

## Project Update: October 2019

Recently I presented a poster (attached) on our research project (ID: 23975-1) in the Students Conference on Conservation Science - Bengaluru 2019 at Indian Institute of Science, Bengaluru, India on 15-19 October 2019.

### PHAYRE'S LANGUR POPULATION IN NORTHEAST BANGLADESH: UNDERESTIMATED AND UNDER-PRESSURE

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#### INTRODUCTION

- Phayre's Langur (*Trachypithecus phayrei*) is a globally endangered primate (Bleisch et al. 2008).
- It is distributed to South Asia (Bangladesh & India) and south-east Asian countries.
- Globally its population is on decline by various anthropogenic threats (Bleisch et al. 2008; Mohur et al. 2003).
- Numbers of forests harbor the species in northeast & south-eastern Bangladesh (IUCN Bangladesh 2015).
- No precise estimation of its population available in Bangladesh.
- We are embarking a survey its population and threats in 5 sites of northeast Bangladesh.

(Source: Gettle and Alonso 1982, Khan 1984, Mohur et al. 2003, Bleisch et al. 2008, IUCN Bangladesh 2015)

#### STUDY AREA

#### DISCUSSION

- Less than 100 individuals was thought for more than last 15 years with less than 50 mature individuals in Bangladesh (Mohur et al. 2003).
- 135 mature individuals were recorded in only 4 forests of NE Bangladesh.
- So, we predict the population was previously underestimated.
- Enough evidences weren't found to support 80% population decline in last 20 years (IUCN Bangladesh 2015).
- Habitat destruction and huge extraction of food plants (e.g. bamboo) are threatening long term survival.
- The landscapes alteration due to agricultural expansion in and around protected forest areas was alarming.
- Population has been surviving in fragmented landscapes under anthropogenic pressures and non-protected areas.
- Immediate conservation measures are required besides continuous investigation on population and threats.

#### METHODS

##### Population Survey

- Survey is being carried out since March 2018 to till now.
- Pre-established forest trails, roads and dried streamlines are used as transects.
- Distance Sampling methodologies are applied to collect population data (Buckland 2001, Campbell et al. 2016).

##### Threats Assessment

- Direct observation of local people's forest use
- Personal Interviews of local community people and forest departmental staff
- Extensive literature survey
- Expert's opinion

**Data Analysis:**  
 We present the results of population survey based on direct counting data only (as it's an ongoing). Population density was calculated using the following formula (Duchateau 2006):  

$$D = n / 2La$$
  
 D= density  
 n= number of individuals  
 a= sampled area  
 L= length of transect

Threats data were categorised for quantification and then percentile (Nahar et al. 2017).

#### RESULTS

##### Population

- Total 28 groups were recorded in 4 forests.
- Mean group size was 11.04 ± 5.54 (4 - 28 ind.)
- 47% individuals were adult.
- 38% adults were male and 62% were female.
- Adult male:female the ratio was 1:1.63
- Mean density was 0.70 ± 0.43 groups/km<sup>2</sup>
- 21% population living outside of protected areas.

##### Threats

- Agricultural expansion
- Logging
- Hunting
- Poaching
- Illegal trade
- Habitat destruction
- Human disturbance
- Fire
- Disease
- Climate change
- Pollution
- Invasive species
- Natural disasters
- Other

#### RECOMMENDATION

- Decreasing forest encroachment and habitat destruction.
- Building capacity of forest staffs, eco-tourists guides and public awareness.
- Proper implementation of laws and acts against illegal activities into the forest.
- Implementation of national park protocols and control tourism.
- Establishing local intelligence network to inform Bangladesh forest department regarding illegal hunting, poaching and trading animals.
- Update protection status of Rajshahi Reserve Forest into a national park.

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