

due to the presence of more active zahe-rite along with gibbsite. It also indicates that mudbanks can be created artificially by introducing about 3–5% of zahe-rite–gibbsite–gypsum mixture into the near-shore clayey sediments, where waves exert maximum pressure on the bottom sediments. If the coasts are protected by creating mudbanks artificially, the cost

for coastal protection and its subsequent maintenance could be reduced. Moreover, this will not affect the aesthetic view of the beaches and will help to increase fish productivity.

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## Mangroves of Maharashtra: a fast disappearing asset

Mangroves are typical group of plants which are adopted for survival in sheltered brackish-water habitats along coasts of tropical and sub-tropical regions. They are known to be the primary producers, shoreline protectors, nursery grounds and habitat for a variety of animals, bridging components and unique biological resources. They provide erosion control and shoreline stabilization. The recent tsunami has proved the importance of mangroves as shoreline protectors. In today's biotechnological research they are used as a source of salt-tolerant genes.

Maharashtra is one of the important coastal state's of India with unique man-

grove diversity spread all along the 720 km coastline, distributed in about 55 estuaries in five districts. Studies have revealed that there are about 24 typical mangroves along with ten halophytes, 12 borderline species and 15 associates in Ratnagiri and Sindhudurg districts alone<sup>1</sup>. The rest of the districts show more or less similar composition. All these species play an important role in maintaining this fragile ecosystem.

Besides this mangrove diversity of Maharashtra, field studies<sup>1</sup> have revealed that the mangroves of this region are being threatened to a great extent. Several species have been recorded as 'Endangered' (EN) and 'Critically Endangered' (CR). Loss of habitat, human interference, pollution, Kharland bunding, aquaculture, grazing, commercial use, etc. are some of the threats affecting the mangrove forests. Due to these factors several thousand hectares of mangrove have been cleared. NRSA has recorded a decline of 7000 ha of mangrove from India during the period 1975–81.

Government initiatives like Kharland bunding are also responsible for the elimination of many sensitive species. It is also interesting to note that since the last many years though several projects, seminars, workshops and conferences devoted to mangroves are being organized in the state, the practical outcome regarding their conservation is in question. The major problem is the lack of participation of local people and awareness about mangroves. The policy makers hardly interact with the local people while deciding the conservation programmes.

The following conservation strategies are suggested: germplasm preservation, sustainable use, protection and preservation of value-added species, land-use pattern, etc.

1. Kulkarni, N. A., Ph D thesis submitted to Shivaji University, Kolhapur, 2006.

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**Figure 1.** Typical mangrove *Rhizophora mucronata* with prop roots.

## Background radiation: no evidence of ill effects

Saroja and Roy<sup>1</sup> have made the following statements: 'Ionizing radiations are a grave threat around the high background regions of the globe. Selected pockets of Brazil, China and India are reportedly under the grip of high background radiation. Presence of monazite sand along the beaches of these regions, among other

factors, has contributed to these dreaded radiations'. '... The incomparably high values are certainly a major threat, affecting the region populated by the fishermen community'. The authors do not indicate why high background radiation is a 'grave threat', and why they qualify radiations as 'dreaded'.

They have measured uranium, and thorium from ten sampling stations in Kan-yakumari District, Tamil Nadu and obtained relatively high values. They refer to other similar studies, but do not refer to any of the health studies carried out in the high background radiation areas (HBRAs).