



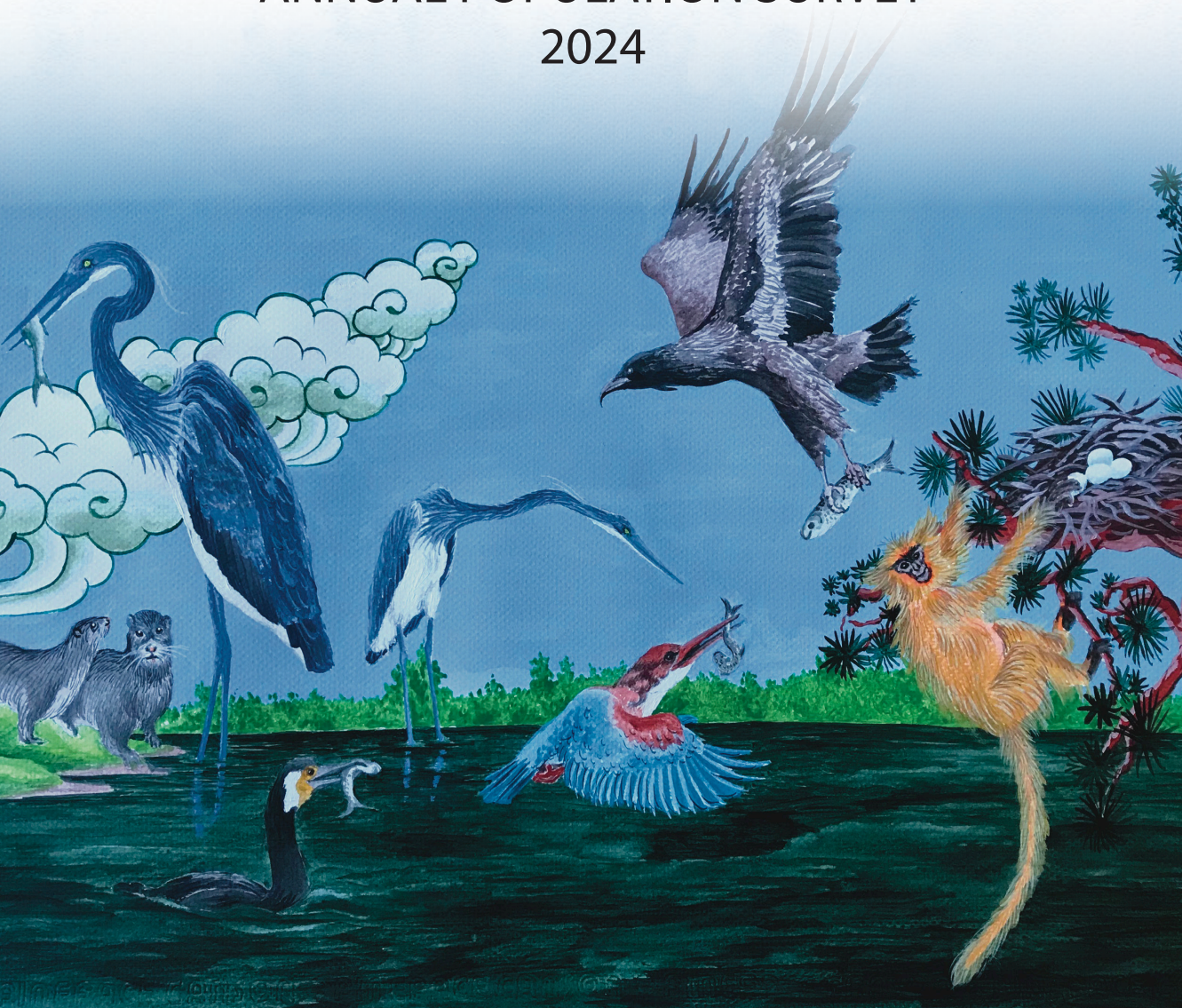
REPORT

WHITE-BELLIED HERON

Ardea insignis

ANNUAL POPULATION SURVEY

2024



Published by:
Royal Society for Protection of Nature, Thimphu, Bhutan
Copyright © RSPN, 2024

CONTENTS

- 01 Summary
- 02 Introduction/background
- 03 Materials/methods
- 05 Data analysis
- 06 Results
- 13 Wildlife diversity in White-bellied Heron landscape
- 14 Threats to White-bellied Heron and other wildlife
- 15 Acknowledgements



Summary

For the year 2024, an annual survey of White-bellied Heron (WBH) was conducted from 1st to 5th March across the major river basins in Bhutan; Wangchhu, Punatshangchu, Mangdechhu, Kuri-gongri, and Jomori. These major rivers with its tributaries are identified as either currently occupying populations or known as potential habitats of WBH. A survey this year observed the presence of 25 individuals of WBH in Bhutan, including three herons that are currently being raised at the White-bellied Heron Conservation Center. The annual nationwide population count enlisted the efforts of more than eighty surveyors from the Department of Forests and Park Services (DoFPS), Local Conservation Support Groups (LCSG) and the staff of Royal Society for Protection of Nature (RSPN).

Each WBH sighting during the survey was carefully documented, capturing details such as, date, time, GPS location, count, age, activity, and prevailing weather conditions. Additionally, all encountered wildlife species were recorded to assess the diversity and population trends of associated species within the WBH landscapes. The data collection process was facilitated through the use of the Epicollect5 digital platform, allowing for even offline recording, uploading to a central database, and subsequent analysis.

The count this year observed almost 55% of the total sightings from the Punatshangchhu basin, followed by Mangdechhu and Wangchhu basins, each contributing 18% and 14%. The 9% of the total population of the WBH was found present in the Phibsoo Wildlife Sanctuary. However, no WBHs were sighted during the population survey period from Kuri-gongri river basin and Jomori in eastern Bhutan. During the survey period, surveyors also recorded four active WBH nests. One in Mangdechhu basin and three in Punatshangchhu basin. Overall, the survey documented a total of 207 bird species and 18 mammal species, providing valuable insights into the diversity of the species present in the WBH landscape.

The WBH population survey was first initiated 2003 and it is an ongoing annual event coordinated by the RSPN with the support of DoFPS and LCSG members in conducting the survey. This concerted effort is significant for the WBH conservation. Today, WBH conservation is not only as a flagship program but also as a fundamental aspect of RSPN's core mandate aimed at securing the species' genetic diversity and facilitating population recovery in Bhutan and the region.

Introduction/Background

White-bellied Heron(WBH), is a species of bird found only in the eastern Himalayan region, extending from Bhutan and northeastern India to northern Myanmar. The bird is at high risk of extinction with a small and fragmented population remaining in these three countries. The International Union for Conservation of Nature (IUCN) uplisted the species to Critically Endangered status in 2008 due to its rapidly declining population, exacerbated by several factors of threats related to freshwater rivers. As of recent records, the WBH population is only left with fewer than sixty individuals remaining in the world. From the remaining global population, Bhutan is home to more than 45 per cent. This report provides an overview of its current distribution, recent sightings and population status recorded during the annual population count carried out in Bhutan.

The Royal Society for Protection of Nature (RSPN), in collaboration with various stakeholders, has undertaken comprehensive conservation efforts aimed at understanding the WBH's distribution in Bhutan, population trends, and behaviour. The conservation initiative to save WBH was started in 2003. Today, the various conservation initiatives encompass habitat monitoring, population survey, restoration of degraded habitats, threat mitigation, documentation of biological behaviours and extending the conservation effort even to the associated communities residing along the WBH landscape . Today, the conservation efforts in the wild have been mainly adopted as a community-based conservation approach, integrating local communities and relevant stakeholders into threat mitigation strategies while concurrently incentivizing communities livelihood opportunities. Besides regular monitoring of WBH in the wild, RSPN has also initiated conservation breeding program in 2021, building upon the successful pilot project of ex-situ conservation conducted in 2011.

The annual population survey carried out in Bhutan serves as an important mechanism for monitoring WBH population trends in Bhutan. The surveyors have conducted the population survey at the onset of the WBH breeding season annually since 2003 for five days. The data collection is facilitated through the utilization of the mobile application Epicollect5. Apart from WBH sightings, the surveyors document the presence of other wildlife species within WBH habitats, providing valuable insights into overall biodiversity dynamics. The collected data not only aids in understanding current population trends and distributions but also informs the development of conservation strategies and prioritization of mitigation activities.

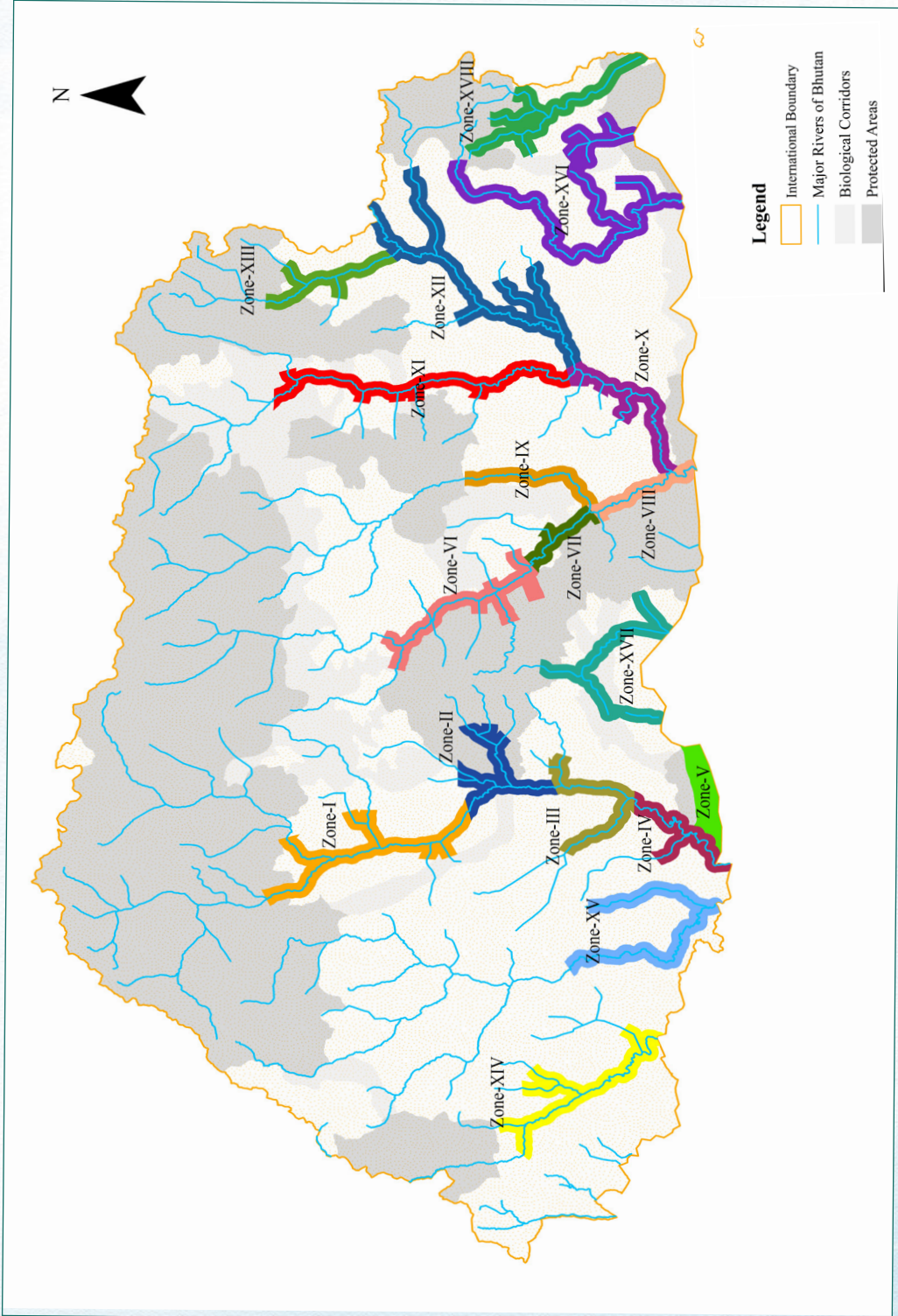
Materials/Methods

There are 18 zones delineated for the WBH annual population survey and also for constant habitat monitoring in Bhutan. These zones are identified mainly based on major river systems known for occurrence and as well as potential habitats for WBH in Bhutan. The zones serve as the primary units of analysis, facilitating systematic population assessment. The altitudinal variation across these zones, ranges from 150 m to 1800 m above sea level, indicating diverse ecological conditions. Within these respective zones, the surveyors explored the area continuously over five days looking for the WBH and the possible occurrence of a nest.

In each of the zones, surveyors mostly grouped in pairs or more conduct the survey. Surveyors are expected to arrive at the survey site one day early from the actual start survey day. The survey is conducted emphasizing morning and evening periods, when WBH activity peaks, where surveyors scanned along the potential foraging ground for WBH and river confluences to have a higher probability of sighting. During the mid-day, surveyors usually focused on scanning the tall trees and big rocks along the rivers, as herons usually remained perched on these during the daytime.

For the data collection, surveyors relied on the Epicollect5 mobile app. Before the conduct of the survey, they were all trained virtually. The Epicollect5 app facilitated real-time data entry, capturing observations of WBH sightings, other wildlife encounters, and potential threats. Surveyors also record essential metadata, including observer details, geo-coordinates, time, weather conditions, and observation frequency.

To ensure data accuracy, a collaborative platform, such as a Telegram group, enabled consultation with experts for species identification and communicating among different groups. Surveyors, communicate through this group instantly while sighting WBH and other species. The photos uploaded in the group by the surveyors also serve as important evidence of sighting. Additionally, during data cleaning and analysis, observations were reviewed to validate species lists, with input sought from individual surveyors for clarification on doubtful or rare sightings.



Map 1: Map of prioritised habitat zones for White-bellied Heron population survey.

Data analysis

Following the survey period, surveyors were provided a few days to upload all the data gathered. After this, data entry is restricted and the data is downloaded in CSV format. Data cleaning and initial analysis were conducted using Microsoft Excel, facilitating data validation and organization. Subsequently, WBH population trend analysis over time for different zones was performed using R, a statistical computing environment. Distribution mapping of WBH zones and other wildlife encounters was achieved using GIS software, enabling spatial visualization of survey results.

The data collected were segregated by zones and is filtered and categorized into four groups for further analysis; WBH observations, other wildlife sightings, survey start and end times, and location updates with threats. WBH observation data were utilized to determine population counts, with observations grouped by zones, and dates to assess the presence of WBH individuals in specific areas. To avoid double counting, observation timestamps, GPS coordinates, and remarks were considered. The highest count of individuals observed within a zone over five survey days was recorded as the final WBH count for the country. GPS locations of surveyed areas and observed species facilitated distribution mapping.

For other wildlife species, similar analytical approaches were undertaken. However, it was not segregated into zones and the result is presented representing whole WBH landscape. The incomplete or doubtful entries were removed, and species richness, individual counts, and threats were identified.



Results

WBH Population Count

The survey conducted along river stretches in Bhutan encompassed a significant effort, with a total of 2038 data entries recorded over five days. Among these entries, 4% (86 sightings) were of WBH sightings, 40% (806 sightings) pertained to sightings of other wildlife species, including birds and mammals, and the remaining 56% (1146 entries) were associated with starting, updating locations, and concluding the survey. The details of sighting locations and the extent of coverage during the survey are visually depicted in the map Fig. 2, providing a spatial representation of the survey findings and enhancing the interpretability of the results.

This year, from the survey carried out, a total of 25 WBH were recorded in Bhutan, comprising 22 individuals observed in the wild and 3 individuals from the WBH conservation center. The wild population were found distributed across the major river basins of Punatshangchhu, Mangdechhu, and Wangchhu. The highest number of WBH individuals was observed in the Punatshangchhu basin, accounting for almost 55% (n=12) of the total sightings, followed by Mangdechhu and Wangchhu basins, each contributing 18% (n=5) and 14% (n=3). The 9% (n=2) of the total population of the WBH was found present in the Phibsoo Wildlife Sanctuary.

Comparative analysis with data from the previous year (2023) reveals a drop by two WBH individuals in Bhutan. Specifically, there has been a drop of one individual from Wangchhu and two individuals from Punatshangchhu basin. However, there was an increase of one individual from Mangdechhu river basin with a lone individual sighted from Chamkharchhu river. The sighting record of two individuals from Phibsoo Wildlife Sanctuary remained the same.

In terms of the WBH distribution pattern in Punatshangchhu, there is a significant shift compared to the previous year(2023). In the previous year, there were six individuals recorded from zone III and four individuals from zone IV, however, this year's survey recorded only four individuals from zone III and two individuals from zone IV. The maximum distribution of WBH was observed from zone II with 5 individuals recorded comparison to 3 individuals recorded in the previous year. The number of individuals recorded from zone I remained the same (n=1). Overall, the analysis of population trend of WBH in each of the zones in Punatshangchhu indicates that there are continuously declining populations in Zones I. Similarly the drop in numbers were observed from Zone III and IV. However there is population growth in Zon II.

In the Mangdechhu basin, there are four Zones identified (Zone VI, VII, VIII & IX) for WBH distribution. The count of 1 individual from Zone VI and 3 individuals from Zone VII remained the same as the previous year(2023). However, the observation of one individual was made from zone IX, which was not recorded in the previous year's(2023) survey. No record was made from zone VIII, even though, there was a record of WBH from the area just three months ago before the survey was conducted. No significant increase or decrease in WBH population observed in Mangdechhu basin.

The Wangchhu basin has only one zone identified for WBH distribution, Zone XV. Under this zone, there are two rivers identified to be known for WBH occurrence from the previous year's survey conducted, Lower Wangchhu river and Jigmechhu. This year's survey recorded 3 individuals from Jigmechhu and no individuals were recorded from lower Wangchhu. In the previous year, there were two individuals recorded from each of these two rivers totalling 4 individual records from this Zone.

Table 1: White-bellied Heron count from different zones recorded during the population survey, 2024

	WBH Habitat Zones	Places	Count
In-situ	Zone - I	Phochhu, Mochhu, Dangchhu	1
	Zone - II	Adha, Nagzhina, Hararongchhu, Kisonachhu and Taksha area	5
	Zone - III	Burichhu, Sunkosh-Dagachhu, Relangthang, Wakletar, Balwani, Malbasey, Kalikhola and Middle Punatsangchhu area	4
	Zone - IV	Lhamozingkha, Rangae and Gumti Lower Punatsangchhu area	2
	Zone - V	Phibsoo Wildlife Sanctuary	2
	Zone - VI	Berti and Upper Mangdechhu area	1
	Zone - VII	Goling and Tsaidang area	3
	Zone-IX	Chamkharchhu	1
	Zone - XV	Jigmechhu and Wangchhu area	3
Ex-situ	WBH Conservation Center (WBHCC)		3
Total Count			25

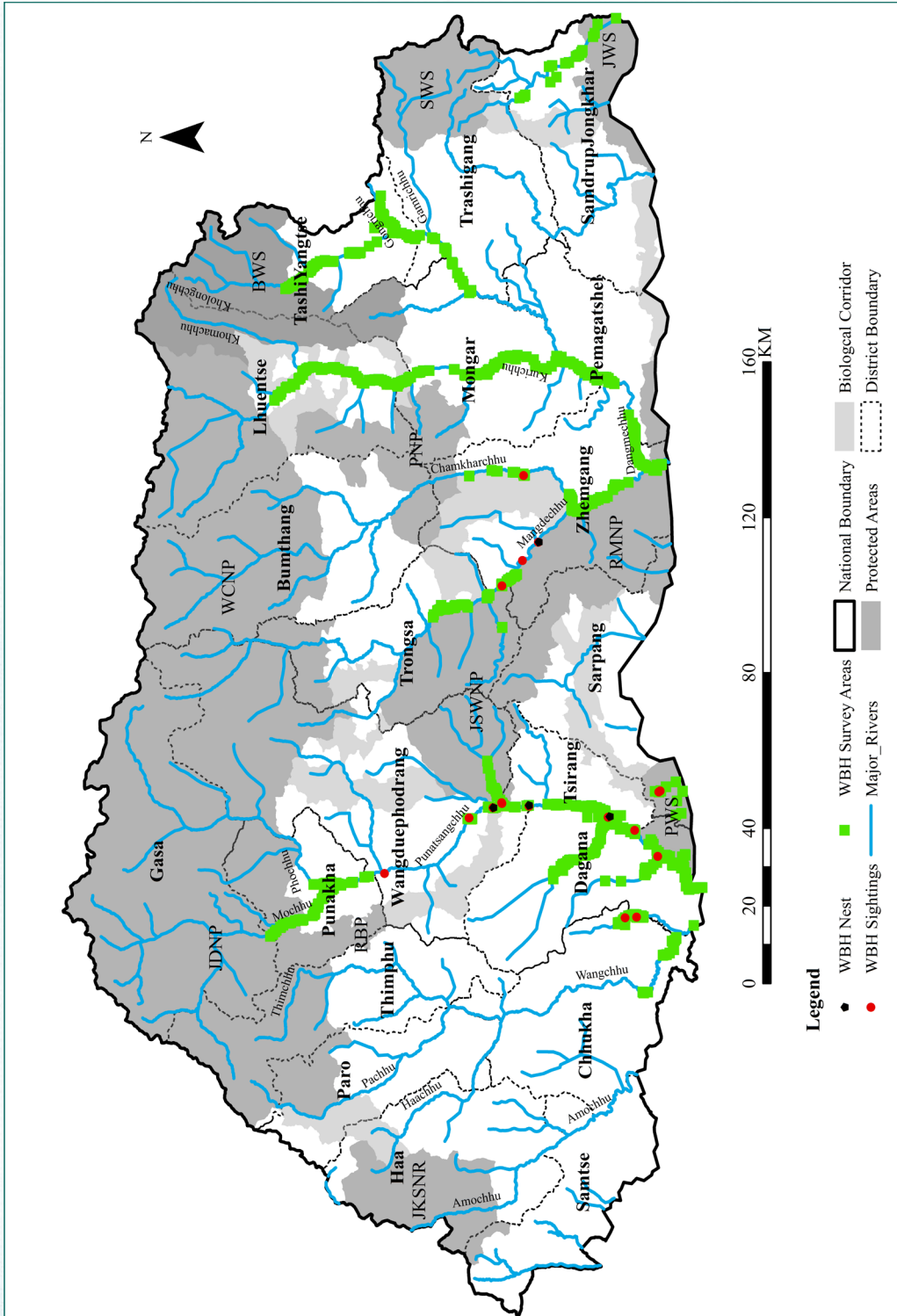


Figure 2: WBH distribution sites, 2024

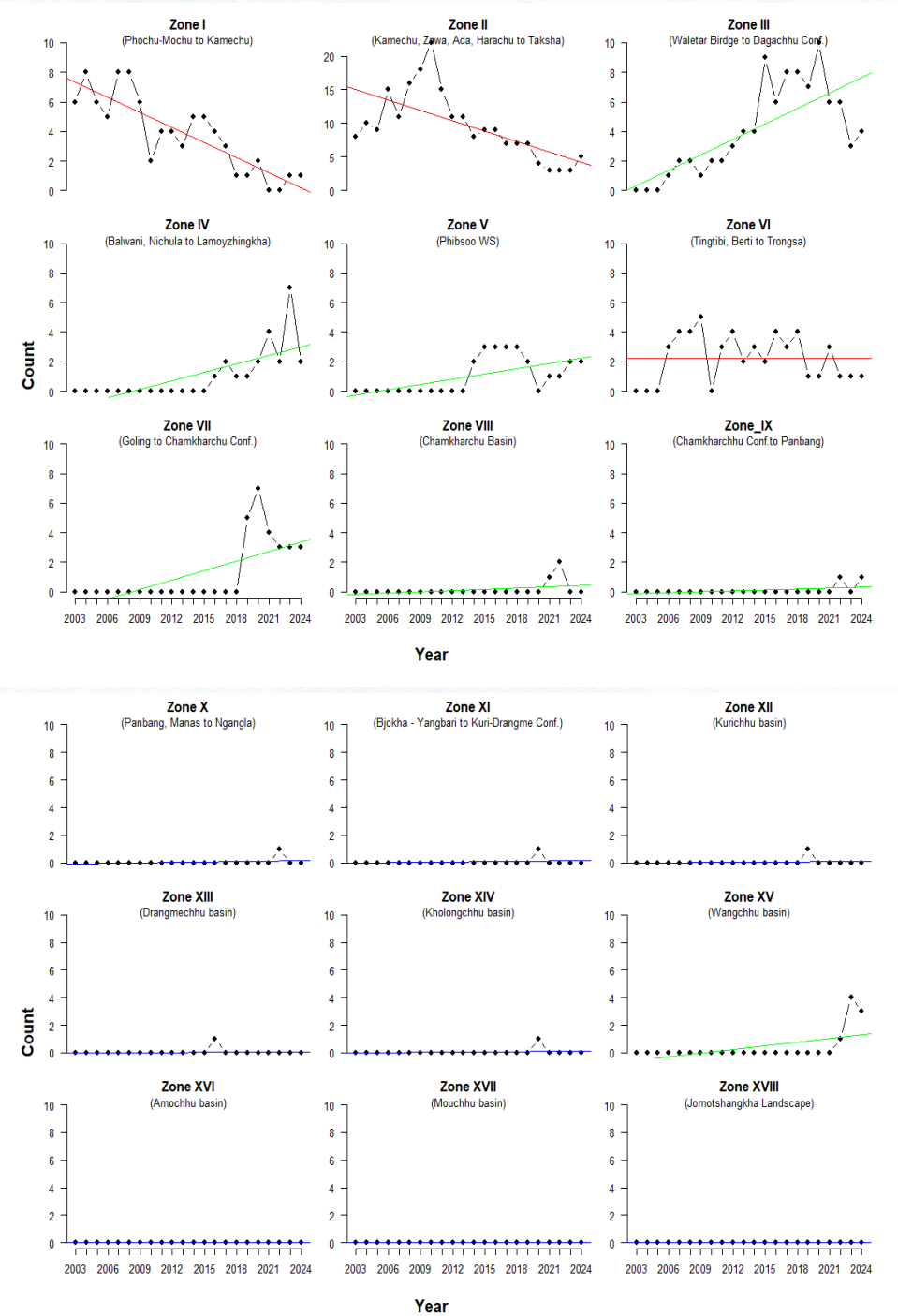


Figure 3: White-bellied Heron Population trend in different habitats zones since 2003

The data analysis was also done based on the observation record made on different areas; age, activity, group size, weather, river basin and time as illustrated in Figure 4. From the total number of WBH observation data entries, 73.3% of observation records indicated the observations made were of adult heron. In terms of activity observed of WBH, the surveyors have encountered heron mostly flying (57 %) and 80.2 % of observations were sightings of single individuals. The observation rate based on the weather indicates, less count reported during cloudy (27.9 %) and foggy weather(3.5 %). The data also indicate the observations made were mostly during morning hours before 11:00 AM (54.7 %).

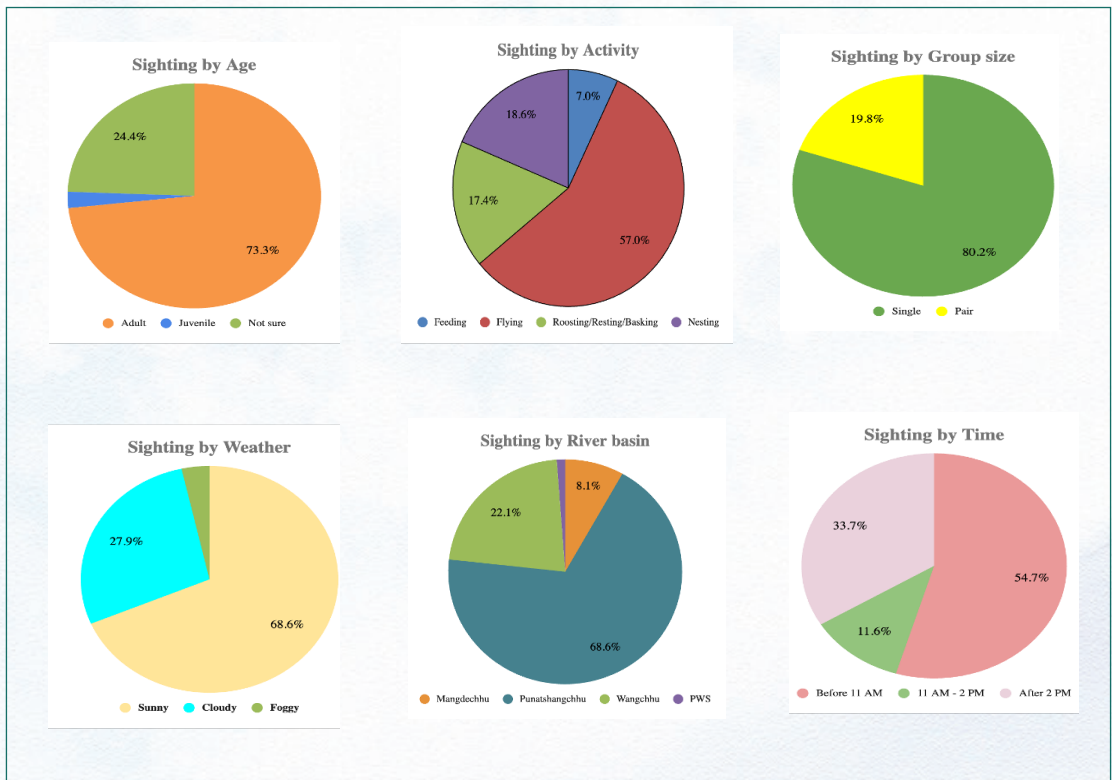


Figure 4: Graphs of WBH sighting details

Nest Count

During the survey, four active nests were recorded. The nests are distributed in two major river basins of Bhutan, Punatshangchhu and Mangdechhu. Three of the nests were found in three different locations within Punatshangchhu basin, one each under Wangdue Phodrang, Tsirang and Dagana districts. One nest in Mangdechhu is located under Zhemgang district. In each of these nests, a pair of WBH birds were observed. Except for the nest in Zhemgang, in all other nests, herons were found in the process of building the nest. A heron was found incubating three eggs in Zhemgang nest.

The nest in Zhemgang was built over a large ficus tree. Though the location of the nest was built at the same place as the previous year, the nest of this year is located almost 200 m away from last year's nest. According to the nest observation data RSPN has maintained for this year, the first egg of heron in this nest was laid on 26 February 2024. After two days (28th February), two more eggs were found in the nest.

The nests found in Punatshangchhu river basin are all in the process of building. From the three nests, the nests located in Wangdue Phodrang and Dagana district are found with enough nesting materials arranged. However, the nest located in Tsirang district is still at the initial stage of building with only a few nesting materials observed.

During the survey in 2023, only two active nests were recorded, one in Zhemgang and another one in Dagana. Later after the survey, another nest was found in Tsirang. The number of eggs laid in each of these nests of Zhemgang, Dagana and Tsirang was three, four and three respectively. However, we have observed no successful fledging of chicks occurred from all these nests in the 2023 year. From the three eggs laid at Zhemgang nest, only two eggs hatched and one was found sterile. The two chicks hatched however were found missing from the nest after a week of hatching. Probably lost to the predator. The four eggs laid at Dagana nest were collected for captive breeding purposes. Later the same parent rebuilt their nest with three eggs laid. However, after a week, the eggs were found missing from the nest. The monkeys were found inhabiting near the nest. In Tsirang nest, there were three eggs laid, but later the parents abandoned them and lost them to the predator.



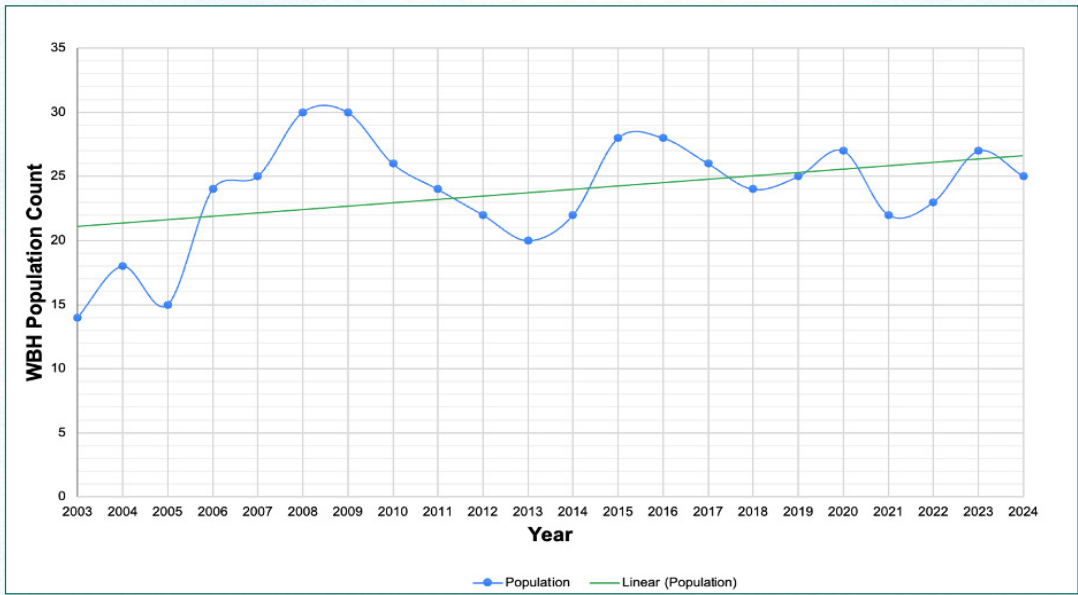


Figure 5: White-bellied Heron population trend in Bhutan, 2003 – 2024



Wildlife diversity in White-bellied Heron landscape

There are rich diversities of wildlife in the WBH habitat areas. During this survey, 806 data entries or checklists were recorded related to the observation of other wildlife species. From these entries, 18 species were identified as mammals and 207 species are of birds.

The most common mammal species recorded was the *Assamese macaque* and the most common bird species recorded was Plumbeous Water Redstart. Among the globally threatened mammalian species spotted were the Asian Elephant, Himalayan Serrow, Capped Langur and Golden Langur, Asian Small-clawed Otter, Smooth-coated Otter, and Sambar Deer.

The threatened bird species sighted include the endangered Pallas's Fish Eagle, Vulnerable listed species of Eastern Imperial Eagle, Great Hornbill, Rufous-necked Hornbill and Wreathed Hornbill, and near threatened listed species of Black-necked Crane, Mountain Hawk Eagle and River Lapwing.



Figure 6: Northern Pintail birds

Threats to White-bellied Heron and other wildlife

WBH birds, which are completely associated with the riverine ecosystem, are at high risk of extinction due to habitat loss and degradation. It is also constrained by the impact of climate change, natural calamities, diminishing food resources and limited knowledge on its ecology and biology. Indirectly, lack of awareness, lack of knowledge, and negligence is also driving the species to the edge.

The data gathered through this population survey indicate that some levels of threats are widespread across the river systems in Bhutan. In more than 69 sites, threats such as Developmental activities (farm road, dam construction), transmission wires across the river, cattle grazing, natural resource extraction like dredging and sand extraction, illegal activities of fishing, and recreational activities along the river were observed.

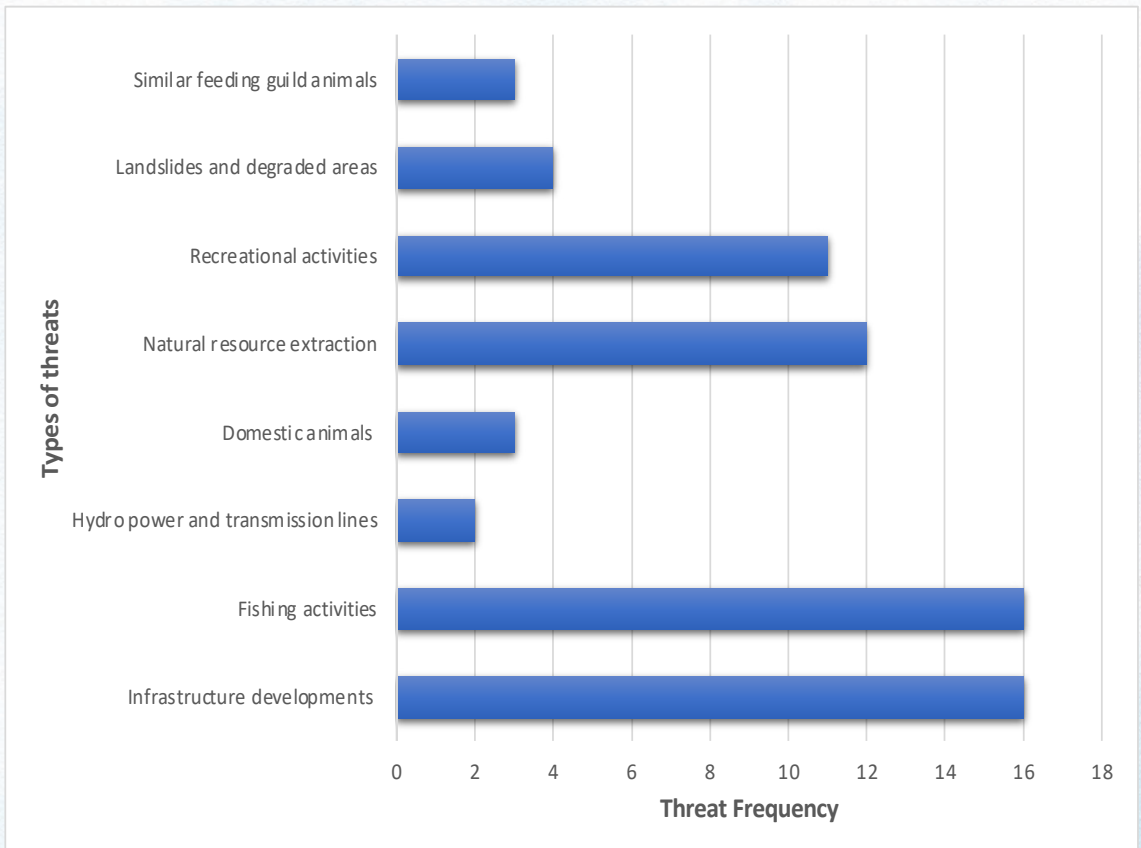


Figure 7: Common threats observed along the survey sites during the population survey

Acknowledgements

RSPN would like to thank the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU) through International Climate Initiative (IKI) for supporting our White-bellied Heron Conservation project. The population and nest surveys of WBH are part of the “Developing Ecosystem-based Solutions for Managing Biodiversity Landscapes in Bhutan” project. Thanks to Synchronicity Earth, MAVA Foundation, Fondation Hans Wilsdorf, International Crane Foundation, Punatshangchhu Hydroelectric Project Authority I & II, DoFPS, and to all our donors, partners and philanthropists for unwavering support and guidance in our conservation efforts.

We appreciate the support and hard work of all the surveyors from DoFPS, LCSG, own staff and volunteers in making this annual survey a success.



IKI
INTERNATIONAL
CLIMATE INITIATIVE



Supported by:

 Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

based on a decision of the German Bundestag



Table 2: Checklist of birds sighted during the White-bellied Heron population survey

EN- Endangered, VU- Vulnerable, NE- Near Threatened, LC-Least Concern

Sl.No.	Common Name	Scientific Name	Conservation Status	Count
1	Ashy Bulbul	<i>Hemixos flava</i>	LC	3
2	Ashy Drongo	<i>Dicrurus leucophaeus</i>	LC	16
3	Asian Barred Owlet	<i>laucidium cuculoides</i>	LC	4
4	Asian Fairy Bluebird	<i>Irena puella</i>	LC	9
5	Bar-throated Siva	<i>Siva strigula</i>	LC	7
6	Bar-winged Flycatcher-shrike	<i>Hemipus picatus</i>	LC	2
7	Barred Cuckoo Dove	<i>Macropygia unchall</i>	LC	1
8	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	LC	4
9	Bhutan Laughingthrush	<i>Garrulax imbricatus</i>	LC	4
10	Black Bulbul	<i>Hypsipetes leucocephalus</i>	LC	147
11	Black Drongo	<i>Dicrurus macrocercus</i>	LC	15
12	Black Eagle	<i>Ictinaetus malaiensis</i>	LC	3
13	Black Stork	<i>Ciconia nigra</i>	LC	8
14	Black-backed Forktail	<i>Enicurus immaculatus</i>	LC	2
15	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	LC	32
16	Black-crested Bulbul	<i>Hypsipetes leucocephalus</i>	LC	37
17	Black-eared Shrike Babbler	<i>Pteruthius melanotis</i>	LC	5
18	Black-faced Warbler	<i>Abroscopus schisticeps</i>	LC	13
19	Black-necked Crane	<i>Grus nigricollis</i>	NT	39
20	Black-tailed Crake	<i>Zapornia bicolor</i>	LC	2
21	Black-throated Prinia	<i>Prinia atrogularis</i>	LC	2
22	Black-throated Sunbird	<i>Aethopyga saturata</i>	LC	6
23	Black-throated Tit	<i>Aegithalos concinnus</i>	LC	7
24	Blue Rock Thrush	<i>Monticola solitarius</i>	LC	8
25	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	LC	56
26	Blue-bearded Bee-eater	<i>Nyctornis athertoni</i>	LC	1

Sl.No.	Common Name	Scientific Name	Conservation Status	Count
27	Blue-capped Rock Thrush	<i>Monticola cinclorhyncha</i>	LC	4
28	Blue-eared Barbet	<i>Psilopogon cyanotis</i>	LC	1
29	Blue-throated Barbet	<i>Megalaima asiatica</i>	LC	22
30	Blue-winged Laughingthrush	<i>Trochalopteron squamatum</i>	LC	6
31	Blue-winged Siva	<i>Siva cyanouroptera</i>	LC	2
32	Blyth's Kingfisher	<i>Alcedo hercules</i>	LC	1
33	Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i>	LC	2
34	Bronzed Drongo	<i>Dicrurus aeneus</i>	LC	5
35	Brown Dipper	<i>Cinclus pallasii</i>	LC	130
36	Brown Fish Owl	<i>Bubo zeylonensis</i>	LC	1
37	Cattle Egret	<i>Bubulcus ibis</i>	LC	47
38	Chestnut-bellied Nuthatch	<i>Sitta cinnamoventris</i>	LC	2
39	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	LC	9
40	Chestnut-crowned Laughingthrush	<i>Trochalopteron erythrocephalum</i>	LC	16
41	Chestnut-headed Bee-eater	<i>Merops leschenaulti</i>	LC	16
42	Chestnut-headed Tesia	<i>Cettia castaneocoronata</i>	LC	2
43	Collared Owlet	<i>Glaucidium brodiei</i>	LC	4
44	Common Buzzard	<i>Buteo buteo</i>	LC	2
45	Common Green Magpie	<i>Cissa chinensis</i>	LC	9
46	Common Greenshank	<i>Tringa nebularia</i>	LC	3
47	Common Hill Myna	<i>Gracula religiosa</i>	LC	12
48	Common Hoopoe	<i>Upupa epops</i>	LC	2
49	Common Iora	<i>Aegithina tiphia</i>	LC	2
50	Common Kestrel	<i>Falco tinnunculus</i>	LC	6
51	Common Kingfisher	<i>Alcedo atthis</i>	LC	23

Sl.No.	Common Name	Scientific Name	Conservation Status	Count
52	Common Pigeon/ Rock Dove	<i>Columba livia</i>	LC	10
53	Common Sandpiper	<i>Actitis hypoleucos</i>	LC	13
54	Common Shelduck	<i>Tadorna tadorna</i>	LC	2
55	Common Stonechat	<i>Saxicola maurus</i>	LC	5
56	Common Tailorbird	<i>Orthotomus sutorius</i>	LC	6
57	Common Teal	<i>Anas crecca</i>	LC	68
58	Crested Kingfisher	<i>Megaceryle lugubris</i>	LC	109
59	Crested Serpent Eagle	<i>Spilornis cheela</i>	LC	11
60	Crimson Sunbird	<i>Aethopyga siparaja</i>	LC	7
61	Daurian Redstart	<i>Phoenicurus aureus</i>	LC	1
62	Eastern Imperial Eagle	<i>Aquila heliaca</i>	VU	1
63	Emerald Dove	<i>Chalcophaps indica</i>	LC	1
64	Eurasian Jay	<i>Garrulus glandarius</i>	LC	1
65	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	LC	1
66	Eurasian Wigeon	<i>Mareca penelope</i>	LC	68
67	Eurasian Woodcock	<i>Scolopax rusticola</i>	LC	1
68	Eurasian Wren	<i>Troglodytes troglodytes</i>	LC	1
69	Fire-breasted Flowerpecker	<i>Dicaeum erythrorhax</i>	LC	2
70	Fork-tailed Swift/Pacific Swift	<i>Apus pacificus</i>	LC	12
71	Gadwall	<i>Mareca strepera</i>	LC	14
72	Golden Babbler	<i>Cyanoderma chrysaeum</i>	LC	2
73	Golden-breasted Fulvetta	<i>Lioparus chrysotis</i>	LC	18
74	Golden-fronted Leafbird	<i>Chloropsis aurifrons</i>	LC	6
75	Golden-throated Barbet	<i>Psilopogon franklinii</i>	LC	7
76	Goosander/Merganser	<i>Mergus merganser</i>	LC	64
77	Great Barbet	<i>Psilopogon virens</i>	LC	39

Sl.No.	Common Name	Scientific Name	Conservation Status	Count
78	Great Cormorant	<i>Phalacrocorax carbo</i>	LC	200
79	Great Hornbill	<i>Buceros bicornis</i>	VU	76
80	Great-crested Grebe	<i>Podiceps cristatus</i>	LC	6
81	Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i>	LC	2
82	Greater Yellownape	<i>Chrysophlegma flavinucha</i>	LC	3
83	Green Bee-eater	<i>Merops orientalis</i>	LC	4
84	Green-backed Tit	<i>Parus monticolus</i>	LC	19
85	Green-billed Malkoha	<i>Phaenicophaeus tristis</i>	LC	5
86	Green-tailed Sunbird	<i>Aethopyga nipalensis</i>	LC	3
87	Grey Bushchat	<i>Saxicola ferreus</i>	LC	6
88	Grey Heron	<i>Ardea cinerea</i>	LC	1
89	Grey Treepie	<i>Dendrocitta formosae</i>	LC	17
90	Grey Wagtail	<i>Motacilla cinerea</i>	LC	7
91	Grey-backed Shrike	<i>Lanius tephronotus</i>	LC	4
92	Grey-headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	LC	4
93	Grey-headed Lapwing	<i>Vanellus cinereus</i>	LC	1
94	Grey-headed Woodpecker	<i>Picus canus</i>	LC	7
95	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	LC	9
96	Greylag Goose	<i>Cutia nipalensis</i>	LC	17
97	Hill Partridge	<i>Arborophila torqueola</i>	LC	1
98	Himalayan Bulbul	<i>Pycnonotus leucogenys</i>	LC	1
99	Himalayan Buzzard	<i>Buteo reffectus</i>	LC	2
100	Himalayan Buzzard	<i>Buteo reffectus</i>	LC	52
101	Himalayan Cutia	<i>Cutia nipalensis</i>	LC	11
102	Hoary-throated Barwing	<i>Sibia nipalensis</i>	LC	3
103	Hodgson's Redstart	<i>Phoenicurus hodgsoni</i>	LC	16

Sl.No.	Common Name	Scientific Name	Conservation Status	Count
104	House Crow	<i>Corvus splendens</i>	LC	2
105	Ibisbill	<i>Ibidorhyncha struthersii</i>	LC	23
106	Indian Peafowl	<i>Pavo cristatus</i>	LC	32
107	Indian Pond Heron	<i>Ardeola grayii</i>	LC	13
108	Indian Roller	<i>Coracias benghalensis</i>	LC	1
109	Jungle Babbler	<i>Argya striata</i>	LC	4
110	Jungle Myna	<i>Acridotheres fuscus</i>	LC	2
111	Kalij Pheasant	<i>Lophura leucomelanos</i>	LC	15
112	Large Woodshrike	<i>Tephrodornis virgatus</i>	LC	14
113	Large-billed Crow	<i>Corvus macrorhynchos</i>	LC	81
114	Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	LC	11
115	Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i>	LC	1
116	Lesser Yellownappe	<i>Picus chlorolophus</i>	LC	2
117	Lineated Barbet	<i>Psilopogon lineatus</i>	LC	1
118	Little Bunting	<i>Emberiza pusilla</i>	LC	33
119	Little Cormorant	<i>Microcarbo niger</i>	LC	144
120	Little Egret	<i>Egretta garzetta</i>	LC	11
121	Little Forktail	<i>Enicurus scouleri</i>	LC	16
122	Little Ringed Plover	<i>Charadrius dubius</i>	LC	4
123	Long-billed Plover	<i>Charadrius placidus</i>	LC	1
124	Long-tailed Minivet	<i>Pericrocotus ethologus</i>	LC	9
125	Long-tailed Shrike	<i>Lanius schach</i>	LC	4
126	Long-tailed Thrush	<i>Zoothera dixonii</i>	LC	2
127	Mallard	<i>Anas platyrhynchos</i>	LC	60
128	Maroon Oriole	<i>Oriolus traillii</i>	LC	6
129	Mountain Hawk Eagle	<i>Nisaetus nipalensis</i>	NT	3
130	Mountain Imperial Pigeon	<i>Ducula badia</i>	LC	3

Sl.No.	Common Name	Scientific Name	Conservation Status	Count
131	Mrs Gould's Sunbird	<i>Aethopyga gouldiae</i>	LC	2
132	Nepal Fulvetta	<i>Alcippe nipalensis</i>	LC	9
133	Northern Pintail	<i>Anas acuta</i>	LC	14
134	Olive-backed Pipit	<i>Anthus hodgsoni</i>	LC	12
135	Orange-bellied Leafbird	<i>Chloropsis hardwickii</i>	LC	20
136	Oriental Magpie Robin	<i>Copsychus saularis</i>	LC	6
137	Oriental Pied Hornbill	<i>Anthracoceros albirostris</i>	LC	1
138	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	LC	18
139	Oriental White-eye	<i>Zosterops palpebrosus</i>	LC	47
140	Osprey	<i>Pandion haliaetus</i>	LC	10
141	Pallas's Fish Eagle	<i>Haliaeetus leucoryphus</i>	EN	5
142	Peregrine Falcon	<i>Falco peregrinus</i>	LC	4
143	Pin-tailed Green Pigeon	<i>Treron apicauda</i>	LC	20
144	Plumbeous Water-redstart	<i>Phoenicurus fuliginosus</i>	LC	182
145	Pygmy Wren Babbler/ Pygmy Cupwing	<i>Pnoepyga pusilla</i>	LC	1
146	Red Junglefowl	<i>Gallus gallus</i>	LC	20
147	Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	LC	30
148	Red-crested Pochard	<i>Netta rufina</i>	LC	9
149	Red-headed Trogon	<i>Harpactes erthrocephalus</i>	LC	5
150	Red-tailed Minla	<i>Minla ignotincta</i>	LC	17
151	Red-vented Bulbul	<i>Pycnonotus cafer</i>	LC	146
152	Red-wattled Lapwing	<i>Vanellus indicus</i>	LC	15
153	River Lapwing	<i>Vanellus duvaucelii</i>	NT	121
154	Rosy Pipit	<i>Anthus roseatus</i>	LC	10
155	Ruddy Shelduck	<i>Tadorna ferruginea</i>	LC	643
156	Rufescent Prinia	<i>Prinia rufescens</i>	LC	4
157	Rufous Sibia	<i>Heterophasia capistrata</i>	LC	4

Sl.No.	Common Name	Scientific Name	Conservation Status	Count
158	Rufous-breasted Accentor	<i>Prunella strophciata</i>	LC	2
159	Rufous-capped Babbler	<i>Cyanoderma ruficeps</i>	LC	11
160	Rufous-faced Warbler	<i>Abroscopus albogularis</i>	LC	5
161	Rufous-necked Hornbill	<i>Aceros nipalensis</i>	VU	33
162	Rufous-necked Laughingthrush	<i>Pterorhinus ruficollis</i>	LC	18
163	Rufous-throated Partridge	<i>Arborophila rufogularis</i>	LC	1
164	Rufous-winged Fulvetta	<i>Schoeniparus castaneiceps</i>	LC	17
165	Russet Sparrow	<i>Passer cinnamomeus</i>	LC	7
166	Rusty-cheeked Scimitar Babbler	<i>Erythrogeus erythrogeus</i>	LC	34
167	Rusty-flanked Treecreeper	<i>Certhia nipalensis</i>	LC	2
168	Sand Martin	<i>Riparia riparia</i>)	LC	3
169	Scaly-breasted Wren Babbler	<i>Pnoepyga albiventer</i>	LC	3
170	Scarlet Minivet	<i>Pericrocotus flammeus</i>	LC	79
171	Silver-breasted Broadbill	<i>Serilophus lunatus</i>	LC	1
172	Slaty-backed Flycatcher	<i>Ficedula erithacus</i>	LC	52
173	Small Niltava	<i>Niltava macgrigoriae</i>	LC	1
174	Speckled Piculet	<i>Picumnus innominatus</i>	LC	3
175	Spotted Dove	<i>Spilopelia chinensis</i>	LC	5
176	Spotted Dove	<i>Spilopelia chinensis</i>	LC	20
177	Spotted Forktail	<i>Enicurus maculatus</i>	LC	6
178	Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	LC	1
179	Streaked Spiderhunter	<i>Arachnothera magna</i>	LC	13
180	Striated Heron	<i>Butorides striata</i>	LC	5
181	Striated Laughingthrush	<i>Grammatoptila striatus</i>	LC	9

Sl.No.	Common Name	Scientific Name	Conservation Status	Count
182	Striated Prinia	<i>Prinia crinigera</i>	LC	2
183	Striated Yuhina	<i>Staphida castaniceps</i>	LC	10
184	Sultan Tit	<i>Melanochlora sultanea</i>	LC	15
185	Tawny Fish Owl	<i>Ketupa flavipes</i>	LC	8
186	Temminck's Stint	<i>Calidris temminckii</i>	LC	3
187	Ultramarine Flycatcher	<i>Ficedula superciliaris</i>	LC	1
188	Verditer Flycatcher	<i>Eumyias thalassinus</i>	LC	3
189	Wallcreeper	<i>Tichodroma muraria</i>	LC	5
190	Wedge-tailed Green Pigeon	<i>Treron sphenurus</i>	LC	5
191	Whiskered Yuhina	<i>Yuhina flavicollis</i>	LC	36
192	White Wagtail	<i>Motacilla alba</i>	LC	55
193	White-bellied Redstart	<i>Luscinia phaenicuroides</i>	LC	1
194	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	LC	3
195	White-browed Wagtail	<i>Pomatorhinus schisticeps</i>	LC	10
196	White-capped Water Redstart	<i>Phoenicurus leucocephalus</i>	LC	119
197	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	LC	88
198	White-tailed Nuthatch	<i>Sitta himalayensis</i>	LC	2
199	White-throated Bulbul	<i>Alophoixus flaveolus</i>	LC	9
200	White-throated Fantail	<i>Rhipidura albicollis</i>	LC	2
201	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	LC	7
202	White-throated Laughingthrush	<i>Pterorhinus albobularis</i>	LC	72
203	White-winged Redstart	<i>Phoenicurus erythrogastrus</i>	LC	1
204	Wreathed Hornbill	<i>Pterorhinus albobularis</i>	VU	16
205	Yellow-bellied Fantail	<i>Chelidorhynch hypoxanthus</i>	LC	4
206	Yellow-bellied Warbler	<i>Abroscopus superciliaris</i>	LC	2
207	Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>	LC	11

Table 3: Checklist of mammals sighted during the White-bellied Heron population survey

Sl.No.	Common Name	Scientific Name	Conservation Status	Count
1	Asian Elephant	<i>Elephas maximus</i>	EN	8
2	Asian small-clawed Otter	<i>Aonyx cinereus</i>	VU	2
3	Assamese Macaque	<i>Macaca assamensis</i>	NT	490
4	Barking Deer	<i>Muntiacus muntjak</i>	LC	7
5	Capped Langur	<i>Trachypithecus pileatus</i>	EN	77
6	Crab eating Mongoose	<i>Urva urva</i>	LC	2
7	Gaur	<i>Bos gaurus</i>	VU	8
8	Golden Langur	<i>Trachypithecus geei</i>	EN	92
9	Hanuman Langur/Gray Langur	<i>Semnopithecus sp</i>	LC	7
10	Himalayan Goral	<i>Naemorhedus goral</i>	NT	6
11	Himalayan Serow	<i>apricornis sumatraensis thar</i>	LC	12
12	Large Indian Civet	<i>Viverra zibetha</i>	LC	1
13	Malayan Giant Squirrel	<i>Ratufa bicolor</i>	NT	3
14	Sambar deer	<i>Rusa unicolor</i>	VU	1
15	Smooth-coated Otter	<i>Lutrogale perspicillata</i>	VU	47
16	Spotted Deer	<i>Axix axis</i>	LC	5
17	Wild Boar	<i>Sus scrofa</i>	LC	2
18	Yellow-throated Marten	<i>Martes flavigula</i>	LC	12

List of surveyors

Sl. No	Survey Area	Surveyor Name	Division/Park/LCSG
1	Doksum - Bumdeling	Sangay Drukpa	Bumdeling wildlife Sanctuary
2	Doksum - Bumdeling	Tshering Chopel	
3	Sherichhu - Doksum	Karma Jamtsho	Trashigang Range
4	Sherichhu - Doksum	Rinchen Tshewang	Udzorong BO, Trashigang Division Forest
5	Doksum - Along Gongri (towards border)	Pema Tshewang	Jamkhar BO, Trashigang Division Forest
6	Doksum - Along Gongri (towards border)	Tandin Wangchuk	Doksum Range, Trashigang Division Forest
7	Basochhu - Wakleytar	Rinchen Dorji	Taksha Range, JSWNP
8	Harachhu - Dayul	Ratan Giri	Adha Guard Post, JSWNP
9	Mangdechhu Dam - Nubji Korphu	Kado Rinchen	Langthel Range,
10	Mangdechhu Dam - Nubji Korphu	Tshering	Nabji Range
11	Sunkosh - Balwani-Domakha	Birkha Bdr. Monger	Tsirang Forest Division
12	Wakleytar - Burichhu	Kinley Phub	
13	Sunkosh - Balwani - Domakha	Dorji Wangchuk	
14	Tala Powerhouse to Raidak	Tenzin Wangchuk	Gedu Division
15	Getana to Deoralibase	Norbu Gyeltshen	
16	Yangbari - towards Lower Kurigongri	Pema Tshering	Pema Gatshel Division Forest
17	Yangbari - towards Lower Kurigongri	Cheki Wangdi	
18	Tshowki/Pagli river	Sangay Tshering	

Sl. No	Survey Area	Surveyor Name	Division/Park/LCSG
19	Samachhu -Dovan	Laxman Tamang	Phibsoo Wildlife Sanctuary
20	Samachhu -Dovan	Pema Dorji	
21	Phibsoo Area	Namgyel Dorji	
22	Phibsoo Area	Dorji B	
23	Phibsoo Area	Khageshor Guragai	
24	Phibsoo Area	Ranjit Mongar (Driver)	
25	Wangdigang - Tingtibi and Along Bertichhu	Kinzang Dorji	Zhemgang Division Forest
26	Shingkar - Khomshar	Thinley Wangchuk	
27	Panbang - Kuri Gongri basin	Kiran Mongar	
28	Jomori	Tashi	Jomotsangkha Wildlife Sanctuary
29	Jomori	Pema Tobgay	Jomotsangkha Wildlife Sanctuary
30	Lower Chamkharchhu (Digala - Chamkharchhu confluence)	Dew Bdr. Dahal	Gomphu Range, RMNP
31	Lower Chamkharchhu (Digala - Chamkharchhu confluence)	Deo Kumar Gurung	Gomphu Range, RMNP
32	Chengarzam to Manas	Pema Loday	Manas Range
33	Chengarzam to Manas	Tshering Tobgay	Manas Range
34	Samarchhu source - Bara Gumtey	Milan Kumar	Dagana Division Forest
35	Samarchhu source - Bara Gumtey	Jambay Gyeltshen	
36	Dagachhu confluence to Dam	Sangay Tshering (Dagana)	
37	Dagachhu confluence to Dam	Sherub Gyeltshen (Drukjeygang)	
38	Dagachhu confluence to Dam	Harka Dhan Mongar	

Sl. No	Survey Area	Surveyor Name	Division/Park/LCSG
39	Rimchu - Phocchu and Mochhu confluence	Kinga	JDNP
40	Kurigongri - Gyelposhing	Lagay Tshering	Mongar Division Forest
41	Kurigongri - Gyelposhing	Gyeltshen	
42	Gyelphoshing - Autsho	Lhadarla	
43	Sunkosh bridge - Balwani	Kharka Sign Chhetri	LCSG
44	Sunkosh bridge - Balwani	Karna Bdr. Tamang	LCSG
45	Thamchen	Suk bardur Rai	LCSG
46	Tingtibi - Tsaidang	Phurba	LCSG
47	Chamkharchhu confluence - Chengarzam	Tshering Norbu	LCSG
48	Chamkharchhu confluence - Chengarzam	Kinga Phuntsho	LCSG
49	Balwani, Malbasey and Domakha	Garjaman Rai	LCSG
50	Balwani, Malbasey and Domakha	Nar Bdr. Rai	LCSG
51	Rangakhola	Ektar Subba	LCSG
52	Nichula	Tanka Bdr Karki	LCSG
53	Dagachhu	Nima	LCSG
54	Dagachhu	Lhaba	LCSG
55	Samachhu-Homa Dovan	Suk Bdr Gurung and Passang Sherpa	LCSG
56	Piping-Bara Gumti	Sanjit Subba	LCSG
57	Samachhu Dovan-Piping	Goray Sherpa	LCSG
58	Power House Tala - Raidak	Harka Bdr Kharka	LCSG
59	Upper Phochhu	Kinley Penjor	LCSG
60	Harachhu - Dayul	Penjor	LCSG
61	Kamichhu	Dawa Zam	LCSG
62	Phochu	Kinley Penjor	LCSG
63	Berti	Tshering	LCSG
64	Langthel	Nima	LCSG
65	Langthel	Dorji	LCSG

Sl. No	Survey Area	Surveyor Name	Division/Park/LCSG
66	Mongar	Sonam Loday	LCSG
67	Chamkharchhu	Lhakpa Dorji	LCSG
68	Punakha	Passang Tshering	LCSG
69	Power House Tala - Raidak	Namgay Dorji	LCSG
70	Power House Tala - Raidak	Choki Dorji	LCSG
71	Power House Tala - Raidak	Leki Dorji	LCSG
72	Power House Tala - Raidak	Chitra Kumar Gurung	LCSG
73	Mangdechhu (Trongsa - Manas)	Jigme Tshering	RSPN
74	Mangdechhu (Trongsa - Manas)	Thinley Phuntsho	RSPN
75	Kurigongri, Tshowki and Jomiri	Dr. Lungten Norbu	RSPN
76	Kurigongri, Tshowki and Jomiri	Dechen Tshomo	RSPN
77	Kurigongri, Tshowki and Jomiri	Tsheten Dorji	RSPN
78	Kurigongri, Tshowki and Jomiri	Tshering Dhendup	RSPN
79	Upper Punatshangchhu	Sonam Tshering	RSPN
80	Lower Punatshangchhu	Tshering Tobgay	RSPN
81	Jigmechhu	Rinzin Thinley Nima(Intern)	RSPN
82	Jigmechhu	Tshewang Lhendup	RSPN
83	Burichhu	Samten Leki	RSPN
84	Burichhu	Wangdi Zam	RSPN



RSPN

Inspiring personal responsibility for
environmental conservation since 1987

Royal Society for Protection of Nature

P.O. Box: 325, Building No.: 25

Lhado Lam, Kawajangsa | Thimphu 11001, Bhutan

Phone: +975 2 326130 | Fax: +975 2 323189

Website: <http://www.rspnbhutan.org> | E-mail: rspn@rspnbhutan.org

Follow Us:



/rspnbhutan



/rspnbhutan



/rspn_bhutan



/rspnbhutan