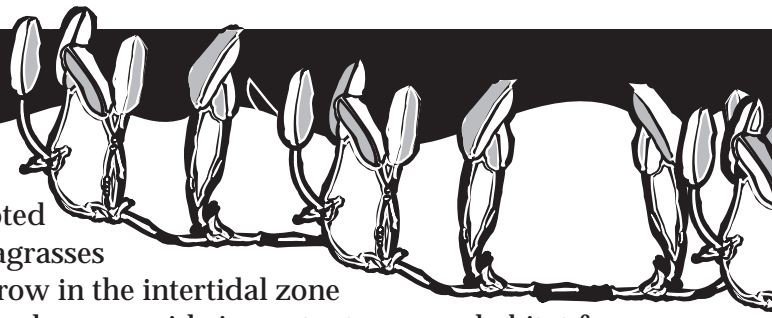


# SEAGRASS COMMUNITIES



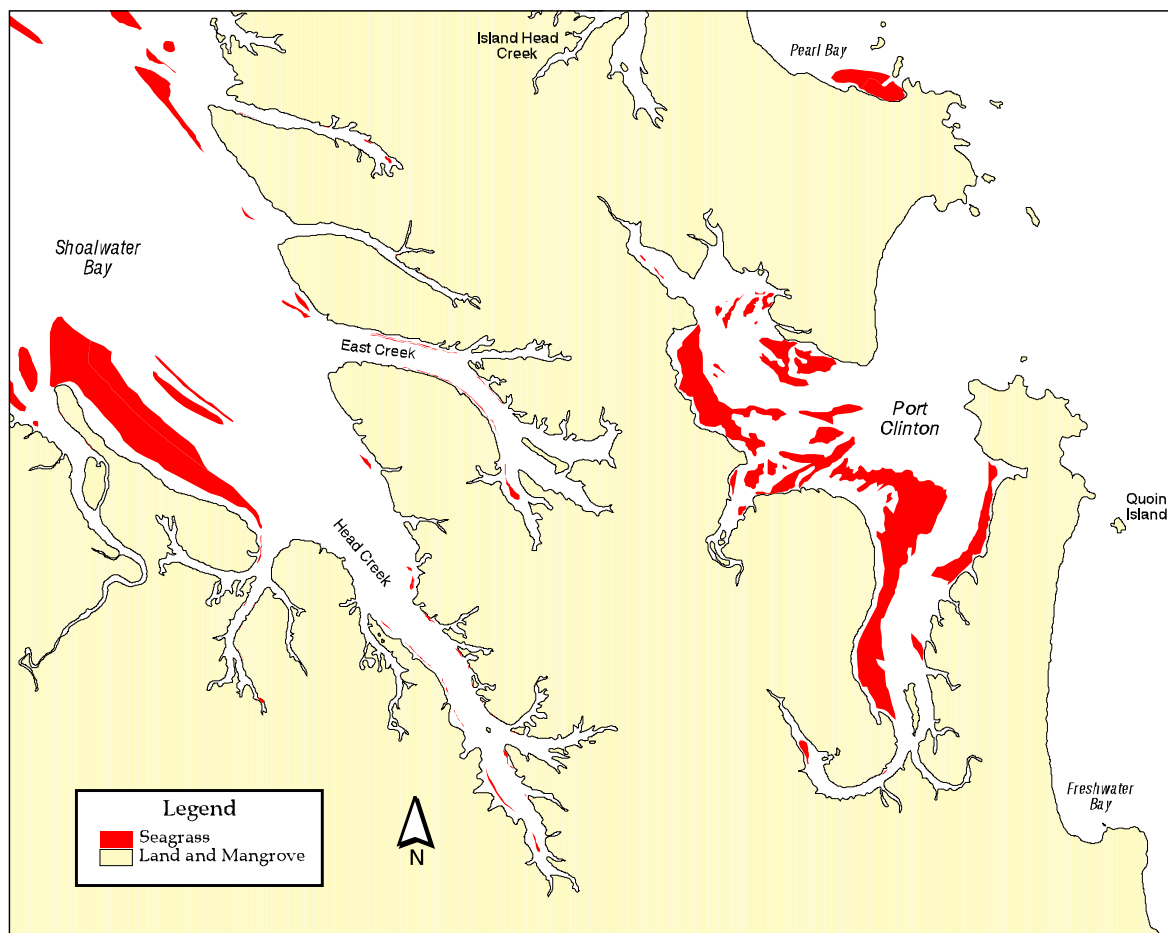
## Introduction

Seagrass is an angiosperm, or flowering plant, adapted to living submerged in the marine environment. Seagrasses are most diverse in tropical regions and generally grow in the intertidal zone on soft substrates such as mud or sand. Seagrass meadows provide important nursery habitat for commercial species of prawns and fish. Seagrasses are an essential food resource for dugongs and green turtles. They also act as nutrient and sediment sinks and play an important role in maintaining water clarity through sediment stabilisation. Coastal seagrasses are therefore an important resource both economically and ecologically.

## Seagrass distribution

Approximately 62% of the known seagrass resources in the Mackay/Capricorn Section of the Great Barrier Reef Marine Park occur in the Shoalwater Bay region. Other large seagrass meadows of equivalent size occur 150 kilometres south at Gladstone and 300 kilometres north in the Whitsunday Group.

Well-developed seagrass meadows occur in Port Clinton. The seagrass beds of Shoalwater Bay and Port Clinton are estimated to cover 7000 hectares. Seagrass habitat is used by many commercial and recreational fish species for at least a part of their life cycle.



*Seagrass distribution in Port Clinton*

Port Clinton forms part of the Shoalwater Bay complex and cannot be considered in isolation from adjacent areas in Island Head Creek and Shoalwater Bay proper. When considered together these areas have:

- the highest seagrass diversity in a single region of the central Queensland coast which remains in an essentially undisturbed state;
- they function as nursery habitat for juvenile fish species and as feeding grounds for rare and threatened species including turtles and dugongs;
- their regional significance is emphasised by the widespread loss of seagrass in Hervey Bay in 1992 due to flooding; and
- they are an important scientific resource and provide an opportunity for comparative studies.

### **Seagrass surveys**

The seagrass areas of Shoalwater Bay, Island Head Creek, Pearl Bay and Port Clinton were intensively surveyed in 1995–96 at different times of the year to account for any seasonal fluctuations.

Twelve seagrass species have been identified in the region and it has been suggested that the species diversity is the highest recorded on the central Queensland coast. Port Clinton has been identified as one of the richest seagrass beds on the east coast with over 50% cover.

Port Clinton has extensive and productive intertidal seagrass meadows. Juvenile penaeid prawns were found to be more common in the Port Clinton and Island Head Creek sites where substrate types consist of mud and fine sand.

In the 1995–96 surveys no seagrass was recorded in Corio Bay. The absence of seagrass may be due to the amount of freshwater discharge or high sediment loads to which the estuary is subjected.

### **Importance of seagrass**

Seagrasses represent a very important ecological community. They play a significant role in providing habitat for fisheries, as a nutrient and sediment trap, and as a source of food for dugongs and green turtles.

The Shoalwater Bay seagrass meadows provide a valuable nursery area for juveniles of important fishery species.

Pioneering seagrasses such as those belonging to the *Halophila* and *Halodule* genus which dominate much of the Shoalwater Bay seagrass communities are the preferred diet of dugongs.

### **Threats to seagrass**

Seagrass is sensitive to changes in salinity, turbidity and siltation. Potential influences on distribution and abundance of seagrasses in Shoalwater Bay (and elsewhere along the Queensland coast) may include freshwater and sediment run-off from the land, in addition to seasonal fluctuations of plant populations.

Water quality is a major factor in determining the extent and health of seagrass communities. Turbidity affects water clarity and hence light penetration. As land use in the Shoalwater Bay region is relatively undisturbed, the water quality in Port Clinton is very good.

Trawling within the Port Clinton area occurred on a trial basis in the past, however, the area has generally been avoided due to its shallowness. Trawling causes considerable destruction to seagrass areas.

Defence activity adjacent to the zoning area is usually limited to amphibious exercises along South Arm in Port Clinton.

The loss and degradation of seagrass habitat in other areas along the Queensland coast means that large and relatively undisturbed areas of seagrass, such as that occurring in the estuaries adjacent to the zoning area, become increasingly important.

## **Sources**

This report is based on a report by the Queensland Department of Primary Industries on *Seagrass Communities in the Shoalwater Bay Region, Queensland—Spring (September) 1995 & Autumn (April) 1996* and resource reports prepared for Shoalwater Bay Commonwealth Commission of Inquiry.

This report has been prepared as background material for preparation of a draft zoning plan for the Gumoo Woojabuddee Section of the Great Barrier Marine Park and adjacent areas including the waters of Port Clinton and the intertidal areas of Freshwater Bay and the Byfield coast. There are no management proposals contained in this report. If you have any questions about the process contact:



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