Sriharikota Island—new refuge for colonial nesting waterbirds

S. Sivakumar[1], Ranjit Manakadan[2] & Patrick David

Sivakumar, S., Manakadan, R. & David, P. 2009. Sriharikota—new refuge for colonial nesting waterbirds. *Indian Birds* 4 (4): 136–137 (2008).

S. Sivakumar, Ranjit Manakadan & Patrick David: Bombay Natural History Society, Hornbill House, Dr. Sálim Ali Chowk, Shaheed Bhagat Singh Road, Mumbai 400023, Maharashtra, India. [2]Email: *ransan5@rediffmail.com*
[1]Present Address: TTK Services Private Ltd., 4th Floor, Arden Fair, Old Madras Road, Bangalore 560016, Karnataka, India.
Mss received on 26th June 2008.

Introduction

Sriharikota Island is well known as the spaceport of India, but largely unknown as a refuge for biodiversity having one of the last remaining and largest patch of tropical dry evergreen forest in India. Sriharikota (*c.* 181 km^2) is situated in the southernmost corner of coastal Andhra Pradesh, bounded on the east by the Bay of Bengal and on the west by Pulicat Lake (Fig. 1). The Pulicat Lake's openings into the Bay of Bengal form the northern and southern boundaries of the Island. The island has been under the control of Indian Space Research Organisation (ISRO) since 1970.

The Bombay Natural History Society (BNHS) has carried out detailed studies on various faunal groups of the island (Bombay Natural History Society 1977; Samant & Rao 1996; Rao 1998; Manakadan & Sivakumar 2004a, b; Manakadan *et al.* 2004; Sivakumar & Manakadan 2004; Sivakumar *et al.* 2004). A significant discovery under one of these projects was of three heronries in the island, christened the Madugu, Beripeta and Karimanal heronries (Manakadan & Sivakumar 2004a; Sivakumar & Manakadan 2005). Prior to the discovery of these heronries, the only known breeding sites for colonial waterbirds of Pulicat Lake were three heronries on the mainland, namely, the Nelapattu, Tada (Bolengalupadu) and Vedurupattu-Edhirpattu heronries (Subramanya 2001).

The Sriharikota heronries

The Beripeta heronry is situated in the central part of the Island and consists of riparian forest with tall trees. The colony is occupied almost exclusively by the Painted Stork *Mycteria leucocephala*. At Beripeta, the main colony had *ca.* 150 nests of Painted Storks and the sub-colony (*c.* one kilometre south) had around 100 nests of the same species during the 2005-06 breeding season.

The Madugu heronry is situated in the northern part of the Island with riparian forest-thicket vegetation with dense canebrakes. The exact number of breeding birds and number of species breeding in this heronry could not be determined due to thick growth of vegetation and lack of vantage points to view the entire breeding area. However, 20 pairs of Grey Heron *Ardea cinerea*, 61 egrets (Little *Egretta garzetta* and Intermediate *Mesophoyx intermedia*) and 14 Little Cormorant *Phalacrocorax niger* were recorded during the 2005–2006 breeding season. Other species recorded in the area (but without confirmed breeding records) during the 2001–2002 breeding season were Cattle Egret *Bubulcus* and Black-crowned Night-Heron *Nycticorax nycticorax*.

The Karimanal colony is situated in the southern end of the island. The colony consisted of Painted Stork (100), Grey Heron (6), Large Egret *Casmerodius albus* (6), Intermediate Egret (1), Little Egret (100) and Little Cormorant (300) during the 2001–2002 breeding season. Breeding did not take place in the following years (2002–2003, 2003–2004 and 2004–2005), which were low rainfall years. Breeding was observed again in 2005–2006, but the number of birds and species were significantly less compared to the 2001–2002 season: Painted Stork (40), Grey Heron (25) and Intermediate Egret (2). 15 pairs of Grey Heron and a couple of Little Egret pairs were recorded breeding on an isolated *Ficus bengalensis*, *c.* 200 m east of the Karimanal nesting site.

Discussion

As there had been no reports of the occurrence of heronries during the BNHS projects during the 1970s and 1990s, these heronries must have got established in recent years due to good protection over the years by ISRO. Breeding has been regular in the Beripeta and Madugu areas since the discovery of the three heronries during the 2001–2002 breeding season. Though safe on the island, the birds face hunting risks while foraging in Pulicat Lake and in the wetlands on the mainland. During one of the visits to the Madugu colony, a few dead adult birds were found hanging from the nest-tree with nooses on their legs, which had become entangled in the branches. Besides hunting, the birds are harassed by bonnet macaque *Macaca radiata,* which attempt to steal eggs.

The Karimanal heronry is located in a low-lying area, which gets inundated during good rainfall years. Casuarina was the main nesting tree in this heronry during the 2001–2002 breeding season. However, many of the nesting trees withered by the end of the breeding season probably due to water logging and / or their inability to withstand the impact of bird droppings. Due to low rainfall in the following years, the water dried soon after the monsoon and breeding did not take place till 2004–2005. Breeding was again recorded during 2005–2006 (a high rainfall year), but fewer birds nested due to the scarcity of nesting trees—a small colony getting established on a nearby, isolated *Ficus bengalensis* tree as mentioned earlier.

Regular breeding of Painted Storks and increase in their numbers observed each year in the Beripata colony are positive signs for this Near-threatened species (BirdLife Internationl 2008) in Sriharikota. Judging from the decline of the mainland-based Vedurupattu-Edirpattu heronry (Kannan

et al., in press), which once supported about 200 breeding pairs of the Painted Stork, it is clear that the Painted Storks breeding in the Beripeta and Karimanal heronries comprise of birds that had shifted from Vedurupattu-Edirpattu heronry. Other species such as Little Cormorant, Little Egret and Grey Heron are also probably from Vedurupattu-Edirpattu, and also the Tada (Bolegalupadu) heronry (Kannan *et al*., in press). The Tada heronry will almost certainly be lost within a few years what with only one of the three nesting trees now remaining and human dwellings coming up right under the lone tree (Kannan *et al*., in press). Much better conditions and proximity to Pulicat Lake have enticed the birds to shift to Sriharikota Island.

The future of the heronries of Sriharikota appears bright due to the high security status of the island and the pro-conservation outlook of ISRO officials. The Beripeta colony receives special attention from officials of ISRO as it is relatively closer and accessible to the residential areas and offers a good view from the nearby security watchtower. However, proposed ambitious plans for the expansion of the spaceport are worrying (Manakadan *et al*. 2004). We hope ISRO will be able to judiciously balance space science with conservation of its biodiversity wealth.

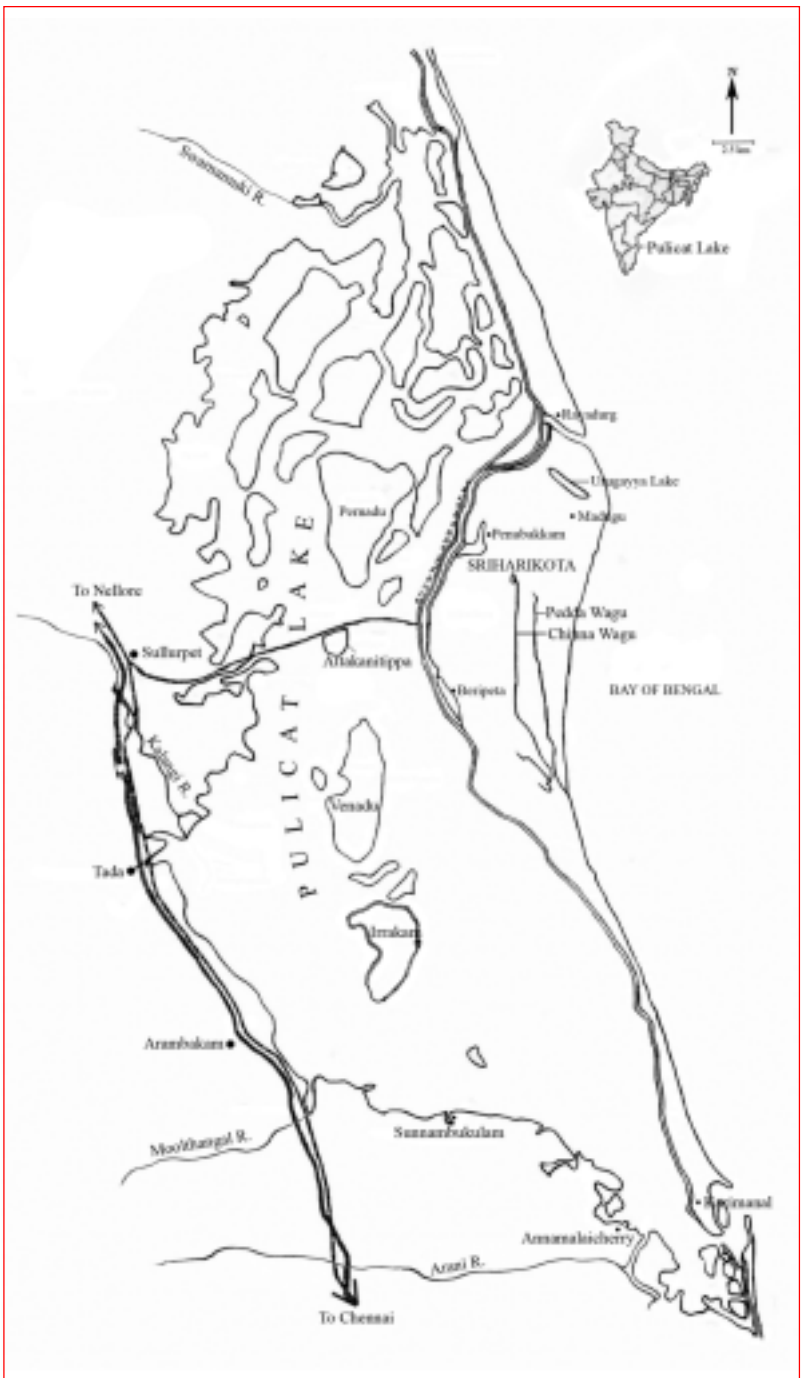

Fig. 1. Sriharikota Island and its adjoining areas.

Acknowledgements

The BNHS is indebted to ISRO for sanction of the projects to the BNHS, and especially to its late Chairman, Prof. Satish Dhawan, one of the stalwarts of ISRO, who initiated the wildlife research and conservation programmes in the Island. These projects have helped document the biodiversity of Sriharikota Island for science and enhanced conservation awareness in the Island.

References

Bombay Natural History Society. 1977. Birds of Sriharikota Island. A preliminary survey by the BNHS submitted to ISRO. Mumbai: Bombay Natural History Society.

Manakadan, R. & Sivakumar, S. 2004a. An ecological account of the faunal diversity of Sriharikota Island and its environs. Final report: Part I—Birds and mammals. Mumbai: Bombay Natural History Society.

Manakadan, R. & Sivakumar, S. 2004b. An ecological account of the faunal diversity of Sriharikota Island and its environs. Final report: Part III—Fish. Mumbai: Bombay Natural History Society.

Manakadan, R., Sivakumar, S., & Rahmani, A. R. 2004. An ecological account of the faunal diversity of Sriharikota Island and its environs. Final report: Part V—Conservation issues. Mumbai: Bombay Natural History Society.

Kannan, V., Manakadan, R., Rao, P., Mohapatra, K. K., Sivakumar, S., & Santharam, V. (in press). The waterbirds of Pulicat Lake, Andhra Pradesh–Tamil Nadu, India including those of the adjoining wetlands and heronries. *J. Bombay Nat. Hist. Soc*.

Rao, P. 1998. The bird communities of the Tropical Dry Evergreen Forests of Sriharikota. Ph.D. Thesis. University of Bombay, Mumbai.

Samant, J. S. & Rao, P. 1996. An ecological investigation of the avian community of Sriharikota Island. Final Report. Mumbai: Bombay Natural History Society.

Sivakumar, S. & Manakadan, R. 2004. An ecological account of the faunal diversity of Sriharikota Island and its environs. Final Report: Part II—Herpetofauna. Mumbai: Bombay Natural History Society.

Sivakumar, S., Kailasanathar, R., & Manakadan, R. 2004. An ecological account of the faunal diversity of Sriharikota Island and its environs. Final report: Part IV—Butterflies. Mumbai: Bombay Natural History Society.

Sivakumar, S. & Manakadan, R. 2005. An account of the heronries and other breeding waterbirds of Sriharikota, Andhra Pradesh, India. Pp. 93–96. In: *New initiatives for bird conservation* (Eds: Verghese, A., Sridhar, S., Chakravarthy, A. K., Bhat, H. R. & Karanth, P.): Proc. National Seminar on Bird Ecology and Conservation. NLBW and INCERT, Bangalore.

Subramanya, S. 2001. Heronries of Andhra Pradesh. *Mayura* 13: 1–27.