

Seagrass of the Gold Coast

Below the surface of shallow coastal waters, small meadows of seagrass emerge from the sandy bottom. The Gold Coast is home to several types of seagrass. This information sheet provides an overview of these seagrass varieties, and their importance to coastal ecosystems in our city.

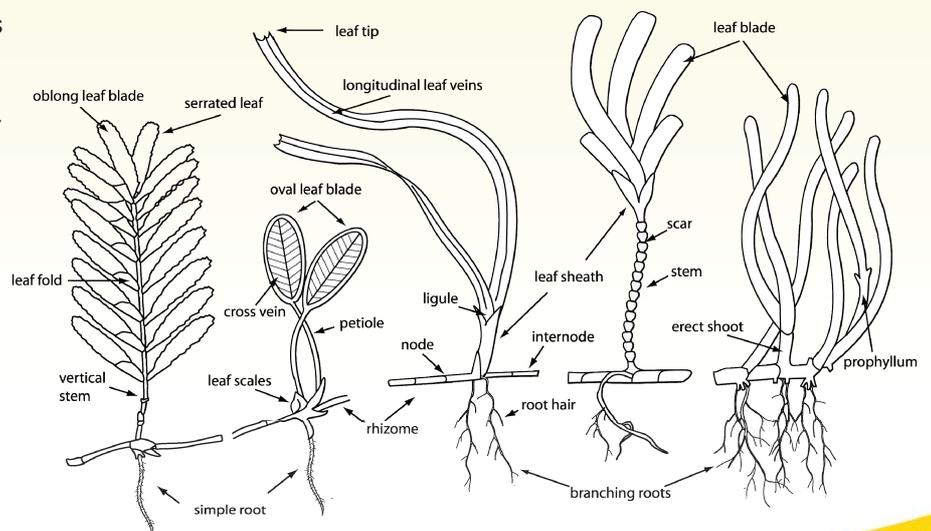
What is seagrass?

Seagrass is not technically grass. It is the term used to describe a number of unique flowering plants that live under the sea. Seagrasses are the only underwater flowering plants to carry out their entire lifecycle within the water column.

Generally, seagrass has leaf blades that extend from stems. These stems can have leaf sheaths or petioles (See Figure 1). Seagrass sways gracefully with the ocean's currents, anchored by roots and rhizomes to the sand. Seagrass leaves are packed with chlorophyll, making them green. Seagrass is an important provider of oxygen to underwater ecosystems. A cuticle around each individual leaf acts as a protective membrane that is thin enough to allow gas-exchange and nutrient absorption.

Unlike terrestrial flowering plants, seagrass can't rely on insects and birds for pollination. Instead, they have several hydrophilic (water loving) strategies for pollination. For more information about these strategies, refer to the Department of Primary Industries *Seagrass Educator Handbook*.

Showing what's a rhizome and what's a leaf blade on the various types of seagrasses
(Source: Len McKenzie 2008)



Why is seagrass important?

Seagrass has been described as an ecological engineer, because of its ability to rapidly colonise areas of the seafloor. Once it has moved into an area, seagrass can stabilise the seabed and effectively alter the environment, making it possible for other flora and fauna to establish. Seagrass varieties also share valuable associations with mangrove and reef environments.



Dugong grass
Halophila ovalis
(Source: Kor -Jent)

Common seagrass species found on the Gold Coast

Cymodocea (*Cymodocea serrulata*) has a soft ribbon-like leaf blade. It can be found in the upper subtidal zone and thrives in salty environments. This is also a favourite of dugongs and sea turtles.

Noodle seagrass (*Syringodium isoetifolium*) can grow in thick patches and the cylindrical leaf blades can range from 10–30cm. Needle seagrass responds rapidly to fluctuations in nutrient levels and is an important food source for dugongs and turtles.

Halodule (*Halodule uninervis*) is mostly found in subtidal zones as deep as 10m and is an efficient seabed stabiliser and sediment accumulator. Leaf blade width is being broader (3.5cm) in muddy zones and narrower (1cm) in more sandy, exposed areas.

Dugong grass (*Halophila ovalis*) is distinct for the oval-like leaves, they can range from 1–4mm in length. Dugong grass has visual cross veins, no hairs on the leaf surface and can tolerate unstable environments where sediments are continually being deposited. This seagrass species is also a preferred food source for dugongs.

Zostera (*Zostera capricorni*) found in intertidal and subtidal areas, with leaves ranging in size from 3–50mm in length. Zostera have distinctly visible cross-veins in the flat ribbon-like leaves and a rounded leaf tip.

Spinulosa (*Halophila spinulosa*) has a fern-like leaf structure with 5–20 serrated leaf pairs, typically subtidal to depths up to 44m.

Where can you find seagrass on the Gold Coast?

Seagrass has adapted to living in the dynamic coastal zone and can rapidly colonise areas. Generally, seagrass can be found in shallow marine habitats with low wave energy. Habitat values of particular seagrass beds can change rapidly as the seafloor responds to coastal processes such as longshore drift, and the usual erosion and accretion caused by variations in wave erosivity (like during storm events). For more information on how these processes continually shape our coastal environment, see *Longshore drift: coastal processes on the Gold Coast* information sheet).

The Broadwater is home to several seagrass communities, found in shallow areas that are sheltered from high-energy waves. In fact, seagrass currently covers 22 per cent of this estuary. Other areas that provide optimum conditions for seagrass growth on the Gold Coast include Currumbin and Tallebudgera Creeks.



Monitoring the seagrass beds at Wave Break Island (Source: Ian Banks 2008)

Looking after our seagrass

The Gold Coast City Council has completed a comprehensive seagrass mapping survey, which outlines the distribution and abundance of seagrass habitats within the Broadwater. This survey will help direct sustainable management strategies for endangered marine turtles and dugongs, and develop on-the-ground solutions to enhance this vital ecosystem.

Hazards to seagrass

- Pollution, oil and metal contamination
- Muddy or murky water and sedimentation
- Unsustainable fishing and boating activities
- Rising sea levels under climate change

Seagrass monitoring

SeagrassWatch, a global community-based monitoring program actively collects data that is collated into a real-world science database. SeagrassWatch is just one way you can help coastal managers and marine biologists better understand this complex environment. To find out more or even adopt your own seagrass patch, visit seagrasswatch.org.

¹ Connell, S. D. and Gillanders, B. M (2007) *Marine Ecology*, Oxford, Sydney.

² McKenzie, L (2008) *Seagrass Educators Handbook*, SeagrassWatch Head Quarters Department of Primary Industries and Fisheries.