Seaweeds and Seagrasses of the Cottesloe Area.

By Dr Anne Brearley

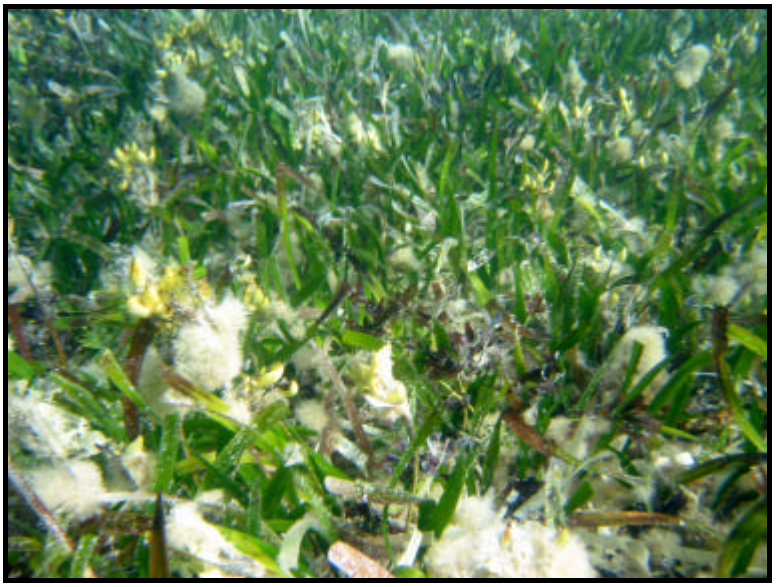
Many types of algae and seagrass are found in the Cottesloe area. They are typical of the west coast. Most are temperate species found right around the south coast but a few are tropical and more common to the north. Algae and seagrasses are important in creating habitat for other organisms. Many tiny animals eat algae that in turn are eaten by larger animals such as fish, and some fish such as the Buffalo Bream also eats algae. Most of the algae and seagrass leaves are however shed or broken off in storms, creating the seaweed banks (wrack) on the beaches. The wrack gradually breaks down due to bacteria, small animals chewing them up and the action of waves. Small fish are abundant in the wrack that accumulates in the swash zone, hence wrack is most important to the food web. Evidence of this food chain in action can be seen if you watch the shags or cormorants swimming in the water, they dive down and bob up with fish such as small cobblers in their beaks.

Seaweeds are classified as Green Brown or Red according to the type of pigments they contain, but colours can be deceptive with some red looking brown and vice versa. Some brown algae like the kelp *Ecklonia* are large and conspicuous and grow in rough slightly deeper water. Other reds and greens are tiny and delicate and may grow in more protected area or attached to large algae or seagrasses. On close examination, even the rocky areas with the appearance of bare rock are covered with algae. These may be encrusting chalky layers of coralline algae, or filamentous strands that bind sand creating a habitat for worms and other small animals. The small shore reef off Grant Street is a good place to view this type of habitat. Some algae particularly the green species such as the sea lettuce *Ulva* and *Cladophora* grow quickly in response to nutrients and can be quite common near freshwater seepages. Next time you're walking on the beach, take time to look at the huge variety of algae in the weed banks, the colours and shapes are quite beautiful.

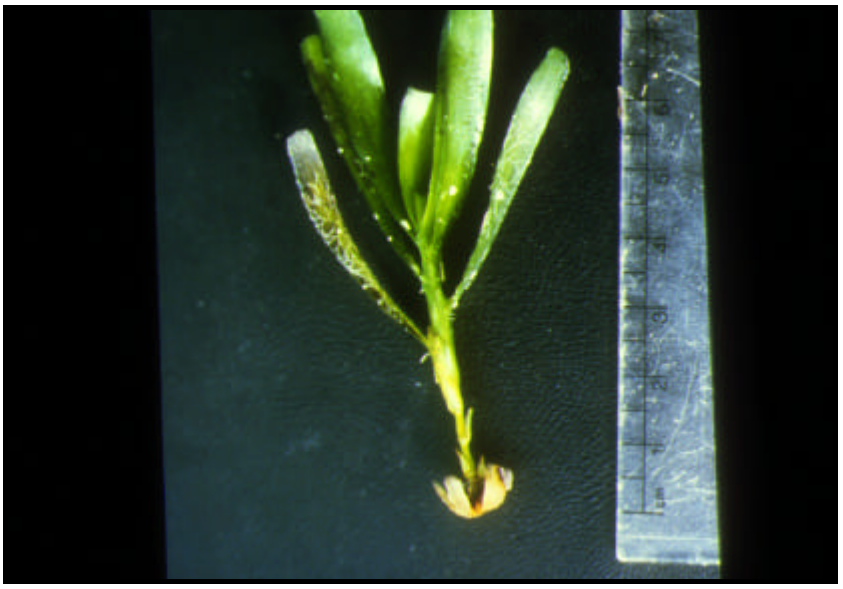
There are ten or more types of seagrasses found around Cottesloe. Seagrasses generally grow in sand and their underground stems or rhizomes bind the sand. In more protected areas such as Geographe Bay, Shoalwater Bay, and at Rottnest they grow as extensive meadows. At Cottesloe they form quite small patches. A wonderful place to view seagrass is between the shore and the Dutch Inn reef near the Beach Street Groyne. The water is about 2 metres deep and the bottom is covered with sand and small rocky outcrops. You should be able to see several types of ribbon weed *Posidonia* sp., which as their common name suggests look like green ribbons and grow up to a metre in length. As the leaves of *Posidonia* decay they are moved around by the waves and the more resistant leaf fibres are rolled into the small brown balls that wash up on the beach. There are also two types of wire weeds or sea nymph *Amphibolis*. These seagrasses have a woody stem and a tassel of leaves at the top. One type also grows on rocky areas. You can see it growing on all the small reef areas and it is particularly abundant on the rocky areas around North Cottesloe. The stems of the wire weed are usually covered with algae, so they create a habitat for the small animals that are eaten by fish. Paddle weed *Halophila* and the fine eelgrass *Zostera* grow between the large seagrasses, these are more fragile and winter storms generally uproot them. The tropical species *Syringodium* with leaves circular in cross section also grows amongst the other seagrasses, while another type similar to the wire weeds called *Thalassodendron* grows on rocks out in the surf zone. As you swim over the seagrasses you will often see fish such as the Rainbow Cale poking their heads out of the leaves. Leatherjackets often hover above the canopy and I have even seen Seadragons gliding by.

As seagrasses are flowering plants they produce flowers and seeds. The bisexual flowers of *Posidonia* are not very spectacular however in early summer the pithy yellow-green bean shaped fruits are an interesting sight. Male and female flowers of *Amphibolis* are produced on separate plants, and the young plant grows on the mother plant. When mature the seedling is released from the parent, the tissue around the base falls off revealing a small comb-like structure that anchors the seedling to seagrasses or algae where it can start to grow.

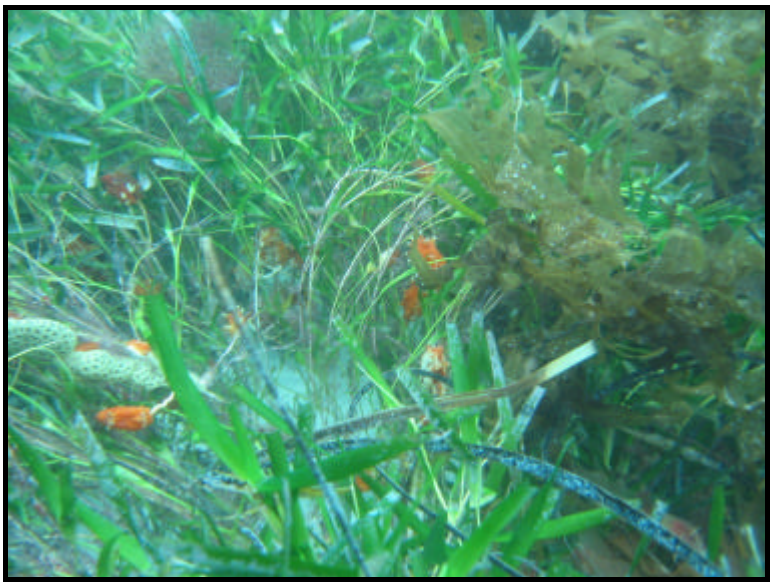
Some of you may be interested in the delightful and informative natural history pamphlets written and illustrated by Elizabeth Rippey and published by the Rottnest Island Authority. Marine topics include seagrasses, shells and fish. Two interesting books are John Huismans *Marine Plants of Australia*, UWA Press 2000 and Graham Edgars *Australian Marine Life, the plants and animals of temperate waters*, Reed Books 1997.



Photograph 1: *Posidonia australis* flowers Parker Pt, Rottnest Island, December 2003



Photograph 3: Comb anchor of *Amphibolis* seedling, Marine Group, Plant Biology UWA.



Photograph 3: Looking into a *Amphibolis griffithii* meadow showing calcareous lace corals Bryozoa and sea tulips sea squirts Ascidians