Mangroves and their importance

Environment, Nature

What is Mangrove? The term 'mangrove', is used to refer to the highly adapted plants found in tropical forest communities or the ecosystem itself. The term 'mangrove' may have been derived from a combination of the Malay word 'manggi-manggi', for a type of mangrove tree (Avicennia) and the Arabic 'el gurm', for the same, as 'mang-gurm'. Mangrove is a tree or shrub that grows in muddy, chiefly tropical coastal swamps. Generally exceeding one half metre in height. Mangrove plants vary genetically and those found on land are not of same types.

They are of different types. An increase in mangroves has been suggested forclimate changemitigation. Big groups of mangroves and other plants are called mangrove swamps, mangrove forests, and sometimes simply manga. The mangrove community is the biotic part of our ecosystem. Importance And Role Of Mangrove Ecosystems: Mangroves are not only important but crucial for the coastal areas. The most important role of mangroves is that they protect vulnerable coastlines from waves because they hold the soil together and prevent coastal erosion.

Mangroves shield inland areas during storms and minimize damage. Example: For example, learning from the 2005 tsunami in Asia, there were no deaths in the areas which had mangrove forests, compared to those areas without, which suffered massive causalities. Mangrove forests provide homes for several species of plants and animals. Migratory shorebirds and waders seek the mudflats forfood. Birds establish large roosting and nesting sites in mangroves. Several species of fish, monkeys, and turtles find refuge there.

The beaches along more mature undisturbed mangroves also serve as nesting sites for endangered sea turtles. Mangroves are fish nurseries as they serve as a source of food for fish and crabs that live in rivers and the shallow areas of the sea/ocean. And they provide a safe haven for juvenile fish, and crab located on coastline. Mangroves therefore contribute significantly in fishing industry and provide us with our fish resource.

ACT AS A FILTERING SYSTEM

They act as filtering systems for the run-off and ground waters, clarify adjacent open water, which facilitates photosynthesis in marine plants.

Mangroves also help to control other forms ofpollution, including excess amounts of nitrogen and phosphorous, petroleum products, and halogenated compounds. Mangroves stop these contaminants from polluting the ocean waters through a process called rhizofiltration. TRAP DEBRIS AND SILT Mangroves trap debris and silt contributing to soil formation and stabilizing the coastline.

SERVE AS HABITAT

Their roots provide shelter for many marine and terrestrial animals, protecting them from ocean currents and strong winds. Many threatened or endangered species reside inside.

PRODUCE NUTRIENTS

Mangroves shed a large amount of leaf litter, being dropped and then broken down by bacteria and fungi which is made available to the food chain of aquatic animals. Therefore mangroves contribute to productivity in off shore water.

SERVE AS NURSERY AND REFUGE

For many juvenile fish and invertebrates such as spiny lobster, gray snapper, jacks and barracuda. Mangroves are the nesting grounds for many water birds. Disappearance Of Mangroves: Mangrove forests are one of the world's most threatened tropical ecosystems. More than 35% of the world's mangroves are already gone.

The figure is as high as 50% in countries such as India, the Philippines, and Vietnam, while in the Americas they are being cleared at a rate faster than tropical rainforests. 12 species of mangroves found in India are considered to be ' Critically Endangered' and a total of 57 mangrove and mangrove-associated species are considered threatened. The main reasons for the destruction in the area are mainly due to population pressure in and around the mangrove belts. Causes Of Disappearance Of Mangroves:

- Mangroves are extremely sensitive to current rising sea levels caused byglobal warmingand climate, Cyclones, typhoons and strong wave action. Insect such as Wood borers, Caterpillars, beetles eat the mangrove foliage and damage the wood.
- Weeds often occupy deforested mangrove areas and restrict the re-growth of mangrove tree species.
- Barnacles are a type of arthropod which when attached to young seedlings, interferes with respiration and photosynthesis and delays seedling growth. Oysters, Crabs, Gastropods also damage the plant parts.
- Mangrove trees are used for firewood, construction wood, pulp production, charcoal production, and animal fodder.

While harvesting has taken place for centuries, in some parts of the world it is no longer sustainable, threatening the future of the forests. * Dams and irrigation reduces the amount of water reaching mangrove forests changing the salinity level of water inthe forest. When salinity becomes too high the mangroves cannot survive. Freshwater diversions can also lead to mangroves drying out. * Pollution is the major problem in world. Toxic man-made chemicals carried by river systems from sources upstream can kill animals living in mangrove forests, while oil pollution can smother mangrove roots and suffocate the trees.

Effects Of Mangroves Disappearance: Mangroves are saline coastal forests include heavy biomasses of trees and shrubs. Such forests are essential in protecting the coastal regions they surround from erosion, but they have also been shown to help mitigate the effects of tropical storms by buffering coastal communities against hurricane-like winds and tidal surges. * Widespread destruction of mangroves (Bahamas, Australia) has resulted in the loss of some of the world’s most diverse ecosystems. As a side effect his has greatly increased shoreline hazards and beach erosion rates. The greatest benefit of mangroves is their ability to reduce storm surge. This benefit is long-term and requires no maintenance. The 1999 super typhoon, Orissa, killed over 10, 000 people in India drowning many with its powerful storm surge * The widespread destruction of Burma’s mangroves has magnified another human disaster in the wake of cyclone Nargis, a tragedy that might have claimed more than 100, 000 lives, according to a news services’ estimates.

Present Condition Of Mangroves In Pakistan Over 600, 000 hectares of Pakistan’s coastline is under mangrove forestation. The coastal communities as well as the fisheries of the coast depend upon this ecosystem their existence is associated with its well-being. Mangroves historically have been considered to be wastelands. The vital flow of the Indus River into the Indus Delta, which constitutes one of the most extensive mangrove areas along the Pakistani coast, is heavily polluted by a variety of ndustrial effluents, sewage, solid waste and nutrient-enriched irrigation water. THE Indus delta mangroves are under the control of the Sindh forest department (280, 470 ha), Port Qasim Authority (64, 400 ha) and Sindh Board of Revenue (255, 130 ha). The area under control of the forest department and Port Qasim is declared as `protected forest` and the area under the control of the Board of Revenue is classified as `government wasteland`. The Indus delta provides subsistence to approximately 200, 000 people throughout the year.

A recent study by WWF - Pakistan (2006) has estimated the existing cover of the Indus delta mangroves around 73, 000 ha. Historically, there used to exist eight species of mangroves which have declined to four species at present.

References

1. www. mangrove. org * http://www. mangrovewatch. org. au
2. http://ocw. unu. edu * http://www. conservancy. org. hk
3. http://floridakeys. noaa. gov
4. http://whataremangroves. com/
5. http://www. wwfpak. org/forest_mangrove. php
6. http://www. cssforum. com. pk/css-optional-subjects

7. www. pandas. org