A REPORT ON

"Wings of Hope: Population Monitoring and Conservation of Critically Endangered Bengal Florican in Koshi Tappu Wildlife Reserve"

Submitted to

Humanitarian and Biodiversity Conservation Society
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1. Background

1.1. Introduction

The Bengal Florican (*Houbaropsis bengalensis*), a ground-dwelling grassland bustard, is categorized as Critically Endangered on the IUCN Red List and included in CITIES Appendix 1 (DNPWC, 2016; Bird Life International, 2023). Its global population ranges from 250 to 999 individuals across its geographic range, including Indian Sub-continent and Southeast Asia (Bird Life International 2023). In Nepal, it is found in the alluvial grasslands of Koshi Tappu Wildlife Reserve (KTWR), Bardia National Park, Chitwan National Park and Suklaphanta Wildlife Reserve (Inskipp and Collar, 1984; Poudel et al., 2008; Jha et al., 2018).

The Bengal Florican lays eggs on the ground under tall grass during their breeding season from March which lasts up to August, exhibiting breeding behavior in the early morning or late afternoon (Baral et al., 2002). Although males disappear at other times of the year, they are mostly conspicuous at the breeding season (Jha et al., 2018). Unfortunately, this breeding behavior coincides with the time of disturbance arising from human activities such as cattle rearing, and grass and dung collection, which greatly reduce the breeding success (DNPWC, 2016). Inattentiveness to Bengal Florican has resulted through the activities like plowing near the grasslands, cultivation, livestock venturing leading to the encroachment of grassland area (Baral et al., 2002). Furthermore, satellite tracking has revealed that these birds migrate from breeding areas to degraded farmlands near human-dominated areas after their breeding season (DNPWC, 2016). This migration makes them more vulnerable to disturbance, hunting, and collision with power lines, ultimately affecting their survival rate (Baral et al., 2013).

The small population of this species estimated under 100 individuals (Inskipp et al, 2016), combined with very low levels of conservation awareness among the local communities in Nepal, has led to an unprecedented decline in this species (DNPWC, 2016). Studies conducted in 2023 recorded a low number of just 23 individuals in the Koshi Tappu Wildlife Reserve (DNPWC, 2024). The lack of understanding regarding the species' ecology and distribution is a significant reason for this situation which is hindering the development of effective conservation strategies (Sovannary et al., 2022). This project objective aligns with the Nepal's 16th periodic plan to protect the endangered species and Bengal Florican Conservation Action Plan 2024-2033 to involve local people in the conservation movement.

1.2 Objectives

The overall aim of this project is to promote awareness among local communities and conduct population and monitoring of Critically Endangered Bengal Florican.

The specific objectives of this research work are:

1. To record the population distribution of Bengal Florican in the Koshi Tappu Wildlife Reserve of Nepal.
2. To record the threats to Bengal Florican in the grasslands of Koshi Tappu Wildlife Reserve.
3. To engage locals in capacity development training and educate students through school awareness program.

3. Methodology

3.1. Study Area

The study IS conducted in Koshi Tappu Wildlife Reserve, which harbors the highest population of Bengal Florican in Nepal (DNPWC, 2024). It is the Nepal's smallest wildlife reserve with the area of 176 sq. km. The 70% of the land is covered by "Phantas" (patches of short grassland and 16.6% of the KWTR is suitable for Bengal Florican (Baral et al., 2020). It is situated in the floodplains of the Sapta Koshi River in the south-eastern Terai. The reserve is the first Ramsar site of Nepal declared in 1987, which supports waterbirds, provides breeding ground for migratory birds and support 20 globally threatened bird species including critically endangered Bengal Florican (Baral et al., 2013). KWTR predominantly features grassland dominated by Typha spp and Saccharun spp, with small patches of Imperata spp, phragmites spp making it a suitable habitat for Bengal Florican (Baral et al., 2013). However, there have been rapid decline in the population of Bengal Florican, 47 individuals in 2014-2015 to 24 individuals in 2023 (DNPWC, 2024). To address this, the study will assess grasslands of the KTWR and promote Bengal Florican conservation within the local community through a science-based awareness program.

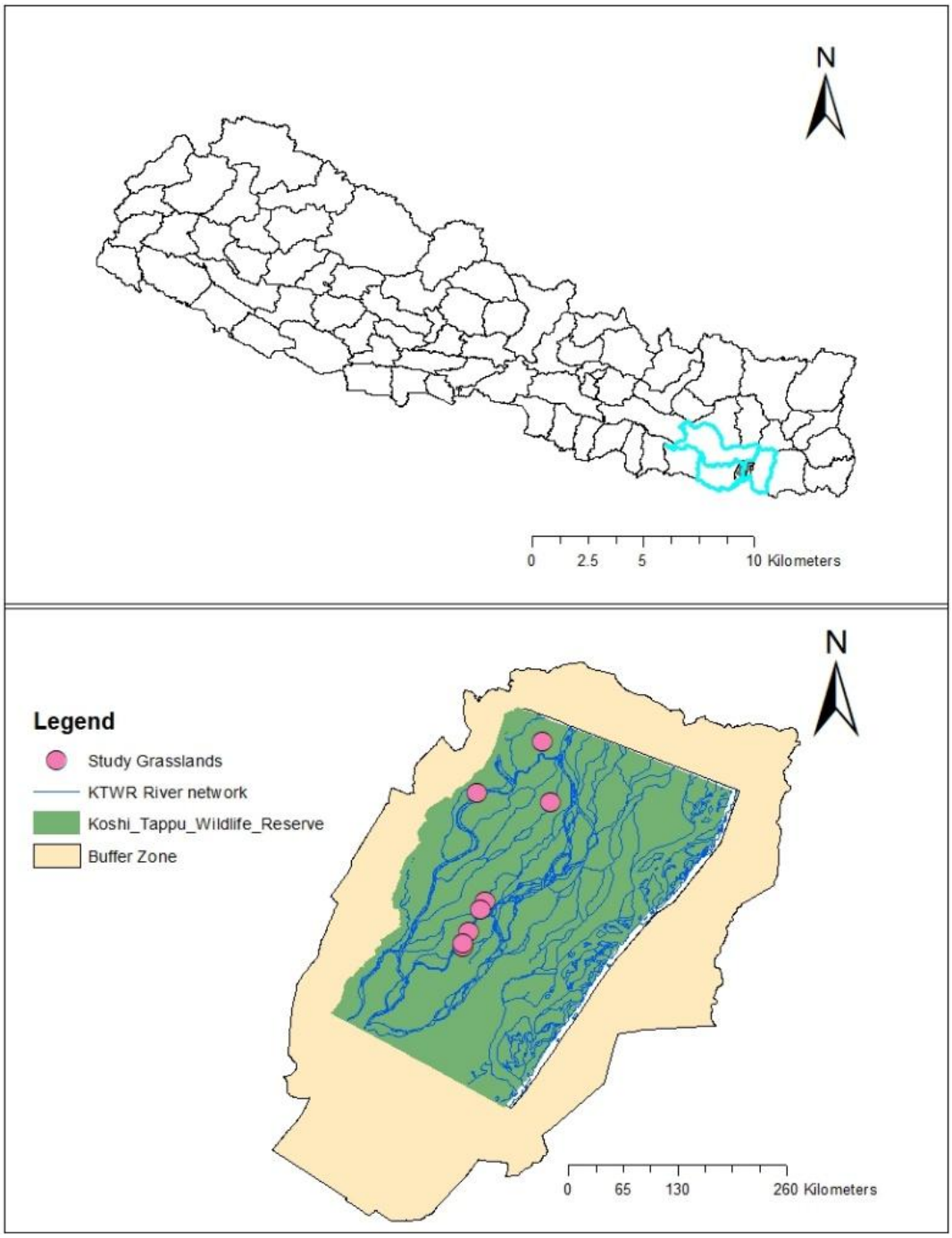

Figure 1: Map of the study area showing the grasslands of KTWR

3.2 Methods

A. Species monitoring

The habitats were surveyed during October, November and December 2025 which covered the major grasslands of KTWR, Bhagalpur, Pathri, Srilankan Tapu, Dharara Tappan, and Sisaulighat, where recent Bengal Florican sightings have been reported. The study area was surveyed early in the morning (6-9 am) and later in the afternoon (3-6 pm) (Baral et al., 2002). In the sweep count method, six team members walk on transects and record the species' presence and absence. Binoculars were be used to confirm the correct identification of the species, and all GPS locations and pictures of the birds were recorded. Bengal Florican shares its grassland habitat with many potentially large species like wild water buffalo and keeping safety issues in concern and maintaining minimal disturbance to Florican, direct observation through vantage points was carried out in the place where sweep and display count is not feasible. The survey was done from safe vantage points, such as vehicle rooftops by using proper binoculars and zoom lenses (Jha et al., 2018).

B. Conservation Awareness and Capacity Development

School program was conducted in 3 selected schools, including activities like Audio- Video Presentation, Bengal Florican Conservation Club Formation and Drawing Competition. In addition, basic monitoring and awareness training was provided to local community members, including ethnic groups dependent on forest and grassland resources.

C. Threat Identification

Threat identification was conducted through field observation and community consultation. During Bengal Florican monitoring surveys, researchers directly observed and recorded visible threats in the habitat. Key Informant Surveys were also conducted with local residents, nature guides, conservation officers, and bird experts associated with **Koshi Tappu Wildlife Reserve**. Information from observations and interviews was combined to identify major threats affecting the Bengal Florican and its habitat.

4. Results and Discussion

A. Population Monitoring and Threats Identification

The habitats were surveyed during October, November and December, which covered the major grasslands of KTWR, Bhagalpur, Pathri, Srilankan Tapu, Dharara Tappan, and Sisaulighat, where recent Bengal Florican sightings have been reported. No individuals were recorded during the survey period. During the October and November visits, the grasslands were dominated by tall grass, while grassland management activities were observed in December visits. Each site was visited thrice to increase the chances of sightings. Evidence of heavy livestock grazing including widespread dung deposits along with signs of grassland burning, was observed across some areas. Koshi flood (43%) and feral livestock grazing (37%) were identified as the major threats to habitat. Based on direct field observations and key informants' interviews, Pathri and Bhagalpur grasslands were identified as priority sites requiring urgent attention based on previous regular sightings, preferred grass and water availability.

Picture 1: Grassland Management by local people in December 2025.


Picture 2 & 3: Team members at work in Bhagalpur and Pathri grasslands.

Picture 4: Species Monitoring through vantage point. Picture 5: Wild Encounter during survey

Picture 6: Dung presence representing the heavy livestock grazing

B. Conservation Awareness and Capacity Development

A total of 500 students from the three schools nearby the grasslands were reached through audio-visual awareness presentation on Bengal Florican conservation. Baseline interactions indicated that 0% of students were aware of the Bengal Florican as a species found in the grasslands of Koshi or its conservation status prior to the awareness sessions. Following the presentation, 75 % of students actively participated in quiz discussions and 60% were able to answer conservation-related questions correctly demonstrating science-based increase in knowledge. 200 students voluntarily participated in a Bengal Florican drawing competition, conducted at junior and senior levels, with eight students (four per level) awarded to encourage engagement.

Picture 7: Presentation during school awareness program; Picture 8: Prize distribution of drawing competition

Picture 9: Bengal Florican Identification session; Picture 10: Students Participating in drawing competition.

Picture 11 & 12; Students coming forward to share their experience about Florican awareness program.

Picture 13 & 14: Pictures from school program.

Bengal Florican conservation club was established, and members participated in a field visit to the grasslands of Koshi Tappu Wildlife Reserve, including interactions with conservation officers of Koshi Tappu Wildlife Reserve. During the visit, students received field-based briefing on florican conservation and direct observation of grassland management practices. Bengal Florican conservation club members successfully conducted the one information sharing program in their school.

Picture 15: Grassland visit with the Bengal Florican Conservation Club Members.

Picture 16: Information sharing session in Koshi Tappu Wildlife Reserve.

C. Training Program

A total of 30 targeted participants, who depend on grasslands for day-to-day activities, received structured conservation training at Aqua Resort near the Koshi Tappu Wildlife Office. The program included 6 thematic sessions; 1. Bengal Florican Identification, 2. Habitat of Bengal Florican, 3. Ecology, Behavior and Breeding 4. Threats to Florican, 5. Local people and Florican Co-existence 6. Overview of Birds of Nepal. Along with this one hands on practical session on GPS and binocular use was given to the local people. Educational materials, including brochures and posters, were distributed to all of participants, providing standardized information on florican habitat, food resources, breeding period, and threats, thereby strengthening local knowledge and technical capacity for species monitoring and conservation. Additionally, during awareness raising brochures and posters were distributed to the local homestays near the Pathri and Bhagalpur grasslandsS

Picture 17: Poster and Brochure distribution during training program.

Picture 18 & 19: Introducing trainers to birds of Nepal and Gps handling.

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