WORKING TOGETHER TO MONITOR SEAGRASS IN QUEENSLAND'S RAMSAR SITES

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Shallow water and intertidal seagrass meadows are a key ecological characteristic of four of Queensland's five Ramsar wetland sites. These marine and estuarine dominated Ramsar sites are Bowling Green Bay, Shoalwater and Corio Bays, Great Sandy Strait and Moreton Bay. During low tide, the intertidal meadows provide globally significant feeding areas for shorebirds. During high tide they provide the primary food source for dugong, endangered green turtles, fish and numerous other animals.

There are approximately 58 000 hectares of seagrass meadow within the boundaries of Ramsar wetlands in Queensland. This is approximately 13 per cent of the seagrass meadows along the east coast of Queensland.

The pressures on these habitats are increasing due to our activities on the land and on our coasts. Fisheries Queensland is working closely with community groups and other government agencies to report on the condition of our seagrass meadows and the general health of our nationally and internationally important wetlands. We now have good information on the status of seagrass in our Ramsar sites.

Great Sandy Strait

The Great Sandy Strait Ramsar site is an estuary in southern Queensland. This was the location of the inaugural Seagrass-Watch monitoring site (August 1999). Seagrass-Watch is a participatory program which involves community groups and agencies in monitoring changes to coastal seagrass meadows in Queensland, as well as nationally and globally, providing an early warning of coastal ecological decline.

The 23 Seagrass-Watch long-term monitoring sites in the Great Sandy Strait have been monitored by the Great Sandy Strait Flora and Fauna Watch community group for the last eight years, with assistance of Burnett Mary Regional Group and the Cooloola CoastCare Association. The monitoring sites have been strategically located to gather information on marine resources in areas critical for fisheries, dugong and turtle. The monitoring provides information for strategic marine park planning, and assessments of impacts both on local and regional scales. Currently the status of seagrass in the Great Sandy Strait is rated as fair.

Shoalwater and Corio Bays

The Shoalwater and Corio Bays Ramsar site on the central Queensland coast includes many wetland types including fringing coral reefs, rocky shores, beaches and sandbars, mangrove forests, melaleuca woodland, freshwater lagoons or swamps, intertidal mudflats as well as shallow open water with seagrass meadows.

The land surrounding Shoalwater Bay is owned by the Australian Defence Force and since the mid 1960s has been used as a military training exercise area with only limited access to the public. The bay has one of the highest tidal ranges in Queensland, up to seven metres, and contains extensive intertidal mud banks which support shallow seagrass meadows. Approximately 16 700 hectares of seagrass are within the Ramsar area. These meadows support a wide diversity of fish species and are visited by many threatened species of turtles (green, loggerhead, hawksbill and flatback) and are home to the threatened dugongs.

The seagrasses within Shoalwater Bay are monitored to assess water quality and habitat resilience as part of the Great Barrier Reef marine monitoring program, a component of *Reef Rescue*, an initiative under *Caring for our Country*. These assessments confirm that seagrass meadows in Shoalwater Bay are in a good condition.

Great Sandy Strait Flora and Fauna Watch volunteers (from left: Pat Cottle, Hanne Larson and Robyn Bailey) monitor the intertidal seagrass meadows at Tinnanbar, Great Sandy Strait. Photo: Len McKenzie

Bowling Green Bay

The most northern Ramsar site in Queensland is Bowling Green Bay, just to the south of the regional Queensland city of Townsville. Bowling Green Bay contains examples of the richest coastal habitats typical of north-east Australia's coastal dry tropics.

Dugong and turtle feed in these meadows with extensive areas of feeding trails and groups of dugong observed during recent surveys by Fisheries Queensland. The seagrass meadows are close inshore and combine with the mangrove forests and wetlands to form a highly productive nursery habitat for commercial and recreational fish and prawn species.

Unfortunately recent monitoring in nearby areas has shown intertidal seagrasses to be in a poor state; although most meadows have a high resilience to impacts and a capacity for relatively fast recovery. Whether this situation also applies to the seagrasses of Bowling Green Bay is unknown, as currently there is no monitoring within the site.

While there are no direct threats to the marine environment, the hydrological connectivity of various aquifers, interactions with surface waters, and how irrigation activity in the adjacent catchments affects regional groundwater hydrology needs further assessment. Increases in pesticides and nutrients, as well as fine sediment from agricultural tail-waters may pose a long-term threat to seagrass meadows.

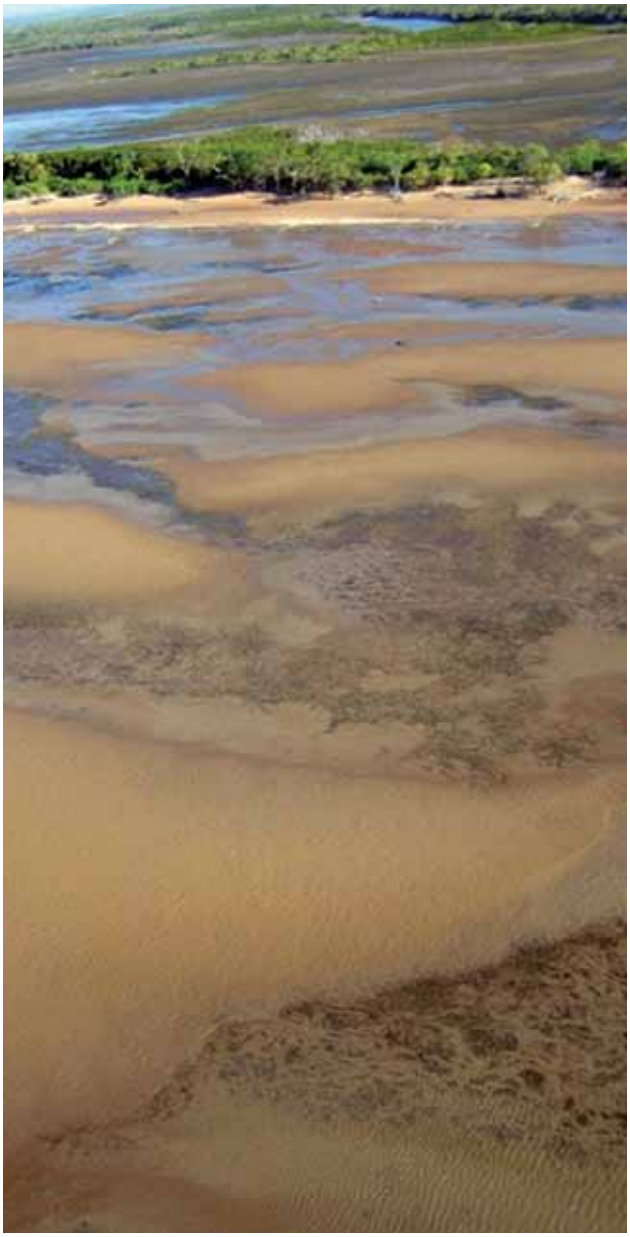
Moreton Bay

Located in one of Australia's fastest growing regions is the Moreton Bay Ramsar site in southern Queensland. The site covers more than 110 000 hectares and includes the offshore sand islands, intertidal mudflats and seagrass meadows, marshes, sandflats and mangroves. This variety of wetlands enhances the Bay's biological diversity with an overlap of wildlife species normally considered tropical or temperate. Approximately 33 500 hectares of seagrass meadows are within the Ramsar site.

The threats to seagrass in this site are many as the population of Brisbane has more than doubled in the last 20 years, resulting in a rapid growth in housing and coastal development. Keeping the bay clean and the productive seagrasses healthy will depend on effective management. Approximately 50 Seagrass-Watch sites are monitored throughout the area, providing information on the condition of the seagrass habitats. Community volunteers, conservation organisations and government agencies have been working together to monitor seagrass since 2001. Current seagrass condition is rated as good, with no sustained losses in the last 10 years.

The future

In the next 10 to 20 years it is expected that changes in climate, for example increasing temperature, sea-level rise and tropical storm frequency, will increase stress to coastal habitats. This will add to impacts on seagrass meadows that support fisheries productivity. The best defence against unnecessary habitat loss will be to use high quality, long-term information in decision making regarding coastal development and management. Monitoring change in seagrass performance and understanding the factors underpinning trends in change, resilience and recovery processes will be critical to understanding the changes occurring in Ramsar wetlands.



Dugong grazing trails (zigzagging marks in foreground) are evidence of the importance of Bowling Green Bay seagrass meadows to local dugong populations. Photo: Rob Coles