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Swamp deer in Manas

Present status and feasibility of restocking

Preliminary report submitted to the Project Tiger Directorate, Manas Tiger Project
Assam, India



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**SWAMP DEER IN MANAS:
PRESENT STATUS AND FEASIBILITY OF RESTOCKING**

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Thank you all !

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ABSTRACT

This report is a mid term report submitted to the Department of Forest, Manas Tiger Reserve on a ongoing study on the status of Swamp deer and feasibility of restocking in the Manas National Park in future. The study so fare generated few interesting findings including one herd of swamp deer in the Burhaburi area in Bansbari rnage, which was thought be locally extinct earlier. This report provides vital information on the species distributional range and their confirmed existence in the Park. In the coming months, we are planning to carry out local people's attitude towards restocking and identifying critical areas where restocking can be drafted.

INTRODUCTION

The **Swamp deer *Cervus duvauceli*** is a vulnerable cervid throughout its range (IUCN RedList). It had a wide distribution earlier, however its populations have fallen drastically because of habitat loss, over hunting, poaching and diseases from cattle. In Assam, only Kaziranga harbours a viable population while in Manas, there were healthy population of swamp deer prior to civil unrest in 1990s. During the period, the poachers almost wiped away the entire population from Manas. Hence, the present population in the Park constitutes a very small and declining fraction of the total population earlier which hangs around <20; which was a guess prior to the initiation of this study. Hence **there is an urgent need to monitor their actual status and other demographic factors associated with the species and the possibility of re-stocking**. As the species became almost locally extinct in Manas during last decade or so, the population at Kaziranga National Park has increased considerably due to better protection. There is enough scope for restocking individuals from Kaziranga as the protection has tightened up under the Indian Rhino Vision 2020 (IRV 2020) in Manas National Park recently; which will assist bringing back swamp deer population to a viable stage in their former range. The wild populations in Manas are in need policy and management schemes that can assure its genetic and demographic sustainability for the future. This can be achieved by re-introduction programs, providing animals without threatening their own genetic and demographic security.

This study essentially intended to diagnose the current status of swamp deer and a feasibility study of re-stocking in the Park; which will significantly benefit the managers and the policy makers to execute the probable re-introduction draft for the conservation of *Cervus duvauceli ranjitsinhi* gene pool in wild.

AIMS AND OBJECTIVES

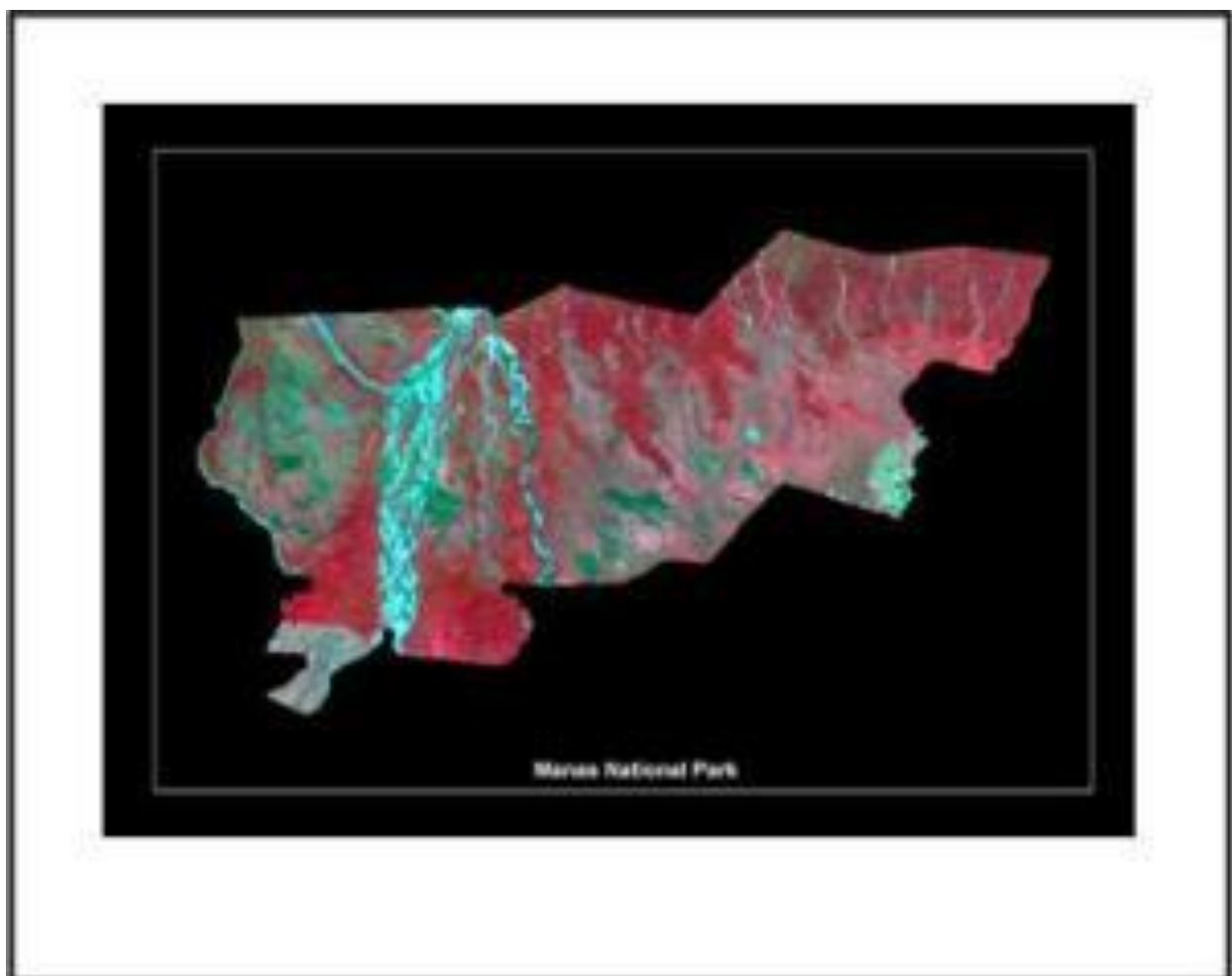
We primarily intended to assess the present status of swamp deer in Manas and re-stocking feasibility of the species in future. The following objectives are taken to secure the status and re-stocking of the species:

- 1) To assess the present status of swamp deer and other habitat variable associated with Swamp deer in the study area.
- 2) Formulate a quantitative strategy with risk assessment to prevent local extinction and achieve the objective of developing viable, self sustaining populations within the historic range in Manas.
- 3) Identify critical areas where swamp deer existed in the past which habitat might be brought back to viability to serve as sites for re-introduction of the species.
- 4) Community awareness on swamp deer conservation in the fringe areas.

STUDY AREA

Manas National Park (26°35'-26°50'N, 90°45'-91°15'E) with a total area of 500 sq km, is the core area of Manas Tiger Reserve, forms an important part of Eastern Himalaya Biological hotspot. It forms a part of Malayan and Indo-Bhutan realms and is a key conservation area in the *Jigme Dorji-Manas-Bumdeling* conservation landscape in the eastern Himalayan ecoregion (Wikramanayake *et al.* 2001). The Reserve is situated in the eastern duar and has extensive *Bhabar* and some *terai* areas, typical of Himalayan foothills. These *terai* like tracts are more or less flat. The natural gradient of the land is gentle sloping southward and area along the southern boundary are more flat and get water-logged during the rains.

The landscape experiences moist tropical to sub-tropical climate with up to 76% relative humidity. The mean annual rainfall is 3330 mm. The mean maximum summer temperature is 37°C and the mean minimum winter temperature is 5°C (WPSI, 2002). During dry season (Feb-May), there is congregation of ungulates in the newly emerged grass shoots ensuring the sighting possibility. While during this period most of the new grasses emerges in the grassland areas in the Park and herds frequents here for grazing. Besides, a broad good quality road network (148.38 km, *Courtesy: GIS Lab, Aaranyak*) inside the Park makes the study area to be covered regularly.



METHODS

The study has been divided into three major parts for convenience- discussion with locals, field survey, community mobilization and restocking draft preparation. Initially, discussions were made with ex-poachers, forest guards, higher officials and local people to establish the historical places of swamp deer in the past. Most of the interviewee has specified four places within the Park where swamp deers were sighted prior to the civil unrest viz. **Kuribeel, Burhaburi, Uchila** and the **Chorphuli** area in the central Bansbari range. While the eastern Bhuyapara range has also holds possibilities having swamp deer in the past.

A GIS map has been developed to identify the available wetlands in the Bansbari and Bhuyapara range using a satellite image (IRS LISS III, 2006). During the last dry six months (December, 08 - and May, 09) attempts were made within the 2 km periphery of two big wetlands Chorphuli and Kuribeel. The initial survey revealed the existence of a single herd, possibly having 10-12 individuals moving in the Chorphuli wetland and possibly covering the nearby Burhaburi grasslands. We attempted to follow the herd for direct assessment but inaccessibility due to dense swampy grassland made it impossible. However, their presence has been confirmed with fresh pellet available in the Chorphuli area and in the nearby woodlands.

Later in the April-may months, a camera trapping protocol was designed to assess the population or even having photographic evidences. The Field Director has provided five camera traps to the project team and five more camera traps were made available from Aaranyak. Although there was no planning for camera trapping in the project application, but the team has realized the need of camera trapping to trigger the policymakers with photographic evidences.

Vegetation assessment within the study site was also being carried out to assess the habitat status and to identify potential critical areas.

Pellet count method in a 25m x 2m block was followed to assess the relative abundance. The team has assessed 96 such plots in the Burhaburi and Kuribeel area to find swamp deer pellet and other ungulate species presence. This is giving a clear indication of plot based co-occurrence and avoidance of swamp deer with other ungulate species in the Park.

Furthermore, we laid 30 transects to detect swamp deer along with other ungulate species. The transects were laid with systematically selected random grids where there were records of swamp deer in the past.

We are carrying out a people's attitude survey in the fringe villages to find out their willing ness to bring back the swamp deer once more to Manas. However this findings yet to be analysed and we are hoping to assemble all these things in our final report.

PRELIMINARY RESULTS

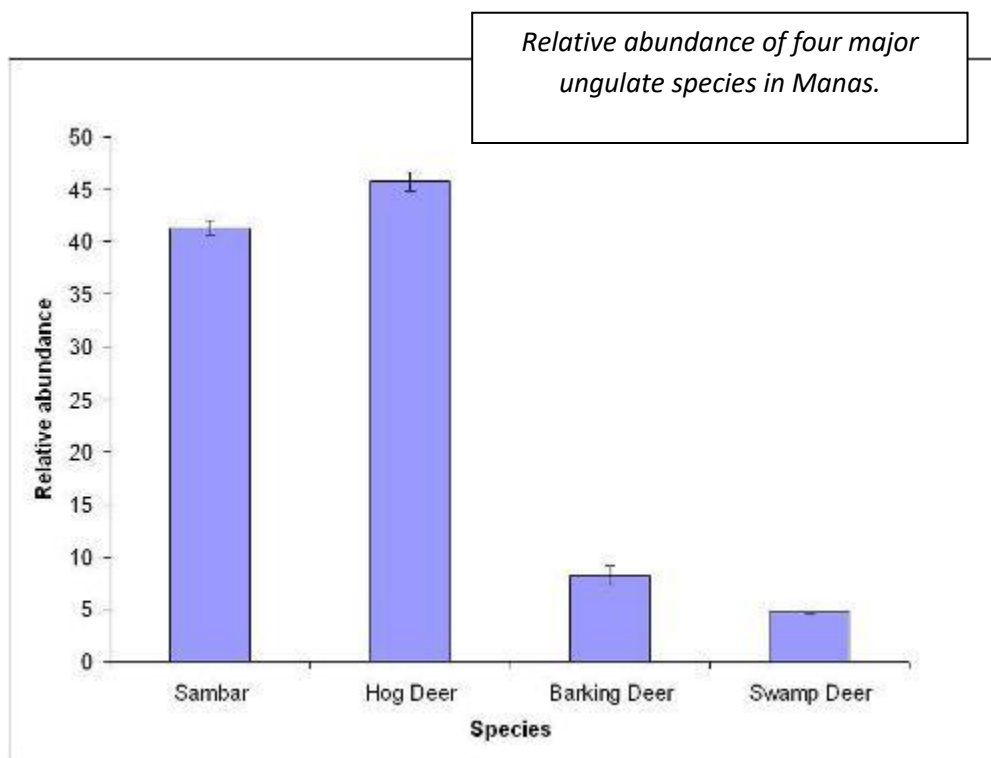
A total 948 pellet groups were detected in 96 rectangular plots, having an area of 25 m X 2 m each. Hog deer, Sambar, Barking deer and Swamp deer were the main ungulate species found apart from Wild Boar, Wild Buffalo and Indian Bison.

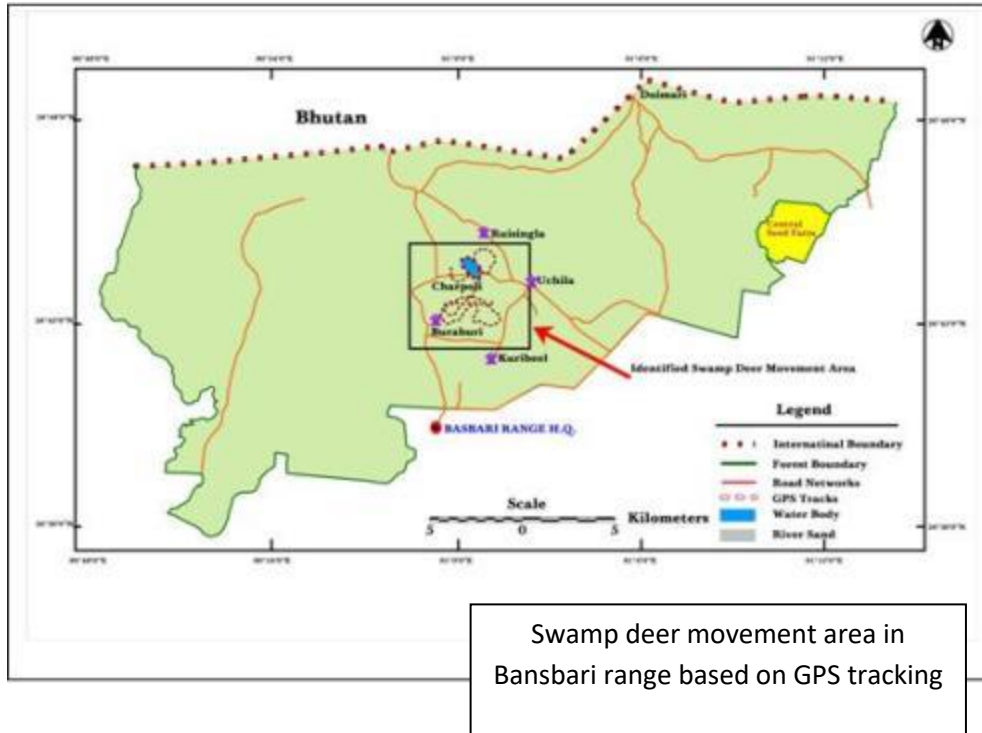
We sampled the entire Bansbari range and the Bhuyanpara range of the Park looking for swamp deer signs viz. pellets, hoof marks. All records of swamp deer signs were mapped to find out their movement using a GPS. Based on this information we installed camera traps to have photographic evidences. Due to limitation in number of camera we carried out the trappings in one phase till now and we are planning to carry out the trapping again in this winter. In the first phase, we installed 10 camera traps at 14 locations in the Burhaburi and Chorphuli parts of Bansbari range for a period of one month.

However our initial camera trapping effort did not provided any swamp deer photographs. A list of the animals that were captured by our camera is enlisted below.

We were able to recover two freshly killed swamp deer antler in the Bhuyapara range, which suggest their presence even in the eastern range as well.

So far, we were able to assess the existence of one herd consisting of 12-16 individuals in the Chorphuli area with our indirect evidences. There is report of sighting of two individuals near to the Kuribeel beat.





List of the Species that were captured in the camera traps

1. Elephant
2. Sambar
3. Hog deer
4. Barking deer
5. Wild boar
6. Gaur
7. Asiatic buffalo
8. Crab eating mongoose

FROM THE FIELD



*Habitat sampling in the swamp deer
past range*



*An existing wetland in the
Chorphuli area, swamp deer
pellets have been recovered
from this area*



*Fresh pellets of swamp deer in the
Chorphuli wetland*



Swamp deer habitat, amidst the tall grasses in Bansbari range



Swamp deer skull recovered from field in the Bhuyapara range



A fresh hoof mark of swamp deer

Swamp deer skulls recovered in Bhuyapara range





Interactions in the fringe village to assess their attitude on swamp deer



Few Shots from Camera Traps



