



Training and demonstration on bat detector

On 17 April 2019, 'Training and Demonstration on Bat Detector' was organized by Bat Friends Pokhara at Bat Cave, Pokhara Metropolitan city-16, Batulechaur. The programme was scheduled on the fourth day of National Wildlife Week celebrated on every first week of Nepalese New Year.

It aimed to familiarize the use of bat detectors among young undergraduate students from Institute of Forestry, Tribhuvan University, Pokhara campus. Nepal harbours 53 species of bats with high potentiality of new records (Acharya et al. 2010; Thapa 2014).

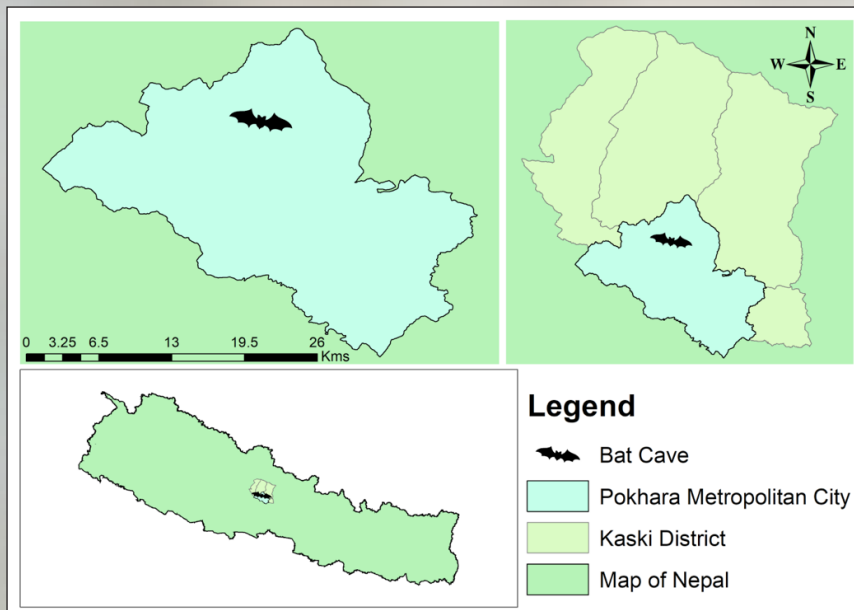
All bats except flying fox species (Family *Pteropodidae*) are laryngeal echolocators that navigate in the dark with the help of echolocation calls (Jones & Holderied 2007). Echolocation calls may be constant or frequency modulated signals given out by bats whose value is unique for each species.



Hipposideros armiger. © Sirish Dangi.



Inauguration of the programme. © Sirish Dangi.



Chamere Gufa (Bat Cave) located at Pokhara Metropolitan city, ward number 16, Batulechaur.



Organizer with a bat detector. © Sirish Dangi.

Most of the Nepalese bat species has been captured and identified with the help of mist nets and harp traps, a very stressful process to these creatures. However, very few surveys are conducted with bat detectors in Nepal. Bat detectors can be used to

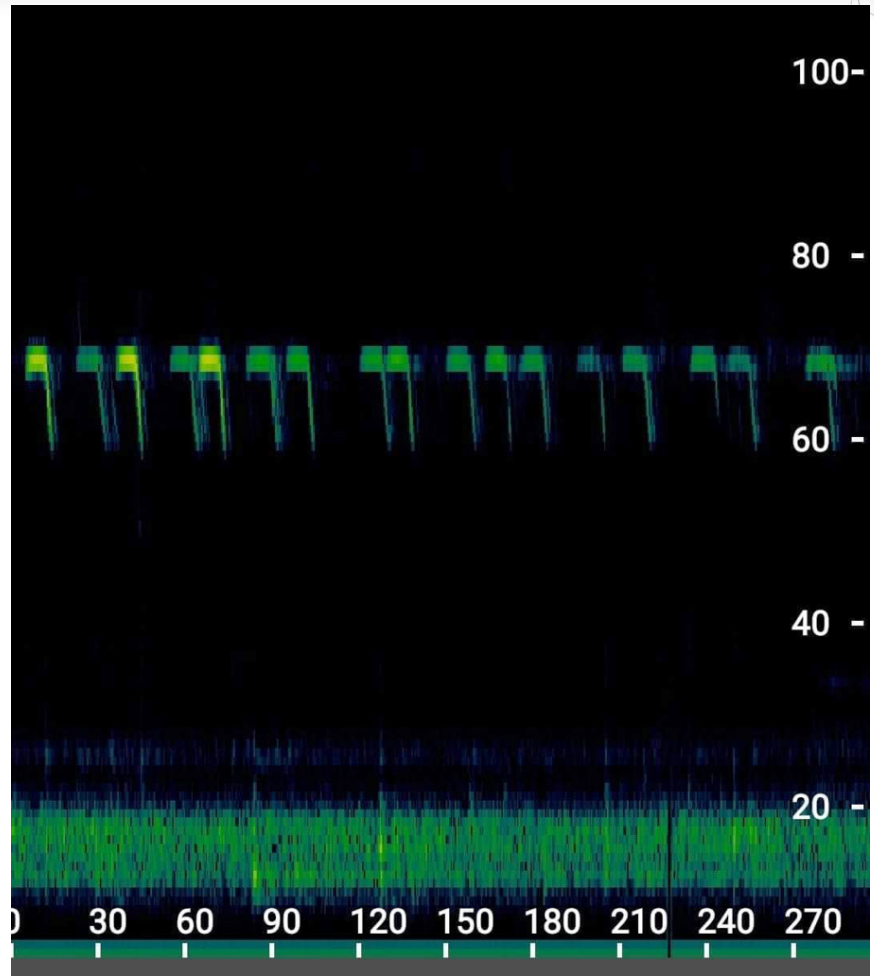
reveal presence, investigate behaviours, estimate and monitor the population trend of bats (Russo & Voigt 2016). Hence, the training was organized with a motto to encourage young students towards research on bats and acoustic surveys.

Bat Friends Pokhara, a membership-based green organization at Institute of Forestry, Pokhara is concerned on bat research, conservation, and awareness. It was established in 2006 by a group of students with keen interests on bats. Since then, it has been actively involved in various trainings and research works (Adhikari et al. 2008; Adhikari & Mohan 2008; Bist 2010; Bhattarai 2019; Bhattarai et al. 2021). Bat cave is one of the best show caves of Pokhara valley. It is managed by Shree Vindhya Vasini Secondary School, Pokhara 16, Batulechaur. Two species, *Rhinolophus luctus* and *Hipposideros armiger* are recorded from this cave including hibernating colony of *H. armiger* during winter (Baniya 2018). Bats migrate to nearby Mahendra cave for maternity roosting after hibernation.

The program was inaugurated at 1145 h by Mr. Sishir Poudel, a representative from the cave management committee. Altogether, 60 students participated in the programme. Participants were orally taught on bat



echolocation phenomenon outside the cave after formal inauguration of the program. A bat detector, Echo Metre Touch 2 Pro device was mounted on an Android device and operated by mobile application Echo Meter to record echolocation calls. Students were divided into three different groups and bat detector usage process through android application was demonstrated. Echolocation call recording procedure and species identification from echolocation diagrams were validated to the participants with the help of previously recorded samples.



Call frequency of *Hipposideros armiger*.

After theoretical demonstration, each group was allowed inside the cave one at a time. They were provided with a detector to record echolocation calls. Only one bat species was recorded with the call frequency of 68–70 kHz. The species was confirmed to be *Hipposideros armiger*. Since their hibernation period had ended, only about 300 individuals were observed roosting inside the cave. This programme maybe one of the pioneer bat detector trainings



Participants discussing on the echolocation call. © Sirish Dangi.



in Nepal. The training was highly interactive and participants were curious to learn more about bats and acoustic surveys.

We are grateful to all the participants and volunteers for effective and interactive participation. We would like to acknowledge National Wildlife Week Committee-2076, IOF for providing the opportunity; the cave management committee for coordination and permission throughout the program and Institute of Forestry, Pokhara campus for their continuous support and assistance.

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