



Fact Sheet 3: Mangrove Forests



Figure 1: The Barker Inlet mangroves (low tide).

WET FACT

South Australia has the most extensive temperate forests of the grey mangrove (*Avicennia marina*) in Australia (230 km²).



What is a mangrove?



A mangrove is a woody plant or plant community that lives between the sea and the land in areas that are flooded and drained by tides. While most trees would drown in such a water-logged environment, the mangrove has special adaptations to survive in this environment.



Survival strategies of a mangrove



What's happening BELOW ground?

- Most mangroves have more of the plant below the ground than above it. The main mass of roots is generally within the top two metres of the soil; the best oxygen supply is in that layer.
- Cable roots and anchor roots support the tree against wave action.
- Small roots sprout from these cable and anchor roots to collect nutrients from the mud. As little oxygen is in the mud, many mangroves have adapted to this by raising part of their roots (pneumatophores) above the surface.

What's happening ABOVE ground?

- The grey mangrove, sends its breathing roots called pneumatophores (nu-mat-a-fores) to the surface for oxygen; like a snorkel (see figure 2).
- Luckily these roots are also waterproof, so when the tide comes in they don't drown.

How can mangroves survive in saltwater?

- Many mangroves stop much of the salt from entering their systems by filtering it out through their roots. Some species can keep out more than 90% of salt in sea water, others quickly pass the salt out of their systems through special salt glands in their leaves.
- You can see and taste the salt coating the leaves.

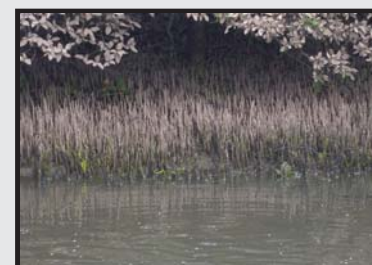


Figure 2: pneumatophores





What lives here?



In the Mud

•Mangrove mud processes enormous amounts of dead animal and plant material because it contains very special types of organisms called **anaerobic bacteria**.

•Did you know that in one teaspoon of mangrove mud there are between 10,000,000 to 1,000,000,000 bacteria.

Around the roots

•Mangrove roots provide excellent shelter for many small animals such as mudskippers, snails, prawns and crabs. These areas are also very important for the fishing industry as they provide a safe haven for many of the commercially caught fish. Dolphins can also be seen swimming into the mangroves at high tide hunting for food.

In the leafy forest

•Within the leafy canopy many insects can be found such as beetles, bees, ants, moths and butterflies. However, birdlife is the most visible element within the mangrove forest. Waterfowls, the white-faced heron, white egret and cormorants can be seen foraging for food or finding shelter.



Why are mangroves important?



Mangroves:

- provide habitat for birds, mammals, crustaceans and fish
- improve the water quality by filtering and trapping pollutants before they enter coastal waters
- protect the shoreline from erosion by stabilising the mud
- provide an important food source for a number of animals.
- produce large amounts of litter such as leaves, bark, fruit and flowers, some of which becomes immediate food for some animals, the rest gets broken down by bacteria.



Activities that affect them



- Elevated nutrient levels from sewage, industry and stormwater discharges often cause the growth of large drifts of algae, such as *Ulva*. *Ulva*, seen in figure 3, prevents the establishment of young plants and chokes established trees by smothering and eventually killing their pneumatophores.
- Dumping of solid waste by humans smothers and/or breaks the pneumatophores.
- Clearing for industrial development, marinas and boat ramps.
- Trampling of mangrove seedlings and pneumatophores by recreational fishers looking for worms and cockles in the mud.



Figure 3: *Ulva* smothering pneumatophores

The major consequences of local destruction of mangroves are lower fish populations and poorer water quality.

