



An annotated checklist of **Winter Migratory Bird** diversity

# Lotus Valley Trek

## Norbugang Eco-Trail

## Gongri-Bali Eco-lodge site

# PemaGatshel

# 2024



**Report Prepared by**  
Bhutan Birdlife Society (BBLs)

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## Acknowledgement

**Bhutan Birdlife Society (BBLs)** would like to express our sincere gratitude for the invaluable support provided by the Dzongkhag in funding the recent winter bird survey conducted along the **Lotus Vallet Trek, Norbugang Eco-trail and Gongri-bali Eco-lodge Campsite**. This comprehensive endeavour was a collaborative effort between Dzongkhag Administration, Forest Ranger from **Royal Manas National Park** and members from **Gongri- Bali Eco-lodge community**. Their local knowledge and passion for conservation greatly enhanced the overall success of the survey.

The findings of the bird survey will not only contribute to our understanding of the avian biodiversity along the site but will also serve as a valuable resource for future conservation and tourism-related initiatives.

Once again, we extend our sincere appreciation to the Pema Gatshel Dzongkhag, for giving us the fund and members from **Gongri- Bali Eco-lodge community** for their unwavering support and collaboration during field visits. We look forward to continuing our partnership in the pursuit of sustainable and responsible environmental practices in Bhutan.



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Hoary-throated barwing



## INTRODUCTION

The study of birds in Bhutan dates back to the political mission led by R.B Pemberton, an officer in the British Indian Empire, to Bhutan in 1838, where several species of birds were collected (Clement 1992). R.B Pemberton was accompanied by Lieut. Blake as assistant and Dr. William Griffith, a medical officer and a botanist (Ludlow 1937). Despite the statement below made by Pemberton (1865), “Of the birds in Bootan a detailed account will be hereafter given when a competent examination has been effected of the collection made by the Mission during its progress through the country, no report was published and the surviving specimens carry no locality data” (Clement 1992:57), it was only in the mid 1930s, that avifauna of Bhutan became known (Ludlow and Kinnear 1937, 1944). Later, between 1966 and 1973, Salim Ali, S.D. Ripley, and a team from the Zoological Survey of India made six collecting trips to the country (Clements 1992).

Some significant publication about birds of Bhutan in the past include Ludlow et al. (1937), Abdulali (1969 - 1988), Gole (1981), Khacher (1981), Ripley (1973), Saha (1980), Ali et al. (1983), Ripley (1982), Clements et al. (1986), Dorji (1987), Gaston (1989), Chacko (1991), Wollenhaupt (1991), and Inskipp et al. (1999). Today, with the strengthening of research institutes and the growth of education level in the country, more conservation efforts and related study on biodiversity, especially on birds and their distribution, behaviour, habitat, and migration patterns are carried out.

Bhutan is rich in Birdlife with the record of 760 bird species of which 31 are globally threatened being listed in the Threatened Category of IUCN Red List of Threatened species which also include 13 restricted range species (Birdlife International 2017). The country is also home to 18 of 37 endemic bird species of Eastern Himalayas.

White-naped yuhina



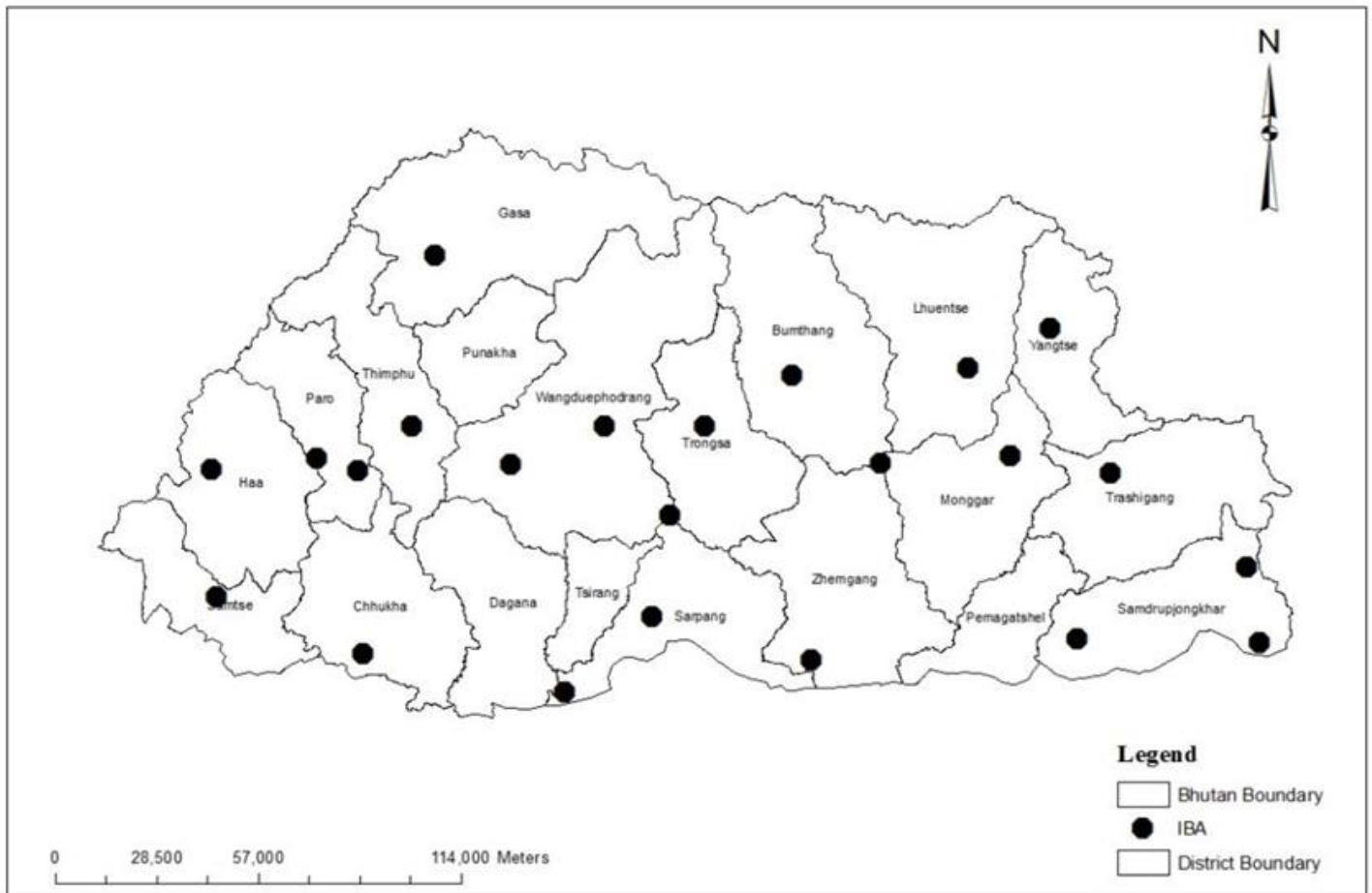


Image 1: Map showing Important Bird Areas of Bhutan

According to Birdlife International (2017), Bhutan hosts a significant number of globally threatened birds; 4 species are of critically endangered birds, 15 species of birds in the vulnerable list, and 24 species of birds in the near threatened list.





## PemaGatshel Dzongkhag



Pema Gatshel, meaning “Blissful Land of the Lotus”, is located in the southeastern part of Bhutan. The Dzongkhag covers an area of about 1023 square km with elevation ranging from 1000 to 3,500 meters above sea level and experiences an average annual rainfall of 1500mm to 3000mm. It shares its border with Trashigang Dzongkhag in the north and north- east, Mongar Dzongkhag in the north and north- west, Zhemgang Dzongkhag in the west, Samdrup Jongkhar Dzongkhag in the east and the Indian state of Assam in the south. 87.65% of the total area is under forest cover, comprising mainly of coniferous and broadleaf species. The climate of the Dzongkhag is hot and humid during the wet season and moderate cold during the dry season. Land holdings are dominated by Kamzhing with negligible wetland.

Divided into 11 gewogs, this Dzongkhag has a population of 25000 people from 4486 households. All the gewog centers are connected with roads making it easier to transport goods and communicate with service centers especially Dzongkhag and Dungkhang administration.

Spiritual and religious blessings are sought from 122 lhakhangs; most sacred being Yongla Gonpa, Kheri Gonpa and Dungkar Lhakhang which too possess historical importance.

Pemagatshel is also famous for artisans who makes religious instruments like Jalings (oboe-like instruments) and Dhungs (long ritual trumpets). The weavers here produce fine Kiras (traditional dress worn by women) from Bura (raw silk). Two particularly gorgeous examples that are a specialty of the region are the Lungsermo and Aiekapur. The region is also famous for a locally made sweet known as Tsatsi Buram. It is made from the abundant sugarcane that grows in the district and is well-liked throughout the country. Besides having so many unique traditions and festivals, the district is very famous for its nature, wild lives and birds. The region offers so many walks, hikes and day treks.

## Survey Area for Winter Bird Biversity

### 1. Lotus Valley Trek



The route used to be the traditional trade route for the entire eastern districts in the past as it connected to “Gudama”, an Indian town across the border. This route was called the salt route because, it was used as the life line for accessing essential items like salt, silk, textile, food items etc. as it was easier alternative than trading with Tibet.



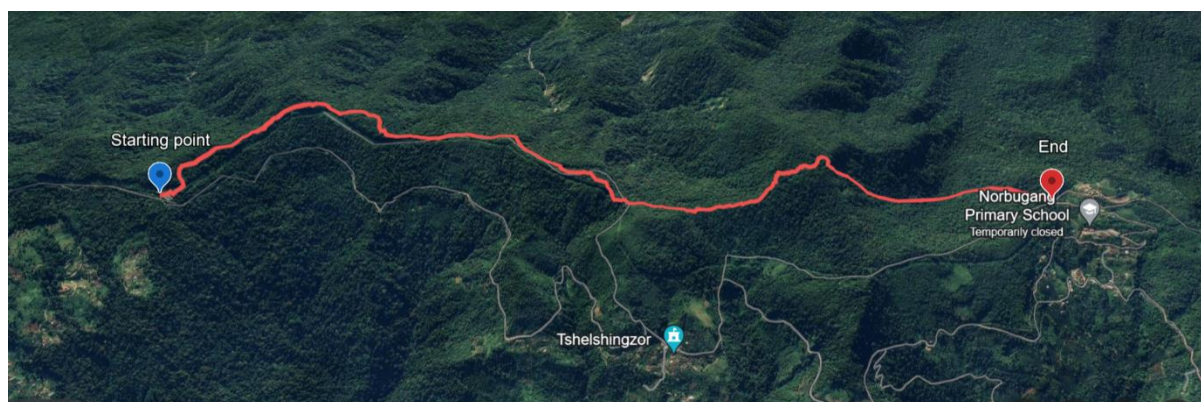
This route has a special place in the hearts of older generations in the east as everyone had transversed through this route prior to the construction of motorable roads. They have countless memories and get excited to share stories of the route. As you hike along the wide traditional highway, you will realise why this lost heritage is being revived to celebrate the medieval memory of eastern Bhutan.

The route also passes through a time aged Bhutanese tradition of cattle herding, where the villagers of the area herd their cattle and migrate as per the fodder available at the particular places. We can still witness the pastureland used and the cattle herding places along trail.

The route is immersed in the rich and pristine tropical biodiversity and come along sacred sites. The trail is fit for nature walks, wildlife watching and adventurous bicycling trail for cycling enthusiasts.

## 2. Norbugang/Nyenshingborang Eco-Trail

Norbugang Gewog is located in the southern part of Pemagatshel Dzongkhag under Nganglam Dungkhag with a total area of approximately 181.7 sq. km at 1100 masl. The Gewog consists of 5 chiwogs namely Norbugang-Rinchenzor, Nyenshingborang, Tshaelshingzor, Gashari, and Maenchu Nganglam. The Nganglam-Panbang National Highway of 55km passes through the Norbugang Gewog area.



A traditional trade route that connects Zhemgang Dzongkhag, Mongar Dzongkhag, and the larger town of India is the Norbugang Eco-trail, also

known as the *Garpa Lam*. Both locals and other delegates use this route. During the tax collection process, the *Garpa* took this route. Before there was a motorable road connecting the location, it served as a trade route for transporting necessities from Nganglam town. The route was essential for travellers heading from Nganglam to Zhemgang, according to verbal correspondence with the **Khenpo Sonam Tshering** of the Nyingsingborang Lhakhang. While on a mission to establish a school at Zhemgang Dzongkhag, **Father Mickey**, a foreign teacher, hiked through the trail. While on his agricultural mission, Dasho Nishoka also travelled this route.

### 3. Gongri-Bali Eco-lodge Campsite

The newly formed Gongri-Bali Eco-lodge community has five members. With objectives of showcasing and promoting their indigenous village life style to outer world, they focus to boost livelihood of communities around and help to generate income in future. The upcoming eco-lodge is located 5km from main road at 600 masl, a perfect site for birdwatching, fly fishing, outdoor camping, river rafting and experiencing aesthetic landscape to rejuvenate mindfulness.



The warm broadleaf forest makes it perfect for high species of flora and fauna. A perfect habitat for Great Hornbill, Rufous-necked hornbill, Barbets, Bee eaters, Collared treepie, White hooded babbler, woodpeckers, laughingthrushes and many more.



## METHODOLOGY

The bird survey was conducted using a standardized protocol- **Bhutan Bird Monitoring Protocol** developed Nature Conservation Division, Department of Forest and Park Services, Royal Government of Bhutan. The survey team utilized both visual and auditory methods to identify and record bird species.

The trail transect method was applied to collect the data incorporating with **Epicollect5 (Bhutan birdlife Society)**. The team from **Gongribali Eco-lodge Community** and **Bhutan Birdlife Society (BBLs)** jointly conducted the survey along the route transecting at various point intervals throughout the survey to ensure comprehensive coverage of bird activity. The standard data collection form prescribed by Bhutan Bird Monitoring Protocol was incorporated in Epicollect5 Project to collect the data on field.

Unlike other survey, the bird survey has to start as early as 5: 00 till 11:00 in morning and continue after 3:00 till 5:00 in afternoon for entire survey period.

## MATERIALS

1. Binoculars & Camera
2. Laser Range Finder
3. Altimeter/GPS Unit/Compass
4. Topographic Map of the Survey Area
5. Field Guide/Bird Songs
6. Data Form/App
7. Pencil/Ball Point Pen

## Findings

This report aims to provide an overview of the bird survey conducted along the Lotus Valley Trek/route in PemaGatshel Dzongkhag. The survey was carried out to collect data on the winter migratory bird species present along the route. The survey was conducted along the route from **28/12/2023 to 21/01/2024** to assess the diversity and abundance of bird species in the area.

The survey aimed to gather data on the presence of different bird species, their habitats, and any potential conservation concerns.

A total of 172 species of birds were recorded along the from 2 trail and Eco-lodge campsite. The survey revealed a significant presence of both resident and migratory bird species, including several vulnerable and Near Threatened ones. The diverse range of habitats within the route contributes to the high bird species count, making it an attractive destination for birding enthusiasts. The species included both resident and migratory birds, showcasing the area's importance as a habitat for various avifauna.

The survey revealed varying levels of abundance for different bird species. Some species were found to be abundant, indicating a healthy population, while others were less common, warranting further attention to understand potential population dynamics.

## Recommendations

Based on the survey findings, the following recommendations are proposed:

1. **Continued Monitoring:** Regular bird surveys should be conducted to monitor changes in bird populations and assess the effectiveness of conservation measures. To get all-inclusive data, the survey for all season should be conducted.
2. **Public Awareness:** Efforts to raise public awareness about the importance of bird conservation and the role of the surveyed area in supporting diverse bird species should be undertaken.
3. **Collaborative Conservation:** Collaboration with local communities, conservation organizations, and government agencies is essential to implement effective conservation strategies.



## Conclusion

The comprehensive study on winter migratory birds conducted at 2 trial and Eco-lodge area has provided valuable insights into the rich avian biodiversity of the region. As a crucial component of the broader tourism initiative, this study aimed to assess the potential of PemaGatshel as a tourist destination, highlighting the significance of its diverse bird population.

The recorded data revealing 172 bird species spanning 45 families underscores the remarkable variety of avifauna present in the area. The Shannon diversity index, calculated at 4.42, further emphasizes the ecological richness of the area, reflecting a balanced distribution of species. This diversity is not only an ecological asset but also holds immense potential to attract bird enthusiasts and nature lovers, contributing to the promotion of sustainable tourism.

One noteworthy finding is the observation that 22.63% of Bhutan's total bird species were documented within the study area. This statistic underscores the importance of the area as a critical habitat for a substantial portion of the country's avian population during the winter months. Such a concentration of birdlife not only enhances the ecological value of the region but also serves as a unique selling point for tourism development.

As Pema Gastshel emerges as a potential tourist destination, the information gathered from this study becomes integral for conservation efforts, tourism planning, and community engagement. By recognizing the significance of the winter migratory birds in the area, stakeholders can work collaboratively to implement sustainable practices that preserve the delicate balance of the ecosystem while providing enriching experiences for visitors.

The findings underscore the need for a holistic approach that prioritizes conservation, education, and community involvement. As the Dzongkhag moves forward in its journey as a potential tourist destination, the knowledge gained from this study will play a pivotal role in fostering a harmonious coexistence between tourism development and the preservation of its natural heritage.

## Annexure 1: Checklist of Lotus Valley Trek

<b>Annotated checklist of Lotus Valley Trek</b>						
<b>SL</b>	<b>Species_Name</b>	<b>Habitat</b>	<b>Behavior</b>	<b>Evidence</b>	<b>Latitude</b>	<b>Longitude</b>
1	Ashy-throated Warbler ( <i>Phylloscopus maculipennis</i> )	Cool broadleaf forest	Call	Observed	27.022269	91.45645
2	Blue Whistling Thrush ( <i>Myophonus caeruleus</i> )	Cool broadleaf forest	Feeding	Observed	26.978622	91.43155
3	Chestnut-crowned Warbler ( <i>Seicercus castaniceps</i> )	Cool broadleaf forest	Feeding	Observed	27.020911	91.46341
4	Red-vented Bulbul ( <i>Pycnonotes cafer</i> )	Cool broadleaf forest	Feeding	Observed	27.020911	91.46341
5	Rufous-capped Babbler ( <i>Stachyris ruficeps</i> )	Cool broadleaf forest	Feeding	Observed	27.020911	91.46341
6	Streaked-breasted Scimitar Babbler ( <i>Pomatorhinus rufficollis</i> )	Cool broadleaf forest	Feeding	Observed	27.020911	91.46341
7	Bar-throated Siva ( <i>Siva strigula</i> )	Cool broadleaf forest	Feeding	Observed	27.020911	91.46341
8	Bay Woodpecker ( <i>Blythipicus pyrrhotis</i> )	Cool broadleaf forest	Flying	Observed	27.016072	91.46638
9	Bhutan Laughingthrush ( <i>Garrulax imbricatus</i> )	Cool broadleaf forest	Feeding		27.024378	91.45729
10	Black-eared Shrike Babbler ( <i>Pteruthius melanotis</i> )	Cool broadleaf forest	Feeding	Observed	26.978622	91.43155
11	Blue-fronted Redstart ( <i>Phoenicurus frontalis</i> )	Cool broadleaf forest	Feeding	Observed	26.992674	91.45755
12	Buff-barred Warbler ( <i>Phylloscopus pulcher</i> )	Cool broadleaf forest	Feeding	Observed	27.011803	91.45588
13	Chestnut-crowned Laughingthrush ( <i>Garrulax erythrocephalus</i> )	Cool broadleaf forest	Feeding	Observed	26.978622	91.43155
14	Coal Tit ( <i>Parus ater</i> )	Cool broadleaf forest	Feeding	Observed	27.024501	91.46314
15	Collared Owlet ( <i>Glaucidium brodiei</i> )	Cool broadleaf forest	Feeding	Observed	27.020911	91.46341
16	Dark-rumped Rosefinch ( <i>Carpodacus edwardsii</i> )	Cool broadleaf forest	Feeding	Observed	27.023872	91.4576
17	Eurasian Jay ( <i>Garrulus glandarius</i> )	Cool broadleaf forest	Call	Observed	27.010953	91.45679
18	Fire-breasted Flowerpecker ( <i>Dicaeum ignipectus</i> )	Cool broadleaf forest	Feeding	Observed	27.01477	91.45719
19	Golden Bush Robin ( <i>Tarsiger chrysaeus</i> )	Cool broadleaf forest	Call	Call	27.020942	91.46342
20	Golden-naped Finch ( <i>Pyrrhoplectes epauletta</i> )	Cool broadleaf forest	Feeding	Observed	26.981352	91.44315
21	Greater Yellownape ( <i>Picus flavinucha</i> )	Cool broadleaf forest	Feeding	Observed	27.00016	91.46197
22	Green-backed Tit ( <i>Parus monticolus</i> )	Cool broadleaf forest	Feeding	Observed	27.016335	91.46664
23	Green-tailed Sunbird ( <i>Aethopyga nipalensis</i> )	Cool broadleaf forest	Call	Observed	27.022269	91.45645



24	Grey-hooded Warbler ( <i>Phylloscopus xanthoschistos</i> )	Cool broadleaf forest	Feeding	Observed	27.012455	91.45535
25	Hill Partridge ( <i>Arborophila torqueol</i> )	Cool broadleaf forest	Call	Call	27.021588	91.45608
26	Himalayan Buzzard ( <i>Buteo burmanicus</i> )	Cool broadleaf forest	Feeding	Observed	27.011803	91.45588
27	Hume's Bush Warbler ( <i>Cettia brunnescens</i> )	Cool broadleaf forest	Feeding	Observed	27.024501	91.46314
28	Kalij Pheasant ( <i>Lophura leucomelanos</i> )	Cool broadleaf forest	Call	Observed	27.022269	91.45645
29	Large Niltava ( <i>Niltava grandis</i> )					
30	Large-billed Crow ( <i>Corvus macrorhynchos</i> )	Cool broadleaf forest	Flying	Observed	27.016018	91.46617
31	Long-tailed Minivet ( <i>Pericrocotus ethologus</i> )	Cool broadleaf forest	Feeding	Observed		
32	Nepal Fulvetta ( <i>Alcippe nipalensis</i> )	Cool broadleaf forest	Feeding	Observed	27.001387	91.46172
33	Olive-backed Pipit ( <i>Anthus hodgsoni</i> )	Cool broadleaf forest	Feeding	Observed	26.992952	91.45764
34	Orange-bellied Leafbird ( <i>Chloropsis hardwickii</i> )	Cool broadleaf forest	Feeding	Observed	26.988273	91.44894
35	Oriental Turtle Dove ( <i>Streptopelia orientalis</i> )	Cool broadleaf forest	Flying	Observed	27.016072	91.46638
36	Red-faced Liocichla ( <i>Liocichla phoenicea</i> )	Cool broadleaf forest	Feeding	Observed	26.978622	91.43155
37	Red-tailed Minla ( <i>Minla ignotincta</i> )	Cool broadleaf forest	Feeding	Observed	27.024501	91.46314
38	Rufous Sibia ( <i>Heterophasa capistrata</i> )	Cool broadleaf forest	Feeding		27.024378	91.45729
39	Rufous-breasted Accentor ( <i>Prunella strophiatea</i> )	Cool broadleaf forest	Feeding	Observed	26.978895	91.43181
40	Rufous-vented Yuhina ( <i>Yuhina occipitalis</i> )	Cool broadleaf forest	Feeding	Observed	27.020911	91.4634
41	Russet Sparrow ( <i>Passer rutilans</i> )					
42	Rusty-fronted Barwing ( <i>Actinodura egertoni</i> )	Cool broadleaf forest	Feeding	Observed	26.978895	91.43181
43	Scaly-breasted Wren Babbler ( <i>Pnoepyga albiventer</i> )	Cool broadleaf forest	Call	Observed	26.981499	91.43955
44	Slender-billed Scimiter Babbler ( <i>Xiphirochus superciliosus</i> )	Cool broadleaf forest	Feeding	Observed	27.020911	91.46341
45	Small Niltava ( <i>Niltava macgrigoriae</i> )	Cool broadleaf forest	Call	Call	27.014428	91.45696
46	Spotted Forktail ( <i>Enicurus maculatus</i> )	Cool broadleaf forest	Feeding	Observed	27.020911	91.46341
47	Straited Bulbul ( <i>Pycnonotes straitus</i> )	Cool broadleaf forest	Call	Call		
48	Straited Laughingthrush ( <i>Garrulax striatus</i> )	Cool broadleaf forest	Feeding	Observed	27.014086	91.45672
49	Ward's Trogon ( <i>Harpactes wardi</i> )	Cool broadleaf forest	Feeding	Observed	27.024501	91.46314
50	Wedge-tailed Green Pigeon ( <i>Treron sphenura</i> )	Cool broadleaf forest	Call	Call	27.016464	91.46669
51	Whistler's Warbler ( <i>Seicercus whistleri</i> )	Cool broadleaf forest	Feeding	Observed	27.013673	91.45634
52	White Wagtail ( <i>Motacilla alba</i> )	Cool broadleaf forest	Flying	Observed	27.016072	91.46638

53	White-browed Bush Robin ( <i>Tarsiger indicus</i> )	Cool broadleaf forest	Feeding	Observed	27.016657	91.46708
54	White-gorgeted Flycatcher ( <i>Ficedula monileger</i> )	Cool broadleaf forest	Feeding	Observed	27.020911	91.46341
55	White-throated Laughingthrush ( <i>Garrulax albogularis</i> )	Cool broadleaf forest	Feeding	Observed	26.978622	91.43155
56	Yellow-billed Blue Magpie ( <i>Urocissa flavirostris</i> )	Cool broadleaf forest	Call	Observed	27.022269	91.45645
57	Yellow-breasted Greenfinch ( <i>Carduelis spinoides</i> )	Cool broadleaf forest	Feeding	Observed	27.017038	91.46703

## Annexure 2: Checklist of Norbugang-Nyenshingborang Eco-Trek

<b>Annotated Checklist of Norbugang-Nyenshingborang Eco-Trek</b>						
<b>SL</b>	<b>Species_Name</b>	<b>Habitat</b>	<b>Behavior</b>	<b>Evidence</b>	<b>Latitude</b>	<b>Longitude</b>
1	Ashy Drongo ( <i>Dicrurus leucophaeus</i> )	Warm broadleaf forest	Feeding	Observed	26.847697	91.239102
2	Barred Cuckoo Dove ( <i>Macropygia unchall</i> )	Warm broadleaf forest	Feeding	Observed	26.853062	91.228868
3	Blue Whistling Thrush ( <i>Myophonus caeruleus</i> )	Warm broadleaf forest	Feeding	Observed	26.847697	91.239102
4	Bronzed Drongo ( <i>Dicrurus aeneus</i> )	Warm broadleaf forest	Feeding	Observed	26.838277	91.172398
5	Chestnut-bellied Nuthatch ( <i>Sitta castanea</i> )	Warm broadleaf forest	Feeding	Observed	26.838277	91.172398
6	Little Spiderhunter ( <i>Arachnothera longirostra</i> )	Warm broadleaf forest	Call	Observed	26.852576	91.226321
7	Long-tailed Broadbill ( <i>Psarisomus dalhousiae</i> )	Warm broadleaf forest	Call	Observed	26.84364	91.198681
8	Orange-bellied Leafbird ( <i>Chloropsis hardwickii</i> )	Warm broadleaf forest	Feeding	Observed	26.847697	91.239102
9	Sultan Tit ( <i>Melanochlora sultanea</i> )	Warm broadleaf forest	Feeding	Observed	26.838277	91.172398
10	Alpine Thrush ( <i>Zoothera mollissima</i> )	Warm broadleaf forest	Feeding	Observed	26.845153	91.145063
11	Ashy Bubul ( <i>Hemixos flavala</i> )	Warm broadleaf forest	Feeding	Observed	26.853062	91.228868
12	Asian Barred Owlet ( <i>Glaucidium cuculoides</i> )	Warm broadleaf forest	Call	Observed	26.847121	91.128192
13	Barn Swallow ( <i>Hirundo rustica</i> )	Warm broadleaf forest	Feeding	Call	26.853029	91.228715
14	Bay Woodpecker ( <i>Blythipicus pyrrhotis</i> )	Warm broadleaf forest	Call	Observed	26.843453	91.18391
15	Black-chinned Yuhina ( <i>Yuhina nigrimenta</i> )	Warm broadleaf forest	Call	Observed	26.852576	91.226321
16	Black-crested Bulbul ( <i>Pycnonotus malanicterus</i> )	Warm broadleaf forest	Call	Observed	26.847121	91.128192
17	Black-naped Monarch ( <i>Hypothymis azurea</i> )	Warm broadleaf forest	Feeding	Observed	26.843612	91.198651

18	Black-throated Sunbird ( <i>Aethopyga saturata</i> )	Warm broadleaf forest	Call	Observed	26.852576	91.226321
19	Blue-throated Barbet ( <i>Megalaima asiatica</i> )	Warm broadleaf forest	Feeding	Observed	26.853062	91.228868
20	Blue-winged Siva ( <i>Minla cyanouroptera</i> )	Warm broadleaf forest	Feeding	Observed	26.846215	91.147908
21	Blyth's Leaf Warbler ( <i>Phylloscopus reguloides</i> )	Warm broadleaf forest	Feeding	Observed	26.843612	91.198651
22	Blyth's Shrike Babbler ( <i>Pteruthius flaviscapis</i> )	Warm broadleaf forest	Feeding	Observed	26.838277	91.172398
23	Broad-billed Warbler ( <i>Tickellia hodgsoni</i> )	Warm broadleaf forest	Feeding	Observed	26.846865	91.127141
24	Chestnut-bellied Nuthatch ( <i>Sitta castanea</i> )					
25	Chestnut-crowned Warbler ( <i>Seicercus castaniceps</i> )	Warm broadleaf forest	Call	Observed	26.844453	91.156068
26	Chestnut-headed Tesia ( <i>Tesia castaneocoronata</i> )	Warm broadleaf forest	Call	Observed	26.852576	91.226321
27	Collared Owlet ( <i>Glaucidium brodiei</i> )	Warm broadleaf forest	Resting	Observed	26.843763	91.198734
28	Collared Treepie ( <i>Dendrocitta frontalis</i> )	Warm broadleaf forest	Feeding	Observed	26.842331	91.187419
29	Common Green Magpie ( <i>Cissa chinensis</i> )	Warm broadleaf forest	Feeding	Observed	26.847697	91.239102
30	Common Rosefinch ( <i>Carpodacus erythrinus</i> )	Warm broadleaf forest	Feeding	Observed	26.851441	91.139522
31	Common Tailorbird ( <i>Orthotomus sutorius</i> )	Warm broadleaf forest	Feeding	Call	26.853029	91.228715
32	Crested Serpent Eagle ( <i>Spilornis cheela</i> )	Warm broadleaf forest	Flying	Observed	26.852404	91.225949
33	Fire-breasted Flowerpecker ( <i>Dicaeum ignipectus</i> )	Warm broadleaf forest	Call	Observed	26.840481	91.163957
34	Fulvous-breasted Woodpecker ( <i>Dendrocopos macei</i> )	Warm broadleaf forest	Feeding	Observed	26.838277	91.172398
35	Golden Bush Robin ( <i>Tarsiger chrysaeus</i> )	Warm broadleaf forest	Call	Observed	26.84303	91.183717
36	Great Barbet ( <i>Megalaima virens</i> )	Warm broadleaf forest	Call	Observed	26.842988	91.194276
37	Great Hornbill ( <i>Buceros bicornis</i> )	Warm broadleaf forest	Call	Observed	26.852576	91.226321
38	Greater Goldenback ( <i>Chrysocolaptes lucidus</i> )	Warm broadleaf forest	Call	Observed	26.852576	91.226321
39	Greater Racket-tailed Drongo ( <i>Dicrurus paradiseus</i> )	Warm broadleaf forest	Call	Observed	26.844164	91.156409
40	Greater Yellownape ( <i>Picus flavinucha</i> )	Warm broadleaf forest	Feeding	Observed	26.838277	91.172398
41	Green-backed Tit ( <i>Parus monticolus</i> )	Warm broadleaf forest	Call	Observed	26.843453	91.18391
42	Grey Treepie ( <i>Dendrocitta formosae</i> )	Warm broadleaf forest	Call	Observed	26.84303	91.183717
43	Grey-chinned Minivet ( <i>Pericrocotus solaris</i> )	Warm broadleaf forest	Feeding	Observed	26.842331	91.187419
44	Grey-headed Canary Flycatcher ( <i>Culicicapa ceylonensis</i> )	Warm broadleaf forest	Call	Observed	26.844453	91.156068
45	Grey-hooded Warbler ( <i>Phylloscopus xanthoschistos</i> )	Warm broadleaf forest	Feeding	Observed	26.846974	91.127665



46	Grey-throated Babbler ( <i>Stachyris nigriceps</i> )	Warm broadleaf forest	Call	Observed	26.84364	91.198681
47	Hill Partridge ( <i>Arborophila torqueol</i> )	Warm broadleaf forest	Call	Observed	26.840546	91.163943
48	Himalayan Vulture ( <i>Gyps himalayensis</i> )	Warm broadleaf forest	Call	Observed	26.844453	91.156068
49	Kalij Pheasant ( <i>Lophura leucomelanos</i> )					
50	Large Niltava ( <i>Niltava grandis</i> )	Warm broadleaf forest	Call	Observed	26.840251	91.168428
51	Large-billed Crow ( <i>Corvus macrorhynchos</i> )	Warm broadleaf forest	Feeding	Observed	26.849418	91.124301
52	Lemon-rumped Warbler ( <i>Phylloscopus chloronotus</i> )	Warm broadleaf forest	Call	Observed	26.84364	91.198681
53	Lesser Necklaced Laughingthrush ( <i>Garrulax monileger</i> )	Warm broadleaf forest	Call	Observed	26.83836	91.172353
54	Lesser Racket-tailed Drongo ( <i>Dicrurus remifer</i> )	Warm broadleaf forest	Feeding	Observed	26.843612	91.198651
55	Lesser Yellownape ( <i>Picus chlorolophus</i> )	Warm broadleaf forest	Feeding	Observed	26.844731	91.155751
56	Little Spiderhunter ( <i>Arachnothera longirostra</i> )	Warm broadleaf forest	Feeding	Observed	26.847697	91.239102
57	Long-tailed Broadbill ( <i>Psarisomus dalhousiae</i> )	Warm broadleaf forest	Call	Observed	26.844236	91.156359
58	Long-tailed Sibia ( <i>Heterophasa picaoides</i> )	Warm broadleaf forest	Feeding	Observed	26.842331	91.187419
59	Mountain Bulbul ( <i>Hypsipetes mcclallandii</i> )	Warm broadleaf forest	Feeding	Call	26.853029	91.228715
60	Nepal Fulvetta ( <i>Alcippe nipalensis</i> )	Warm broadleaf forest	Call	Observed	26.843453	91.18391
61	Nepal Fulvetta ( <i>Alcippe nipalensis</i> ) Collared Owlet ( <i>Glaucidium brodiei</i> )	Warm broadleaf forest	Call	Observed	26.847121	91.128192
62	Oriental White-eye ( <i>Zosterops palpebrosus</i> )	Warm broadleaf forest	Call	Observed	26.843453	91.18391
63	Pin-striped Tit-babbler ( <i>Macronous gularis</i> )	Warm broadleaf forest	Feeding	Observed	26.846974	91.127665
64	Puff-throated Babbler ( <i>Pellorneum ruficeps</i> )	Warm broadleaf forest	Call	Observed	26.844453	91.156068
65	Red-tailed Minla ( <i>Minla ignotincta</i> )					
66	Red-tailed Minla ( <i>Minla ignotincta</i> )	Warm broadleaf forest	Feeding	Observed	26.842331	91.187419
67	Red-vented Bulbul ( <i>Pycnonotes cafer</i> )	Warm broadleaf forest	Feeding	Observed	26.847697	91.239102
68	Red-whiskered Bulbul ( <i>Pycnonotes jocosus</i> )	Warm broadleaf forest	Feeding	Observed	26.849418	91.124301
69	Rufous Sibia ( <i>Heterophasa capistrata</i> )	Warm broadleaf forest	Call	Observed	26.852576	91.226321
70	Rufous-backed Sibia ( <i>Heterophasa annectans</i> )	Warm broadleaf forest	Call	Observed	26.84364	91.198681
71	Rufous-bellied Niltava ( <i>Niltava sundara</i> )	Warm broadleaf forest	Call	Observed	26.852576	91.226321
72	Rufous-capped Babbler ( <i>Stachyris ruficeps</i> ),	Warm broadleaf forest	Feeding	Observed	26.846865	91.127141
73	Rufous-throated Partridge ( <i>Arborophila rufogularis</i> )	Warm broadleaf forest	Call	Observed	26.840546	91.163943

74	Rufous-vented Laughingthrush ( <i>Garrulax gularis</i> )	Warm broadleaf forest	Feeding	Observed	26.845183	91.155366
75	Rusty-cheeked Scimiter (Babbler <i>Pomatorhinus erythrogenys</i> )	Warm broadleaf forest	Feeding	Observed	26.840454	91.163976
76	Scarlet Minivet ( <i>Pericrocotus flammeus</i> )	Warm broadleaf forest	Feeding	Observed	26.838277	91.172398
77	Silver-eared Mesia ( <i>Leiothrix argentea</i> )	Warm broadleaf forest	Call	Observed	26.847892	91.130033
78	Spotted Dove ( <i>Streptopelia chinensis</i> )	Warm broadleaf forest	Feeding	Observed	26.846865	91.127141
79	Straited Laughingthrush ( <i>Garrulax striatus</i> ),	Warm broadleaf forest	Feeding	Observed	26.842331	91.187419
80	Streaked Spiderhunter ( <i>Arachnothera magna</i> )	Warm broadleaf forest	Call	Observed	26.852576	91.226321
81	Streaked-breasted Scimiter Babbler ( <i>Pomatorhinus ruficollis</i> )	Warm broadleaf forest	Call	Observed	26.840546	91.163943
82	Whiskered Yuhina ( <i>Yuhina flavicollis</i> )	Warm broadleaf forest	Feeding	Call	26.853029	91.228715
83	Whistler's Warbler ( <i>Seicercus whistleri</i> )	Warm broadleaf forest	Feeding	Observed	26.846865	91.127141
84	White-bellied Erpornis ( <i>Yuhina zantholeuca</i> )	Warm broadleaf forest	Call	Observed	26.843453	91.18391
85	White-browed Scimiter Babbler ( <i>Pomatorhinus schisticeps</i> )	Warm broadleaf forest	Call	Observed	26.83836	91.172353
86	White-crested Laughingthrush ( <i>Garrulax leucolophus</i> )	Warm broadleaf forest	Call	Observed	26.852576	91.226321
87	White-napped Yuhina ( <i>Yuhina bakeri</i> )	Warm broadleaf forest	Call	Observed	26.84364	91.198681
88	White-throated Bulbul ( <i>Allophoixus flaveolus</i> )	Warm broadleaf forest	Call	Observed	26.84303	91.183717
89	White-throated Bulbul ( <i>Allophoixus flaveolus</i> )	Warm broadleaf forest	Feeding	Observed	26.851441	91.139522
90	White-throated Fantail ( <i>Rhipidura albicollis</i> )	Warm broadleaf forest	Feeding	Observed	26.838277	91.172398
91	Yellow-vented Warbler ( <i>Phylloscopus cantator</i> )	Warm broadleaf forest	Feeding	Observed	26.843612	91.198651

### Annexure 3: Checklist of Gongribali Eco-lodge Site

<b>Annotated Checklist of Gongribali Ecologe Site</b>						
<b>S L</b>	<b>Date</b>	<b>Species</b>	<b>Behavior</b>	<b>Evidence</b>	<b>Latitude</b>	<b>Longitude</b>
1	2024-01-05T04:25:15.022Z	Blue Whistling Thrush ( <i>Myophonus caeruleus</i> )	Feeding	Observed	26.869339	91.120816
2	2024-01-05T04:25:15.022Z	Blue-throated Barbet ( <i>Megalaima asiatica</i> )	Feeding	Observed	26.869339	91.120816
3	2024-01-05T04:25:15.022Z	Bronzed Drongo ( <i>Dicrurus aeneus</i> )	Feeding	Observed	26.869339	91.120816
4	2024-01-05T04:37:47.287Z	Brown Dipper ( <i>Cinclus pallasii</i> ), Little Forktail ( <i>Enicurus scouleri</i> )	Feeding	Observed	26.872733	91.119564
5	2024-01-05T04:25:15.022Z	Brown Shrike ( <i>Lanius cristatus</i> )	Feeding	Observed	26.869339	91.120816
6	2024-01-05T04:26:51.452Z	Common Tailorbird ( <i>Orthotomus sutorius</i> )	Preening	Observed	26.869709	91.120528
7	2024-01-05T06:11:47.864Z	Great Cormorant ( <i>Phalacrocorax carbo</i> )	Flying	Observed	26.872931	91.118919
8	2024-01-05T04:25:15.022Z	Great Hornbill ( <i>Buceros bicornis</i> )	Feeding	Observed	26.869339	91.120816
9	2024-01-05T04:25:15.022Z	Grey Bushchat ( <i>Saxicola ferrea</i> )	Feeding	Observed	26.869339	91.120816
10	2024-01-05T04:25:15.022Z	Grey-backed Shrike ( <i>Lanius tephronotus</i> ),	Feeding	Observed	26.869339	91.120816
11	2024-01-05T04:25:15.022Z	Grey-capped Pygmy Woodpecker ( <i>Dendrocopos canicapillus</i> )	Feeding	Observed	26.869339	91.120816
12	2024-01-05T04:25:15.022Z	Grey-headed Woodpecker ( <i>Picus canus</i> )	Feeding	Observed	26.869339	91.120816
13	2024-01-05T04:25:15.022Z	Lesser Racket-tailed Drongo ( <i>Dicrurus remifer</i> )	Feeding	Observed	26.869339	91.120816



14	2024-01-05T04:25:15.022Z	Maroon Oriole ( <i>Oriolus traillii</i> )	Feeding	Observed	26.86933 9	91.120816
15	2024-01-05T04:25:15.022Z	Paddyfeild Pipit ( <i>Anthus rufulus</i> )	Feeding	Observed	26.86933 9	91.120816
16	2024-01-05T04:25:15.022Z	Pin-striped Tit-babbler ( <i>Macronous gularis</i> )	Feeding	Observed	26.86933 9	91.120816
17	2024-01-05T06:11:47.864Z	Plumbeous Water Redstart ( <i>Rhyacornis fuliginosus</i> ),	Flying	Observed	26.87293 1	91.118919
18	2024-01-05T04:25:15.022Z	Red Junglefowl ( <i>Gallus gallus</i> )	Feeding	Observed	26.86933 9	91.120816
19	2024-01-05T04:25:15.022Z	Red-vented Bulbul ( <i>Pycnonotes cafer</i> )	Feeding	Observed	26.86933 9	91.120816
20	2024-01-05T06:06:16.792Z	Ruddy Kingfisher ( <i>Halcyon coromanda</i> )	Call	Observed	26.87293 1	91.118919
21	2024-01-05T06:06:16.792Z	Scaly-breasted Wren Babbler ( <i>Pnoepyga albiventer</i> )	Call	Observed	26.87293 1	91.118919
22	2024-01-05T06:11:47.864Z	Slaty-backed Forktail ( <i>Enicurus schistaceus</i> ),	Flying	Observed	26.87293 1	91.118919
23	2024-01-05T04:26:51.452Z	Spotted Dove ( <i>Streptopelia chinensis</i> )	Preening	Observed	26.86970 9	91.120528
24	2024-01-05T04:25:15.022Z	Yellow-bellied Fantail ( <i>Rhipidura hypoxantha</i> )	Feeding	Observed	26.86933 9	91.120816

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