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DISTRIBUTION OF MANGROVES IN THE ASHTAMUDI ESTUARY

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Abstract: The present study was undertaken to record the mangroves of Ashtamudi estuary. Eleven species of true mangroves and 6 associate mangroves were identified from the study areas. The reasons for depletion of mangroves are discussed in the paper.

Key words: Ashtamudi, true mangroves, associate mangrove.

Mangroves are salt tolerant forest ecosystems found mainly in the tropical and sub tropical inter-tidal regions of the world. Mangrove forests are among the world's most productive ecosystems (Kathiresan and Bingham, 2001). This ecosystem is a reservoir of large number of plant and animal species. The plant usually grow at the intertidal zones of sheltered shores, estuaries, tidal creeks, backwaters, lagoons, marshes and mud flats in the tropical and sub tropical latitudes. Mangrove fauna comprises organisms of both marine and terrestrial origin (Hogarth, 2001). Mangrove ecosystems are of great ecological and economic importance in protecting the shore lines and boosting the fishery production (Krishnamurthy and Jeyaseelan, 1980; Kathiresan, 1990). India has only 2.66% of the world mangroves, (Kathiresan, 2002). The extent of mangroves in Kerala spread over 70,000 ha at the beginning of 20thcentury, currently remains as discrete and isolated patches only, covering an area of less than 50 sq.km. (Mohan, 2001). This depletion is due destructive fishing practices, aquaculture, effluents from industries and other pollution problems, coconut husk retting and reclamation for various activities. In Kerala mangrove forests exist at Veli, Kollam, Kumarakom, Kannamali, Chewai, Nadakkavu, Edakkad, Pappinisseri, Kunjimangalam and Chithen (Ramachandran and Mohan, 1987). Data available on the extent and importance of Ashtamudi mangroves has been very much limited.

Ashtamudi, the second largest brackishwater lake in Kerala (8°53'-9°02' N, 76°31'-76°41' E), is situated on the southwest coat of India. Mangroves were collected from Asramam, Neendakara, Thekkumbhagom and Kadapuzha areas or the lake. Herbarium sheets of the mangroves were prepared and the specimens were identified with the help of published keys (Jain and Rao, 1977; Kathiresan, 2002).

Ashtamudi estuary was once famous for its mangroves. A number of species was reported by Ramachandran *et al*. (1986). It is well represented by true mangroves such as: *Acanthus ilicifolius, Acrostichum aureum, Avicennia marina, Avicenniaofficinalis, Bruguieragymnorrhiza, Ceriopstagal,Derris trifoliata, Exoecaria agallocha, Lumnitzera racemosa* (only in Neendakara), *Rhizophora apiculata, Sonneratiacaseolaris,* and mangrove associatessuch as *Alstonia scholaris*, *Cerbera odollam*, *Hibiscus tiliaceus*, *Pandanusfascularis*, *Thespesia populnea, Calophyllum inophyllum*. Among these *Rhizophora apiculata* is the pioneer species fringing the margins. Avicennia and Sonneratia are seen inside, whereas *Bruguiera gymnorrhiza* and two species of Rhizophora from

Table 1. List of mangrove plants in the Ashtamudi estuary and their status

Species	Family	IUCN
Acanthus ilicifolius	Acanthaceae	EN
Acrostichumaureum	Pteridaceae	LR
Avicennia marina	Avicenniaceae	EN
Avicenniaofficinalis	Avicenniaceae	EN
Bruguieragymnorrhiza	Rhizophoraceae	CR
Ceriopstagal	Rhizophoraceae	EN
Derris trifoliata	Leguminosae	EN
Exoecariaagallocha	Euphorbiaceae	VU
Lumnitzeraracemosa	Combretaceae	EN
Rhizophoraapiculata	Rhizophoraceae	EN
Sonneratiacaseolaris	Sonneratiaceae	EN

EN-Endangered, LR-Low risk, CR-Critically endangered, VU-Vulnerable

Ashtamudi estuary. Blasco (1975) also recorded *Acanthus ilicifolius* and *Cerberaodollam* from the Kollam backwaters.

Regeneration of mangroves rarely observed as the areas are subjected to human interference to varying degrees. However Rhizophora regenerate well. The northern area of Neendakara, a few patches of mangrove *Lumnitzera racemosa* is observed, and it is the only locality in Kerala for this species at present. About 11 true mangrove species and6 associate mangroves were identified from the study areas. Ramachandran *et al.* (1985, 1986) after a very detailed survey along the entire coastal stretch of Kerala, reported 39 species of mangroves and mangrove associates (Nair and Bijoy Nandan, 1994) encountered 39 species of mangrove flora and associates from 10 backwater ecosystems of Kerala. This investigation has revealed that the luxuriant growth of Ashtamudi mangroves has been rapidly diminishingdue to loss of habitat, cattle grassing, harvest for medicine, harvest for timber, fuel gathers, over fishing and destructive fishing practices, effluents from industries and other pollutions such as thermal, oil, pesticide and mercury, coconut husk retting, reclamation and sedimentation.

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