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### SOME SUGGESTIONS FOR SEA TURTLE RESEARCH AND CONSERVATION IN INDIA

T.S.N. MURTY

*Zoological Survey of India, Madras-600 028, India*

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It is gratifying to note that of late there has been awareness that despite vast populations, sea turtles are in danger of extinction. This has led to the initiative for affording protective measures by legislation, governing trade, collecting or habitat modification, to the establishment of the exclusive marine preserves. The aim here is to highlight some such major lacunae and recommend some suitable measures in speeding up our present task of scientific conservation and rational utilization of the sea turtle resources.

(a) *Surveys* : From the point of the feeding and nesting grounds of sea turtles, India with its enormous coastline of about 5,700 km and four major island groups, the Andamans & Nicobars, the Islands in the Gulf of Mannar separating Sri Lanka and India, and the Islands off the northern coast of Saurashtra are ideal for purpose of exploitation and conservation of these endangered animals. While some details of the occurrence of sea turtles on the east coast mainly that of Orissa are definitely known, there are few records of concentrated nesting on the west coast.

(b) *Research* : Very little investigation has been carried out on the biology of Indian sea turtles. Over 90% of the present day research is focussed on female nesting and hatchling emergences. Our knowledge on the migration of sea turtles nesting on our coasts, their remote feeding areas, their age and growth characteristics is far from complete. The knowledge gained so far on ecological and taxonomic relationships of different populations is also not adequate. As such it must be stressed that more research should be done at sea where the animals live. The behavioural and physiological researches carried out so far indicate that we still do not know their temperature and moisture requirements on beaches and the overall effect of these factors on the sex ratios of hatchings and hatchling survival.

(c) *Conservation* : It is possible to step up our attempts aimed at conservation and utilisation of our sea turtle fauna. For this considerable planning is required. Foremost is the urgent need to bring out an atlas giving full information covering their location, physical and biological conditions and protection

requirements of their rookeries. Once this primary data are in hand, in-depth research including the long-term population monitoring might be taken up at a representative sample of their rookeries covering all species nesting in Indian waters.

In the light of preliminary findings of rookeries for any species, follow-up research work should be taken up in view of the fact that the rookeries are prone to destruction by man and beast. Likewise special attention should be paid to locate the key rookeries for the Hawksbills and other rare species. The immediate objective of the conservation programme should be to re-establish the breeding colonies of sea turtles where they once were abundant by affording total protection to their breeding sites. Simultaneously their nests and eggs should be saved from predation by the beast and man. Ultimately we have to set up some marine reserves governed by strict regulations free from the influence of urban development and industrialization. Such nesting and feeding reserves can at least protect turtles in the highly vulnerable stages of their life on land. Also, the establishment of marine sanctuaries are still ideal.

(d) *Advance publicity* : Sometimes even the well-intentioned wide publicity given to the discovery of new turtle rookeries unwittingly leads to the wanton destruction of the animals before the investigations are on. It is, therefore, necessary to be cautious in disseminating any information on the location of

new feeding grounds and their nesting beaches.

(e) *Public education* : In addition to the legal protection now enjoyed by them, it is time we created public awareness about the wealth of sea turtles since there is a rapidly growing interest in wildlife conservation in India today. An illustrated booklet designed to inform the layman about the sea turtle fauna, their natural history and the country's laws governing their protection must be quickly published not only in English but also in the language spoken by the people of the maritime States.

The sea turtle research and the programme of conservation should involve the combined efforts of the scientific organisations like ZSI, the Central and State Fisheries Departments, and the Marine Science Departments of the Universities located nearer the coastal zone. Our navy and forest department personnel will be of immense help in affording adequate protection to the hatching enclosures on the coast and in restraining the operations of high-power launches of the poachers. The hard fact is that the turtle populations cannot be conserved and restored unless fisherman co-operate. Ultimately a complete sea turtle conservation programme must consider legislation and its enforcement and the protection of sanctuaries, continuous population monitoring and public education.

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