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RESEARCH ARTICLE

Ornithofauna of Bangaram and Thinnakara Islands in the Lakshadweep Archipelago (India), Arabian Sea

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ABSTRACT

A bird survey was conducted by employing Direct Observation and Block Count method in Bangaram and Thinnakara Islands during 2009. Among the 55 species of birds identified in the survey, Bangaram represents 46 species and Thinnakara represents 19 species. Charadriidae with 21 species is the most speciose family at Bangaram whereas Laridae with 11 species is the most speciose family at Thinnakara. The Common Tern, Sandwich Tern and Gull-billed Tern are the new addition to Bangaram Reef. In Thinnakara we spotted mainly Terns. As conservation strategy awareness programmes and a marine bird monitoring programme with adequate representation of fishermen, local people and Department of Environment and Forests should be launched at Bangaram and Thinnakara Islands

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INTRODUCTION

Several studies have documented the avifauna of Lakshadweep Archipelago: The pioneer work on birds was done by Hume (1876). Ellis (1924), Betts (1939 a, b) and Burton (1940) conducted studies on birds of Lakshadweep Archipelagos. The Petrel of the Indian Ocean was first reported by Bourne (1960) followed by Bailey *et al.* (1968) and Mathew *et al.* (1991). Waston *et al.* (1963) prepared a preliminary field guide to the birds of the Indian Ocean, Mathew and Ambedkar (1964) conducted a bird study trip to Laccadive Islands. Pied crested Cuckoo in Lakshadweep was studied by Subiah (1978). Chapman (1984) conducted a study on sea birds, Bhaskaran (1985) published a book on Birding in Lakshadweep. Bourne (1989) published a sea bird report. Daniels (1991) studied Island biogeography and birds of Lakshadweep Archipelago. Kurup and Zacharias (1994) published a paper on Birds of Lakshadweep Island. Robertson (1994) reported the occurrence of some pelagic birds in lakshadweep. Mathew *et al.* (1996) conducted an ornithological study in Lakshadweep and Pitti Islands. Santharam *et al.* (1996) made some recent addition to the bird list of Lakshadweep Island. Pande (2005) published first Ocean bird survey and the last bird survey in Lakshadweep Archipelago was made by Pande *et al.* (2007). The present study aims to prepare a check list of birds of Bangaram and Thinnakara Islands in the Lakshadweep Archipelago.

MATERIAL AND METHODS

Study Area

Two islands named Bangaram and Thinnakara were selected for the study. Bangaram Island is a tourist destination just 2 km away from Agatti Island (Figure 1.). It consists of 128 acres. The dominant

vegetation is coconut (*Cocos nucifera*) plantation. Bangaram has a unique ornithological status within the Lakshadweep. The Island is divided into three areas: freshwater lake (Figure 2.), coconut plantation and beach (Figure 3.) Thinnakara is an uninhabited Island of around 120 acres and located on the east, just 600 m away from Bangaram Island. It is 0.42 Km² in area, mainly of coconut plantations. The large stretches of sandbar which exposed during the low tides are favourable foraging sites for terns and shorebirds (Figure 4 and 5.)

METHODOLOGY

Direct Observation and Block Count Method (Altman, 1974) was employed for two day's survey on April 24th and 25th 2009. Observations were made between 06:00h to 12:00 h in the morning and 15:00 h to 17:00 h in the afternoon with the help of Nikon binocular (10 × 50 mm). Bird species were confirmed with Grimmett *et al.* (1999), Sashikumar *et al.* (2004), Kumar *et al.* (2005) and Message *et al.* (2005). Common names and classification were followed after Manakadan and Pittie (2001).

RESULT AND DISCUSSION

55 species of birds from 11 families were identified in the survey. Bangaram represents 46 species and Thinnakara represents 19 species. Nine species were common in both Bangaram and Thinnakara Islands. Charadriidae with 21 species is the most speciose family at Bangaram (Table 1). Bangaram is the only freshwater habitat in the Lakshadweep Islands, the mudflats exposed during the low tide which attracts many birds. Like that the fresh water lake with thick vegetation and Coconut plantation in the Bangaram provides suitable resting and roosting sites for birds.

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Figure 1. An aerial photography of Bangaram Island



Figure 2. Fresh Water Lake in Bangaram Island.



Figure 3. Sandy Beach of Bangaram Island



Figure 4. Thinnakara Island with Terns



Figure 5. Thinnakara Sand bar exposed during low tide

Common Greenshank (*Tringa nebularia*), Wood Sandpiper (*Tringa glareola*) and Marsh Sandpiper (*Tringa stagnatilis*) were the most abundant shore-birds observed in the Bangaram. Out of the 19 species identified from the Thinnakara Island, 6 species were shorebirds. Ruddy Turnstone (*Arenaria interpres*) was the most abundant species among the shorebirds. Family laridae represented with 11 species is the most speciose family at Thinnakara. Gent (2007) had identified 150 species of birds from Bangaram reef. But our survey noticed only 55 species of birds. Gent (2007) reported 11 species of Terns at Bangaram reef, including Bridled Tern and White-cheeked Tern but We found only Lesser Crested Tern and Large Crested Tern. The Common Tern, Sandwich Tern and Gull-billed Tern are the new addition to Bangaram Reef. Pande *et al.* (2007) reported Pond Heron, Asian Koel and Barn Swallow in Bangaram, but we were unable to find these birds during the present survey. In Thinnakara we spotted mainly terns. Bartailed Godwit, Green Sandpiper, Spotted Sandpiper, Terek Sandpiper, and Pond Heron, recorded by pande (2005) were not sighted here now. Regarding the conservation, a detailed management plan has to be developed for Bangaram reef. A comprehensive monitoring

program is required which should be conducted every month with bird counts especially in pre and post monsoon season to know the population trend. Bird surveys should be organized every year in inhabited and uninhabited islands and open reefs of Lakshadweep. Networking and data sharing protocols have to be developed along with marine bird research and conservation organizations in the Indian Ocean regions.

A marine bird monitoring and conservation initiative should be launched with adequate representation of fishermen, local people of Lakshadweep, the Department of Environment and Forests, with help of international initiatives like Global Sea Bird Programme of Bird Life International. Education and awareness programme must be initiated for the local islanders, fishermen, school students and tourists. An interpretation center should be developed on the islands of Kavaratti and Agatti.

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Table 1. List of birds identified from Bangaram and Thinnakara Islands during 2009 period

Sl. No.	Family	Common Name	Scientific Name	Bangaram	Thinnakara
1.	Procellariidae	Flesh-footed Shearwater	<i>Puffinus carneipes</i>	✓	
2.	Phaethontidae	Grey-backed Tropicbird	<i>Phaethon aethereus</i>	✓	
3.		Red-tailed Tropic Bird	<i>Phaethon rubricauda</i>	✓	
4.	Sulidae	Masked Booby	<i>Sula dactylatra</i>	✓	
5.		Little Egret	<i>Egretta garzetta</i>	✓	
6.		Median Egret	<i>Mesophoyx intermedia</i>	✓	
7.		Large Egret	<i>Casmerodius albus</i>	✓	
8.		Cattle Egret	<i>Bubulcus ibis</i>	✓	
9.		Western Reef Heron	<i>Egretta gularis</i>	✓	
10.		Grey Heron	<i>Ardea cinerea</i>	✓	✓
11.	Ardeidae	Purple Heron	<i>Ardea purpurea</i>	✓	
12.		Indian-Pond Heron	<i>Ardeola grayii</i>	✓	
13.		Little Green Heron	<i>Butorides striatus</i>	✓	
14.		Black Crowned Night Heron	<i>Nycticorax nycticorax</i>	✓	
15.		Yellow Bittern	<i>Ixobrychus sinensis</i>	✓	
16.		Chestnut Bittern	<i>Ixobrychus cinnamomeus</i>	✓	
17.		Black Bittern	<i>Dupetor flavicollis</i>	✓	
18.	Ciconiidae	Asian Openbill-Stork	<i>Anastomus oscitans</i>	✓	
19.	Threskiornithidae	Glossy Ibis	<i>Plegadis falcinellus</i>	✓	
20.	Rallidae	Whistle-breasted Waterhen	<i>Amaurornis phoenicurus</i>	✓	
21.	Charadriidae	Pacific Golden Plover	<i>Pluvialis fulva</i>	✓	✓
22.		Grey Plover	<i>Pluvialis squatarola</i>	✓	
23.		Little Ringed Plover	<i>Charadrius dubius</i>	✓	
24.		Kentish Plover	<i>Charadrius alexandrinus</i>	✓	
25.		Lesser Sand Plover	<i>Charadrius mongolus</i>	✓	✓
26.		Greater Sand Plover	<i>Charadrius leschenaultii</i>	✓	
27.		Bar-tailed Godwit	<i>Limosa lapponica</i>	✓	
28.		Whimbrel	<i>Numenius phaeopus</i>	✓	
29.		Eurasian Curlew	<i>Numenius arquata</i>	✓	✓
30.		Common Redshank	<i>Tringa totanus</i>	✓	✓
31.		Marsh Sandpiper	<i>Tringa stagnatilis</i>	✓	
32.		Common Greenshank	<i>Tringa nebularia</i>	✓	
33.		Green Sandpiper	<i>Tringa ochropus</i>	✓	
34.		Wood Sandpiper	<i>Tringa glareola</i>	✓	
35.		Terek Sandpiper	<i>Xenus cinereus</i>	✓	
36.		Common Sandpiper	<i>Actitis hypoleucos</i>	✓	
37.		Ruddy Turnstone	<i>Arenaria interpres</i>	✓	✓
38.		Sanderling	<i>Calidris alba</i>	✓	✓
39.		Little Stint	<i>Calidris minuta</i>	✓	
40.		Dunlin	<i>Calidris alpina</i>	✓	
41.		Curlew Sandpiper	<i>Calidris ferruginea</i>	✓	
42.	Laridae	Gull-billed Tern	<i>Gelochelidon nilotica</i>		✓
43.		Caspian Tern	<i>Sterna caspia</i>		✓
44.		Lesser Crested Tern	<i>Sterna bengalensis</i>	✓	✓
45.		Large Crested Tern	<i>Sterna bergii</i>	✓	✓
46.		Sandwich Tern	<i>Sterna sandvicensis</i>		✓
47.		Common Tern	<i>Sterna hirundo</i>		✓
48.		Little Tern	<i>Sterna albifrons</i>		✓
49.		Sooty Tern	<i>Sterna fuscata</i>		✓
50.		Whiskered Tern	<i>Chlidonias hybridus</i>		✓
51.		White-winged Black Tern	<i>Chlidonias leucopterus</i>		✓
52.		Brown Noddy	<i>Anous stolidus</i>		✓
53.	Alcedinidae	Small Blue Kingfisher	<i>Alcedo atthis</i>	✓	
54.		Brown-winged Kingfisher	<i>Halcyon amauroptera</i>	✓	
55.	Zosteropidae	Oriental White-eye	<i>Zosterops palpebrosus</i>	✓	

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