



Threats to White Bellied Heron and its Mitigation Measure along Stretch and Confluence of Phochuu and Mochuu, Punakha.

Progress Report I

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Funded by:

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Prepared by:

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1. Brief information:

Project title	Threats to White Bellied Heron and its Mitigation Measure along Stretch and Confluence of Phochuu and Mochuu, Punakha.
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Project leader	Tandin Dorji

2. Executive summary of the project

Punatsangchhu basin; Phochu and Mochhu are the oldest and previously the most abundantly used habitats of White-bellied Heron (WBH) in Bhutan (RSPN, 2021). Every year WBHs are observed along the stretch and confluence of Phochuu and Mochuu. However, it is known that the population of WBH along these river stretches are declining, only 2 individual was observed from Pochhu and none from Mochhu in the year 2020 (RSPN, 2020) and none was observed last year (RSPN, 2021). Therefore, our study aims to identify the threats to WBH that reside along the stretch and confluence of Pochhu and Mochhu, Punakha Dzongkhag, and accordingly provide threats mitigation measures.

3. Field visit and survey

The study area includes a total of eleven villages: Neptengkha, Wolathang, Samdingkha, Jara, Khawakha, Tempakha, Jongkholo, and Tsekha along the Phochhu river, and Lakhu, Bali and Zomlingthang area along the Mochhu river. These eleven villages fall under four Gewogs under Punakha Dzongkhag/district (Table 1 & Figure 1). Peoples' responses regarding the WBH threats were collected through questionnaire survey and interview that lasted for about 15 – 20 minutes for each participant. Local dialect was used to communicate and convey the questions to the participants. Participants were targeted through the use of snowball sampling technique. The survey questionnaire covered questions under four main thematic areas: knowledge on WBH, WBH sighting in the area, threat details and mitigation measures.

The team has completed the questionnaire survey in all villages except for Bali. We have recorded the responses from the questionnaire survey in excel sheet for analysis. During the questionnaire survey, participants were compensated with in-kind goods (Butter lamps) worth Nu. 250, as well as refreshments that included juice and “*doma-pani*”, areca nut, a common edible offered to strangers for their time and effort in Bhutanese tradition.

Apart from the questionnaire survey, the team made a field visit along Phochu and Mochhu while maintaining some distance from the riverbank. The sole purpose of the visit was to observe the activities held by people that may pose a threat to WBH. We found that the rafting was prominent along the stretch of the Zomlingthang area. Besides, we discovered that people gather along the riverbank where WBH resides (near Tsekha) on special occasions.

Table 1: GPS Locations of Sampling Site.

Dzongkhag	Gewog	Village	Coordinates	Questionnaire survey status
		Neptengkha	27.688392, 89.908812	Completed
		Wolathang	27.676847, 89.907882	Completed
	Toedwang	Samdingkha	27.636401, 89.865125	Completed
		Jara	27.622688, 89.868765	Completed
		Khawakha	27.616329, 89.870985	Completed
Punakha		Tempakha	27.634019, 89.861106	Completed
	Chubbu	Jongkholo	27.636901, 89.861370	Completed
		Bali	27.645733, 89.790676	Not completed
	Dzomi	Tsekha	27.607961, 89.872997	Completed
		Lakhu	27.626265, 89.826329	Completed
	Guma	Zomlingthang area	27.598558, 89.853640	Completed

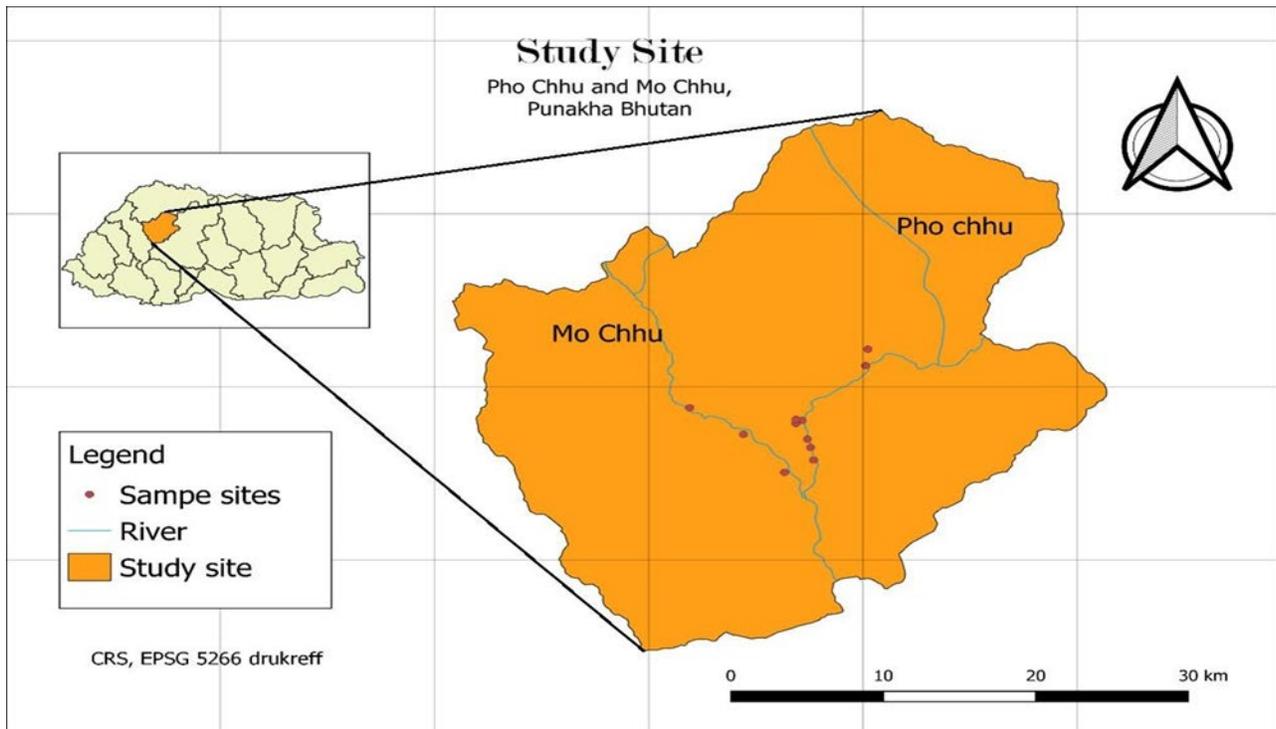


Figure 1: Map Showing the Study Site and Sampling Site.



Figure 2: Team Leader (Tandin Dorji) interviewing local people for questionnaire survey.

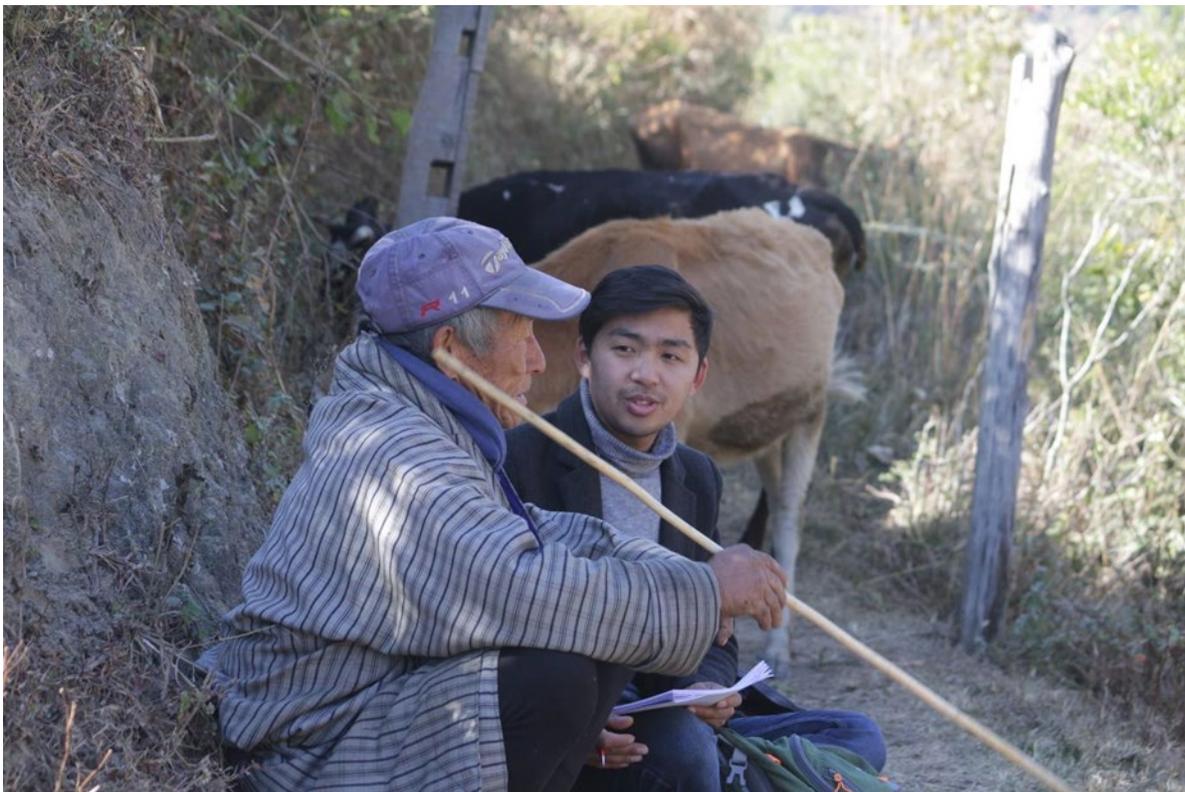


Figure 3: Team member (Kinley Dorji) interviewing local people for questionnaire survey.



Figure 4: Butter lamp (in-kind goods) given to interviewee as compensation.



Figure 5: Rafting observed in the study area during field visit.

4. Further plan

The team will collect the data from Bali village on 23rd February.

Upon the completion of data collection (questionnaire survey), the team will conduct data analysis using the analysis software R, version 4.0.4 (R Core Team, 2021). Descriptive analysis will be used to explore the total number of respondents and compare their responses. WBH threats in different areas will be graphed using frequency table and then will be compared among one another. Our study will also incorporate community analysis to compare the current study site with the site where WBHs still roost. We can compare the climate (temperature and precipitation), landscape favorability, and other relevant factors such as habitat pollution, competition and poaching. We can then correlate those factors with the threats identified by the villagers.

- In March 2023, the data analysis will be presented to the Rufford Foundation in the form of a progress report.
- The team will visit the study sites to disseminate and present the findings of the project to the local people through an awareness program. The awareness program will include a presentation on the threats to WBHs and mitigation measures.
- With the permission of the Rufford Foundation, a project outcome (written document) will be distributed to village leaders (local leaders). The findings will also be presented to RSPN and other conservation organizations (Department of Forest and Park Services) as baseline data to help with WBH conservation.