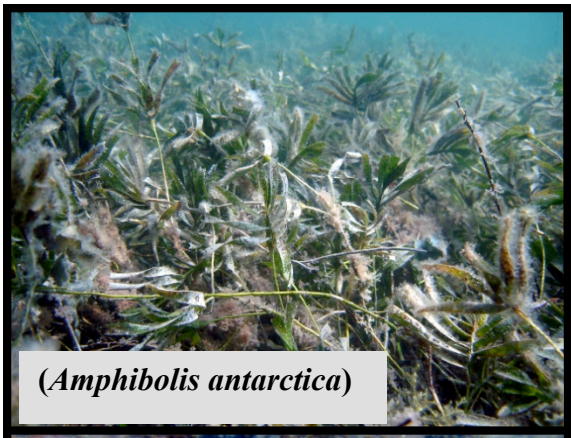
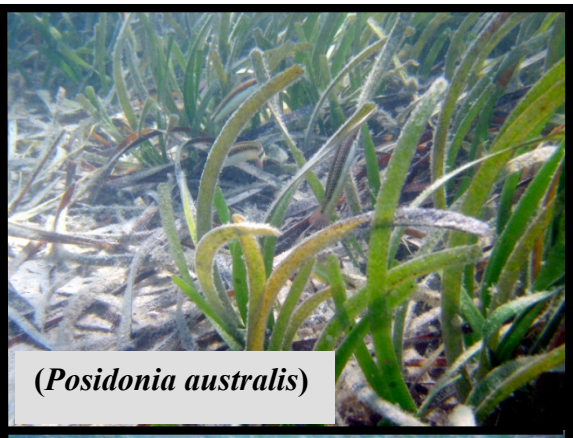
SPECIES FACT SHEET

The Seagrasses

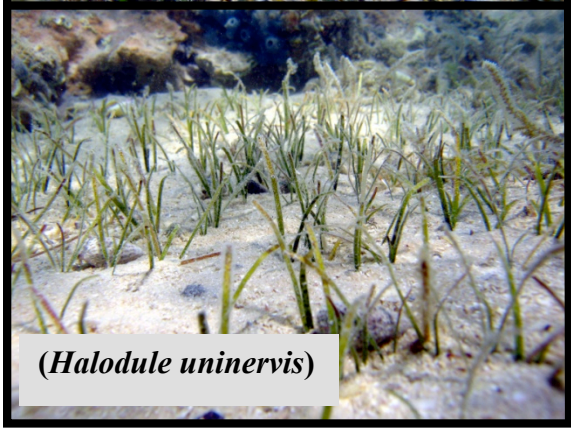


(*Amphibolis antarctica*)

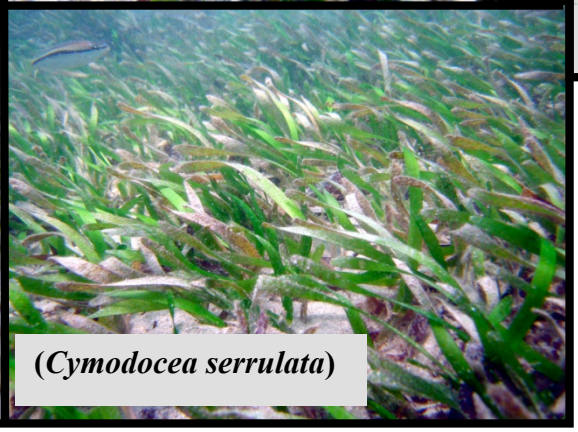


(*Posidonia australis*)

(*Halophila spinulosa*)



(*Halodule uninervis*)



(*Cymodocea serrulata*)

Identification and Distribution: Seagrasses are aquatic angiosperms (flowering plants) that provide food or shelter for many organisms. Seagrasses are found in the shallows from cool temperate seas to the tropics and may form large continuous beds made up of a single species or a mix of multiple species. The seagrasses of Shark Bay represent a mix of species found most commonly in the temperate zone – including the most common species, *Amphibolis antarctica* – and those that are found in tropical waters. Seagrasses sometimes are confused with "seaweeds" or macroalgaes that lack the structural complexity, vascular system (xylem and phloem), and true roots of seagrasses.

Common seagrasses in Shark Bay, Western Australia
Posidonia australis
Posidonia angustifolia
Posidonia coriacea
Amphibolis antarctica
Halodule uninervis
Cymodocea angustata
Cymodocea serrulata
Syringodium iseotifolium
Halophila spinulosa
Halophila ovalis
Halophila decipiens
Halophila minor

Seagrasses come in many shapes and sizes but all have above ground leaves that capture the sun's light for photosynthesis and a stem (rhizome) that usually lies below the sediment. The size and depth of rhizomes varies considerably among species but all help to anchor the plant in the sediment and store energy and nutrients for the plant. Roots form off of the rhizomes. As the rhizome grows through the sediment, leaf clusters will branch off at different points and increase the area covered by the individual seagrass plant. Seagrass stabilize the sediment and can prevent erosion by acting as 'padding' by absorbing wave energy from pounding seas and high velocity currents.

Reproduction: Seagrasses reproduce both sexually and asexually. Vegetative (asexual) spread through growth of rhizomes is most common. For sexual reproduction, plants are either monoecious, with a single plant having both male and female flowers, or dioecious with individual plants having either male or female flowers. The pollen and seeds of seagrasses are dispersed by the water and can remain suspended in the water column over long distances depending upon seed size and currents. Pollen from the anther at the tip of the stamen is released from the male flower into the water and relies on chance to encounter the carpel of a female flower. The pollen is received by the stigma of the carpel and must pass through the tube-like style in order to reach the ovary and fertilize the ovules. It is these ovules that ultimately become the fertilized seeds and from which new seagrass plants can grow.

Threats to seagrasses: In many parts of the world seagrasses have been declining rapidly, raising serious concerns about the health of these important ecosystems. Seagrasses are threatened by dredging, filling, decreased water clarity and pollution and are damaged by boats operating in waters that are too shallow.

Seagrasses in Shark Bay: Shark Bay has one of the largest continuous seagrass beds in the world and is probably among the most pristine seagrass ecosystems left on the planet. The seagrass beds cover 4,000 square kilometers of the bay's 13,000 square kilometer area and support healthy populations of a variety of marine life. The Wooramel Bank on the eastern side of Shark Bay spans the coast for 129 km and is about 8 km wide, making its 1032 square kilometer meadow one of the largest continuous meadows in the world. Twelve different species of seagrass have been reported from the bay - the largest number of species ever recorded in one place in the world.

SBERP Research: SBERP is conducting several studies on the seagrasses of Shark Bay. First, we are documenting the distribution of species throughout the bay and investigating how the species composition and nutrient content of the seagrasses changes across the bay and throughout the year. Second, we are studying which seagrasses herbivorous fishes, green sea turtles, and dugongs prefer to graze. Finally, we are using experiments to determine how grazers structure the seagrass beds of Shark Bay and how these effects might be driven, ultimately, by tiger sharks. Check out the following link to keep up to date on our research results: www.SBERP.org.

SHARK BAY ECOSYSTEM RESEARCH PROJECT