World Applied Sciences Journal 9 (4): 367-371, 2010
ISSN 1818-4952

First Cameras Trap Sighting of Critically Endangered Hispid Hare (*Caprolagus hispidus)* in Shuklaphanta Wildlife Reserve - Nepal

[1]Achyut Aryal and [2]Hemanta Kumar Yadav

[1]The Biodiversity Research and Training Forum, P.O. Box 299, Pokhara, Nepal &
Ecology and Conservation Group, Institute of Natural Sciences, Massey University, Albany, New Zealand
[2]National Trust for Nature Conservation (NTNC), Nepal

Abstract: The hispid hare (*Caprolagus hispidus*) is one of the globally critically endangered lagomorphs species. Historically the species was distributed throughout the southern lowland of Nepal to Uttar Pradesh, West Bengal to Assam of India, however, the present distribution range is unknown. Although we do not have good evidence of its distribution in different protected area of Nepal, it is presence in Bardia National Park and Shuklaphant Wildlife Reserve. Some studies have been conducted in the 1980s which examined status, distribution and general biological-ecological behaviors. Currently, the hispid hare has distributed in 38km^2 grassland of SWR, the southern fire watch tower of Shuklaphanta grassland has supported large number of hispid hare population. The present study has confirmed the presence of hispid hare in different grassland of the SWR with evidence of the first wild cameras trap photographs.

Key wards: Hispid hare · Presence and absence · Suklaphant wildlife reserve (SWR) · Grass land etc

INTRODUCTION

The hispid hare *(Caprolagus hispidus)* is one of the globally critically endangered lagomorphs species and it is distributed in the southern Himalayan foothills from Uttar Pradesh (India) through Nepal and West Bengal to Assam. It is listed as an endangered species by the IUCN Red Data List [3, 4, 5]. Previous studies on this species have been conducted in the Shuklaphanta Wildlife Reserve (SWR) [1, 4, 6] but lacking the studies and information from the other protected areas of Nepal.

We assume the world population of hispid hare is approximately 300 individuals throughout its distribution range scattered over fragmented landscapes. So the conservation of this species in the wild is very challenging particularly from the perspective of viable population and anthropogenic activities. Conservation and management of small mammals like the hispid hare has limited focus, species target research and conservation practices are also limited in Nepal. Continuous grassland burning for grassland management, invasion by woody perennials in grassland patches in the Shuklaphanta Wildlife Reserve (SWR) might become a serious threat for survival of wild populations of hispid hare. There was no direct evidence of the presence of hispid hare in the wild in SWR despite the work of Bell [1] and Yadav [6] confirmed the presence of hispid hares basis on pellet distribution. Therefore, we used both the camera traps and search pellets distribution to confirm the presence and distribution of hispid hare in SWR.

MATERIALS AND METHODS

Study Area: The Suklaphanta Wildlife Reserve (SWR) (latitude 28°. 49'-28°. 57'N & longitude 80°. 07'- 80°. 15'E),) is situated in the southern part of Far-Western Nepal in Kanchanpur District (Figure 1). It covers an area of 305 km^2. The reserve has prominent grassland patches and a large herd of swamp deer [3]. Initially it was gazetted as a hunting reserve, (area: 155 km^2) in 1976. Later, it was extended in the north-east section up to Syali River with an additional area of 150 km^2 in 1981. The reserve is bounded in the east and north by national forest, Lagga Bagga, a national forest in India, in the south and Mahakali River in the west. The aquatic and terrestrial habitats of SWR contain more than 665 plant species

Corresponding Author: Achyut Aryal, BRTF Nepal, P.O. Box 299, Pokhara, Kaski, Nepal &
Ecology and Conservation Group, Institute of Natural Sciences, Albany, New Zealand
E-mail: savefauna@gmail.com.

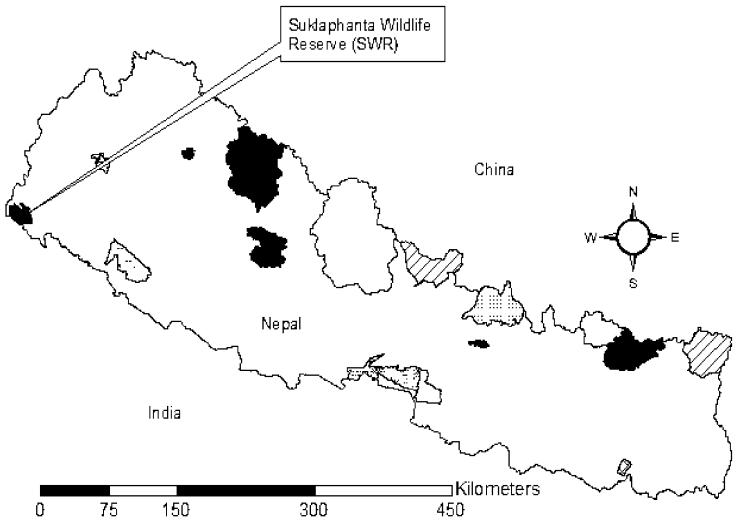

Fig. 1: Study area (SWR) with different protected area of Nepal (Photo© Achyut Aryal)

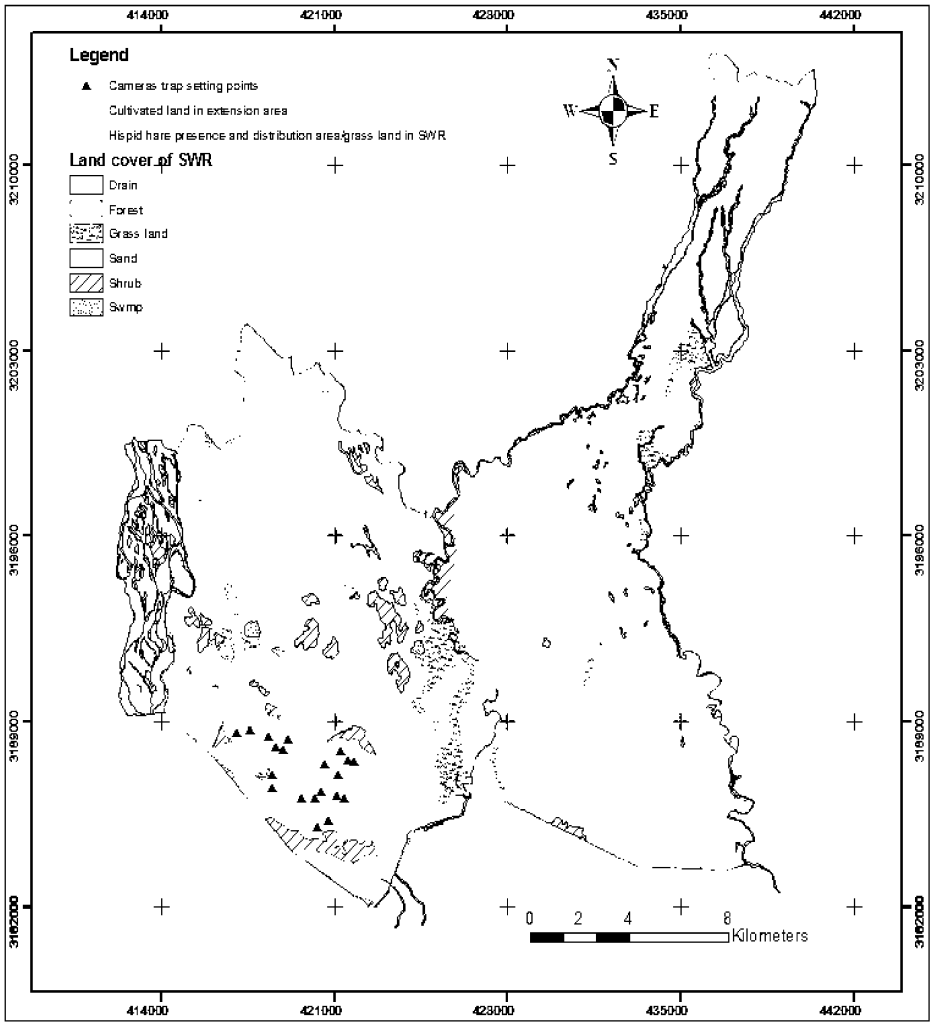

Fig. 2: Hispid hare distribution area and cameras traps sites in SWR

belonging to 438 genera and 118 families, which is the highest, reported for any given protected areas in Terai [3]. The climax vegetation is dominated by Sal (*Shorea robusta)*. Sal dominates the canopy layer with assemblages of *Terminalia talata, Terminalia bellirica* and *Lagestromea paraviflora*. SWR has provided prime habitat for Swamp deer deer *(Cervus duvauceli*), hog deer (*Axis porcinus)*, spotted deer *(Axis axis)* including endangered species such as hispid hare *(Caprolagus hispidus*), tiger (*Panthera tigris*), rhino (*Rhinocerous unicornis*), elephant (*Elaphus maximus*).

Methods: We conducted interviews with park staffs, SCP (Shuklaphanta Conservation Program) staffs, Buffer Zone people, field level staffs and biologists to gather information on the presence and absence of hispid hare. Then we moved into the field to scan hispid hare potential habitat and searched for hispid hare pellets throughout all grasslands patches of the reserve. Base on presence and absence of pellets, we confirmed the potential habitats of hispid hare. We used camera traps on potential hispid hare habitats. We had only 20 camera traps and distributed them throughout the potential habitat of hispid hare (Figure 2) and shifted camera traps to other different places in each 5 days. The main objective of setting the camera traps was to capture photographs of the hispid hares so we distributed it randomly. We started to set camera traps from 4 April to 18 April 2010 and commenced habitat survey starting from November 2009. We recorded GPS coordinates, habitat characters, dominated vegetation species in the study area with the reference to pellets distribution in the habitat using predefined data collection protocol. We used Arc GIS 9x software to prepare distribution maps.

RESULTS AND DISCUSSION

All together 97 people were interviewed during the presence and absence survey with the majority of respondents (>80%) expecting hispid hare to occur in the SWR.

Hispid hares were distributed in a 38km^2 grassland area of the SWR (Figure 2). The pellets of hispid hare were mostly found in the tall grasslands along Shuklaphnata area, Silalekh, 24 no Pillar, Barkaula area near Army post, Singhpur Phanta and DhaknaGhat, near the Mahakai river, Piparia, Rani lake areas (Figure 2). Surrounding the fire watchtower (Tintale Machan) area in the southern part of Shuklaphanta supported a large number of hispid hare (>30). All locations of hispid hare have similar ground

Fig. 3: First wild hispid hare taken from camera traps in wild at SWR (Photo © Achyut Aryal)

characteristics: flat terrain dominated by grass species like *Saccharum spontaneum* and *Imperata cylindrica*. The dominated vegetation species are important for the conservation of associated wildlife and vegetation [7] that means good grassland management practices ensure the conservation of hispid hare in natural habitat.

We obtained evidence of its hispid hare pellet distribution throughout the grass lands of SWR. Prior to our research using motion sensitive cameras, no other researchers had captured photographs of this species in the wild. Realizing this gap in the baseline biological data of this species, we initiated our camera survey in grassland areas of SWR. First, we confirmed the presence of hispid hare through its pellets distribution. It was really challenging for our team to obtain evidence of the presence of hispid hare in the wild, so we decided to fit camera traps randomly in different strategic areas of the SWR. We installed cameras in Shuklaphanta, Singhpur area and near the southern watchtower (Tintale Machan). We used 20 cameras from 4 April to 18 April 2010 and finally we succeeded to capture hispid hare in two cameras on 14-15 April 2010 near southern watchtower (Figure 3).

On the basis of pellet distribution (Figure 5), cameras traps (Figure 6) and interview with local staffs, we assumed the population of hispid hare is >150 individuals in SWR and we concluded that grassland fire (Figure 4) is main problem for survival of wild population of hispid hare in the area.

Fig. 4: Grass land fire in hispid hare habitat (Photo © Achyut Aryal)

Fig. 5: Pellets of hispid hare (Photo© Achyut Aryal)

Fig. 6: Camera traps setting in hispid hare habitat

Further research on its status, distribution and presence/absence survey should be carried out throughout the potential protected area i.e. Chitwan National Park, Bardia National Park and Shuklaphant Wildlife Reserve as well as conservation activities are more essential to change local people attitude towards the conservation of this species.

ACKNOWLEDGEMENT

We would like to acknowledge the DNPWC of the government of Nepal for providing permission to conduct this research. We thank Shuklaphant Wildlife Reserve (SWR)/Government of Nepal and National Trust For Nature Conservation (NTNC)-Shuklaphanta Conservation Project (SCP) for providing technical support and equipments (cameras traps).

We would like to thank Mr. Gunananda Pant for supporting field level data collection and Bikash Adhikari (BSc Forestry, fellow at Institute of Forestry, Tribhuvan University, Pokhara, Nepal) for his support in lab.

We thank to ZGAP Germany for financial support to conduct this study. We thank Dr. Mark Seabrook-Davison for first editing in the paper, Mr. Jagganath Singh (Warden of SWR), Kishor Maheta and other staffs of SWR for their support. We are thankful to our field level technicians (Mr. Mohan Dev Bhatta, Mr. Suman Malla and Shankar Lal Chaudhary) from SWR and NTNC-SCP for their valuable support in the field.

REFERENCES

1. Bell, D.J., 1987. Study of the biology and conservation problems of the Hispid hare. Final report. University of East Anglia, England.
2. DNPWC 2003. Royal Suklaphanta Wildlife Reserve Management plan 2003, Department of National Parks and Conservation, Nepal.
3. IUCN, 2010. IUCN Red List of Threatened Species. Version 2010.1. <www.iucnredlist.org>. Downloaded on 22 April 2010.
4. Maheswaran, G. and A.T. Smith, 2008. Caprolagus hispidus. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.1. <www.iucnredlist.org>. Downloaded on 22 April 2010.
5. Maheswaran, G., 2002. Status and ecology of endangered hispid hare Caprolagus hispidus in Jaldapara Wildlife Sanctuary, West Bengal, India. Bombay Natural History Society and Wildlife Conservation Society, New York.
6. Yadav, B., 2005. Status, Distribution and Habitat Use of Hispid Hare (Caprolagus hispidus) in Royal Suklaphanta Wildlife Reserve, Nepal. BSc Thesis, IOF, TU, Nepal.
7. Banjo, A.D., G.A. Otufale, O.L. Abatan and E.A. Banjo, 2006. Taboo as a Means of Plant and Animal Conservation in South-Western Nigeria: A Case Study of Ogbe River and its Basin. World Appl. Sci. J., 1(1): 39-43.