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Mangroves

Mangroves are coastal forests found in sheltered estuaries and along river banks and lagoons in the tropics and subtropics. The term 'mangrove' describes both the ecosystem and the plant families that have developed specialized adaptations to live in this tidal environment.

Any of certain shrubs and trees that belong primarily to the families Rhizophoraceae, Acanthaceae, and Arecaceae (palm) and that grow in dense forests along tidal estuaries, in salt marshes, and on muddy coasts. Mangroves characteristically have prop roots (exposed, supporting roots). In addition, in many species respiratory roots (Pneumatophores) project above the mud and have small openings through which air enters, passing through the soft, spongy tissue to the roots beneath the mud. Mangrove fruits put out an embryonic root before they fall from the tree (Vivipary); the root may fix itself in the mud before the fruit separates from the parent. Likewise, branches and trunks put out adventitious roots which, once they are secure in the mud, send up new shoots. The common mangrove (Rhizophora mangle) grows to about 30 ft (9 m) tall and bears short, thick, leathery leaves on short stems and has pale yellow flowers. Its fruit is sweet and wholesome.

Mangrove swamps are found in tropical and subtropical tidal areas. Areas where mangroves occur include **estuaries** (A partly enclosed coastal body of brackish water with one or more rivers or streams flowing into it, and with a free connection to open sea) and marine shorelines.

Brackish water- water having more **salinity** than **freshwater**, but not as much as **seawater**.

The intertidal existence to which these trees are adapted represents the major limitation to the number of species able to thrive in their habitat. High tide brings in salt water, and when the tide recedes, solar evaporation of the sea water in the soil leads to further increases in salinity. At low tide, organisms are also exposed to increases in temperature and desiccation. Thus, for a plant to survive in this environment it must tolerate broad ranges of salinity, temperature, and moisture, as well as a number of other key

environmental factors — thus only a select few species make up the mangrove tree community.

.Though the trees themselves are few in species, the ecosystem these trees create provides a home for a great variety of other organisms.

Adaptations

Mangrove plants require a number of physiological adaptations to overcome the problems of high salinity, frequent tidal inundation and absence of oxygen. Each species has its own solutions to these problems; this may be the primary reason why, on some shorelines, mangrove tree species show distinct zonation. Small environmental variations may lead to greatly differing methods for coping with the environment. Therefore, the mix of species is partly determined by the tolerances of individual species to physical conditions.

Mangrove swamps protect coastal areas from erosion, storm surge (especially during hurricanes), and tsunamis. The mangroves' massive root systems are efficient at dissipating wave energy. Likewise, they slow down tidal water enough so its sediment is deposited as the tide comes in, leaving all except fine particles when the tide recedes. In this way, mangroves build their own environments. Because of the uniqueness of mangrove ecosystems and the protection against erosion they provide, they are often the object of conservation programs, including national biodiversity action plans.