

## Project Update – December 2021

We performed the following activities following the project objectives:

### Objective 1: Amphibian Fieldwork

The aim is to document amphibian diversity in the landscape. To fulfil this objective, we so far conducted 45 visual encounter surveys (VESs) in different locations between September and November 2021 in Nainital district. We also recorded frog and toad advertisement calls of three species using unidirectional microphones and digital audio recorders at night. Ecological data such as temperature, stream background noise, relative humidity, etc., were recorded as well to understand the ecological habitat preferences of the anurans. We also measured, photographed, collected buccal swabs and GPS locations of the recorded species and individuals. Interestingly, we found two species of frogs that looks like a new regional record for Kumaon region.



**Figure 1:** Project team collecting ecological data during amphibian visual encounter surveys (VES) in Indian Veterinary Research Institute (IVRI), Mukteshwar hill stream in Nainital district in the month of October 2021.

### Objective 2: Passive Acoustics Monitoring (PAM) technique to detect anurans:

We are in process of ordering Audio moth acoustic loggers for our field study requirement from Open Acoustics Devices, UK. Due to the rise in COVID-19 cases, it's a bit delayed but we should be able to receive the devices soon. These devices are to be used for detecting secretive and rare anurans and also inform us about the phenology of the species. Sites/habitats have been identified to install acoustics data loggers. Once the acoustics data loggers will arrive, we will deploy them along the selected habitats in the hill streams along altitudinal gradient within different land use types.

### **Objective 3: Data analysis and lab work**

Work of molecular analysis for proper species identification is under progress in the forensic laboratory of Wildlife Institute of India, Dehradun, Uttarakhand. Project team members Vishal Kumar Prasad and Kumudini Bala Gautam are performing DNA extraction, PCR and generating sequences of the collected samples of anurans from the project sites. Apart from this, team is also analysing bioacoustics data of recorded anurans for developing conservation action plan.

### **Objective 4: Outreach and awareness campaigns**

The project team has successfully trained around 12 local youths, three researchers from Pondicherry University (Tamil Nadu) and Bharti Vidyapeeth University (Pune) on amphibian night surveys from Peora, Simayal, Odakhan and Chafi villages in Nainital districts. We performed hands-on field training on amphibian identification, call identification, photography of amphibians using smartphones and basic cameras for 25 nature guides and NGO volunteers of Nature@Mukteshwar group, Centre for Ecology and Development in Nainital district and Biodiversity Research and Conservation Foundation, Dehradun. We also conducted a talk on Amphibian Conservation of Kumaon region in Chirping Woods resort in Mukteshwar with 30 nature tourist guides on September 30 2021.



**Figure 2:** Project team members organising a talk on – Himalayan Amphibian Conservation amongst stakeholders in Mukteshwar, Nainital in September 2021.