

hotspot of Nepal and proposed Protected Area of Nepal. Panchase forest provide significant habitat for the different flora and fauna, mostly bat. This is a most potential site for bat research and conservation which has not been documented by earlier research work. Therefore this study was to explore the present status of bat in the wild, its distribution area and local people's perception towards conservation of bat in the Panchase area. Approximately 36,759 people who live in this area (Gurung, Brahmin/Chhetri, Bishwakarma, Nepali, Pariyar and some Newar and Magar) depend on the Panchase forest for firewood/timber/livestock grazing and illegal poaching. These activities directly affect the wildlife. They think, in case of bat it is value less and they don't seems to know its importance. The habitat of bat and its fruit plants are deforested by local people for fuel wood and timber, as well as many caves of Panchase area used by livestock header. They use fire in the cave for removing bat, and making shelter for their livestock and themselves (MDO/UNDP, 2006). Therefore, the present study was able to indentify the present bat species diversity and distribution in Panchase region of Nepal which will support to further management of those species in the region.

Panchase Forest and region

The Panchase Forest is located at the nexus of the districts of Kaski, Parbat and Syangja, in the western region of Nepal. Panchase Forest is a Biodiversity hotspot, a national forest, and thus owned by Government of Nepal. It is managed by the DFOs and the Ministry of Forestry and Soil Conservation (MFSC). The Panchase Forest is bordered by 10 Village Development Committees (VDCs) spread across Kaski, Parbat and Syangja Districts.

Panchase Forest

Panchase forest starts from 1450m to 2517m. The forest is sub-tropical and temperate mixed evergreen forest. The region is very rich in plants diversity. Red rhododendron and orchids of different species are the major blossoming plants. 400 species of orchids are found in Nepal. Out of which 112 species are available in Panchase area. Among them, 3 species are available nowhere in the world. The total area of Panchase forest is 45.93 sq km. The forest nearby the settlement and the lower part of Panchase forest has become community forest as per conservation policy. At

Table 1: Bat distribution: main potential areas

S.N.	Place	V.D.C.	Type of Places
1	Alapeshor Gufa	Thuli Pokhari- Parbat	Cave
2	Malangdi River	Pipal Gachi-Parbat	Canal of Malangdi River
3	Phalebans	Sanakha Pokhari-9, Parbat	Reservoir of Phalebans canal
4	Tuni Khola Kalidaha	Wangsing-9- Syangja	Den/ Cave
5	Dhundure Khola	Wangsing-2- Syangja	Sloppy Area
6	Tareveer CF	Arther Dandakharkha-6- Syangja	Sloppy Area/cave
7	Rapu Ward-4	Pamja Deurali- Parbat	Banana Leaf
8	Dableswara-5	Arther Dandakharkha- Parbat	Bamboo clump, Prunus tree
9	Bharuwaswara-5	Arther Dandakharkha-Parbat	Bamboo Clump
10	Tareja-4	Bange Phadke-syangja	Ceiling of live stock shed
11.	Harpan	Bhadaure Tamagi, Kaski	Cave
12.	Tamagi Village	Bhadaure Tamagi, Kaski	Cliff/cave
13.	Bhadaure Deurali	Bhadarue Tamagi, Kaski	Tree roosting

Table 6: Bat species diversity in Panchase region, Nepal	
Species	Scientific name
Asiatic Greater Yellow House Bat	<i>Scotophilus heathii</i>
Fulvous Fruit Bat	<i>Rousettus leschenaulti</i>
Himalayan Whiskered Bat	<i>Myotis siligorensis</i>
Horseshoe Bat	<i>Rhinolophus pusillus</i>
Andersen's Leaf-nosed Bat	<i>Hipposideros pomona</i>
Nepalese Whiskered Bat	<i>Myotis muricola</i>
Short-Nosed Fruit Bat	<i>Cynopterus sphinx</i>
Hodgson's Bat	<i>Myotis formosus</i>



Figure 2: *Rhinolophus pusillus* in Panchase Cave



Figure 3: Buffalo (4 months old) horn chewing by bats

present, 68.69% forest is under protected forest and the rest of the forest managed by community as community forest. There are two patches of Panchase protected forest, one is at and around the peak and the other is in Pumdibhumdi. The panchase protected forest located in Pumdibhumdi will be converted to community forest.

Methodology: Distribution Area of Bats (roosting) in Panchase region

The distribution area was identified on the basis of direct observation, cave survey, and from interview of local herders and other knowledgeable person (key informants). These preliminary information will be vital to find out potential bat roost areas, that will also be visited later to confirm the presence of bats. In addition, the local people in the area were formally interviewed to confirm any particular bat roosts in their area. Confirmed roosting localities were recorded using a Global Positioning System (GPS) unit. (In the case of inaccessible roosts, a GPS location was taken at the closest accessible point to the bat roost). Besides, villagers were asked about their attitude towards bats, formally and informally. Conclusions concerning potential threats were drawn out at formal and informal questioning.

GIS Distribution Map

Based on GPS Point and topographical map of the project area, bat distribution maps were prepared. Data were collected during field visit, a bat distribution map of Panchase region was created using Arc GIS 9.3. (Fig.1)

Results and Discussion

Bat Species and Distribution

Trees with roosting bats were distributed in all VDCs of Panchase region, every village of Panchase region has recorded bat in surrounding the house in late evening, especially summer time. Total 5 caves were identified but only three caves had bats in it. Other caves did not have bat because of fire inside the cave by livestock headers and MAOIST party (during political conflict time) for their shelter. Panchase forest harbours more tree roosting bat than caves roosting bats. Generally bats were distributed in all village area of Panchase region. Bats regularly come to villagers homes and livestock shed, and they are reported always chew the horns of young buffalo and cow, a reason why local people don't like bats.

Panchase region provides important habitat of bat diversity. Because of different microclimate in Panchase region there is high diversity of bat. On

the basis of field survey we found 8 species of bat in Panchase region, however, more bats should be present. An inventory is required to know the species present in this area. From the present study it can be concluded that only 10% of species found in this area has been recorded from Panchase region so future study on species diversity should be the priority research on bats for this region.

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