The Bhitarkanika Mangrove Zone

The Mangroves of the Brahmani and Baitarani Delta is more commonly known as Bhitarkanika Mangrove Zone. Situated in the Kendrapara District of Odisha, the 672 sq. kms of Bhitarkanika wildlife sanctuary comprises of mangrove forests, rivers, creeks, estuaries, back water and mud flats. This unique area with rich biodiversity has also been designated as the second Ramsar site (i.e. Wetland of International importance) of the State during August, 2002.

The Bhitarkanika mangrove zone is host to India's largest populations of saltwater crocodiles and also is the world's biggest nesting beach for Olive Ridley turtles at Gahirmatha. The wetland also hosts a large and diverse population of resident and migratory birds from Central Asia and Europe, that flock in Bagagahan heronry, an area of approximately 4 hectares within the Bhitarkanika mangrove forest.

The area supports rich biodiversity including 71 species of mangroves and mangrove associates, largest population of estuarine crocodiles (1654 as per 2011 census), the rare white crocodile (Sankhua), largest Indian lizards (water monitor), poisonous and non-poisonous snakes like king cobra and python, varieties of resident and migratory birds and number of mammalian species like spotted deer, sambar, wild boar, fishing cat, jungle cat, otter etc.

The mangroves are frail ecosystems and mostly depend upon fresh water influx and tidal inflow from the sea to grow. In Bhitarkanika zone the water salinity changes diurnally from fresh to saline so, the community have adapted to the wide salinity gradients over the years resulting in varied & diversified vegetation. The highly diversified plant species of the Bhitakanika mangroves has become a ground to variety of animals. Bhitarkanika Sheltered water of mangrove provides nursery grounds for commercially harvested prawns and shrimps, which breed only in the sea. Apart from this the Bhitarkanika mangrove eco systems have contributed significantly to the formation of mud flats and islands along the coast of Bay of Bengal and associated riverine systems.

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MANGROVES

Scouts for the earth

What are mangroves

Mangroves are highly productive wetland ecosystems strategically located at the interface between land and sea. They are salt tolerant trees and shrubs that grow in tropical, subtropical tidal coasts and extending along estuaries & creeks throughout the world. The specific regions where these plants occur are termed as 'mangrove ecosystem'. These are highly productive and extremely tolerant to different salinity gradients. Mangroves grow in mud flat areas that are frequently submerged with salt water due to tidal activity of gulfs, seas and oceans. It supports a special kind of food chain called detritus food chain where mangrove plays the role of a producer.

Why mangroves

- Mangroves mitigate the adverse impact of storms and cyclones in coastal areas and reduce coastal erosion
- The root system of mangrove along with the sea grass provides the ideal spawning grounds and nursery to the juveniles for a gamut of species.
- They serve as ideal habitat for important fish and shellfish, crustaceans and molluscs. They enhance the productivity of fish in adjoining coastal waters by providing them with large quantities of organic and inorganic nutrients.
- They buffer coastal waters from undesirable land-based influences, such as sediment, contaminant or nutrient run-off.
- They provide the critical habitats for diverse marine and terrestrial flora and fauna ranging from migratory birds to estuarine crocodiles and sea turtles.
- They are a source of wood products – timber, poles and posts, firewood, charcoal; non-wood products such as fodder, honey, wax, tannin, dye and materials for thatching; as well as aquatic products such as fish, prawns, crabs, clams, oysters and mussels.
- They are the source of leaf detritus which supports phytoplankton and zoo planktons which in turn provide nutrition for fish, crabs, prawns and other aquatic life.

Mangroves in Odisha

The mangroves of the Odisha coastal area are basically divided into four zones:

- Mangroves of Mahanadi Delta
- Mangroves of the Brahmani and Baitarani Delta (the Bhitarkanika Mangrove zone)
- Mangroves of Devi River Mouth
- Mangroves of the Balasore coast

Among these four mangrove zones, the Bhitarkanika zone is the 2nd largest mangrove zone of India after Sundarban and is most important due to its largest stretch (2nd largest & rich ecosystem after Papua & New Guinea) & unique bio-diversity. The mangroves all along the Odisha coast are threatened due to high density of population in these areas and ever increasing demand for land for agriculture and prawn farming by the local people and more specifically the migrants. The mangrove belt of Bhitarkanika encompassing areas between in the Dhamara mouth to Barunei on the coast, has been notified as Bhitarkanika Sanctuary (672 Sq.km.) and also declared as a Ramsar Site of International Standard in 2002. Part of this area (145 Sq.km) is notified as National Park.

Due to the vast stretch, this mangrove forest provides a natural breeding place for crocodiles and several threatened species like sea turtle, king crab, dolphin etc.

Threats to mangroves

Mangrove forests are one of the most threatened tropical ecosystems.

A survey says in countries like India, Vietnam etc. 50% of mangroves have already been cut and diminished. Starting from over harvesting of the trees to use as firewood, construction wood, charcoal production, and animal fodder to using mangroves forests as dumping yards for solid wastes and for discharging the effluents from various sources, mangroves face a number of survival threats. Encroachment of the mangroves to use as agricultural & paddy fields, tourist spots and more specifically into shrimp farms is one of the major causes of degradation of mangroves. Like every other marine ecosystems, mangroves are spawning grounds of different marshy fishes .Therefore, overfishing is also counted as threat towards decreasing mangroves and also depletion of breeding areas of fishes.

Now a days global warming causes change in sea level which affects the mangrove trees as they require stable sea levels for long-term survival.

How to save mangroves

- Stop cutting mangrove trees for fuel wood or any other purpose
- Stop dumping solid waste or any industrial rubble near mangrove area.
- Infrastructure of any kind (includes personal building, industries, mining activities etc) near mangroves should be restricted by stringent rules and regulations
- Create awareness about the advantages of mangrove and to make mangrove plantation and rehabilitation a widespread and important environmental initiative