# Why conserve seagrass?





Seagrasses are economically and ecologically valuable to both humans and marine life. Seagrass is one of the most productive natural ecosystems in the world.

Seagrasses improve water quality by acting as nutrient sinks, buffering or filtering nutrient and chemical inputs to the marine environment. They also stabilise coastal sediments, helping to avert erosion.

Seagrasses provide food and shelter for many organisms (shrimps, crabs, worms, snails and small fish) and are a nursery ground for commercially important prawn and fish species. Larger fish and seabirds visit seagrass meadows to feed.

Endangered sea turtles and dugongs also graze on seagrass.

Seagrass meadows are fragile ecosystems. Human impacts such as excessive pollution from sewage discharge, oil spills, herbicides, coastal runoff, dredging, boat propellers and anchors/moorings can damage or destroy seagrasses.



# How you can help

In Queensland, all marine plants, including seagrass, are protected from unlawful damage. Incidental damage and limited collection of seagrass is allowed if only in accordance with the QLD Fisheries self assessable code MP05 (see website below).

Many efforts are underway to educate the public about the benefits of seagrass and how they can help to protect seagrass. There are many ways you can help: don't litter; be aware when applying fertilizers and pesticides, as excess amounts can wash down gutters and drains to the sea; when boating, slow down and avoid shallow areas; support marine conservation initiatives; learn about these special marine habitats and volunteer to monitor their health by joining Seagrass-Watch.

Seagrass-Watch is a global seagrass assessment and monitoring program. Seagrass-Watch monitoring efforts are vital to assist with tracking global patterns in seagrass health, and assess the human impacts which have the potential to destroy or degrade these coastal ecosystems and decrease their yield of natural resources. Responsive management based on adequate information will help to prevent any further significant areas and species being lost. To protect the valuable seagrass meadows along our coasts, everyone must work together.

> For more information visit: www.seagrasswatch.org

# Seagrasses of Dunk Island



#### Cymodocea rotundata

- flat, strap-like leaves 2-4mm wide
- rounded, smooth leaf tip
- smooth rhizome
- leaf scars form continuous ring around the stem
- found on shallow reef flats

# Cvmodocea serrulata

- broad strap-like leaves, 5-9mm wide
- leaf tip serrated
- leaf sheath is broadly triangular
- leaf scars not continuous ring around the stem
- found on shallow subtidal reef flats



#### Halodule uninervis

- trident leaf tip
- 1 central longitudinal vein
- rhizome usually pale with clean black leaf scars
- dugong & turtle preferred food



#### Halophila decipiens

- small oval leaf blade 1-2.5cm long
- 6-8 cross veins
- leaf hairs on both sides
- leaves usually longer than wider



#### Halophila ovalis

- oval shaped leaves in pairs
- 8 or more cross veins
- smooth leaf surface
- preferred dugong food



#### Halophila spinulosa

- leaves arranged in opposite pairs
- erect shoot up to 15cm long
- found at subtidal depths (>3m)

#### Halophila tricostata

- erect shoots 8-18cm long
- leaves with 3 veins
- 2-3 leaves at each node
- leaves "whorl" around stem found at subtidal depths (>10m)



#### Syringodium isoetifolium

- narrow, cylindrical, spaghetti-like leaves
- leaves 7-30cm long, taper to a point
- 2-3 leaves arising at each shoot
- rhizomes thin

#### Thalassia hemprichii

- broad ribbon like, curved leaves
- short black bars of tannin cells in leaf blade
- thick rhizome with scars between shoots
- common on reef flats

# Seagrass-Watch HQ PO Box 4

Clifton Beach, QLD 4879 **AUSTRALIA** 

Email: hg@seagrasswatch.org www.seagrasswatch.org

Text and design byL. McKenzie and R. Yoshida, seagrass watercolours by R. Berry

# Seagrasses **Dunk Island**



www.seagrasswatch.org

### What are Seagrasses?



Seagrasses are unique marine flowering plants of which there are approximately 60 species worldwide. Various common names are applied to seagrass species, such as turtle grass, eelgrass, tape grass, spoon grass and shoal grass. Seagrasses are not seaweeds. Seaweed is the common name for algae.

Seagrass live in sheltered coastal waters, undergo pollination while submerged and complete their entire life cycle underwater. They grow much like land grasses, with extensive below ground rhizomes or

runners. Plants form small patches that develop into large continuous meadows. These meadows may

consist of one or many species, sometimes up to 12 species present within one location.

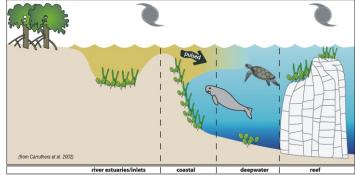
Because seagrass requires sunlight, most seagrass is found in clear shallow waters. Seagrasses survive in the intertidal zone especially in locations sheltered from wave action or where there is pooling of water at low tide, (e.g., reef platforms and tide pools), which protects seagrass from elevated temperatures and drying.



## Seagrasses of North Queensland



Seagrasses are a major component of north Queensland's wet tropics marine ecosystems. Thirteen species of seagrass have been recorded, representing 87% of the known species found in Queensland waters. The wide range of physical habitats where seagrasses are found undoubtedly contributes to the high species diversity. Habitats include intertidal and subtidal areas of estuary, coastal, reef and deepwater environments.



General conceptual model of seagrass habitats in north east Australia

# Seagrasses of Dunk Island

Dunk Island is a continental island located approximately 4 km off Mission Beach, within the Great Barrier Reef Marine Park. Nine seagrass species can be found on the reef flat and the sea bed surrounding Dunk Island, with most present on the western side.

Scattered over sandy areas exposed at low tide you will find *Halodule uninervis* and the clover like *Halophila ovalis*, both food for dugong. On the sand bank to Kumboola Island, is the broad leaved *Cymodocea serrulata* with its serrated leaf tips and its narrow leaved relative *Cymodocea rotundata* with smooth leaf tips. These species are often eaten by green turtles which visit the reef flat during high tides. Mixed in amongst the coral on the reef flat you will find the hooked leaved *Thalassia hemprichii*. Closer to the islets and reef edge, you will find patches of *Syringodium isoetifolium* with it's distinctive spaghetti-like leaves.

In the deeper waters (>3m) off the sand spit, you can find **Halophila decipiens**, a clover like species which has "hairy" leaves. Toward the mainland, you may find the fern like **Halophila spinulosa** or the rare **Halophila tricostata**, which has oval shaped leaves arranged in clusters on a vertical stem.

Seagasses on Dunk Island are being monitored as part of the Great Barrier Reef Water Quality Protection Plan because seagrasses are important indicators of the 'health' of the marine environment. The monitoring programme provides a critical component of the assessment of any long-term improvement in water quality that will occur as best land management practices are widely adopted across the Great Barrier Reef catchments and regions.

