



## Mangroves of Exmouth Gulf

Mangrove forests are made up of plants specially adapted to grow in the intertidal zone in marine coastal environments and along estuarine margins. They are salt tolerant and are often found in association with salt marshes.



Mangrove ecosystems support the detritus-based (natural debris) of the food web and have a significant effect on nutrient cycling. These systems provide habitat for many species: the roots provide complex structures for algae and invertebrates, and sheltered nursery habitat for fish and prawns. The trunks and roots also increase carbon sequestration, and some is buried in

sediments.

Sediment is stabilised by mangroves, helping to reduce water flow and erosion. Mangrove communities provide protection from episodic storm events. Their stability helps maintain water quality by minimising turbidity.

Like so many systems, mangroves are already showing signs of stress due to global warming. The mangrove forest is recognised as an area of high conservation because of the valuable services to the marine environment. One of the biggest threats to its health is coastal development.

- If sediment is disturbed and resuspended because of building or dredging, it can smother mangrove roots. The loss of mangroves will increase the rate of coastal erosion.
- Sewage outfalls or nutrient input can increase the organic content of water, leading to high biochemical oxygen demand levels. This reduces oxygen availability to trees and fauna and can result in the death of mangroves.
- Building bridges, causeways, ports, etc can restrict tidal exchange and reduce flushing of higher regions leading to mangrove death.
- changes in coastal water movement (hydrology) may also cause ponding of water in low lying regions and result in reduced oxygen supply to the roots and mangrove death.
- Acid sulfate soils form naturally in mangroves and swamps. Disturbance or excavation of sediments can release acid sulphate, and in contact with oxygen it becomes sulfuric acid. Rain can wash it into the water and surrounding environment and cause serious damage. Once acid sulfate soils are disturbed, the damage caused is very difficult to manage.
- Oil is toxic to mangroves because it smothers the roots.

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