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## **MARINE LIVING RESOURCES OF THE UNION TERRITORY OF LAKSHADWEEP —**

**An Indicative Survey  
With Suggestions For Development**

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**Limited Circulation**

## 15. TURTLE RESOURCES

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The common species of marine turtles namely *Chelonia mydas*, *Lepidochelus olivacea*, *Eretmochelys imbricata* and the *Dermochelys coriacea* are known to occur in the Lakshadweep Islands. (Bhasker, 1978a, b, c, d; 1979 Silas, 1984). Earlier reports deal with its occurrence, nesting habits, and trade (Ellis, 1924; Rammunni, 1965 and Mannadiar, 1976); Bhasker (op. cit) made detailed investigations and monitored the frequency of nesting, seasons of nesting and the occurrence of various species of turtles in the Islands. However the turtles of Lakshadweep require more attention with special reference to its reproductive biology, feeding habit and behaviour. The breeding population of *Chelonia mydas* needs special attention as the species does not nest in large numbers along the mainland.

The study was carried out from January to April 1987 covering all the inhabited and a few uninhabited islands as a part of the effort to estimate the fishery potentials of the Lakshadweep islands. The information on the nesting, and nesting habits were collected by observing the areas during the night and investigating the ecology of the nest. The ecology of the feeding grounds were studied by underwater observations by skin diving with the help of mask, snorkal and fins. The sea weeds and sea grasses were collected, identified and the total biomass was estimated for the major species.

The islands visited during the course of the study were Chetlat, Kiltan, Kadmat, Amini, Bitra, Agatti, Bangaram, Tinnakara, Kavarati, Suheli (Valiyakara and Cheriya-kara), Kalpeni including Cheriya-kara, Androth and Minicoy.

### Nesting grounds

Nesting grounds of *Chelonia mydas* were observed in Suheli Valiyakara, Tinnakara, Bangaram, Parli and Agatti. The largest nesting ground was found on the north eastern shore of Suheli Valiyakara (Lat: N. 10°, 08' long: E. 72°-18'-20"). This island has a total area

of about 0.5km<sup>2</sup> (48.56 Hectares). Seashore on the western side of the island is formed by the coral stones while about 100 meters on the north eastern side is sandy where the nests are made. The turtles make their nests about 20 meters away from the high tide mark below the thick growth of *Rhododendron* bushes locally known as 'Kanni'. Maximum number of nests found on the Suheli Valiyakara was 202 during June to September, 1977. (Kar and Bhaskar, 1982). The number has come down to 119-132 nests during May to October, 1982. These nests were made by 20-27 turtles. However during the present investigation about 130 nesting craters were observed. The average length, breadth and the depth of five nesting crater were 219cm, 225cm, 62.5cm, respectively. The average distance between the craters was 45 cm. The turtle track of the *Chelonia mydas* on the Valiyakara beach measured 106 cm in width anteriorly 166 cm posteriorly and the width of lateral marking was 36 cm.

The nesting intensity was much less in other islands and no nesting was observed during the visit. At Tannakara, Bangaram, Pitti and Parli the number of nests observed were 11, 15, 8 and 10 respectively. (Bhasker, 1984).

2. *Nesting population*:- The nesting population of *Chelonia mydas* in Suheli par (Valiyakara) may be about 30 and that of all the other islands may be about 15. The intensity of nesting of other species of turtles in the Lakshadweep is less. One *Dermochelys coriacea* nest was reported from Pitti island. (Silas; 1984).

3. *Nesting seasons*:- The peak nesting season for the green turtle is during the southwest monsoon, starting from June to September though a few nests may be made during other months also. Bhaskar (1984) observed 119-135 nests in Suheli Valiyakara made by 22-27 turtles during S. W. monsoon period from May to October. However, the collection

of neo-nates of *C. mydas* from Kadmat in February indicate that a few turtles may nest in December also. The Hawk bills and Olive ridley were found to nest in Androth, Kadmat, Agatti, Bangaram and Tinnakara. Silas (1984) recorded a nest of *Dermochelys coriacea* from the Pitty island on 5-2-'67.

During the present observation 28 species of sea weeds belonging to 24 genera were collected from the Suheli lagoon. Some of the species like *Gelidiella acerosa* *G. edulis*, and *sargassum* sp. were common forage species of *C. mydas*. Extensive beds of *Cymodocea* sp and *Halophila* ssp were observed in the

Table 1. Nesting sites or sighting of turtles in Lakshadweep islands

Name of island	<i>E. mydas</i>		<i>L. olivacea</i>		<i>E. imbricata</i>		<i>D. coriacea</i>	
	N	S	N	S	N	S	N	S
Chetlat	X	X	X	X	—	—	—	—
Kiltan	—	—	X	X	—	—	—	—
Kadmat	X	X	X	X	X	—	—	—
Amini	X	X	—	X	—	X	—	—
Bitra	X	X	X	X	X	X	—	—
Agatti	X	X	X	X	X	X	—	—
Bangaram	X	X	X	X	X	X	—	—
Tinnakara	X	X	X	X	X	X	—	—
Pitti	—	—	—	—	—	—	X	—
Kavaratti	—	X	—	—	—	—	—	—
Suheli								
(Valiakara)	X	X	—	—	—	—	—	—
Kalpeni	—	X	—	X	—	—	—	—
Androth	—	X	X	—	X	—	—	—
Minicoy	—	X	—	X	—	—	—	—

N — Nesting

S — Sighting

4. *Feeding grounds*:- Deraniyagala (1939) reports that *C. mydas* feeds on *Cymodocea halassia*, *Zostera*, *Halophila* and algae in Srilanka coast. Agastheesapillai and Thiagrajan (1979) found *Holophila ovalis*, *Thalassia testudinum*, *Gelidiella acerosa*, *Cymodocea* sp and other sea weeds in stomach of *C. mydas* caught from Gulf of Mannar and Palk Bay. Frazier (1971) found that turtles forage on *Cymodocea* sp., *Gelidium* sp., *Laurencia* and *Caulerpa* sp. in Aldabra Atoll. Hughes (1974) also observed *Gelidium*, *Codium duthieae* and *Caulerpa filiformes* in the stomach of green turtles of Mozambique. In Gulf of Aden, Hirth and Carr (1970) found that the green turtles feeds on *Posidonia oceanica* and *Syringodium* ssp. These studies illustrate that the green turtles feed on sea grasses and sea weeds.

lagoon. In Kalpeni 44 species of seaweeds were observed. The availability of *Gelidiella acerosa* the common food of the turtle was about 3 tonnes in the island, The other forage species of sea grass like *Cymodocea serrulata*, *C. rotundata* and *Thalassia hemprichi* were found in abundance. *T. hemprichi* is one of the favoured forage species of *C. mydas*. (Mortimer, 1979). From Androth 39 species of sea weeds belonging to 28 genera were collected. *Gelidiella acerosa*, *Laurencia* spp. *Sargassum* spp. and *Thalassia hemprichi* were the common seaweeds and sea grasses found in the islands forming the food of *C. mydas*. The Minicoy island is also rich in seaweed and seagrass flora. 51 species belonging to 35 genera of seaweeds were observed in the lagoon. Of these green turtles feeds on

*Gelidiella acrose*, *Sargassum* ssp. *Gracilaria edulis* and the seagrass *Cymodocea serrulata* *Halophlia ovata* and *H. uninervis*.

Similarly the lagoons of other islands also have extensive beds of seagrass and seaweeds on which the green turtles feed.

5. *Feeding population*:- During the survey, the turtles were observed in all the lagoons. The number of green turtles sighted in Suhelipar were 17 whereas in Kalpeni, Kavaratti and Minicoy the number of turtles seen were 5, 4 and 7. In all the islands the estimated *C. mydas* population may be about 100. Two pairs of *C. mydas* were found mating on Kalpeni lagoon on 22-3-87. The mating of *C. mydas* was also observed in the lagoons of Kadmat and Bangaram.

6. *Fishery*:- Turtles are caught in the islands for meat, oil and shell. The turtle oil is used for painting the boats and making the screws of boats watertight. However there is no quantitative record of the turtle products used. It is estimated that about 59 turtles are killed annually in all the islands for their products. The turtles are caught by barbed harpoons by the islanders. The fishermen stand on the boat throw the harpoon on the feeding turtles and haul it up in to the boat. The turtles are caught as bycatch in the gill nets also.

7. *Conservation*:- The nesting ground of marine turtles of Lakshadweep are gradually shrinking due to human activities. Human population is increasing in the islands though the area available is limited. The total land area of the ten inhabited and 17 uninhabited islands is 28.5 Km<sup>2</sup> with a population of about 35,000. Hence the density of population is 1,228/Km<sup>2</sup> on the whole and 1315/Km<sup>2</sup> in the inhabited islands. Hence the conflict between the environmental preservation and human activities is inevitable. For example the number of fishing boats has increased from 145 in 1978 to 350 boats in 1987. But all the islands cannot be inhabited due to the non-availability of fresh water. Hence at least the un-inhabited island may not become populated. One such island is Suheli Valiyakara. So it may be possible to declare the island as a sanctuary for the green turtle. The light house constructed very near to the turtle

nesting site may have adverse effect on the nesting activities. Hence it should be shifted to some other place.

The turtles in the lagoon also should be protected from being killed. It is essential that the feeding population should be protected. The trade of the products of turtles like turtle scutes, turtles meat and turtle oil should be prohibited under appropriate provision of the Indian wild Life Act 1972.

#### 8. *Recommendation*:-

1) Suheli Valiyakara and its lagoons should be declared as the sanctuary for *Chelonia mydas*. The human activities in the island should be reduced to minimum. The light house near the nesting site at Suheli Valiyakara may be shifted as it can disturb the nesting turtles. (2) The lagoon should be preserved as it has a feeding population of green turtles (3) Studies on reproductive parameters, feeding, migration and behaviour of the green turtle should be undertaken.

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