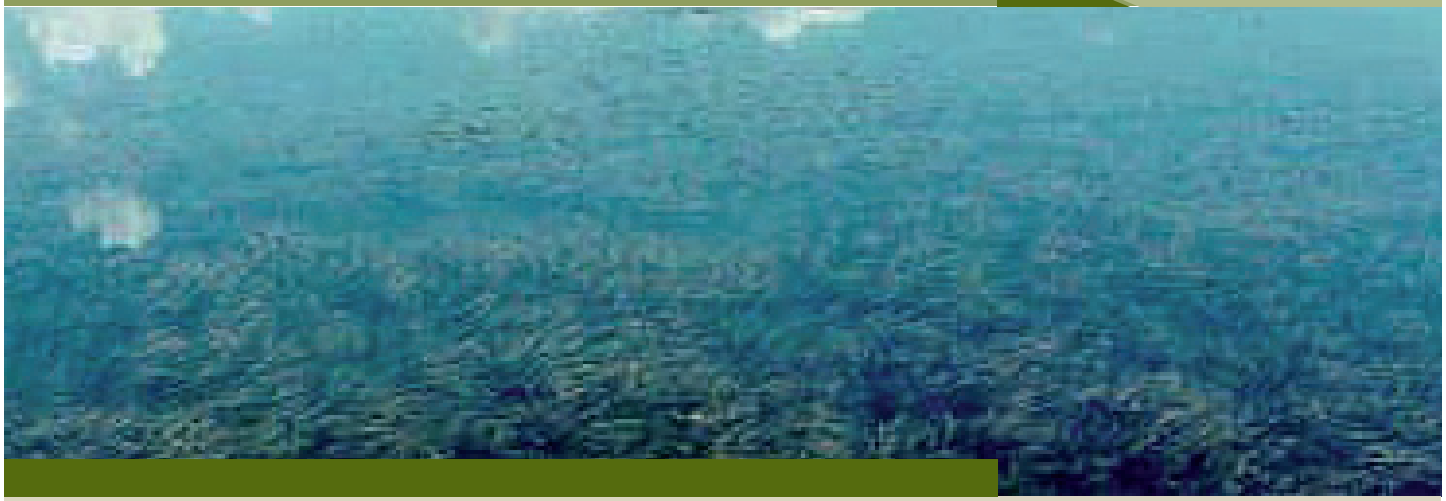
Seagrass

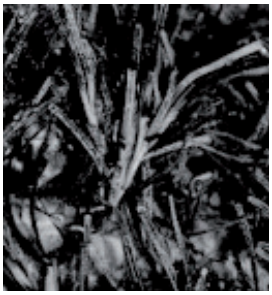
Seagrasses are a group of extremely important plants which grow and flower underwater.



Seagrasses grow in soft mud or sand in the calm, shallow, salt waters of estuaries, bays, lagoons and lakes. There are 25 species of seagrasses found in Australian waters and six of these are found on the NSW coastline.

Seagrass Identification in the Tweed

The most common species are:

	Eelgrass or ribbon weed (*Zostera capricorni*) • leaves 1-50 cm long and 1-5 cm wide • upright reproductive stems • slender rhizomes • found on tidal flats in most rivers and lagoons
	Paddleweed (*Halophila ovalis*) • paired oval leaves • leaves 1-5 cm long and 5-20 cm wide • delicate creeping rhizome usually white and translucent

Importance of Seagrasses:

- Contribute large amounts of organic material to the food chain
- act as baffles, causing silt to settle from surrounding waters.
- Food and shelter for many aquatic animals, including commercially important marine organisms.
- Nursery grounds for many important commercial and recreational fish and crustacean species, including mullet, whiting, tailor, luderick, bream, flathead, prawns and crabs.
- Food for herbivorous fish and sea turtles.
- One study in the United States revealed that 2.6km2 of seabed supported 235 million prawns and 95000 million molluscs and other shellfish.

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Seagrasses continued. . .

Distribution of Seagrass:

In 1991 seagrass beds in the Tweed estuary covered about 67.4 ha, mainly of *Zostera capricorni*. In the 1930's the area was about 200 ha but following dredging and a major flood this area was reduced to about 40 ha by 1976.

In the Cudgen, Cudgera and Mooball creeks seagrass occurs in the shallow edges of these creeks and is mainly *Zostera capricorni*. Some dense beds still exist within the Cudgera and Mooball creeks in 1997 but is less dense in the Cudgen creek.

Photos taken in the past show that the lower reaches of the Cudgera creek had extensive seagrass beds in the 1960's, however by 1997 the seagrass was limited mainly to smaller patches within the lower reaches in all three creeks.

It is likely that seagrass distribution will continue to show yearly variations.

Growing Habitat:

The distribution of seagrasses is indicative of water quality. In particular, the depth of seagrass growth is dependent upon the penetration of light into the water.

The shallow edge is controlled by tidal exposure and the deep edge by light availability. Seagrass/light relationship has been investigated in Moreton Bay for five years.

Correlations between water quality parameters and seagrass depth range were developed. According to their findings minimum habitat requirements for *Zostera capricorni* were established, and include a maximum of 10mg/L of Total Suspended Solids.

Other factors which affect the distribution of seagrass beds are turbidity, salinity, temperature, current and wave action.

Seagrass beds are fragile ecosystems and their distribution is effected by severe storms, floods and human interference. Some of the activities that are causing an increase in turbidity and having a detrimental effect on seagrasses include dredging and pollution from sewage discharge, urban stormwater, oil and agricultural runoff.

Seagrass beds are also being destroyed by dredging and reclaiming land, uncontrolled bait digging, boat propellers and anchors as well as land management practices such as intensive farming, pasture improvement and clearing of vegetation close to rivers and creeks.

Propagation:

Seagrasses flower, are pollinated, and seed underwater. The seeds are then dispersed by the tides. They grow mainly in spring and summer. During autumn or after storms, their leaves or the plants themselves are washed up on the shore.

Protection of Seagrasses:

Coastal waterways need to be managed properly to ensure their future survival. Tweed Shire Council has developed management plans for Tweed Estuary, Terranora and Cobaki Broadwaters and the Cudgen, Cudgera and Mooball Creeks.

References and Further Information:

Abal,E.G., K.M.Holloway and P.C.Dennison (eds) 1998. Interim Stage 2 Scientific Report. Brisbane River and Morton Bay Wastewater Management Study. Phone (07) 3403 6135. website:www.brmbwms.qld.gov.au

Couchman D. Seagrasses: A brief look at their Ecology and Biology. Fisheries Management Branch, Qld Department of Primary Industries.

NSW Fisheries,1993. Estuarine Habitat Management Guidelines.

Tweed Shire Council Estuary Management Plans for Lower Tweed Estuary and the Cudgen, Cudgera and Mooball Creeks. Tweed Council Natural Resources Management Unit (NRM) phone (02) 6670 2400.

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