Tropical Queensland Seagrasses

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The importance of seagrass meadows as structural components of coastal ecosystems has been recognised during the past 20 years. This has resulted in more interest in the environment being focused on the biology and ecology of seagrasses. These marine angiosperms are important for stabilising coastal sediments; providing food and shelter for a diverse range of organisms; as a nursery ground for many prawn and fish of commercial importance; and for nutrient trapping and recycling.

Seagrasses are unique amongst flowering plants in that they can live entirely immersed in seawater. Several species are found at depths of down to 50 metres but tropical species are most common in depths less than 10 metres below mean sea level. Adaptation to a marine environment imposes major constraints on morphology and structure. The restriction to seawater may have also influenced their geographic distribution and speciation.

Seagrass meadows in northern Queensland play a critical ecological role as a support for commercial species of penaeid prawns and fish. Seagrasses are also essential food for dugong and green sea turtles. Coastal seagrasses are also important nutrient and sediment sinks, and play important roles in maintaining sediment stability and water clarity. The growth of seagrasses depends on several factors including the availability of light, nutrients and water temperature. Activities that lead to a change in these factors such as turbidity from dredging or run-off from agriculture, could potentially have a negative impact on seagrass growth and distribution. Seagrasses show measurable growth responses to changes in ambient water quality conditions and can therefore be used as effective ecological indicators of environmental impact.

Tropical seagrass meadows vary seasonally and between years. The potential for widespread seagrass loss has been well documented. The causes of loss can be natural such as cyclones and floods, or due to human influences such as dredging, agricultural run-off, industrial run-off or oil spills. Destruction or loss of seagrasses has been reported from most parts of the world, often from natural causes e.g. 'wasting disease' or high energy storms. More commonly destruction has resulted from human activities, e.g. as a consequence of eutrophication or land reclamation and changes in land use. Anthropogenic impacts on seagrass meadows are continuing to destroy or degrade coastal ecosystems and decrease their yield of natural resources. It is important to document seagrass species diversity and distribution and to identify areas requiring conservation measures to prevent significant areas and species being lost.