

## OBC-FUNDED: CONSERVATION UPDATE

# Pallas's Fish-eagle *Haliaeetus leucoryphus* conservation project in Bangladesh

SAYAM U. CHOWDHURY, MOHAMMOD FOYSAL, NAZIM UDDIN PRINCE &amp; SYED S. INAM

## Background

The existence of a single population of the migratory Pallas's Fish-eagle *Haliaeetus leucoryphus* was identified by the very first satellite tracking study in 2013–2014 (Steele 2017), which established that the species primarily breeds in the Indian Subcontinent in winter and spends the summer to the north of the Himalaya, chiefly in Mongolia. Considering this significant new evidence of just a single migratory population, along with the ongoing loss of freshwater wetlands throughout its range, the species was uplisted to Endangered in 2017, with a global population estimated to number 1,000–2,499 mature individuals (BirdLife International 2020). Since Bangladesh is one of the last countries to support a significant breeding population of the Pallas's Fish-eagle, a detailed

assessment to determine its current status and conservation challenges in Bangladesh was essential. Therefore, we formed the Bangladesh Raptor Research and Conservation Initiative project to introduce science-based conservation actions not only for Pallas's Fish-eagle but also for other globally threatened raptors, such as Indian Spotted Eagle *Clanga hastata*.

With support from the Oriental Bird Club, we: 1) conducted large-scale community-based interview surveys to identify Pallas's Fish-eagle nests in Sunamganj and Netrokona districts of the Sylhet Division in north-east Bangladesh; 2) determined immediate threats to Pallas's Fish-eagles in the region; 3) studied its nesting habitat preferences and diet; and 4) initiated a nest guardian scheme.

**Plate 1.** An adult Pallas's Fish-eagle *Haliaeetus leucoryphus* at the nest, north-east Bangladesh, December 2017.





**Plate 2.** Adult and chicks at the nest, December 2017.



**Plate 3.** Bird's-eye view of a Pallas's Fish-eagle nest, December 2017.



**Plate 4.** Eagle chicks at the nest, January 2020.

### The project

Our approach was first to determine a suitable and practical method to identify all nesting locations of Pallas's Fish-eagles (Plates 1–4) in our study area, their immediate threats, and how to address those through conservation interventions. In order to achieve that we conducted a pilot study and identified a community-based interview survey (Plates 5 & 6) as the most appropriate method considering the traditional linkages between Pallas's Fish-eagles and local people, details of which are outlined in Chowdhury *et al.* (in prep.).

### Field surveys

We conducted a total of 955 interviews over an area of approximately 4,150 km<sup>2</sup> of seasonally flooded

freshwater wetlands and human-modified landscapes in north-east Bangladesh. We identified 53 Pallas's Fish-eagle nests including four clusters supporting 41 nests. Most nests (88.7%) were built in trees and 11.3% on communication towers (Chowdhury *et al.* in prep.). The majority (83%) of nests were located within 100 m of human settlements, suggesting that the species is somewhat tolerant of human presence and the associated disturbances. However, of the 830 respondents who positively identified Pallas's Fish-eagle, some (2.28%) mentioned that the owner of the nest tree had destroyed eagle nests as a result of predation on domestic chicks and ducklings by the adult eagles, 18% indicated that the Pallas's Fish-eagle nest tree in their area was cut down, and 26.6% reported substantial mortality of



NAZIM UDDIN PRINCE



SAYAM U. CHOWDHURY

**Plates 5 & 6.** Interview surveys in Sunamganj district, north-east Bangladesh.



SAYAM U. CHOWDHURY

**Plate 7.** Camera trap photo of adult feeding fish to its two young, February 2020.

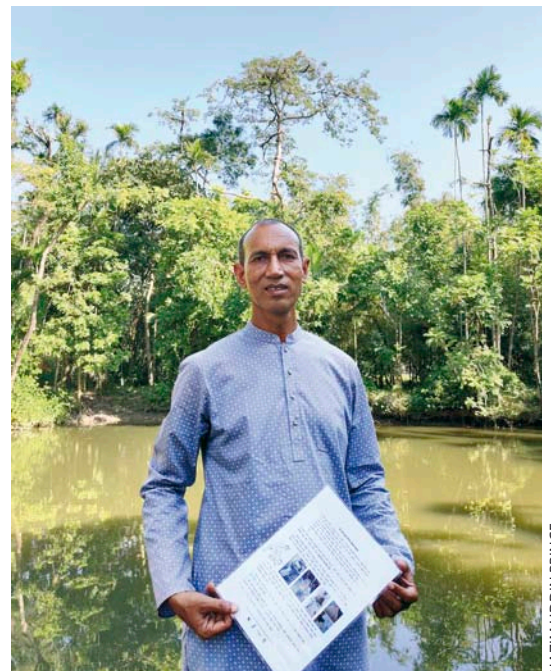


SYED S. INAM

**Plate 8.** Pallas's Fish-eagle nest protection workshop at Sunamganj in north-east Bangladesh, November 2020.

nestlings due to the pre-monsoon storms in March–April as a large number of nestlings fall from the nest during these storms and do not survive in most cases (Chowdhury *et al.* in prep.).

To further investigate the claims of domestic chick and duckling predation by Pallas's Fish-eagles, and to understand their diet during the breeding season, we installed camera traps in two nests and observed the eagles' behaviour for two weeks in January–February 2020 (Plate 7). Unfortunately, only one camera trap returned results, from which we were able to identify 32 food items that were consumed by three chicks between 28 January and 10 February 2020. We identified 11 rodents and 21 fish, including *Labeo gonius* ( $n = 7$ ), *Systomus sarana* ( $n = 3$ ), *Mastacembelus armatus* ( $n = 3$ ), *Wallago attu* ( $n = 2$ ), *Channa marulius* ( $n = 2$ ), *Labeo* spp. ( $n = 2$ ), *Labeo rohita* ( $n = 1$ ) and *Mystus gulio* ( $n = 1$ ). It is interesting to note such a high proportion (34.37%) of rodents, which indicates that these are likely to be an important food source. However, it is not possible to state whether this is a typical pattern or just the diet of this particular pair (since our observations are limited to one nest). More investigation is needed.



NAZIM UDDIN PRINCE

**Plate 9.** An eagle nest guardian in front of the nest, January 2020.

### Conservation interventions

Based on the findings of the research component of the project outlined above, we initiated a nest guardian scheme in villages around Sunamganj city. This pilot project comprised the identification of at least one nest guardian for each nest and organising workshops at nest locations (Plate 8). During the workshops, we invited the nest guardian (typically the owner of the nesting tree) (Plate 9) and members of nearby households and gave them training on chick handling and rehabilitation, in case any chicks fell from the nest during the pre-monsoon storms. We also distributed illustrated pamphlets covering this training. In addition, during the workshops we highlighted the importance and benefits of healthy wetland ecosystems, the global status of Pallas's Fish-eagles and their historical and cultural connections with local communities. All nest owners under the pilot project agreed not to cut down the Pallas's Fish-eagle nesting trees, without any incentive.

### The future

We plan to expand our conservation interventions in other villages of the Sunamganj and Netrokona districts that support Pallas's Fish-eagle nests. We also aim to continue nesting surveys to identify nest locations outside our study area and monitor known nests to understand breeding success and foraging ecology, and correlate these with habitat characteristics. This can be achieved by comparing nesting pairs located in healthy and degraded wetlands in human-dominated landscapes and factors that influence breeding success and juvenile dispersal (Chowdhury *et al.* in prep.). The findings

of this proposed research will help us to identify key landscape features important for the Pallas's Fish-eagle and formulate long-term conservation actions at a broad scale. In addition, we are interested to initiate a colour-marking scheme targeting young birds at the nest, which will allow us to monitor individuals, verify site fidelity and formulate population estimates.

### Acknowledgements

We thank the Oriental Bird Club for supporting our fieldwork. We are grateful to Rhys Green and Rob Sheldon for their comments on our study design. We also thank Shafiqur Rahman for volunteering during fieldwork and Bangladesh Forest Department for their support and encouragement.

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**Sayam U. Chowdhury, Mohammad Foysal,  
Nazim Uddin Prince & Syed S. Inam**  
Bangladesh Raptor Research & Conservation  
Initiative  
House 16/C, Tallabag, Sobhanbagh  
Dhaka - 1207, Bangladesh  
Email: sayam\_uc@yahoo.com