New location record for Northern Tree Shrew from Bihar

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Abstract

To build up the baseline data for conservation and management planning of the Bhimbandh Wildlife Sanctuary (BWS), Bihar, India field surveys were conducted during 2014. During the study 23 mammalian species were recorded; of the species, one i.e. Northern Tree Shrew *Tupaia belangeri* was the new record to the BWS. This contribution adds in the new location (in BWS, Bihar) to the distribution range of Northern Tree Shrew. This new record of species from Bihar indicates the possible extension in the distribution range of species; it contributes to the species database and builds the biodiversity database of the area as well.

Introduction

This study took place in the Bhimbandh Wildlife Sanctuary (BWS) in 2014, and was designed particularly to form the baseline data for conservation and management planning of the sanctuary, a biodiversity rich but completely unexplored area of Bihar state of India. Sanctuary lies between 25° 55′ and 25° 15′ N and 86° 15′ and 86° 33′ E and extends over an area of 680.94 km^2 (Fig 1). Being situated in the lower (Elevation wise) portion of Gangetic plain which is near to North-East bio-geographical region; BWS shares the wildlife species of both the regions which makes the sanctuary a unique ecosystem with wide range of wildlife species. But unfortunately, the ecosystem of the sanctuary is threatened due to several anthropogenic activities like illegal mining, deforestation, poaching etc. The high density of human population around the BWS further intensifies the pressure. In the present scenario, the sanctuary is almost an isolated patch of forest which is highly infected by the left wing extremism and facing a potential threat of habitat degradation.

During the study 23 mammalian species (Table 1) were recorded; of the species, one i.e. Northern Tree Shrew *Tupaia belangeri* was the new record to the BWS (Bihar). The species was recorded and photographed (Fig 2) at Munger forest range (25°16′01.31″ N; 86°30′38.70″ E) of BWS on 19 March 2014 at around 10.00 hours. Tree Shrews are small insectivores belonging to order Scandentia and all 19 species are endemic to Southeast Asia. This note presents the first photographic record of the species from Bihar state of India.

Identification and Conservation Status

Tree Shrews can be characterised by their long snout, large eyes (laterally placed), large ears with unique pinna, naked moist nose pad, and a bushy tail (Menon 2014). Despite their name 'Tree Shrew' they are neither as much arboreal as squirrels nor they look like shrews. Morphologically they are more similar to squirrels than shrews. But they can be easily distinct from squirrels as they do not have whiskers.

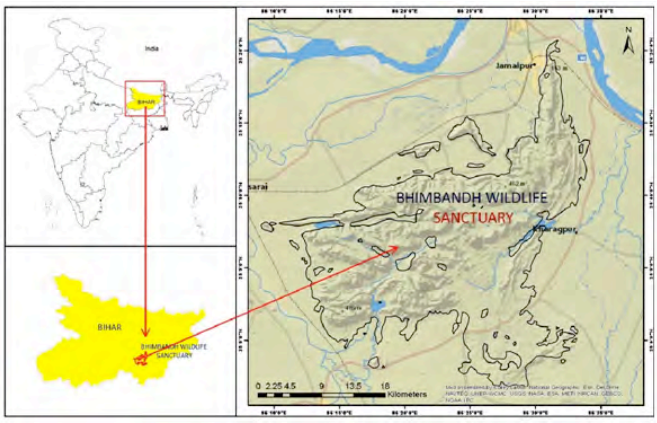

Fig 1. Location of Bhimbandh Wildlife Sanctuary in Bihar, India

Fig 2. Northern Tree Shrew *Tupaia belangeri* in its habitat at Bhimbandh Wildlife Sanctuary

Northern Tree Shrew is olive-brown or greyish brown coat and a buff or orange venter. The long bushy tail is equal to its body length. The lower earlobe is slightly smaller with more hair inside the ear than Madras Tree Shrew *Anathana ellioti* (Menon 2014). The species is endemic to Indo-Burma biodiversity hotspot (Majumder and Agarwala 2015) and found in deciduous and evergreen primary forest and secondary forest, commonly in karst and associated natural scrub vegetation, from sea level up to upper montane areas (Molur *et al.* 2005). The species is widely distributed in the North-eastern India and reported from Assam, Meghalaya, Manipur, Mizoram, Nagaland, Sikkim and Tripura states of India (Das *et al.* 1995; Majumder and Agarwala 2015).

The Northern Tree Shrew is categorised as Least Concern in IUCN Red List (Han *et al.* 2008) and listed in Appendix II of CITES (UNEP-WCMC 2001). It is also listed in the Schedule II of the Indian Wildlife (Protection) Act, 1972 amended upto 2008. However, the species is threatened due to habitat

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Table 1. List of mammals recorded during the survey at Bhimbandh Wildlife Sanctuary (Bihar) India.

S. no.	Common name	Scientific name	IUCN Status
1	Common Leopard	*Panthera pardus*	NT
2	Jungle Cat	*Felis chaus*	LC
3	Small Indian Civet	*Viverricula indica*	LC
4	Common Mongoose	*Herpestes edwardsii*	LC
5	Small Indian Mongoose	*Herpestes javanicus*	LC
6	Striped Hyena	*Hyaena hyaena*	NT
7	Indian Wolf	*Canis lupus pallipes*	LC
8	Golden Jackal	*Canis aureus*	LC
9	Indian Fox	*Vulpes bengalensis*	LC
10	Sloth Bear	*Melursus ursinus*	VU
11	Five-striped Palm Squirrel	*Funambulus pennantii*	LC
12	Indian Porcupine	*Hystrix indica*	LC
13	Northern Tree Shrew	*Tupaia belangeri*	LC
14	Indian Hare	*Lepus nigricollis*	LC
15	Four-horned Antelope	*Tetracerus quadricornis*	VU
16	Blue Bull	*Boselaphus tragocamelus*	LC
17	Sambhar	*Rusa unicolor*	VU
18	Barking Deer	*Muntiacus muntjak*	LC
19	Wild Bore	*Sus scrofa*	LC
20	Rhesus Macaque	*Macaca mulatta*	LC
21	Common Langur	*Semnopithecus entellus*	LC
22	Indian Field Mouse	*Mus booduga*	LC
23	Ganga River Dolphin	*Platanista gangetica*	EN

EN= Endangered; LC= Least Concern; NT= Near Threatened; VU= Vulnerable.

loss resulting from shifting agriculture, small-scale and selective logging, clearing of forest, establishment of human settlements and forest fires (Molur *et al.* 2005).

The effective conservation and management of wildlife area or species depends on better understanding of all the components of biodiversity. Hence, makes the timely reporting of expansion or shrinkage of species' range important for conservation management of the species (Silambarasan *et al.* 2015). This contribution adds in the new location (in BWS, Bihar) to the distribution range of Northern Tree Shrew. This new record of species from Bihar indicates the possible extension in the distribution range of species; it contributes to the species database and builds the biodiversity data base of the area as well.

Small mammals have significant influences on vegetation and soils, exert predatory pressure on insects and other mammals, and also provide food for other predators (Carolyn 1987). They fill important and perhaps crucial roles in ecosystem function. They are interconnected in complex ways with other biotic and abiotic components of the ecosystem. Hence, it is suggested to focus management efforts on these relationships to a greater extent in the sanctuary. Further, survey and monitoring are recommended (Molur *et al.* 2005) to estimate the range expansion of the species.

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