

Identification of Potential Marine Important Bird Areas in India

Raju Kasambe

Project Manager, IBA-BNHS

Introduction

India has a coastline of 8,118 km with an Exclusive Economic Zone (EEZ) of 2.02 million sq. km and continental shelf area of 468,000 sq. km, spread across 10 coastal states and seven Union Territories, including the islands of Andaman and Nicobar, and Lakshadweep Archipelagoes.

The marine ecosystem of India is extremely diverse, which is attributed to the geomorphologic and climatic variations along the coast. The coastal and marine habitats include banks, offshore, gulf waters, tidal flats, mudflats, coastal dunes, mangroves, marshes, wetlands, seaweed and seagrass beds, deltaic plains, estuaries, lagoons, and coral reefs.

There are four major coral reef areas in India – along the coast of Andaman and Nicobar group of islands, the

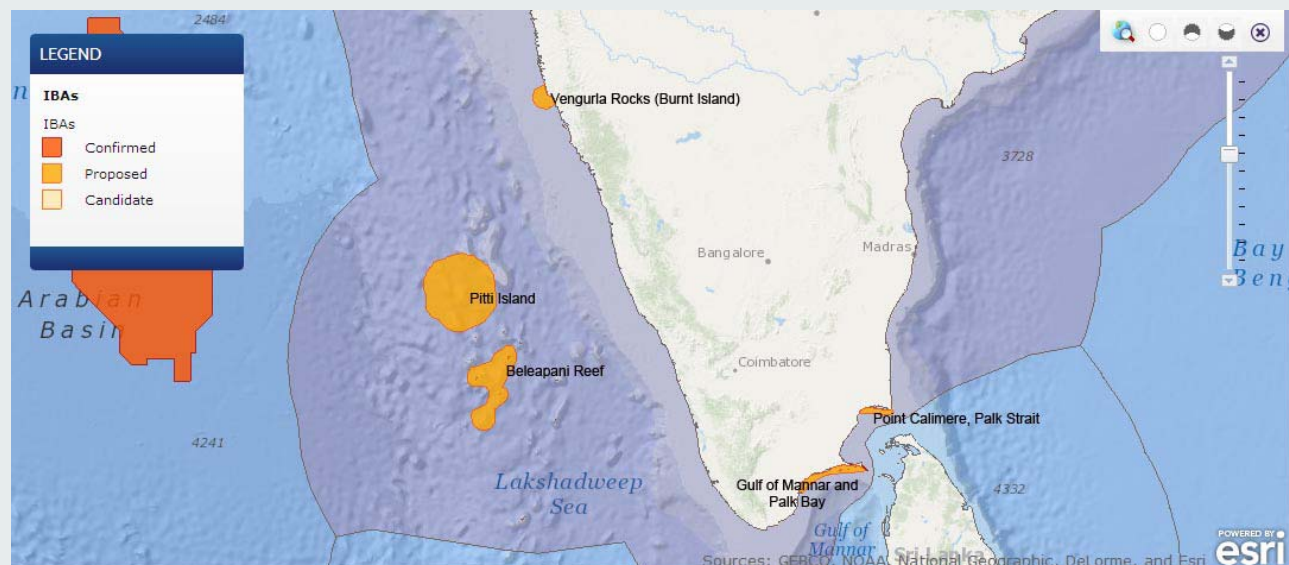
Lakshadweep group of islands, Gulf of Mannar, and Gulf of Kachchh. The Andaman and Nicobar group is the richest in terms of diversity. Mangrove ecosystem is found along both the east and west coast of India, covering an estimated 4,120 sq. km. Important mangrove areas exist in the Sundarbans, Bhitarkanika, Krishna and Godavari delta of Andhra Pradesh, Andaman and Nicobar Islands, Gulf of Kachchh, and the Pichavaram Vedaranyam area of coastal Tamil Nadu. Seagrass beds are found along the coast of Tamil Nadu, Lakshadweep Islands, Andaman and Nicobar Islands, and the Sundarbans. There are 770 species of seaweeds found in shallow waters all along the Indian coast, particularly in Tamil Nadu, Gujarat, Goa, Maharashtra, and Lakshadweep (Rajagopalan 2008).

Five species of sea turtles are found in Indian waters, of which three nest in huge numbers along the east coast of

India at Gahirmatha, Rushikulya, and Devi river mouth, all of which are in the state of Orissa.

Twenty-five species of marine mammals of Orders Cetacea and Sirenia are found in Indian waters. Sea Cows (*Dugong dugong*), for example, are found in the waters off Gulf of Mannar, Gulf of Kachchh, and the Andaman and Nicobar Islands. The islands of Andaman and Nicobar and Lakshadweep are considered to be biodiversity hotspots, where large numbers of endemic flora and fauna exist.

Nearly 75 species of seabirds are found in the marine environment of India. Some species of marine terns breed in huge numbers on some islands, like Vengurla Rocks (Burnt Island), Pitti Island, and Adam's Bridge. Many species of seabirds are recorded on various offshore islands, but there is a great need for systematic studies on the



Proposed Marine IBAs in India

marine birds of India to document their diversity as well as breeding status.

Marine IBA Workshop

The Marine IBA project of India is funded by the Royal Society for the Protection of Birds (RSPB), UK. A workshop about the Marine IBA programme in India was held on September 28, 2010 at Bombay Natural History Society, Mumbai. Scientists working on marine biology who participated the workshop included B.C. Choudhury (WII, Dehradun), Priya Davidar (ECOS, Pondicherry), Vinod Malayilethu (Senior Coordinator, Marine Programme, WWF-India, stationed at Cochin, Kerala), Shirish Manchi (SACON), Manish Chandi (ANET/NCF), Bhavik Patel (BNHS, Kachchh-Gujarat), Manan Shukla (BNHS, Kachchh-Gujarat), S. Balachandran (Asst Director, BNHS, Point Calimere, bird migration/wetland related studies and ringing expert), Asad R. Rahmani (Director, BNHS), Ian Barber (International Officer, Asia, RSPB), Raju Kasambe (Project Manager, IBA-IBCN), Deepak Apte (Asst Director, Conservation, BNHS), Mohit Kalra (GIS Analyst, posted at Delhi), Amrita Neelkantan (Advocacy Officer, Delhi), Sujit Narwade (In-charge, BNHS ENVIS Centre). The workshop focused on the development of a strategy for identification of Marine IBAs in India.

In liaison with marine biologists, five potential Marine IBAs were identified in India. The project used Global Marine IBA criteria designed by BirdLife International. These Marine IBAs are as follows:

1. Pitti Island, Lakshadweep Islands

Pitti Island and the islands around it are an important site supporting the breeding and migratory populations of many marine terns including Sooty Tern *Onychoprion fuscatus*, Brown Noddy *Anous stolidus*, Great Crested Tern *Thalasseus bergii*, Lesser Crested Tern



Asad Rahmani

A congregation of Brown Noddy at Pitti Island

Thalasseus bengalensis and White-cheeked Tern *Sterna repressa*, and many other species of seabirds. The Marine IBA covers the waters around Kavaratti, Agatti, Suheli, Bangaram, Kadmat, Amini, and Perumal Par as foraging range for marine birds. The sea water in a radius of 25 km is included as foraging range for Large Crested Tern *Sterna bergii*. Pitti Island was declared as a wildlife sanctuary in 2000.

2. Beleapani Reef, Lakshadweep Islands

This includes Beleapani Reef with waters around Chereapani Reef, Bitra, Chetlat, and Kiltan as foraging range – 80 km for Sooty Tern, 25 km for Great Crested Tern. It is an unprotected area.

3. Gulf of Mannar and Palk Bay, Tamil Nadu

The Gulf of Mannar is an important wintering ground for many species of seabirds and waders which flock to the islands in the gulf. Thousands of Lesser Crested Tern *Sterna bengalensis* come roosting and forage in the sea around the island during the daytime. They also breed on Adam's Bridge Island. The

number of seabirds found here exceeds 1% threshold population of the Marine IBA Criteria A4iii (20,000 seabirds). This Marine IBA includes seawaters within a radius of 25 km for Lesser Crested Tern, and the boundary is an approximately 7 km buffer from the islands in the bay. Gulf of Mannar was declared as a biosphere reserve in 1989.

4. Point Calimere, Palk Strait, Tamil Nadu

The number of seabirds found here exceeds the 1% threshold population for Marine IBA Criteria A4iii (20,000 seabirds) as congregations of multiple species are recorded here. The site is an important wintering ground for thousands of migratory terns, gulls, and waders, including waterfowl. It also supports a good population of the Near Threatened Lesser Flamingo *Phoeniconaias minor*. The Critically Endangered Spoon-billed Sandpiper *Calidris pygmeus* has been reported here. Point Calimere was declared as a wildlife sanctuary in 1967.

5. Vengurla Rocks (Burnt Island), Maharashtra

This island is important for the

nesting and or sighting of various marine terns including Bridled Tern *Sterna anaethetus*, Great Crested Tern *S. bergii*, Roseate Tern *S. dougallii*, and Lesser Crested Tern *S. benghalensis* in huge numbers exceeding the 1% threshold population for Marine IBA Criteria A4i and A4iii (20,000 seabirds). This marine IBA includes the sea waters upto radii of 25 km for *S. bergii* and 10 km for *S. dougallii* from the island. It is an unprotected area.

Need for Research

There is a need to study the marine species in India, as studies on single species in the marine environment have not been done in India.

National Priorities

India has 38 Marine and Coastal Protected Areas. These PAs has been notified either as national parks or wildlife sanctuaries under the Wildlife (Protection) Act, 1972, though there is no specific provision or mention of MPAs under this or any other legislation. There is an urgent need to address this issue and include the seas and the ocean waters in the legislation.

The study of seabirds in Indian Ocean territories is meagre, and whatever has been done was through individual efforts. Considering the huge areas of ocean around the Indian peninsula, the number of islands and the length of the coastline, it is a very difficult task to cover all these sites and gather data without well-planned surveys.

The many islands in the Andaman and Nicobar group, in the Gulf of Kachchh, Gulf of Mannar, and the Lakshadweep Archipelago need systematic surveys for better understanding of the avifauna, and seabirds in particular. Many of the ornithological expeditions to these islands were restricted to the study of terrestrial birds, with emphasis on the endemic species.

Burnt Island (Vengurla Rocks),

Cherbaniani (Beleapani Reef), Byramgore, and Suheli Pitti need to be declared immediately as Marine Bird Sanctuaries.

Agreements related to seabirds to which India is a signatory

India became a signatory to the CBD in June 1992, and the Convention itself came into force on December 29, 1993. The CBD sets out the obligations of States to the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

India, in its third report to the CBD in 2006, highlighted the following activities initiated under the Programme of Work on Coastal and Marine Biodiversity: MCPAs (Marine and Coastal Protected Areas) have been declared and gazetted; management plans have been developed with the involvement of all stakeholders; effective management with enforcement and monitoring has been put in place; and a national system or network of MCPAs is already in place and is being further developed.

The report also states that India has a system of MCPAs that includes areas that forbid extractive uses, and are surrounded by sustainable management practices over the wider marine and coastal environment, with an overall high priority towards the implementation of the Programme of Work on Coastal and Marine Biodiversity. India also reports that national targets have been set in sectoral plans, strategies and programmes, especially for the establishment of new MPAs, and that already there are enabling legislative frameworks in place to manage marine and coastal biodiversity and PAs.

The report identified major legislative and institutional barriers, and a variety of social, economic, political, administrative, and financial reasons that impede effective establishment and

management of PAs. Several PAs have not been legally gazetted yet. The absence of management plans and monitoring processes also hampers the effective management of PAs. Low investment in both manpower and financing, and inadequate inter-agency coordination also adversely affect PA management.

Thus, several issues hindering effective establishment and management of PAs have been identified by India. The Government pointed out that enabling mechanisms were still being developed to incorporate governance, participation, equity, and benefit sharing of CBD targets into the legal framework. It was also emphasized that currently there are limited provisions for sharing benefits with the local communities. It was reported that little data is presently available on the socioeconomic status of communities dependent on PAs, and that efforts need be taken to collect such information.

Marine and Coastal Protected Areas in India

There are 38 MCPAs in India, primarily in marine and coastal environment, which cover a total area of 30,399.58 sq. km (Rajagopalan 2008). According to the Government of India's third national report to the CBD in 2006, there are 31 Marine and Coastal Protected Areas, 18 of which are fully within the marine environment, whereas the other 13 are partly on land. Besides these, there are 100 PAs that have terrestrial or freshwater ecosystems that border with sea water or partly contain coastal and marine environment. These PAs has been notified as national parks or wildlife sanctuaries under the Wildlife (Protection) Act, 1972, though there is no specific provision or mention of MPAs under this or any other legislation.

Also, another 100 Protected Areas (including 10 in the main Indian coast and 90 island PAs in Andaman and Nicobar) have terrestrial or freshwater

ADVOCACY FOR CONSERVATION

Marine and Coastal Protected Areas including Biosphere Reserves in India

Sr. No.	Name of the Protected Area	State	Legal Status	Area sq. km
1	Coringa Wildlife Sanctuary and East Godavari	Andhra Pradesh	WLS	235.70
2	Krishna Wildlife Sanctuary	Andhra Pradesh	WLS	194.81
3	Pitti Wildlife Sanctuary	Lakshadweep	WLS	0.01
4	Gulf of Kachchh Marine National Park, Jamnagar	Gujarat	NP	162.89
5	Gulf of Kachchh Wildlife Sanctuary, Jamnagar	Gujarat	WLS	295.03
6	Khijadiya Wildlife Sanctuary	Gujarat	WLS	6.05
7	Malvan Marine Sanctuary, Sindhudurg	Maharashtra	WLS	29.12
8	Bhitarkanika National Park	Orissa	NP	145
9	Bhitarkanika Wildlife Sanctuary	Orissa	WLS	672
10	Gahirmatha Marine Sanctuary, Kendrapara	Orissa	WLS	1435
11	Chilika (Nalabund) Wildlife Sanctuary	Orissa	WLS	15.53
12	Gulf of Mannar Marine National Park	Tamil Nadu	NP	560
13	Gulf of Mannar Biosphere Reserve	Tamil Nadu	BR	10,500
14	Pulicat Lake (Bird) Sanctuary	Andhra Pradesh	WLS	500
15	Pulicat Lake Bird Sanctuary	Tamil Nadu	WLS	153.67
16	Point Calimere Sanctuary	Tamil Nadu	WLS	17.26
17	Sundarbans National Park	West Bengal	NP	1330.10
18	Sundarbans Tiger Reserve	West Bengal	TR	2585
19	Sundarbans Biosphere Reserve	West Bengal	BR	9600
20	Haliday Sanctuary	West Bengal	WLS	5.95
21	Lothian Island Sanctuary	West Bengal	WLS	38
22	Sajnekhali Sanctuary	West Bengal	WLS	362.04
23	North Button National Park	A & N	NP	0.44
24	Middle Button National Park	A & N	NP	0.64
25	South Button National Park	A & N	NP	0.03
26	North Reef Island Sanctuary	A & N	WLS	3.48
27	South Reef Island Sanctuary	A & N	WLS	1.17
28	Cuthbert Bay Sanctuary	A & N	WLS	5.82
29	Cinque Sanctuary	A & N	WLS	9.51
30	Greater Nicobar Biosphere Reserve	A & N	BR	885
31	Parkinson Island Sanctuary	A & N	WLS	0.34
32	Mangroves Island Sanctuary	A & N	WLS	0.39
33	Blister Island Sanctuary	A & N	WLS	0.26
34	Sandy Island Sanctuary	A & N	WLS	0.26
35	Mahatma Gandhi Marine National Park (Wandoor, South Andaman)	A & N	NP	281.5
36	Rani Jhansi Marine National Park (Richies Archipelago)	A & N	NP	256.14
37	Lohabarrack (Salt Water Crocodile) Sanctuary, South Andaman	A & N	WLS	100
38	Galathea Bay Sanctuary	A & N	WLS	11.44
			Total area	30399.58

(WLS: Wildlife Sanctuary; TR: Tiger Reserve; NP: National Park, BR: Biosphere Reserve)

ecosystems which constitute boundaries with sea water or partly contain marine environment, but are not listed as MCPAs as per the criteria. Although India has a very long coastline and varied coastal habitats, the MCPAs are restricted to 4% of the total area of the PAs and 1.3% of the continental shelf area of the country.

There are many more potential PAs on the east coast of India, while only four PAs have been declared on

the west coast to date. Most of the PAs were declared between 1975 and 1990, much before the various guidelines and policies on PAs were formulated at the international and national levels. The increasing conflicts within PAs and the amendments in legislation have made the process of declaration of PAs more stringent and slow, especially in the case of those declared by the state governments (Rajagopalan 2008).

References

Singh, H.S. (2002) Marine Protected Areas in India: Status of Coastal Wetlands and Their Conservation. Gujarat Ecological Education and Research (GEER) Foundation.

Rajagopalan, R. (2008) Marine Protected Areas in India. *International Collective in Support of Fishworkers*. Samudra Monograph. Pp. 69.

Contact:

Email: Kasambe.raj@ gmail.com