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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**

## 17. SOME OBSERVATIONS ON THE MARINE MAMMALS AND MARINE BIRDS

R. S. Lal Mohan

### INTRODUCTION

The marine mammals found in the sea around Lakshadweep are not well documented. Our information on the distribution is based on a few records of cetaceans washed ashore. The remote nature of the islands may be the reason for the poor knowledge of the marine mammals occurring there.

The birds of the Lakshadweep are better known and have attracted the attention of the naturalists as early as 1876, when A. O. Humes (1876) published an account on the birds of Lakshadweep. He visited Pitti, Baliyapani and other islands where he found large nesting grounds of birds. Later Alock (1902) observed nesting ground of birds in Pitti, Baliyapani, Bitra and other islands giving a lucid account of the bird population. Betts (1938) also described the birds of Lakshadweep. Later Ramunni (1965) while serving as the Administrator of the islands evinced great interest in the study of the birds of the islands. He visited the Pitti

Island in 1962. The Bombay Natural History Society under the leadership of Dr. Salim Ali, undertook several trips to the island to study migration and ecology of the nesting grounds of the birds (Mathew and Ambedkar, 1964). These studies paved way for the protection of nesting populations and prevention of egg collection, resulting in the declaration of Pitti island as a bird sanctuary. Recently Livingston (1987) recorded 23 species of marine birds and described the association of the birds and the tuna fishery.

During the present study all the inhabited and a few uninhabited islands were visited from January to April, 1987 and the marine mammals and birds of the islands were observed. Information were collected by enquiry and observing the tuna shoals and the birds, and the tuna shoals and the dolphins.

### MARINE MAMMALS

*Background information:* Nishiwaki (1983) considered that 46 species of Cetaceans belonging to 28 genera inhabit the Indian

Ocean. James and Soundararajan (1979) while studying the data on the cetaceans, stranded or washed ashore along the main land of India, reported 11 spp of cetaceans. Recently James and Lal Mohan (1987) summarised the information available on all the 20 species of cetaceans found to occur along the Indian Coast and provided a field key to the identification of the species. Lal Mohan (1987) brought to focus the need for intensifying research on marine mammals with special reference to Indian Ocean as it is declared as a sanctuary for the whales by the International Whaling Commission in 1979. Pillai (1987) reported the occurrence of *Ziphius cavirostris* from Minicoy. The occurrence of *Pseudorca crassidens* also can be inferred to occur in the islands as its skeleton is displayed in the Kavaratti museum.

#### *By-catch of dolphin*

Though we have some information on the by-catch of dolphins along the Indian Coast (Lal Mohan, 1985) we have no data on the number of dolphins caught in Lakshadweep. Dolphins are not consumed in Minicoy island but it is taken in the northern islands like Kavaratti, Agatti, Amindevi and Kadmat. Altogether about 50 dolphins are caught annually in all the islands.

During the survey two spinner dolphins, *Stenella longirostris* of length 1390 mm and 1395 mm were harpooned and killed for its meat at Kavaratti by the fishermen. The meat was sold at a rate of Rs. 5/- per Kg. it was also observed that the flippers and caudal flukes and the dorsal fins of the dolphins are dried along with the shark fin and adulterated with it.

The common species of dolphins involved in the by catch are *Stenella longirostris*, *Sousa chinensis*, *Tursiops truncatus aduncus* and *Delphinus delphis tropicalis*. 60% of the catch belongs to *Stenella longirostris* and 20% to *Tursiops truncatus aduncus* and the rest to *Sousa Chinensis* and *Delphinus delphis tropicalis*.

The dolphins are caught mainly during October to April during fair fishing season. Masudi, the great traveller recorded that the ambar (ambergris) was found abundantly in

in the islands and were available in different hues—black, white and dark bay colour (Ramunni, 1965).

#### *Tuna fishery and the dolphins*

The association of the dolphin with the tuna fishery of the Tropical Pacific is well documented (Perrin; 1968, 1969, 1970). Very high mortality of dolphins are reported (Martin, (1975) in Pacific in the purse seines operated for tuna. Though large scale killing of dolphins has not been observed, the situation has to be watched closely as there are proposals to introduce purse seines for tunas around Lakshadweep Island.

Fishermen consider citing of dolphins as an indication for tuna shoals (*Katsuwonus pelamis*). The species of dolphins involved with the tuna shoal are *Stenella longirostris* and *Delphinus delphis*. The association of dolphin and tuna may be probably due to sharing of the food by the two.

Though there are reports of collection of ambergris (Ramunni, 1965) there no authentic report of it, in recent years.

### BIRDS

The Lakshadweep attracts the attention of the conservationists because of the bird nesting grounds like the Pitti island. Protection of these nesting grounds goes a long way for the preservation of the species.

#### *Bird fauna of the island*

The common species of birds found in the islands are given below:

- Sterna anaethetus* (Brown winged tern)
- Sterna fuscata nubilosa* (Sooty tern)
- Sterna bergii veloz* (Large crested tern)
- Sterna bengalensis* (Lesser crested tern)
- Anous stolidus pileatus* (noddy tern)
- Egretta gularis* (Reef heron)
- Pluvialis squatarola* (Grey plover)
- Pluvialis dominica* (Golden plover)
- Dromas ardeola* (Crab plover)
- Charadrius alexandrinus* (Kentish plover)
- Numenius phaseopus* (Whimbrel)
- N. arguata* (curlew)
- Tringa hypoleucos* (Common sandpaper)

TABLE 1 : Distribution of the birds in various islands of Lakshadweep.

Name of Birds	1	2	3	4	5	6	7	8	9	10	11	12
1. <i>Sterna anaethetus</i>	x	xxx	xxx	xx	x	x	xxx		x	—	x	x
2. <i>S. fuscata nubilosa</i>	x	xx	xx	xx	x	x	xx	x	x	—	x	x
3. <i>S. Bergii veloz</i>	x	xx	xx	x	x	x	xx	x	—	—	—	—
4. <i>S. bengalensis</i>	—	x	x	x	x	x	xx	—	—	x	—	—
5. <i>Anous stolidus pileatus</i>	x	xxx	xx	xxx	x	x	xxx	x	x	x	x	x
6. <i>Egretta gularis</i>	x	x	x	x	x	x	x	—	—	—	—	x
7. <i>Pulvialis squatarola</i>	xx	—	—	x	x	—	—	x	—	—	—	—
8. <i>P. dominica</i>	x	—	—	—	—	—	—	—	—	—	—	—
9. <i>Dromas ardeola</i>		—	x	—	—	x	—	x	—	—	—	x
10. <i>Charadrius alexandrinus</i>	x	—	—	x	—	—	x	x	x	x	—	—
11. <i>Numenius phaeopus</i>	x	x	x	—	—	—	x	x	x	—	—	x
12. <i>N. arguata</i>	x	x	x	x	x	x	—	x	—	—	—	x
13. <i>Tringa hypoleucos</i>	x	—	—	x	—	x	x	—	—	x	x	x
14. <i>Arnaria interpres</i>		—	—	x	—	—	—	—	—	x	—	—
15. <i>Calidris minutus</i>	x	x	x	—	—	—	—	—	x	x	x	—
16. <i>Oceanites oceanicus</i>	x	x	x	—	—	—	—	—	x	x	—	x
17. <i>Oceanodroma leucorhoa monorhis</i>	x	x	x	x	x	—	—	—	—	—	—	—
18. <i>Ardeola grayii</i>	—	x	x	x	—	—	—	—	—	—	—	—
19. <i>Streptopelia orientalis</i>	—	—	—	—	—	—	x	x	—	—	—	—
20. <i>Eudynamys scolopacea</i>	—	—	—	—	—	—	—	—	—	—	x	—
21. <i>Alcedo atthis</i>	—	x	x	x	—	—	—	—	—	—	x	—
22. <i>Hirundo rustica</i>	—	—	—	x	—	x	—	—	—	—	x	x
23. <i>Delichon urbica</i>	—	—	—	—	—	—	—	—	—	—	—	—
24. <i>Motacilla flava thunbergi</i>	—	—	—	—	—	—	—	—	—	—	—	—
25. <i>Zosterops palpebrosa</i>	x	x	x	x	x	x	x	—	—	—	—	—

x - Stray number      1. Agatti.    2. Bangram    3. Tinnakara- Parali    4. Bitra.    5. Kadmat.    6.   
 xx 5 to 100 numbers    7. Suheli    8. Kalpeni    9. Androth    10 Chetlat    11. Kiltan    12. Amini  
 XXX more than 100.

- Arnaria interpres* (Turnstone)
- Calidris minutus* (Little stint)
- Oceanites oceanicus* (Wilson strom petrel)
- Oceanodroma leucorhoa monorhis*
- Ardeola grayii* (Pond heron)
- Streptopelia orientalis* (Rufous turtle dove)
- Eudynamys scolopacea* (Koel)
- Alcedo atthis* (Common King fisher)
- Hirundo rustica* (Swallow)
- Delichon urbica* (House martin)
- Motacilla flava thunbergi* (Grey head)
- Zosterops palpebrosa* (White eye)

The distribution of the birds observed in the islands are given in Table 1. The birds found in large numbers are *Anous stolidus pileatus*, *S. fuscata nubilosa*, *S. anaethetus*.

Some of the birds are migratory while others are residents.

*Pitti island*

The Pitty island deserves special mention. Located at longitude 10° 46"-30"-N. and 72°-31"-30"-E, the island has an area of about 121 hectares lying about 10 K. M. north west of Kavaratti. The shore of the island is bound by reef with sandbanks on the southern end. The island is devoid of vegetation. It is difficult to land on the island due to the heavy breakers and boulders. The fishermen land on the northern side of the island in country crafts. The island is a favoured nesting ground of the sooty tern (*S. fuscata nubilosa*) and the noddy terns, *Anous stolidus pileatus*. Humes (1876) found thousands of chicks of terns

hatching from the eggs when he visited Pitti island during February, 1876. Alcock (1902) visited the island in 1891 and stated that ground above the high water mark was literally carpeted with young terns of two species, many dead and rotting and many reduced to clean picked skeleton with only the quill feathers, still sticking to the wing bones. He attributed the reason for the wholesale destruction of the young birds to the swarm of large hermit crabs (*Coenobita*). When Ramunni (1965) visited the islands in 1962 found thousands of birds, most of them sitting on their eggs. He observed that apart from the chicks which did not move, the birds hovered around like a cloud. He could see only two types of birds "Sooties and terns" and did not see any dead birds or carcasses. There were plenty of hermit crabs also. Later many teams from organisation like Bombay Natural History Society and Zoological Survey of India (Venkateswarlu, 1982) have visited the island to study the migration, and nesting habits of the birds. The island has been declared as a bird sanctuary. Mathew and Ambedkar (1969) observed the large scale nesting of *Sterna anaethetus* at Baliyapani island. Bitra island was nesting ground for flocks of sea birds before 1940 (Ramunni, 1965). During the survey large number of noddy terns of about 5000 were observed in Agatti. The sooty terns (*S. fuscata*) numbering 8.10 thousands were also found on the shore of Bangaram and Bitra.

**Nesting season:-** The noddy terns and the sooty terns start laying eggs from late December to January and their eggs are of the size of the hen with brown blotches. Humes (1876) observed fully fledged chicks in February in Pitti island.

**Bird-Tuna interaction:-**

The terns are known to follow the tuna shoals in Minicoy (Ramunni, 1964) which help the fisherman to locate the tuna shoals. This association seems to stem from the food habits of the birds and tuna. The birds involved are *Anous stolidus*, *S. terna bergii*, *S. bengalensis* and *S. fuscata*. Livingston (1987) described, the utility of the birds in locating the tuna shoals in Minicoy. He found a positive correlation between the number of sea birds observed

and the number of tuna caught. The two peaks in the occurrence of the birds, coincide with the two peaks of the tuna landing in Minicoy island. However his postulation that the birds feed on the mucus and the copepod parasites attached to the tuna appear untenable as the beaks of the birds are neither suitable for picking the parasites or taking mucus from the body of the tuna. Further no tuna (*Katsuwonus palamis*) was found infected with parasites to the extent of being picked up by the seabirds. As the tuna and marine birds feed on fishes, the occurrence of the forage fishes may be attracting the birds and tuna to the same place. Further when the tuna forages on the shoals of fishes, the fishes jump out of the water attracting the birds.

The marine birds also have enriched the mineral resources of island consisting of low grade phosphates derived from the bird droppings for many thousands of year. It is one of the reasons for the fertility of some of the islands. (Ramunni 1964, Jones, 1986).

**Conservation:-** It is suggested that regular monitoring should be carried out on the dolphin catch and the whale beaching. C.M.F.R.I. has recently initiated a project to monitor the dolphin catch and stranding of whales in Lakshadweep. As the islands are far apart it will be difficult to collect data by a single individual. Hence the fisheries inspectors of Lakshadweep administration should be instructed to monitor the dolphin catch. The local people also should be made aware of the endangered status of the species. The Wild Life Act of 1972 should be implemented so that the killing of dolphin is prevented. Historically marine birds were nesting in large numbers in some of the islands like Bitra and Baliyapani about hundred years before. Now birds no more nest in these islands in large numbers due to human interference. The same fate should not fall on Pitti island which is the only island left for birds to nest. Though it has been declared as a sanctuary it is reported that the eggs are being collected surreptitiously. This should be prevented. The local fishermen and the people should be informed by suitable attractive print outs and pamphlets, the delicate and vulnerable position of the birds. The emphasis

should be placed on the importance of saving the eggs and the nesting population. If the hermit crabs are found to attract the hatchlings as observed by Alcock (1902) steps should be taken to control them. It is needless to say that but for scientific studies the nesting populations should not be disturbed even from the tourist point of view.

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