

## **Project Update: April 2020**

### **Winter Season**

Similar to the previous monitoring phase, the caves of Kaligandaki were surveyed again during the winter season from late January to mid-February 2020. We recorded the caves' micro-climatic properties and bat community assemblages. An Echometer Touch 2 Pro was used to record the ultrasound emitted by bats.

### **Caves microclimatic condition**

In all study caves, CO<sub>2</sub> concentration didn't exceed 600 ppm which was surprising given what we have recorded during the autumn season - Gupteshore cave had more than 7000 ppm from morning to evening and Laleshore cave had more than 2500 ppm inside, while, Alpeshore, Parbati and Pauwa had fairly equal CO<sub>2</sub> level.

In the morning, the temperature difference between the entrance and inside the cave remained 3-5°C in all sites. Temperature both inside the caves and at the entrances was fairly equal in daytime though slightly higher at the entrance. In the evening, the temperature at the entrance and inside the caves decreased.

In Gupteshore, Alpeshore and Laleshore cave, humidity was higher inside the caves than at the entrance (the difference was more than 20% in all caves) throughout the day while the humidity difference was below 5% in Parbati and Pauwa cave.

### **Bat species**

Contrary to what was observed in the autumn season, the colony size in all caves was relatively low. Only one individual was recorded from Laleshore, Alpeshore and Parbati caves while no bats were recorded from Gupteshore cave during the visit. However, a few individuals (fewer than 20) of *Rhinolophus* and *Miniopterus* species were observed to emerge at Gupteshore, Alpeshore and Parbati. This finding provided evidence of species not preferring these caves as hibernation sites in Kaligandaki canyon. As usual, *Cynopterus sphinx* was recorded from Parbati cave and *Rousettus leschenaultii* from Alpeshore and Tara cave.

### **Additional activities**

The school teaching programme was organised in a few schools to raise awareness about caves and bats conservation. Bat conservation posters, videos and research equipment (microclimatic sensor and acoustic device) were also demonstrated. A blog post on NeBRCU webpage was published mentioning how diverse Kaligandaki canyon is for bats and raising conservation issues. Further, the project's major findings were shared among forestry students of Tribhuvan University in Pokhara via an oral presentation.

### **Future Plans**

Only two seasonal monitoring sessions have been conducted so far and the project still has spring and summer monitoring to go. Most of the major conservation work needs to be done within the remaining monitoring phase. However, due to coronavirus impact, Nepal has been under lockdown for a few weeks and infection cases are increasing day by day which will extend the lockdown period. The time for spring monitoring is

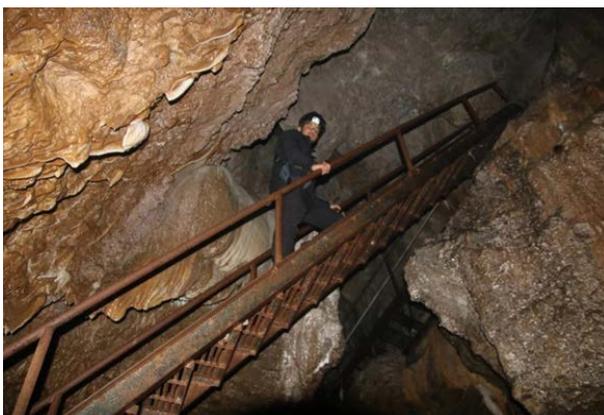
approaching, and in this situation, I'm regret to say the project activities will be postponed until the end of lockdown.



Left: Habitat surrounding Laleshore cave. Right: Habitat surrounding Parbati cave.



Left: Inside Laleshore cave. Right: Inside Alpeshore cave.



Left: Inside Alpeshore cave. Right: Measuring microclimatic condition in Gupteshore cave.



Left: Fire ignition trace in Parbati cave. Right: Plants growing inside Gupteshore cave.



Left: Researcher demonstrating acoustic device to school students. Right: Researcher demonstrating conservation poster to school students.

<https://nebrcu.org.np/truly-kaligandaki-canyon-is-hotspot-for-bat-diversity/>

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## Truly!! Kaligandaki Canyon is Hotspot for Bat Diversity

Its been more than two years since we have started exploring the valley of deepest gorge of the world, the Kaligandaki Canyon, situated beneath and in between the mountain ranges of Dhaulagiri and Nilgiri (>8000m a.s.l.). With aid of financial support from Rufford Foundation, UK, The Explorers Club, USA and equipment support from IDEA WILD, USA, we used both trapping and acoustic method of survey to understand the bat diversity in the hilly region of Kaligandaki landscape. After long years of endurance and exploration effort we successfully recorded more than 20 species of bats out of 50 above recorded from Nepal. Thus recorded bats comprises 2 species of fruit bats, 1 species of carnivorous bat and >17 species of insectivorous bats. The great significance of this study was it recorded the existences of the small bamboo bat, *Tylonycteris fulvula* (Sano Baase Chamero in Nepal) for the first time in Nepal which has been distributed all across the Indian Sub-continent. Learn more about *Tylonycteris fulvula* [here](#).



Blog post posted in NeBRCU website



Researcher presenting projects findings to forestry students in Institute of Forestry, Pokhara.