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RESEARCH ARTICLE

STATUS OF WESTERN HOOLOCK GIBBON *HOOLOCK HOOLOCK* IN THE KANGHMUN VILLAGE SAFETY RESERVE FOREST OF MAMIT DISTRICT, MIZORAM, INDIA

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ABSTRACT

The present population status survey of Western Hoolock Gibbon (*Hoolock hoolock*) was carried out at 10 specific localities in Kanghmun Village Safety Reserve Forest from November 2012 to March 2013 based on information gathered from the forest department and local inhabitants. The majority of the Gibbon groups (5 groups) was recorded by direct observations and only 1 group recorded by indirect (call count) observations. We recorded a total of 19 individuals in the 6 family groups during our population status survey. Of the total 19 individuals, 6 (31.57%) were adult males, 6 (31.57%) were adult females, 2 (10.52%) were sub-adults, 2 (10.52%) were juveniles, 3 (15.78%) were infants. The immature class formed by sub-adults, juveniles and infants include 7 (36.84%) of the total population. We estimated the average group size to be at 3.16 individuals ranging from 2 to 4 individuals. The estimated adult sex ratio (male: female) was 1:1. The *Jhum* cultivation (Shifting cultivation) is the main factor leading to the destruction and fragmentation of Gibbon habitat.

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INTRODUCTION

Hoolock Gibbon (*Hoolock hoolock*) is also known as “White Browed Gibbon” found in the forests of Northeast India and adjacent Bangladesh, Myanmar and China. Currently two distinct species of Hoolock Gibbons, the Western Hoolock Gibbon (*Hoolock hoolock*) and the Eastern Hoolock Gibbon (*Hoolock leuconedys*) are recognized. They usually swing from one branches of tree to another and are completely arboreal. The Western Hoolock Gibbon (*Hoolock hoolock*) occurs in the forests of Northeastern India, found in the following states : Assam, Arunachal Pradesh, Tripura, Meghalaya, Manipur, Nagaland and Mizoram. Whereas the Eastern Hoolock Gibbon (*Hoolock leuconedys*) found only in the state of Arunachal Pradesh and certain places of Assam (Chetry and Chetry, 2011). But the population of Hoolock Gibbon is declining rapidly day by day in Northeast India as well as its global distribution range (Kumar et al., 2013). Hoolock Gibbons are protected by law in India. But it is unfortunate that their conservation has not been taken up seriously till date. The communities living in or near the Hoolock Gibbon habitat depends on forest resources and bad economic conditions along with population influx play devastating role in respect of survival parameters of this species (Deb et al., 2014).

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The species is threatened by habitat destruction and fragmentation as a result of shifting cultivation, expansion of agricultural land, establishment of coffee estates, expansion of tea gardens, various kinds of developmental projects, logging, hunting for food and medicine, pet collection and illegal trade (Choudhury, 1990, 1991, 1996; Srivastava, 1999; Ahmed, 2001; Malone et al., 2002; Solanki and Chutia, 2004; Das et al., 2006; Walker et al., 2007). According to Choudhury (2006) Hoolock Gibbons are present in all the districts of Mizoram. The present study was carried out to understand the status, group size and composition of Western Hoolock Gibbon in Kanghmun Village Safety Reserve Forest of Mamit district.

MATERIALS AND METHODS

Mizoram is one of the states of Northeast India. The state of Mizoram (21°58'-24°30'N and 92°16'-93°25'E) is located in the Southern part of Northeast India. Mamit district is one of the eight districts of Mizoram and is located in the Northwestern part of Mizoram. The study area Kanghmun Village Safety Reserve Forest (Figure 1) falls under Kanghmun Forest Range (23°40'-23°22'N and 92°30'-92°40'E) of Mamit Forest Division. The Village Safety Reserves which are normally vicinity of the village. The Village Council are guided by the State Forest Act for maintenance of these reserves. The present population status survey of Western Hoolock Gibbon was carried out at 10 specific localities in

Kangmun Village Safety Reserve Forest from November 2012 to March 2013 based on information gathered from the forest department and local inhabitants.

recorded the exact count of each group size, composition, sex and exact location with GPS. Age and sex compositions of Western Hoolock Gibbon were classified into two major age

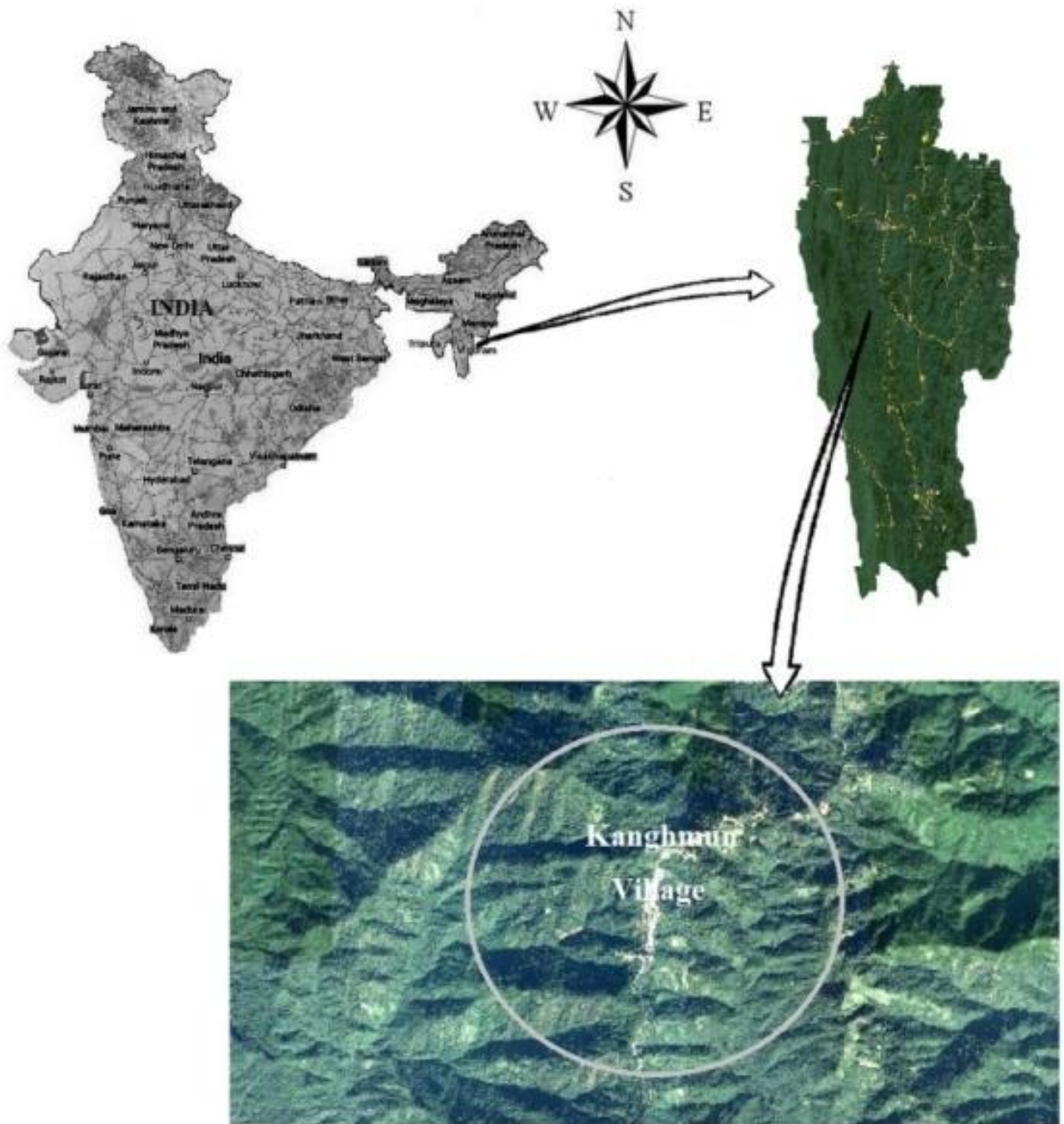


Figure 1. Location of study area

The population was estimated by a modified line transect method (Burnham *et al.*, 1980; NRC, 1981) depending upon the habitat and forest condition. Data were collected using both direct and indirect methods. The line transects were laid in a stratified random manner to cover all selected areas in the reserve forest. Three observers walked slowly covering an average distance of 10 km per day between 0600 hr to 1630 hr or until sunset. While sighting the presence of Hoolock Gibbon by direct or indirect methods, such as calls, branch shaking and sounds associated with locomotion and feeding, observers

categories, adult and immature, these were further subdivided into four subcategories, adult, sub-adult, juvenile and infant, based on morphological differences as described by Gupta *et al.* (2005).

RESULTS AND DISCUSSION

The Northeast region of India is unique habitat of diverse biota with a high level of endemism and Mizoram is part of both Northeast India as well as Indo-Burma biodiversity “hotspot”. Mizoram is a mountainous region and Mizoram has variegated

hilly terrain. The hills are steep and separated by rivers. Kanghmun Village Safety Reserve Forest of Mamit district is situated about 75 km away from the state capital Aizawl.



Figure 2. Hilly terrains of Kanghmun Village Safety Reserve Forest and habitat of Western Hoolock Gibbon



Figure 3. Western Hoolock Gibbon (*Hoolock hoolock*), Adult male

Table 1. Total number of groups and individuals with age-sex composition recorded from five surveyed areas in Kanghmun Village Safety Reserve Forest

GPS Locations	Adults		Immature			Total individuals	Mode of sighting of groups		Total group	Average group size
	M	F	SAD	JUV	INF		Direct(Visual)	Indirect(Song)		
N23°33.838'	02	02	-	01	01	06	02	-	02	3.00
E92°34.718'										
N23°33.843'	01	01	01	-	01	04	01	-	01	4.00
E92°34.777'										
N23°33.471'	01	01	-	01	-	03	01	-	01	3.00
E92°34.608'										
N23°33.474'	01	01	-	-	-	02	-	01	01	2.00
E92°34.615'										
N23°33.477'	01	01	01	-	01	04	01	-	01	4.00
E92°34.617'										
Total	06	06	02	02	03	19	05	01	06	3.16

M- Male; F- Female; SAD- Sub-adult; JUV-Juvenile; INF- Infants

The site had not previously been surveyed for Hoolock Gibbon. Hilly terrains of Kanghmun Village (Figure 2) offer a lot of challenges in the population status survey. Some part of the forest is completely inaccessible due to dense vegetation and hilly terrain. The population survey was carried out at 10 localities in the village safety reserve forest. Out of these from 5 localities a total of 6 groups were recorded (Table 1). The majority of the Gibbon groups (5 groups) was recorded by direct observations and only 1 group recorded by indirect (call count) observations. We recorded a total of 19 individuals in the 6 family groups during our population status survey. The group size and compositions of the Gibbon population with GPS locations are presented in Table 1. Of the total 19 individuals, 6 (31.57%) were adult males, 6 (31.57%) were adult females, 2 (10.52%) were sub-adults, 2 (10.52%) were juveniles, 3 (15.78%) were infants. The immature class formed by sub-adults, juveniles and infants include 7 (36.84%) of the total population. We estimated the average group size to be at 3.16 individuals ranging from 2 to 4 individuals. The estimated adult sex ratio (male: female) was 1:1. There are almost no

quantitative information on the population estimation of Hoolock Gibbon based on systematic studies in Mizoram. There are only mentions of their presence or absence from protected areas. But Hoolock Gibbon also present in outside protected areas particularly in Reserve Forests, Community Forests and Village Reserve Forests. According to Choudhury (2006) Hoolock Gibbon are present in all the districts of Mizoram. But the status of Hoolock Gibbon in Mizoram is still not conclusively known. Kanghmun Village Safety Reserve Forest is located in Mamit district and falls under Kanghmun Forest Range. According to Village Council, total 242 families residing in Kanghmun village and the village has population of 1300 of which 87% are *Jhum* farmers. *Jhum* cultivation (Shifting cultivation) is the traditional farming system in Mizoram and *Jhuming* is an integral part of the sociocultural life of Mizos. The traditional *Jhum* cultivation practiced by the village farmers leave open patches in the hill slopes, and the forest contiguity is lost. The *Jhum* is the main factor leading to the destruction and fragmentation of Gibbon habitat. Hoolock Gibbon (Figure 3 and 4) is threatened by anthropogenic activity and such kind of anthropogenic activity results fragmentation and degradation of forest in the form of canopy gaps and food availability in quantity and quality (Kumar *et al.*, 2009).



Figure 4. Western Hoolock Gibbon (*Hoolock hoolock*), Adult female

Hoolock Gibbons are protected by law in India but it is unfortunate that their conservation has not been taken up seriously till date (Deb *et al.*, 2014). The Government of India is not serious enough about the conservation issues affecting the country's only ape species (Chetry and Chetry, 2011). All the states of North East India have a huge conservation scope but despite of having conservation scope Hoolock Gibbon is facing enormous anthropogenic pressure ranging from habitat loss, encroachment and fragmentation throughout the entire distribution range making the species extremely vulnerable. The tree dwelling ape Hoolock Gibbon amazingly displays agility in swinging through the trees. But fragmentation of habitat restricts the movement of Hoolock Gibbon through the canopy in search of its food. Hoolock Gibbon is listed by the IUCN Red List of Threatened Species as "Endangered". The species is listed on Schedule-I, the highest schedule on the Indian Wildlife (Protection) Act in 1972 and also in Appendix-I of CITES. But most of the local village people are unaware about the legal status of Hoolock Gibbon. Based on our study, we recommend that government should start a community education program on Hoolock Gibbon. Community education program for local people could encourage the local community to participate in the conservation and management process.

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