

Local habitats

Fact Sheet



ECOSYSTEM EXTRAS!



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1 Coral reefs have been around for millions of years and are home to about 25% of all marine life!

2 The surface of a mudflat is covered in millions of microscopic plants called 'microalgae' that grow by capturing the sun's energy.

3 Dugongs LOVE seagrass – particularly the eelgrass species found around Gladstone.

4 Mangroves' special above-ground roots are called 'pneumatophores'.

5 Sandy beaches are mostly made of silica (SiO₂) in the form of the mineral quartz.



Coral spawning
© Professor Peter Harrison

Explore the habitats of the Gladstone region

A habitat is the type of environment in which plants and animals live. There are different kinds of habitats based on the species of plants that grow in a particular environment, the climate (temperature and weather) of the area and its geography, but all can be placed in one of the following four categories:

- Terrestrial habitats are found on land, like forests, grasslands, deserts, shorelines and wetlands.
- Freshwater habitats include places like bogs, ponds, lakes, rivers and streams.
- Marine habitats include coral reefs and seagrass beds found in the ocean.
- Estuarine habitats are found where fresh water from rivers and streams mixes with the salty water of the ocean.

You can find all four of these habitats in the Gladstone region. These various environments provide food, water and shelter to many amazing animals, and they're the reason Gladstone is home to so many of them, including our Big 6!

Corals

On the edge of the Great Barrier Reef, the Gladstone region is home to a range of corals, each of which perform different roles in coral reef ecosystems. Some of these include:

Branching corals grow by branching (just like a tree) to form dense forest-like reefs. They are fast growing (up to 30cm a year) to provide habitat and shelter for fish and other reef animals.

Massive corals are the foundation of a reef and grow in a semi-circular, or boulder like shape.

They are generally slow growing, adding only a few centimetres each year, but can live for a long time.

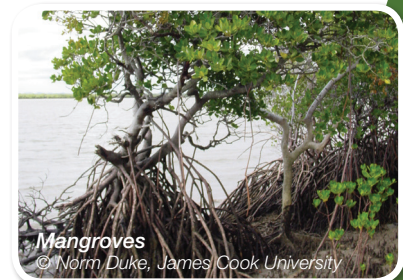
Encrusting corals are low and flat and grow outwards across the reef bed. This is an advantage as their streamlined shape makes them resilient to strong currents.

Soft corals come in a variety of forms but contain only soft tissues and no hard calcium carbonate skeleton (calcium carbonate is the same stuff eggshells are made from).

Mangroves

Mangroves have a cooperative relationship with the Great Barrier Reef – the reef protects the coast where the mangroves grow from being eroded by the sea, and the mangroves trap sediment (dirt and rocks) washed from the land that would otherwise smother the reef.

Mangrove forests are so important to the environment that the government made laws to protect them. You have to get a permit from Fisheries Queensland if you want to remove part of a mangrove forest as the *Queensland Fisheries Act 1994* makes it illegal to damage any part of a mangrove – even a single leaf.



Mangroves
© Norm Duke, James Cook University

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Mudflats

They might not look as appealing as a white sandy beach, but mudflats are one of Gladstone's most important marine ecosystems.

An intertidal habitat, mudflats are made up of the very fine sediment that is left behind when the tide comes in or goes out.

These tiny particles restrict water movement into the soil and allow very little oxygen below the surface, giving mudflats their dark colour while creating the perfect environment for bacteria to produce those smelly gasses.

But there is a lot more to mudflats than bacteria and a bad smell – mudflats are part of the environmental super team (with mangroves) that sustain local fisheries!

You can find worms, crabs and all sorts of molluscs (soft-bodied invertebrates) within this ecosystem, as well as hungry fish, stingrays, and sharks when the tide is high.



Mudflats fronting mangroves near Fisherman's Landing
© Norm Duke, James Cook University

Seagrass

Seagrasses are named because of their long grassy leaves, but they are not really grasses, rather a type of flowering plant that has evolved to live in sea water. They range in size from no bigger than your fingernail to plants with leaves as long as seven metres. Like the plants in your garden at home, seagrasses draw nutrients from their roots and leaves – they love sunlight and need lots of it to grow!

Seagrasses like to live in sandy or muddy intertidal zones (the areas that are covered by water at high tide and uncovered at low tide) and subtidal zones (like intertidal zones but with areas that are always underwater) protected from big waves and surf. They are usually found in water that is less than five metres deep, but in Gladstone one species – *Halodule spinulosa* – was found growing 19 metres underwater! When there is a lot of seagrass growing in one place it is called a seagrass meadow but it really looks more like an underwater carpet!



Dugong feeding on seagrass
© LauraD / shutterstock.com

Sandy beaches

Shaped by wind, waves, and tide, the sandy beach environment looks more like a desert than a vibrant ecosystem. But if you take a closer look you will find millions of macrofauna and meiofauna calling your local beach home!

Macrofauna are invertebrates that are larger than one millimetre and include ghost crabs (crustaceans), pippies (molluscs), worms, and amphipods (also called beach fleas - but don't worry, they don't bite!)

Meiofauna are the little guys - smaller than half a millimetre (the size of a grain of sand) and bigger than 42 micrometres (microscopic). They can look like worms, shrimp, and snails and common ones include ostracods, copepods, polychaete worms, and nematode worms.

Although seaweed doesn't grow on sandy beaches, the dead weed (called wrack) you find washed ashore is an important part of beach ecology and should be left alone!



Ghost crab
© Brandon Alms / shutterstock.com

Find out more



Great Barrier Reef Marine Park Authority
www.gbrmpa.gov.au/
Marine Science: Sandy Beach Processes
www.marinebio.net
Seagrass Watch
www.seagrasswatch.org



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