

Population Status, Threats and Conservation of the Bengal slow loris *Nycticebus bengalensis* in Northeast Bangladesh

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INTRODUCTION

Bangladesh is a small country having an area of 147,610 km² with one of the densest human population, roughly over 1230 people/km². A total of 10 primate species recorded from Bangladesh. Two species are globally **Endangered**, three are **Vulnerable**, and one is **Near Threatened** (Roos et al. 2014). Among the total eight species of slow lorises worldwide, the Bengal slow loris is the only species that occurs in Bangladesh (Molur et al. 2003). The Bengal slow loris, *Nycticebus bengalensis* is a **small nocturnal primate** classified as **Vulnerable** by the IUCN and has a largest geographic range (Streicher et al. 2008). Due to habitat destruction, hunting and road accident the population of this species is declining (Pliosungneon et al. 2001). Due to its **cryptic** and **nocturnal** behavior very little is known about this species. Population status, habitat requirements, behavior or threats are totally unknown. Thus there is a major gap in our knowledge on this species in Bangladesh. We decided to conduct this study to determine population of the Bengal slow loris population in northeastern Bangladesh, estimate the total population size of Loris in the selected forest of this region and to determine their habitat characteristics.



Fig 1. Body pattern of Bengal slow loris from different angle.

MATERIALS AND METHODS

Study Area

Ten fragmented forest patches exist in northeast Bangladesh (Moulvibazar and Habigonj district, Sylhet Division). Protection status of these forest patches are variable, with two national parks, one wildlife sanctuary and seven reserve forests. We surveyed five of the ten forest fragments- Satchari, Rema-Kalenga, Lawachara, Adampur, Juri (Figure. 2). The topography of the study area is hilly with elevations ranging from 50 to 300 m above sea level. The forests are all replanted tropical, wet, semi-evergreen forests with varying levels of degradation.

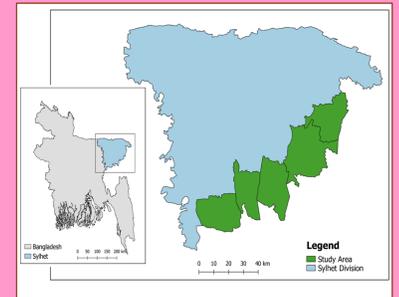


Fig. 2 Showing the location of field site in North-east Bangladesh

Field Methods

We conducted our survey from **June 2017 to August 2018**. We estimated encounter rates by reconnaissance sampling (Walsh & White, 1999). We conducted night surveys (**18.00–03.00**), using head lamps with red filters (Figure. 2). Each night we selected one to three transects with a minimum length of 1 km.

Three to four surveyors walked each transect slowly (**1-1.5 km/h**), observing both sides of the transect (Nekaris & Jayewardene, 2004). We searched the canopy to detect lorises using the orange **eye-shine** (Das et al. 2009). We assessed the threats of Bengal slow loris by direct observation during the field work. Beside this we asked local people, forest guards and local experts for loris mortality and rescue information using a semi structured questionnaire (Figure. 3).

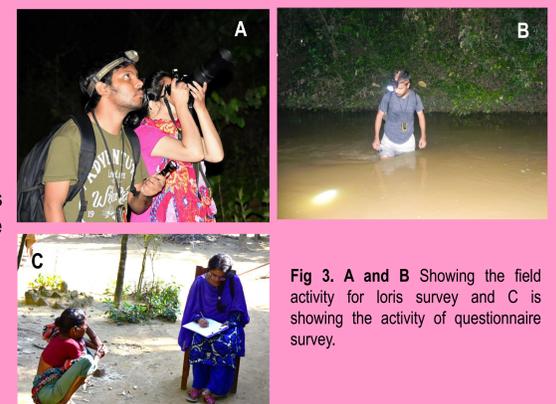


Fig 3. A and B Showing the field activity for loris survey and C is showing the activity of questionnaire survey.

RESULTS

Encounter Rate

We walked and covered a total of **127 km** over **58 night** surveys. We encountered Bengal slow lorises a total of **74** times in four protected areas. We did not encounter any slow loris in Juri Reserved Forest (Figure. 4). Encounter rate was highest in Satchari National Park (**1.78/km**) and lowest in Adampur Reserve Forest (**0.17/km**).

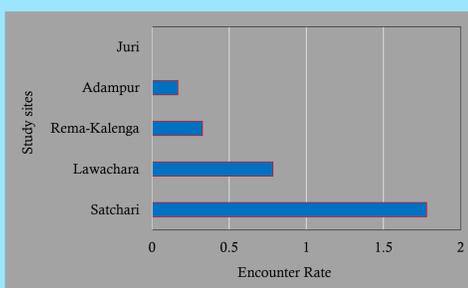


Fig. 4 Showing the encounter rate of Bengal slow loris in different study site.

Mortality

During the study period we recorded three cases of **electrocution mortality** of Bengal slow lorises in Lawachara National Park and one **road-kill** in Satchari National Park (Figure. 4).



Fig 4. Showing the effect of electrocution on Bengal slow loris in Satchari National Park (A) and Lawachara National Park (B).

Loris Rescue

We recorded loris rescue information from Lawachara National Park, Satchari National Park and Rema-Kalenga Wildlife Sanctuary (Figure. 4). Where the rescue and release number is higher (**n=16**) in Lawachara National Park and lower in Rema-Kalenga Wildlife Sanctuary (**n=2**, Figure 6).



Fig 5. A adult male Bengal slow loris, rescued from forest adjacent human habitation.

Fig 5. Showing the rescued loris in different study sites.

CONCLUSION

- Bengal slow loris is present in most of the forest patches of North-east Bangladesh. All forests are highly degraded and under various anthropogenic pressure. Although Satchari National Park is a small forest patch, loris encounter rate is higher in this patch.
- Beside habitat loss, electrocution mortality and road accidents are the main threats to slow loris in North-east Bangladesh.
- To mitigate road accidents and to avoid electrocution fatalities of the Slow loris in forest patches in Bangladesh, we strongly suggest avoiding construction of roads and power supply lines inside forests.
- If this is not possible, then stricter control of the speed limit of vehicles inside the forest by creating speed breakers to avoid road killing is recommended.
- To avoid electrocution mortality we recommend the use insulated power lines at least in the forested areas. Maintenance of natural canopy bridges and preparation of artificial canopy bridges over the roads and electric power supply lines can minimize road kill and electrocution mortality of loris as well as other primates.

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