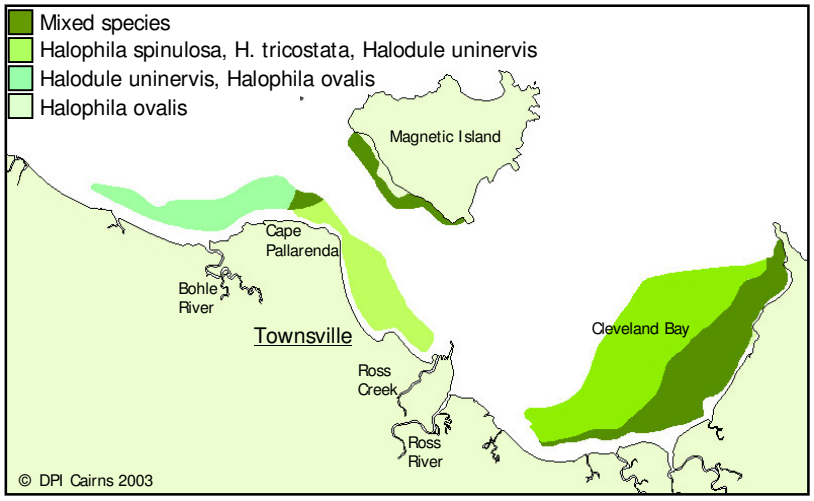
Townsville's Marine Meadows

Seagrasses are important

Seagrasses are related to flowering plants on land. They are an important ecological and economic resource in the coastal zone. Seagrasses stabilise marine sediments and help to maintain water clarity. They are also nursery areas and habitat for many important fish, prawn and shellfish species. Seagrass is the most important food for dugongs and marine turtles, and seagrass meadows are a foraging habitat for seabirds.
There are 29 seagrass species in Australia - seven species grow near Townsville.



Where are they?

Seagrasses grow on tidal mudflats, on shallow sandy areas close to the coast, in coral reef lagoons and around sand cays. They also grow on the deep sandy areas of the Great Barrier Reef lagoon between the mainland and the reefs, to depths greater than 60 m.

In the Townsville area, there are many seagrass meadows along Cape Cleveland, the Strand, Cape Pallarenda, and around Magnetic Island. The main seagrass species in shallow waters near Townsville are *Halophila ovalis*, *Halodule uninervis*, *Zostera capricorni*, and *Cymodocea serrulata*. *Halophila spinulosa* has also been found in deeper waters of Cleveland Bay. Seagrass distribution can also be affected by natural disturbances such as storms, flood events and disease. In April 2000, intertidal seagrass meadows in the Townsville region were decimated by a cyclone but have since recovered.

Protection of seagrasses

Townsville's seagrass meadows are close to a busy coastal city and large port facilities. They are also part of the Great Barrier Reef World Heritage Area and to a large extent part of the Great Barrier Reef Marine Park. Activities in the Marine Park are regulated to protect the Great Barrier Reef while allowing reasonable use of the Great Barrier Reef region.

In recognition of the importance of seagrass meadows as a foraging habitat for dugongs, Cleveland Bay was declared a Dugong Protection Area in 1998. The use of mesh nets is restricted in this area. By law (QLD Fisheries Act 1994) it is prohibited to damage seagrass or any other marine plant. Activities that may cause damage to seagrass, for example, earthworks in tidal areas or on the shore, require a permit.

Seagrass washed up on Pallarenda beach

Life in intertidal seagrass meadows at Pallarenda: gastropods and heart urchin

Halophila ovalis

Worldwide there is concern that seagrass meadows are being lost from coastal areas due to human disturbances such as marine dredging and filling, damage by anchors, coastal development and water pollution. Most disturbances affect seagrass by stirring up, or adding sediment and thus reducing the amount of light underwater and/or smothering or burying the seagrass. Some toxic chemicals, such as herbicides, also reduce the productivity of seagrass.

During the redevelopment of the Strand from 1998 to 1999 Townsville City Council were mindful of the potential impact from the building activities and used several methods to protect the adjacent seagrass meadows. These methods included using special fill materials and linings to prevent fine sands being washed into the ocean, monitoring turbidity in the waters off the Strand, and monitoring the health of the seagrasses of the strand. Due to these measures, the seagrass meadows off the Strand were not affected by the construction activities.

Halodule uninervis

Zostera capricorni

Local eyes

Seagrass-Watch is a community-based seagrass monitoring program run by Queensland's Department of Primary Industries, and involving over 300 volunteers throughout Queensland. Seagrass-Watch assesses the health of nearshore seagrasses and provides early warning of major changes in seagrass distribution. The Townsville Seagrass-Watch group was formed in 2001 and regularly surveys seagrass at Shelly Beach and Bushland Beach. If you want to get involved, contact the Townsville Seagrass-Watch Coordinator by phone on 4722 2655

Cymodocea serrulata

The future

To protect the valuable seagrass meadows of the Townsville region and elsewhere the community, government and researchers are working together. Information about the knowledge of the biology and ecology of Australian tropical seagrasses is still limited, however, research by CRC Reef Research Centre, Department of Primary Industries and James Cook University is continuing to fill the gaps. This knowledge is used by environmental managers to assess stress to seagrass caused by human activity, the potential for natural recovery or options for mitigation.

What can you do?

- Join your local Seagrass-Watch team (or another volunteer group, for example the Indo-Pacific Sea Turtle Conservation Group);
- When boating and fishing, avoid anchoring over dense seagrass meadows;
- Observe recommended speed limits when boating in coastal areas, to prevent boat strikes with marine wildlife and to not scare them from their feeding areas;
- Never discard any litter into the ocean. For example, fishing line can entangle marine turtles, while plastic bags, may be mistaken for food and ingested;
- Report sick, injured or dead marine turtles, dugongs, whales or dolphins to the Marine Animal Hotline on 1300 360 898.

Halophila spinulosa

www.reef.crc.org.au www.dpi.qld.gov.au www.soe-townsville.org/ seagrass