

“TAKING TOURISM TO THE TOP”

BIRDING TOURISM FEASIBILITY STUDY REPORT

2020



TO PROMOTE BIRDING TOURISM IN SAMDRUP JONGKHAR, TSIRANG, GASA

HIGH VALUE, LOW VOLUME



TOURISM COUNCIL OF BHUTAN

BIRDING TOURISM FEASIBILITY STUDY REPORT 2020



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Project Summary

Project Title: Feasibility Study to Promote Birding Tourism in Samdrup Jongkhar, Tsirang and Gasa

Project Objective: Enhance regional spread of tourism by identifying birding potentialities in Samdrup Jongkhar, Sarpang-Tsirang & Punakha-Gasa Dzongkhags (2019 – 2020 FYP)

Project Timeline: July 2019 – June 2020

Project Manager: Rinzin Jamtsho, Chief, IPPD, TCB

Project Financial Support: The Secretariat, Tourism Council of Bhutan (TCBS)

Project Execution: The Ugyen Wangchuck Institute for Conservation and Environment Research (UWICER) executed the bird survey for promotion of birding tourism in parts of Bhutan upon the signing of the Memorandum of Understanding (MoU) between the Secretariat, Tourism Council of Bhutan (TCB) and the UWICER, dated 2019 August 30.

Project Technical Support: Ugyen Wangchuck Institute for Conservation and Environment Research (UWICER)

Project Field Execution: October 2019, January 2020 & April 2020

Project Report Submission: June 2020

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Abstract

This bird survey activity was executed based on the July 2019 agreement between the Secretariat, Tourism Council of Bhutan and the Ugyen Wangchuck Institute for Conservation and Environment Research to promote and expand nature-based tourism in Bhutan and the region. The surveys were conducted along three potential bird watching routes namely: Narphu – Samdrup Jongkhar, Shechamthang – Waklaytar and Rimchu – Gasa Dzong in three consecutive seasons (Fall, Winter and Spring, 2019 – 2020). With our work and literature reviews, we recognize, the Narphu – Samdrup Jongkhar (368 bird species) bird watching route as the best for birding activity followed by Shechamthang – Waklaytar (312 bird species) and Rimchu to Gasa (205 bird species). The Shannon-Wiener Diversity Index generated on the species of birding interest also support that the Narphu – Samdrup Jongkhar is the best birding route. The Hodgson' Frogmouth (*Batrachostomus hodgsoni*) was recorded for the first time in the Sarpang Dzongkhag.

1. Introduction

The Himalayan Kingdom of Bhutan is blessed with its geophysical factors, visionary monarchs and people to be endowed with rich biodiversity. Owing to this natural gift of biodiversity, Bhutan is identified as a part of the ten global hotspots on earth. Today, Bhutan has recorded a total of 748 bird species. Given the size disparity, indeed, it is stunning to have bird species richness comparable to North America. The geophysical factors that favors Bhutan to support high bird diversity are: wide altitude range (80 – 7700m), diverse and heterogeneous habitats and ecosystems, contiguous forest cover, a corridor to the Central Asian Flyway for the passage migrants, a summer and winter residence to seasonal migrants, and global warming and climate change. Besides having endowed with high biodiversity, the leadership and people have adopted and endorsed forward looking constitutional mandates to preserve 60% of the land cover under forest in perpetuity for the sustenance of biodiversity and sustainable green-powered economy (hydropower, nature tourism & organic agriculture).

Around the world, people claim bird watching is the second most participated sport, football being the first. Further, bird watchers from around the globe, exclaim Bhutan as one of the best birding countries in the Asian continent. If such is a true proclamation of the people on earth, Bhutan is definitely a place worth a visit. Atop the rich bird diversity, stunningly beautiful species, Bhutan is inhabited by **52** globally threatened and **12** restricted range species, people vie to observe during their life. The **4 critically endangered species** are: White-bellied Heron (*Ardea insignis*), Baer's Pochard (*Aythya baeri*), White-rumped Vulture (*Gyps bengalensis*), Red-headed Vulture (*Sarcogyps calvus*); **5 endangered species** are: Pallas's Fish Eagle (*Haliaeetus leucoryphus*), Egyptian Vulture (*Neophron percnopterus*), Steppe Eagle (*Aquila nipalensis*), White-winged Duck (*Cairina*

scutulata), Black-bellied Tern (*Sterna acuticauda*); **21 vulnerable species** are: Rufous-necked Hornbill (*Aceros nipalensis*), Great Hornbill (*Buceros bicornis*), Wreathed Hornbill (*Rhyticeros undulatus*), Blyth's Tragopan (*Tragopan blythii*), Greater Spotted Eagle (*Clanga clanga*), Indian Spotted Eagle (*Clanga hastata*), Eastern Imperial Eagle (*Aquila heliaca*), Black-necked Crane (*Grus nigricollis*), Chestnut-breasted Partridge (*Arborophila mandellii*), Dark-rumped Swift (*Apus acuticauda*), Common Pochard (*Aythya ferina*), Woolly-necked Stork (*Ciconia episcopus*), Long-tailed Duck (*Clangula hyemalis*), Rustic Bunting (*Emberiza rustica*), Wood Snipe (*Gallinago nemoricola*), Snow Partridge (*Lerwa lerwa*), Great Slaty Woodpecker (*Mulleripicus pulverulentus*), Eurasian Curlew (*Numenius arquata*), Grey-crowned Prinia (*Prinia cinereocapilla*), White-throated Bushchat (*Saxicola insignis*), Beautiful Nuthatch (*Sitta formosa*), **22 near-threatened species** are: Blyth's Kingfisher (*Alcedo hercules*), Falcated Duck (*Anas falcata*), Ferruginous Duck (*Aythya nyroca*), Curlew Sandpiper (*Calidris ferruginea*), Pallid Harrier (*Circus macrourus*), Japanese Quail (*Coturnix japonica*), Satyr Tragopan (*Tragopan satyra*), Black-necked Stork (*Ephippiorhynchus asiaticus*), Great Thick-knee (*Esacus recurvirostris*), Red-necked Falcon (*Falco chicquera*), Bearded Vulture (*Gypaetus barbatus*), Himalayan Vulture (*Gyps himalayensis*), Booted Eagle (*Hieraaetus pennatus*), Black Eagle (*Ictinaetus malayensis*), Ward's Trogon (*Harpactes wardi*), Red-breasted Parakeet (*Psittacula alexandri*), Alexandrine Parakeet (*Psittacula eupatria*), Grey-headed Parakeet (*Psittacula finschii*), Blossom-headed Parakeet (*Psittacula roseata*), Rufous-throated Wren Babbler (*Spelaeornis caudatus*), Blackish-breasted Babbler (*Sphenocichla humei*), River Tern (*Sterna aurantia*), River Lapwing (*Vanellus duvaucelii*) and Northern Lapwing (*Vanellus vanellus*); **12 restricted range species** are: Chestnut-breasted Partridge (*Arborophila madellii*), Blyth's Tragopan, Dark-rumped Swift, Ward's Trogon, Rufous-throated Wren Babbler, Himalayan Wedge-billed Wren Babbler (*Sphenocichla humei*), Hoary-throated Barwing, Brown-throated Fulvetta, White-naped Yuhina (*Yuhina bakeri*), Yellow-vented Warbler (*Phylloscopus cantator*) and Broad-billed Warbler ()

Bhutan having all the above species, birds themselves serves as ambassadors of advertisement and source of attraction for bird watchers and bird watching.

In this study, the bird surveys were carried out in the three stretches of the study areas identified by the Secretariat, Tourism Council of Bhutan (TCBS). The areas of interest to the TCBS were: (1). Narphu – Samdrup Jongkhar (NSJ) in the south east of Bhutan, (2). Shechamthang – Waklaytar (SWK) in the south-central Bhutan, and (3). Rimchu – Gasa Dzong (RGS) in the north-central Bhutan. The TCBS proposed this bird survey to explore for a feasibility to promote bird watching tourism in these parts of the country. The other objective of the survey is to gather geospatial information on bird species and make the information available in public domain to enhance bird watching tourism and raise equity in bird watching opportunities in the country.

The transect length in the Narphu – Samdrup Jongkhar was approximately 56KM with 185-point count plots, encompassed warm broadleaf forests (150 – 1000m) and subtropical broadleaf forests (1000 – 2000m) ecosystems, and within altitudinal range between 150 – 1900m; the Shechamgthang – Waklaytar was about 91KM with 303-point count locations, covered subtropical broadleaf forests, warm broadleaf forests, and subtropical dry chirpine and riverine forests ecosystems, and within elevation of 300 – 1960m range; and the Rimchu – Gasa was almost 58KM with 191-point count stations, traversed warm broadleaf forests and cold broadleaf forests and riverine forests ecosystems, and within altitudinal range of 1345 – 1820m.

During the 3 season (Fall, Winter and Spring) point count bird surveys in the 3 birding routes, a cumulative list of 373 bird species was enlisted. Overall, the survey was conducted at 2037 point locations along the 642KM of transect, generated 13,435 species data points and counted 28,605 birds. The Narphu – Samdrup Jongkhar birding route had cumulative list of 262 bird species; the Shechamthang – Waklaytar had cumulative list of 291 bird species; and Rimchu – Gasa birding route recorded cumulative list of 204 bird species. The Shannon Diversity Index (H) supported aforementioned bird species richness in each birding route. The H values were: (1) NSJ (H = 4.56), (2) SWK (H = 4.62) and (3) RGS (H = 4.45). In our Mann-Whitney U Test, the three birding routes did not show significance at $p < 0.05$ level. When our data were categorized by seasons, bird species richness in Fall, Winter and Spring were 254, 257 and 304 respectively. The Shannon Diversity Index (H) showed, the Shechamthang – Waklaytar ([Fall, H = 4.39], [Winter, H = 4.23], [Spring, H = 4.46]) birding route have the highest bird richness and diversity in all the three seasons, in the second was Narphu – Samdrup Jongkhar ([Fall, H = 4.31], [Winter, H = 4.17], [Spring, H = 4.36]), and in the third was Rimchu – Gasa ([Fall, H = 3.96], [Winter, H = 4.02], [Spring, H = 4.27]). In our statistical validation of seasonal data with Mann-Whitney U Test, bird diversity in Fall & Winter ($z = 2.160$, $p = 0.03$) and Fall & Spring ($z = 2.30$, $p = 0.02$) differed between those seasons, however, statistical difference between Winter & Fall ($z = 0.108$, $p = 0.91$) was not observed.

Further, quantitative and qualitative analysis were done for each bird watching route to bring forth clarity to contribute to enhancing bird watching by season, habitat and locations. We did not analyze and compare species richness by habitats amongst bird watching routes, as the habitat varied from route to route.

With our data we inferred, Shechamthang to Waklaytar birding route has the highest species richness compared to Narphu to Samdrup Jongkhar and Rimchu to Gasa birding routes, however each bird watching route has their specialty.

We have also compiled an annotated checklist of bird species for each bird watching route to serve as a reference resource for planning a birding tour. The annotated birdlist for each route indicated that the Narphu - Samdrup Jongkhar has the highest bird diversity giving it the best bird watching route of the three surveyed sites.

2. Survey Design & Methodology

2.1. Survey Design and Layout

Three survey transects of varying lengths were laid along the primary national highways in parts of Bhutan. The 58KM transect with 185-point count plots in the southeast ran from Narphu to Samdrup Jongkhar (NSJ) in the Samdrup Jongkhar Dzongkhag; the 91KM transect with 303- point count stations in the south-central stretched from Shechamthang to Waklaytar (SWK) within Sarpang, Tsirang and Wangdi Phodrang Dzongkhags; and the 65KM transect with 191-point count locations in the north-central transect was laid from Rimchu to Gasa within Punakha and Gasa Dzongkhags. The transects encompassed subtropical broadleaf forests (200 – 1000m), warm broadleaf forests (1000 – 2000m), cool broadleaf forests (2000 – 2850m), subtropical dry chirpine and riverine forests (200 – 900m) and human settlements.

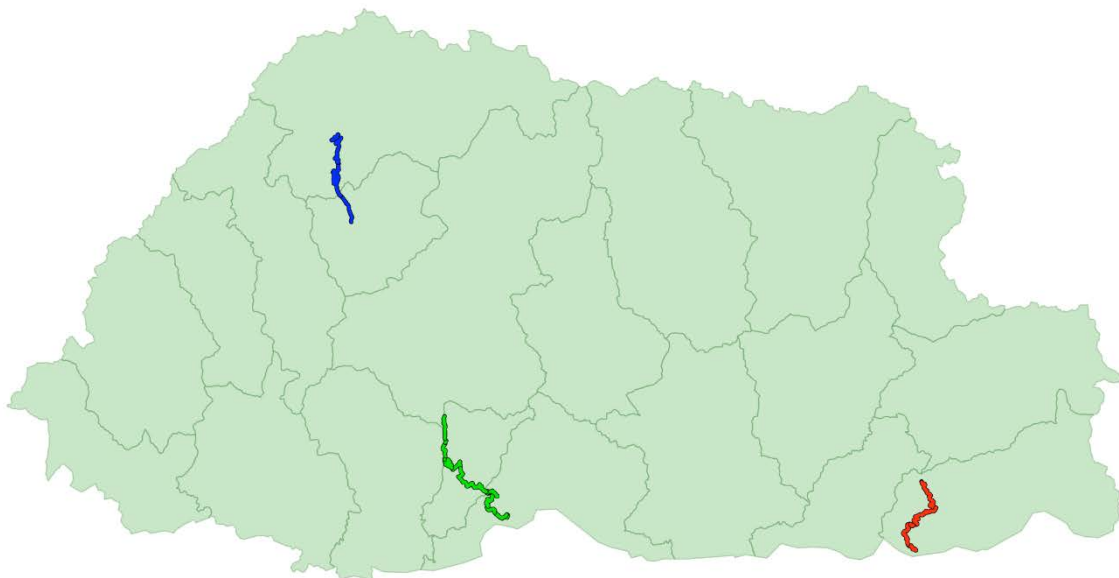


Figure 1: A map of Bhutan with point count survey transects. Color code indicates different transects. Red is Narphu to Samdrup Jongkhar transect, Green is Shechamthang to Waklaytar transect, and blue is Rimchu to Gasa transect.

Point count surveys were conducted in fall, winter and spring. The Fall (season I) survey was conducted from the third week of October until mid-November 2019. Five surveyors (3 from UWICER and 2 volunteers) were engaged. The Winter (season II) survey was undertaken in January 2020, with the engagement of five surveyors (2 from UWICER and 3 volunteers). The Spring (season III) survey was implemented in April

2020 by three surveyors (2 from UWICER and 1 volunteer). During the spring survey, bird songs were recorded manually and with a semi-automated sound recorder.

At a point count station, bird species within 50meter radius were recorded (however acoustically active species beyond 50m were also included). Direct observation and acoustic skills were used to identify and record bird species at each survey point location (Annex I: Point Count Data Form). Vigo Hilux 4WD was engaged to shuttle from point to point locations during the surveys. Beside bird data, geophysical information (GPS coordinates, altitude, forest or habitat) of a point location were collected. We used the Field Guide to the Birds of Bhutan and the Eastern Himalayas by Inskipp et al, 2019 for bird identification in the field and taxonomic nomenclature.

2.2. Data Management and Analysis

Point count data were managed and analyzed in Microsoft Excel 2016. We performed quantitative and qualitative analysis. In the qualitative analysis, we made assessments in species richness, identification of important birding areas and species of birding interest. In our quantitative analysis, we computed Shannon-Wiener Diversity Index (1) and performed Mann-Whitney U Test (2) to compare data across survey routes, seasons and habitats.

2.2.1. Shannon-Wiener Diversity Index

The Shannon-Wiener Diversity Index is calculated with the mathematical formula (1).

$$\text{Shannon Index (H)} = - \sum_{i=1}^s p_i \ln p_i \quad (1)$$

s: is number of species

n: is number of individuals of a particular species

N: is total number of individuals of all species

p: is the proportion (*n*/*N*) of a particular species

ln: is natural log

i: *i*th start at 1

Σ : is sum of calculations

2.2.2. Mann-Whitney U Test

The Mann-Whitney U Test is computed with mathematical formulae (2) and (3). The small value of *U*₁ and *U*₂ is used to determine the significance table to infer the difference between two groups of data sets. However, in this Mann-Whitney U Test was performed online (<https://www.socscistatistics.com/tests/mannwhitney/>)

$$U_1 = R_1 - \frac{n_1(n_1+1)}{2} \quad (2)$$

$$U_2 = R_2 - \frac{n_2(n_2+1)}{2} \quad (3)$$

n_1 : is the number of species in group 1

n_2 : is the number of species in group 2

R_1 : is the sum of ranks of species in group 1 when data from group 1 and group 2 are put together and ranked

R_2 : is the sum of ranks of species in group 2 when data from group 1 and group 2 are put together and ranked

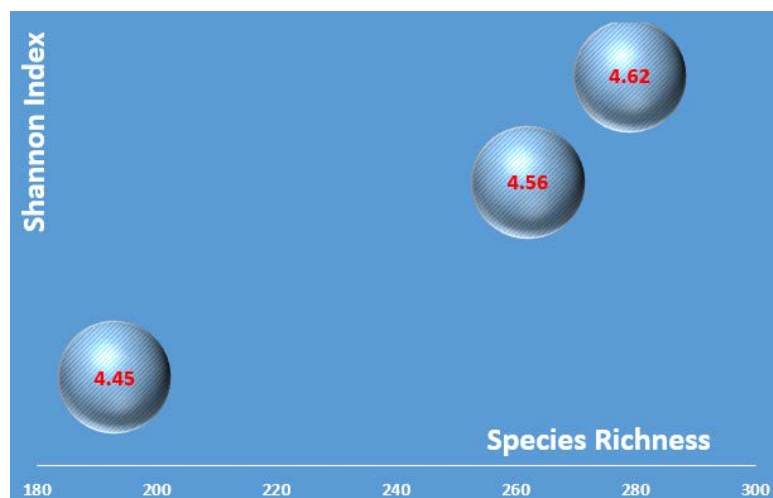
Beside the aforementioned quantitative analysis, a qualitative analysis was performed to extract information to identify important birding areas and species of birding interest based on species status in the Red List-IUCN (International Union for Conservation of Nature).

2.2.3. Species of Birding Interest (SBI)

A qualitative analysis was performed to understand which bird watching route had the highest species of birding interest value. A bird species was assigned a score of 1, given it was listed in the IUCN Redlist, and Bhutan Schedule, identified as a restricted range species (a species distribution range < 50,000 KM²), endemic to the region, and species of elegance. Based on the score, Shannon Index was calculated for each bird watching route.

3. Results, Discussions & Proposals

The point count bird surveys were conducted along a total transect of 642KM, at 2037 point locations. The survey generated 13, 435 data points and counted 28,605 birds. In the 3 season (fall, winter & spring) bird surveys, along the 3 routes, a cumulative total of 373 bird species was recorded. During the consecutive bird surveys, we listed 262, 291 and 204 bird species in respective routes of NSJ, SWK and RGS (Annex: bird list by route).



In our analysis in bird diversity by transect, the Shechamgthang – Waklaytar (H = 4.62) had the highest Shannon Diversity Index (H) followed Narphu – Samdrup Jongkhar (H = 4.56) and Rimchu – Gasa (H = 4.45) [Figure 2]. From these index values of H, we inferred that Shechamthang to Waklaytar stretch has the highest bird

Figure 2: The plot depicts bird species richness and the Shannon-Wiener Diversity Index (H) three bird watching routes.

richness and diversity, and lowest bird species richness and diversity along Rimchu to Gasa route. However, in our comparative two-tailed analysis of significance at $p < 0.05$ level, between the transects (NSJ & SWK [$z = 1.269, p = 0.20$], NSJ & RGS [$z = -1.409, p = 0.16$], SWK & RGS [$z = -0.26, p = 0.80$]) in Mann-Whitney U Test indicated that the differences in species richness and diversity is not significant.

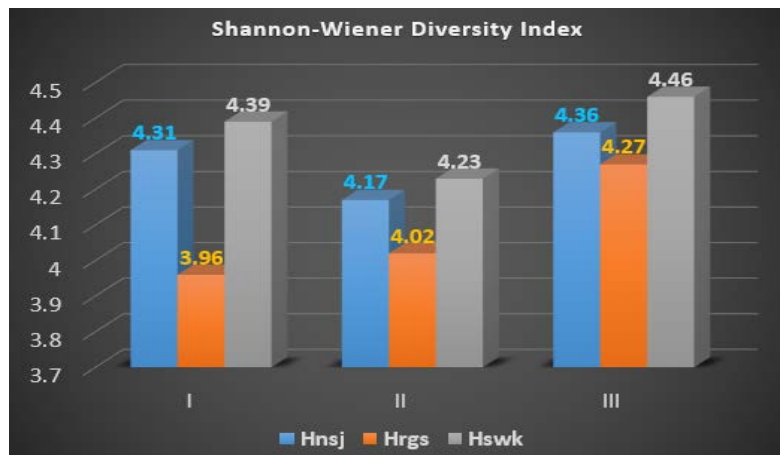


Figure 3: The graph shows seasonal Shannon-Wiener Diversity Index (H) along three bird watching routes (Hnsj: H for Narphu - Samdrup Jongkhar, Hrgs: H for Rimchu - Gasa Dzong, Hswk: Shechamthang - Waklaytar).

Narphu – Samdrupjongkhar in second place with Shannon Index in Fall [H = 4.31], Winter [H = 4.17] and Spring [H = 4.36], Rimchu – Gasa having Shannon Index in Fall [H = 3.96], Winter [H = 4.02] and Spring [H = 4.27] (Figure 3). Along the stretches of Narphu to Samdrup Jongkhar and Shechamthang to Waklaytar, species richness and diversity decreased in the winter, and increased in the spring. These differences in seasonal Shannon-Wiener Diversity Index values may be attributed to seasonal movements (fall and spring bird migrations) and the species activity levels (passive in winter and acoustically active in spring for courtship and breeding). Further, it is possible that high altitude migrants do not descend to these areas. However, H values for the Rimchu – Gasa route increased in every subsequent season (Fall [H = 3.96], Winter [H = 4.02], and Spring [H = 4.27]). The increase of species richness and diversity along Rimchu to Gasa may be from high altitude birds residing in this area in winter, and also the influx of species from spring migration. We also performed Mann-Whitney U Test to validated seasonal data with two-tailed analysis of significance at $p < 0.05$ level, between the seasons: (Fall & Winter [$z = 2.160, p = 0.03$]); Fall & Spring ([$z = 2.30, p = 0.02$]) and Winter & Spring ([$z = 0.108, p = 0.91$]). In our Fall data was compared with Winter & Spring, the difference in species richness and diversity was significant. But the species richness and diversity in Winter & Spring were statistically not significant.

During our bird surveys in Fall, Winter and Spring, we listed 254, 257 and 304 bird species in respectively (Annex: bird list by season). In our assessment of H by season (Fall, Winter, and Spring), the result indicated Shechamthang – Waklaytar have the highest

bird species richness and diversity in all the three seasons (Fall [H = 4.39], Winter [H = 4.23], Spring [H = 4.46]),

The point count survey transects covered subtropical broadleaf forests (200 – 1000m), warm broadleaf forests (1000 – 2000m), cool broadleaf forests (2000 – 2850m), subtropical dry chirpine and riverine forests (200 – 900m) and human settlements (Figure 4).

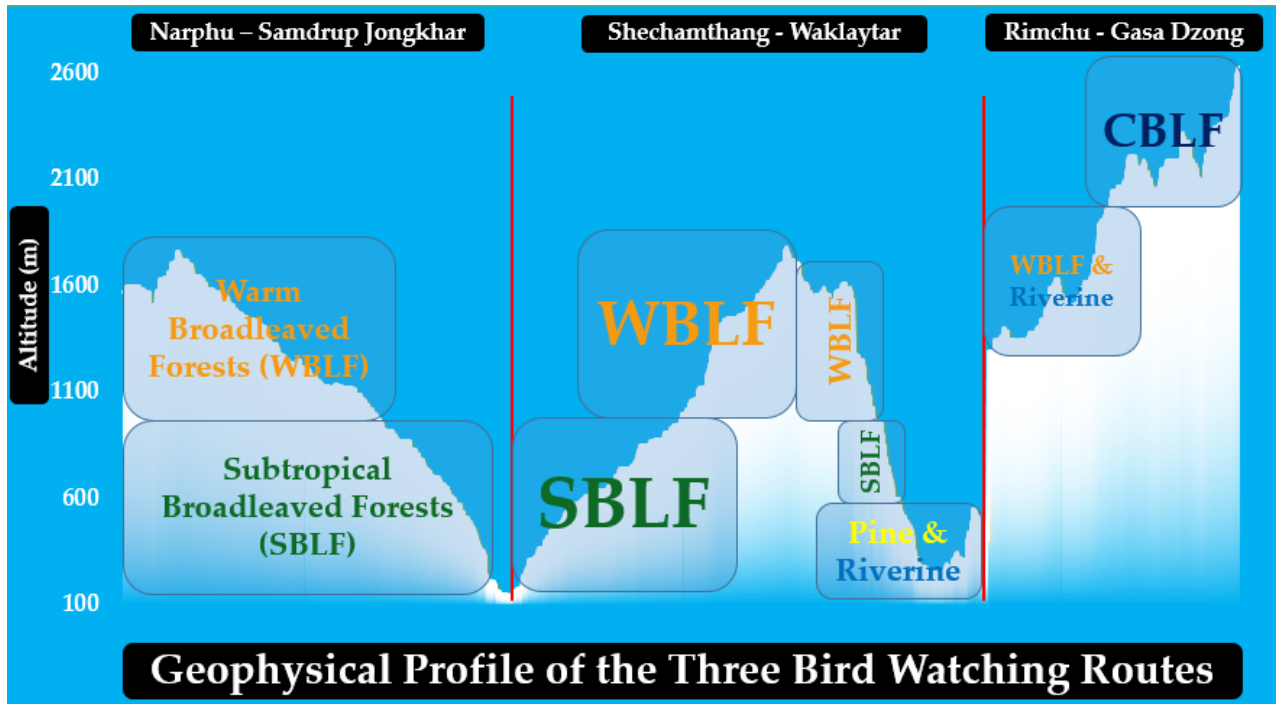


Figure 4: Bird watching route from Narphu - Samdrup Jongkhar is within altitude range from 140 – 1885m with subtropical and warm broadleaf forest. The birding route from Shechamthang – Waklaytar has an elevation range of 240 – 1900m with subtropical and warm broadleaf forests, subtropical dry chirpine and riverine forests. The Rimchu - Gasa Dzong bird watching route lie within the altitude range of 1260 -2630m, comprising warm broadleaf and riverine forests and cool broadleaf forests.



Narphu to Samdrup Jongkhar Bird Watching Route



3.1. Narphu to Samdrup Jongkhar (NSJ) Bird Watching Route

3.1.1. Geophysical Information



Figure 5: Figure shows the point count stations from Narphu - Samdrup Jongkhar bird watching route.

Narphu – Samdrup Jongkhar birding route lies within an altitude range of 150 – 1900m (Figure 5). This birding route encompasses two major habitat types, namely the subtropical broadleaf forests (200 – 1000m) and warm broadleaf forests (1000 – 2000m). The tiny Narphu township saddles on the ridgeline at the base of the famous jaw dropping Narphu cliff. Narphu is about 60KM from Samdrup Jongkhar- an entry point to Bhutan by land in the east. Narphu township is located at 1697m and the highest point is at Shekpashing (1883m) between Narphu and Samdrup Jongkhar. Along the birding route, there are human settlements at Forest Camp, Tokorong, Shekpashing, Morong (45KM from SJ), Arthrise, Tapkang Yoe, Mitangkhar, Saynagang, Aerong, Lamserong, Dewathang (18KM from SJ) and Charkilo. The habitats between Dewathang and Samdrup Jongkhar are degraded and disturbed.

3.1.2. Species Richness, Shannon Diversity Index (H) and Mann-Whitney U Test

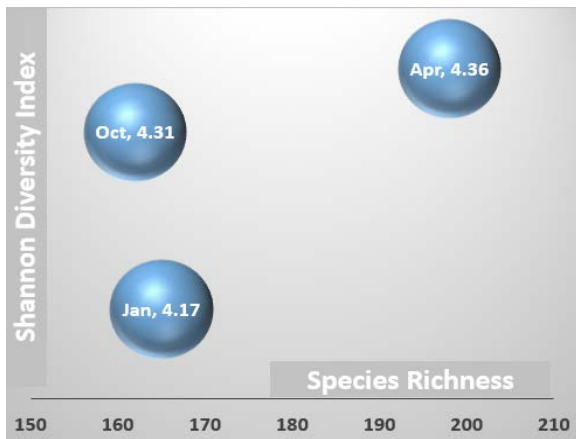


Figure 6: The plot represents seasonal bird species richness and the Shannon - Wiener Diversity Index of Narphu - Samdrup Jongkhar bird watching route.

A total transect length run along NSJ birding route in 3 seasons was 174KM (singleton transect was 58KM). We surveyed at 555 point locations (185 singleton points). A cumulative running bird species list was 262. In the Fall, 162 bird species were listed, and in the subsequent seasons – Winter and Spring, the survey enlisted 165 and 198 species respectively. In the NSJ birding route, the Shannon Diversity Index (H) indicated highest species richness and diversity in Spring (H = 4.36), followed by Fall (H = 4.31) and Winter (H = 4.17). The H determined that birding in this area was best

in Spring, better in Fall and good in Winter. But Mann-Whitney U Test between seasons (Fall & Winter [$z = -0.63, p = 0.54$], Fall & Spring [$z = -0.01, p = 0.99$], Winter & Spring [$z = 0.56, p = 0.58$]) showed statistically not significant among three seasons.



Figure 7: The plot show the bird species richness and H index of the subtropical broadleaf and warm broadleaf forests found along NSJ bird watching route.

We also analyzed whether there was a difference in H value at habitat levels. The NSJ birding route has subtropical broadleaf forests (SBLF) and warm broadleaf forests (WBLF). Across the three seasons, we observed 152 and 208 bird species in SBLF and WBLF respectively. In our analysis, we found WBLF with $H = 4.36$ have greater species richness and diversity compared to SBLF ($H = 3.87$). The Mann-Whitney U Test between SBLF & WBLF ($z = 3.41, p = 0.0006$) indicated significance at $p < 0.05$ significant

level. This H and U Test results supported that birding was better in warm broadleaf forests than subtropical broadleaf forests.

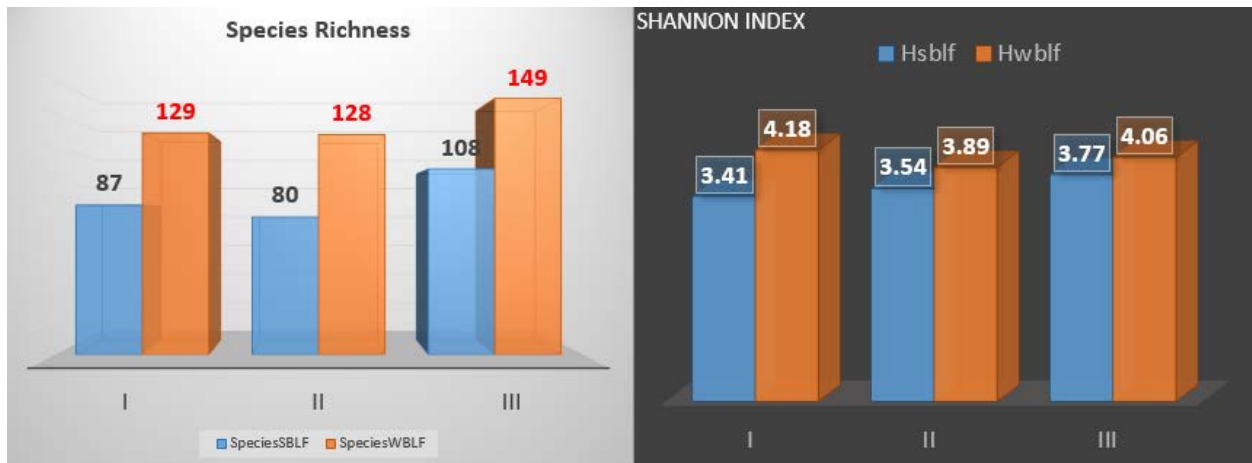


Figure 8: The chart shows the seasonal bird species richness and H in the two habitats found enroute NSJ.

Species richness in three seasons in SBLF (Fall = 87, Winter = 80, Spring = 108), and in WBLF (Fall = 129, Winter = 128, Spring = 149). In our analysis for Shannon Diversity Index by habitat and season matrix, the warm broadleaf forests in Fall ($H = 4.18$) had the highest species diversity when compared to WBLF & Winter ($H = 3.89$), and WBLF & Spring ($H = 4.06$). The subtropical broadleaf forests across the season ([SBLF & Fall, $H = 3.04$], [SBLF & Winter, $H = 3.54$], [SBLF & Spring, $H = 3.77$]) had lower H compared to WBLF, and the highest H was in Spring. Mann-Whitney U Test in season by habitat showed significance in each season between the habitats ([Fall: SBLF & WBLF, $z = 3.65, p = 0.00$], [Winter: SBLF & WBLF, $z = 2.96, p = 0.003$], [Spring: SBLF & WBLF, $z = 2.89, p = 0.004$]) at significance of $p < 0.05$ level. From this U Test result, we deduced that species richness and diversity in two habitats differed each season.

3.1.3. Birding Areas & Species of Birding Interest (BABI)

Along the NSJ birding route, we performed a subjective qualitative analysis, sub-diving the entire birding route to 5 sections (Samdrup Jongkhar – Dewathang (18KM),

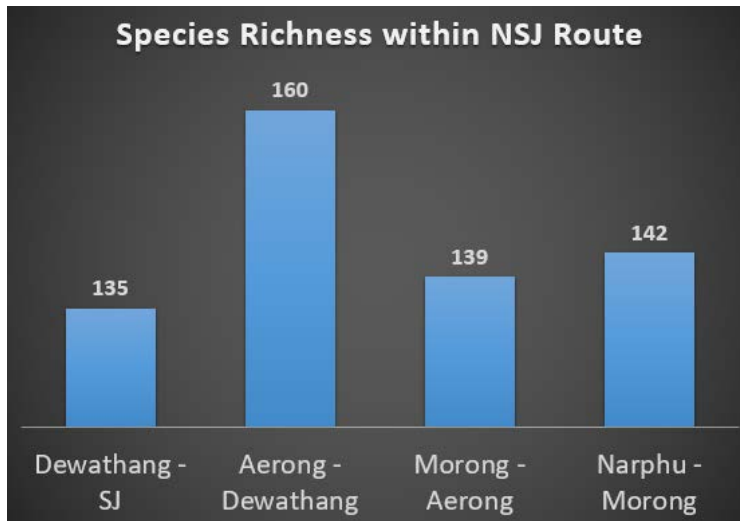


Figure 9: Richness of bird species in sub-divided sections of Narphu - Samdrup Jongkhar birding route: *Narphu to Morong, Morong to Aerong, Aerong to Dewathang, and Dewathang to Samdrup Jongkhar.*

Dewathang – Aerong (12KM), Aerong – Morong (15KM) and Morong to Narphu (15KM). Figure 3 showed the best birding section was Dewathang to Aerong (160 species), followed by Morong to Narphu (142), Aerong to Morong (139) and Samdrup Jongkhar to Dewathang (135).

below the road, plot ID 26, 1774m between 0800 – 0900hrs, on 22nd October 2019. The birds sallied between a matured tree and a shrub. They were with two Chestnut-bellied Nuthatch and Rufous Sibia. 5 individuals were sighted at Lamsorongchu, plot ID 94, 1241m, between 1530 -1630hrs, on 24th October 2019. They were with Sultan Tits and Chestnut-bellied Nuthatch. In the winter survey, 3 individuals were again observed at Lamsorongchu. They followed us from plot ID 94 until plot ID 98, 1301m, between 1500 – 1530hrs. They were with 2 Sultan Tits. Two individuals were observed between Tashigatshel and Samdrup Jongkhar on 15th February 2020 by Niels Bomholt. On the 13th April 2018, Guy Poisson sighted three in proximity to Dewathang. Susan Myers a bird around Tashigatshel on 21st April 2006.

Beautiful Nuthatch: The largest of the nuthatches in Bhutan was observed at two locations in fall. 3 birds were observed between Tokorong and Shekpashing,

Rufous-necked Hornbill: During the current survey, along the Narphu – Samdrup Jongkhar bird watching route, Rufous-necked Hornbill was observed at 44 occasions, between 1031 – 1883m, primarily in the warm broadleaf forests. Between Narphu and Morong, we sighted hornbills at 14 occasions in the localities of Narphu, Tokorong, Shekpashing and Morong. We had maximum encounter occasions (19) of this hornbill between Morong and Aerong. The stretch between Aerong and Dewathang had 11 occasions of observation. Susan Steele observed an individual nearby Dewathang on 3rd March 2020.

Great Hornbill: Along the Narphu – Samdrup Jongkhar, encounters of Great Hornbill are comparatively less than Rufous-necked Hornbill. During the survey this hornbill was observed at 6 occasions between Aerong to Samdrup Jongkhar.

Long-billed Wren Babbler: A pair was observed feeding on ground underneath the hedges of *Aconogonum* sp. by the road at Aerong (1410m). On the 18th April 2014, Lisa Hamilton sighted an individual along the road to the Power House from the Samdrup Jongkhar – Trashigang primary national highway on 18th April 2014

Black-headed Shrike Babbler: Shrike Babbler are birds; a visitor will not refrain to observe. Along the Narphu – Samdrup Jongkhar, White-browed Shrike Babbler, and

Black-eared Shrike Babbler are observed. The rarest of the Shrike Babbler is Black-headed Shrike Babbler. A male was observed at 1031m in warm broadleaf forests between Lamsorongchu and Dewathang singing out its melody. Black-headed Shrike Babbler is recorded for the first time in the bird watching route.

Long-tailed Broadbill: It is a beautiful bird a visitor would not want to miss while birding watching in Bhutan. During our survey, we failed to observe this species but other bird watchers have definitely sighted in this bird watching route. On the 27th April 2018, Jim Pompy observed one bird at Tashi Gatshel. Guy Poisson, on 13th April 2018 encountered 2 individuals near Dewathang.

Hodgson’s Frogmouth: Peter Lobo and his tour group recorded Hodgson's Frogmouth for the first time in Bhutan from Melongbrak (Narphu) in 2008. Subsequently, a breeding record was made at Gomphu, in the Royal Manas National Park. In recent years, it has been regularly observed at Yongkola, Mongar. During our spring survey, the call of the bird was heard at the Morong Campsite on two consecutive nights.

Grey Peacock Pheasant: Grey Peacock Pheasant is one of the beautiful low altitude pheasants adorned with double ocelli on the feathers. This bird was heard during the spring survey (April 2020) only from its acoustic activity, between Shekpashing to Dewathang, in the warm broadleaf forests, within 986 – 1754m of altitude range. We heard the bird at 8 occasions; 2 times between Shekpashing and Morong and 6 times along Morong to Dewathang. Susan Steele, one individual was recorded nearby Dewathang on 3rd March 2020. Other beautiful birds found enroute Narphu – Samdrup Jongkhar bird watching route are Dark-rumped Swift, Pale-headed Woodpecker, Greater Rufous-headed Parrotbill (White-breasted Parrotbill), Blyth’s Kingfisher, Coral-billed Scimitar Babbler, and many more.

3.1.4. Campsites, Homestays, Birding Access & Other Attractions

Table 1: Shows the existing and proposed sites for development of camping and overnight amenities along NSJ route.

Sl. No.	Location	Existing	Proposed	Birding Access
1	Samdrup Jongkhar	Hotels		Dewathang, CF, toward Bangtar
2	Lamsorongchu	NA	Camp	Dewathang, Aerong, Mithangkhar, Farmroads
3	Morong	Camp	Camp & Homestay	Morongchu, Tapkangyoe, Syerchenmo, Mitangkar, Shekpashing, Orong (<i>other attraction – lake, Morong Monastery & traditional healing, day trek birding</i>)
4	Narphu	NA	Camp & Homestay	Tokorong, Tselingkhon, Gomdar, farmroads (<i>other attraction – Narphu cliff & rock climbing, Yongla Goenpa</i>)

Along the Narphu - Samdrup Jongkhar bird watching route, it is proposed that bird watching can be launched from 4 locations, namely Samdrup Jongkhar, Lamsorongchu, Morong and Narphu.

In Samdrup Jongkhar, bird watchers can be lodged in various hotels, and access for bird watching from Samdrup Jongkhar to Dewathang, Dewathang toward Samdrup Chhoeling

(Bangtar), and in the community forest. Bird watching can be also accessed along farm roads.

At Lamsorongchu, we suggest a new campsite be established. From Lamsorong bird watching can be done from Lamsorong to Dewathang, Aerong, and Mitangkhar. Bird watching can be also done along the farm roads.

Currently, bird watchers use Morong (space of the Outreach Clinic) as the campsite for bird watching. There is also a decent house nearby the campsite that can be converted to a homestay. From Morong, bird watching can be accessed to Morongchu, Tapkangyoe, Syerchenmo, Mitangkhar, Shekpashing, and Orong. The other attractions around Morong are the Morong monastery and practice of traditional healing, day trek for birding on the ridgeline above the monastery. A detour can be made to a lake enroute to Syerchenmo.

In Narphu, we propose that a new campsite is installed. From Narphu, bird watchers can access birding to Shekpashing, Tokorong, Tselingkor, and Gomdar. A network of farm roads exists to cater bird watching. Some other attractions at Narphu are Narphu cliff and Yongla Goempa. Rock climbing activity may be initiated at the Narphu cliff, given a stable and sturdy cliff surface.

Some important bird species along the Narphu – Sandrup Jongkhar birding route



Beautiful Nuthatch (Phub Dorji)



Crimson Sunbird (The Birders Hub)



Great Hornbill (Phub Dorji)



Asian Emerald Cuckoo (Phub Dorji)



Grey Peacock Pheasant



Greater Goldenback (The Flicker)



Ruby-cheeked Sunbird (Pinterest)



White-browed Scimitar Babbler (Phub Dorji)

3.1.5. Annexure I: Annotated checklist of the bird species observed along NSJ during the Fall Season.

Sl.No	English Name	Species	Altitude (m)	Source
1	Asian Barred Owlet	<i>Glaucidium cuculoides</i>	970, 1697	UWICER
2	Bay Woodpecker	<i>Lanius vittatus</i>	1697	UWICER
3	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	843 - 1828	UWICER
4	Green-backed Tit	<i>Parus monticolus</i>	970 -1844	UWICER
5	Grey Treepie	<i>Dendrocitta formosae</i>	556 - 1774	UWICER
6	Grey-backed Shrike	<i>Lanius tephronotus</i>	244 - 1697	UWICER
7	Large-billed Crow	<i>Corvus macrorhynchos</i>	1697, 1740	UWICER
8	Mountain Scops Owl	<i>Otus spilocephalus</i>	1697	UWICER
9	Striated Laughingthrush	<i>Garrulax striatus</i>	877 - 1869	UWICER
10	White Wagtail	<i>Motacilla alba</i>	1697	UWICER
11	Ashy Drongo	<i>Dicrurus leucophaeus</i>	206 - 1856	UWICER
12	Black Bulbul	<i>Hypsipetes leucocephalus</i>	812 - 1856	UWICER
13	Blue-throated Barbet	<i>Megalaima asiatica</i>	535 - 1727	UWICER
14	Common Tailorbird	<i>Orthotomus sutorius</i>	198 - 1727	UWICER
15	Great Barbet	<i>Megalaima virens</i>	588 - 1867	UWICER
16	Grey Bushchat	<i>Saxicola ferreus</i>	894 - 1727	UWICER
17	Large Niltava	<i>Niltava grandis</i>	1008 - 1752	UWICER
18	Olive-backed Pipit	<i>Anthus hodgsoni</i>	262 - 1727	UWICER
19	Oriental White-Eye	<i>Zosterops palpebrosus</i>	198 - 1727	UWICER
20	Red-faced Liocichla	<i>Liocichla phoenicea</i>	970 -1883	UWICER
21	Rufous Sibia	<i>Heterophasia capistrata</i>	1148 - 1856	UWICER
22	Rusty-cheeked Scimitar Babbler	<i>Pomatorhinus erythrogenys</i>	807 - 1867	UWICER
23	Striated Bulbul	<i>Pycnonotus striatus</i>	1182 - 1867	UWICER
24	Verditer Flycatcher	<i>Eumyias thalassinus</i>	970 - 1844	UWICER
25	Wedge-tailed Green Pigeon	<i>Treron sphenurus</i>	855 - 1844	UWICER
26	Whiskered Yuhina	<i>Yuhina flavicollis</i>	1698 - 1752	UWICER
27	White-tailed Nuthatch	<i>Sitta himalayensis</i>	1727 - 1856	UWICER
28	White-throated Fantail	<i>Rhipidura albicollis</i>	247 - 1815	UWICER
29	Blue-winged Siva	<i>Siva cyanouroptera</i>	970 - 1884	UWICER
30	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	1604 - 1815	UWICER
31	Collared Owlet	<i>Glaucidium brodiei</i>	1051 - 1715	UWICER
32	Green-tailed Sunbird	<i>Aethopyga nipalensis</i>	1714, 1715	UWICER
33	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	812 - 1765	UWICER
34	Rufous-necked Hornbill	<i>Aceros nipalensis</i>	1031 -1883	UWICER
35	Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	1381 - 1765	UWICER
36	Tickell's Leaf Warbler	<i>Phylloscopus affinis</i>	1715	UWICER
37	Yellow-vented Warbler	<i>Phylloscopus cantator</i>	232 - 1715	UWICER
38	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	1249 - 1779	UWICER
39	Black-throated Sunbird	<i>Aethopyga saturata</i>	699 - 1828	UWICER
40	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	198 - 1714	UWICER
41	Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i>	572 - 1774	UWICER
42	Mountain Tailorbird	<i>Phyllergates cucullatus</i>	1687, 1714	UWICER
43	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	894 - 1714	UWICER
44	Bar-throated Siva	<i>Siva strigula</i>	1630 - 1688	UWICER
45	Black-throated Tit	<i>Aegithalos concinnus</i>	1688	UWICER

46	Chestnut-bellied Nuthatch	<i>Sitta cinnamoventris</i>	535 - 1752	UWICER
47	Himalayan Cutia	<i>Cutia nipalensis</i>	1688	UWICER
48	Orange-bellied Leafbird	<i>Chloropsis hardwickii</i>	267 - 1740	UWICER
49	Red-tailed Minla	<i>Minla ignotincta</i>	970 -1833	UWICER
50	Yellow-cheeked Tit	<i>Parus spilonotus</i>	1241 - 1688	UWICER
51	Common Green Magpie	<i>Cissa chinensis</i>	572 - 1630	UWICER
52	Fire-breasted Flowerpecker	<i>Dicaeum ignipectus</i>	208 - 1884	UWICER
53	Greater Yellownape	<i>Picus flavinucha</i>	1008 - 1833	UWICER
54	Rufous-chinned Laughingthrush	<i>Garrulax rufogularis</i>	1299 - 1754	UWICER
55	Rusty-fronted Barwing	<i>Actinodura egertoni</i>	932 - 1765	UWICER
56	Bhutan Laughingthrush	<i>Garrulax imbricatus</i>	1253 - 1869	UWICER
57	Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	1059 - 1752	UWICER
58	Grey-chinned Minivet	<i>Pericrocotus solaris</i>	17474 - 1828	UWICER
59	Streaked Spiderhunter	<i>Arachnothera magna</i>	519 - 1856	UWICER
60	Beautiful Nuthatch	<i>Sitta formosa</i>	1241, 1774	UWICER
61	Chestnut-crowned Laughingthrush	<i>Garrulax erythrocephalus</i>	1774 - 1867	UWICER
62	Dark-sided Flycatcher	<i>Muscicapa sibirica</i>	206 - 1828	UWICER
63	Rufous-throated Partridge	<i>Arborophila rufogularis</i>	950 - 1844	UWICER
64	Sultan Tit	<i>Melanochlora sultanea</i>	855 - 1774	UWICER
65	Golden-throated Barbet	<i>Megalaima franklinii</i>	1165 - 1828	UWICER
66	Blue-winged Laughingthrush	<i>Garrulax squamatus</i>	1182 - 1883	UWICER
67	Northern Goshawk	<i>Accipiter gentilis</i>	1867	UWICER
68	White-throated Laughingthrush	<i>Garrulax albogularis</i>	1883	UWICER
69	Barred Cuckoo Dove	<i>Macropygia unchall</i>	1241 - 1867	UWICER
70	Golden Babbler	<i>Stachyridopsis chrysaea</i>	232 - 1844	UWICER
71	Scaly-breasted Wren Babbler	<i>Pnoepyga albiventer</i>	1008 - 1844	UWICER
72	Yellow-throated Fulvetta	<i>Pseudominla cinerea</i>	1232 - 1815	UWICER
73	Scaly Laughingthrush	<i>Garrulax subunicolor</i>	1687, 1779	UWICER
74	Black Eagle	<i>Ictinaetus malayensis</i>	821, 1740	UWICER
75	Common Rosefinch	<i>Carpodacus erythrinus</i>	1740	UWICER
76	Crested Serpent Eagle	<i>Spilornis cheela</i>	1552, 1740	UWICER
77	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	418 - 753, 1740	UWICER
78	Red-vented Bulbul	<i>Pycnonotus cafer</i>	198 - 1740	UWICER
79	Rufous-bellied Eagle	<i>Lophotriorchis kienerii</i>	212 - 821, 1740	UWICER
80	Rufous-necked Laughingthrush	<i>Garrulax ruficollis</i>	843 - 1740	UWICER
81	Yellow-browed Warbler	<i>Phylloscopus inornatus</i>	970, 1740	UWICER
82	Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i>	970 - 1698	UWICER
83	Chestnut-crowned Warbler	<i>Phylloscopus castaniceps</i>	970 - 1698	UWICER
84	Emerald Dove	<i>Chalcophaps indica</i>	1572, 1698	UWICER
85	Mountain Imperial Pigeon	<i>Ducula badia</i>	1687, 1698	UWICER
86	Silver-eared Mesia	<i>Leiothrix argentauris</i>	970 - 1698	UWICER
87	Blue-bearded Bee-eater	<i>Nyctornis athertoni</i>	909, 1687	UWICER
88	Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	436 - 1687	UWICER
89	Lesser Yellownape	<i>Picus chlorolophus</i>	572 - 1687	UWICER
90	White-naped Yuhina	<i>Yuhina bakeri</i>	1076 - 1687	UWICER
91	Grey Wagtail	<i>Motacilla cinerea</i>	198 - 1666	UWICER
92	Small Niltava	<i>Niltava macgrigoriae</i>	1148 - 1666	UWICER
93	Spotted Forktail	<i>Enicurus maculatus</i>	1197 - 1666	UWICER
94	Common Hoopoe	<i>Upupa epops</i>	1649	UWICER
95	Brown-flanked Bush Warbler	<i>Cettia fortipes</i>	1623	UWICER
96	Plumbeous Water Redstart	<i>Rhyacornis fuliginosa</i>	198, 1581	UWICER

97	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	198, 1581	UWICER
98	Little Pied Flycatcher	<i>Ficedula westermanni</i>	1281, 1557	UWICER
99	Pin-tailed Green Pigeon	<i>Treron apicauda</i>	1557	UWICER
100	Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	232, 1500 - 1552	UWICER
101	Bronzed Drongo	<i>Dicrurus aeneus</i>	198 - 1515	UWICER
102	Nepal Fulvetta	<i>Alcippe nipalensis</i>	208 - 1454	UWICER
103	Eurasian Tree Sparrow	<i>Passer montanus</i>	198 - 1406	UWICER
104	Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i>	208 - 1396	UWICER
105	Long-tailed Sibia	<i>Heterophasia picaoides</i>	1059 - 1396	UWICER
106	Black-throated Prinia	<i>Prinia atrogularis</i>	1031 - 1394	UWICER
107	Thick-billed Green Pigeon	<i>Treron curvirostra</i>	1394	UWICER
108	Scarlet Finch	<i>Carpodacus sipahi</i>	1410	UWICER
109	Grey-headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	212 - 1391	UWICER
110	Whistler's Warbler	<i>Seicercus whistleri</i>	232 - 1391	UWICER
111	White-spectacled Warbler	<i>Seicercus affinis</i>	1391	UWICER
112	Eurasian Hobby	<i>Falco subbuteo</i>	1322	UWICER
113	Spotted Dove	<i>Stigmatopelia chinensis</i>	198 - 662, 1306	UWICER
114	Maroon Oriole	<i>Oriolus trailii</i>	572 - 1269	UWICER
115	Coral-billed Scimitar Babbler	<i>Pomatorhinus ferruginosus</i>	932, 1241	UWICER
116	White-browed Shortwing	<i>Brachypteryx montana</i>	1232	UWICER
117	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	1008, 1230	UWICER
118	Scarlet Minivet	<i>Pericrocotus flammeus</i>	401 - 1249	UWICER
119	White-browed Scimitar Babbler	<i>Pomatorhinus schisticeps</i>	588 - 1253	UWICER
120	Speckled Piculet	<i>Picumnus innominatus</i>	1224	UWICER
121	White-bellied Erpornis	<i>Erpornis zantholeuca</i>	970, 1224	UWICER
122	Spotted Elachura	<i>Elachura formosa</i>	1031, 1197	UWICER
123	Bar-winged Flycatcher-shrike	<i>Hemipus picatus</i>	1148	UWICER
124	Great Hornbill	<i>Buceros bicornis</i>	662 - 1051	UWICER
125	Slaty-bellied Tesia	<i>Tesia olivea</i>	970, 1031	UWICER
126	Black-crested Bulbul	<i>Pycnonotus flaviventris</i>	212 - 932	UWICER
127	Greater Rufous-headed Parrotbill	<i>Psittiparus ruficeps</i>	932	UWICER
128	Grey-headed Woodpecker	<i>Picus canus</i>	932	UWICER
129	Oriental Magpie Robin	<i>Copsychus saularis</i>	198 - 855	UWICER
130	Barn Swallow	<i>Hirundo rustica</i>	812 - 821	UWICER
131	Dark-rumped Swift	<i>Apus acuticauda</i>	699 - 821, 1630	UWICER
132	Scaly-breasted Munia	<i>Lonchura punctulata</i>	812	UWICER
133	Chestnut-tailed Starling	<i>Sturnia malabarica</i>	212, 772	UWICER
134	Common Myna	<i>Acridotheres tristis</i>	212 - 772	UWICER
135	Jungle Babbler	<i>Turdoides striata</i>	772	UWICER
136	Fulvous-breasted Woodpecker	<i>Dendrocopos macei</i>	716	UWICER
137	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	699	UWICER
138	Pin-striped Tit Babbler	<i>Macronus gularis</i>	232 - 679	UWICER
139	Greater Goldenback	<i>Chrysocolaptes lucidus</i>	662	UWICER
140	Crimson Sunbird	<i>Aethopyga siparaja</i>	198 - 627	UWICER
141	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	519 - 627	UWICER
142	Rufous Woodpecker	<i>Micropternus brachyurus</i>	610	UWICER
143	Golden-fronted Leafbird	<i>Chloropsis aurifrons</i>	469 - 572	UWICER
144	Greater Necklaced Laughingthrush	<i>Garrulax pectoralis</i>	572	UWICER
145	Rufous Treepie	<i>Dendrocitta vagabunda</i>	572	UWICER
146	Common Iora	<i>Aegithina tiphia</i>	436 - 556	UWICER

147	Asian Fairy Bluebird	<i>Irena puella</i>	247 - 535	UWICER
148	Ruby-cheeked Sunbird	<i>Chalcoparia singalensis</i>	232, 418	UWICER
149	Oriental Honey-buzzard	<i>Pernis ptilorhynchus</i>	267	UWICER
150	Ashy Bulbul	<i>Hemixos flava</i>	247 - 262	UWICER
151	Peregrine Falcon	<i>Falco peregrinus</i>	215	UWICER
152	Crested Kingfisher	<i>Megaceryle lugubris</i>	206	UWICER
153	White-throated Bulbul	<i>Alophoixus flaveolus</i>	198, 206	UWICER
154	Yellow-bellied Warbler	<i>Abroscopus superciliaris</i>	208	UWICER
155	Blue-throated Blue Flycatcher	<i>Cyornis rubeculoides</i>	198 - 212	UWICER
156	Puff-throated Babbler	<i>Pellorneum ruficeps</i>	198, 212	UWICER
157	Common Pigeon	<i>Columba livia</i>	198	UWICER
158	Common Stonechat	<i>Saxicola torquatus</i>	198	UWICER
159	Asian Brown Flycatcher	<i>Muscicapa dauurica</i>	212	UWICER
160	Black-hooded Oriole	<i>Oriolus xanthornus</i>	212	UWICER
161	Jungle Myna	<i>Acridotheres fuscus</i>	212	UWICER
162	Black-naped Monarch	<i>Hypothymis azurea</i>	232	UWICER
163	Blue-capped Rock Thrush	<i>Monticola cinclorhyncha</i>		Brodie Cass Talbot
164	Collared Treepie	<i>Dendrocitta frontalis</i>		Brodie Cass Talbot
165	White-hooded Babbler	<i>Gampsorhynchus rufulus</i>		Brodie Cass Talbot
166	Great Myna	<i>Acridotheres grandis</i>		Brodie Cass Talbot
167	Pale Blue Flycatcher	<i>Cyornis unicolor</i>		Brodie Cass Talbot
168	Scarlet-backed Flowerpecker	<i>Dicaeum cruentatum</i>		Brodie Cass Talbot

3.1.6. Annexure II: Annotated checklist of the bird species observed along NSJ during the Winter Season.

Sl. No.	English Name	Species	Altitude (m)	Source
1	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	1148 - 1722	UWICER
2	Grey-sided Bush Warbler	<i>Cettia brunnifrons</i>	1695	UWICER
3	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	1008 - 1740	UWICER
4	Rufous Sibia	<i>Heterophasia capistrata</i>	1008 - 1852	UWICER
5	Grey Wagtail	<i>Motacilla cinerea</i>	807 - 1815	UWICER
6	Green-backed Tit	<i>Parus monticolus</i>	1581 - 1714	UWICER
7	Whiskered Yuhina	<i>Yuhina flavicollis</i>	1008 - 1727	UWICER
8	Chestnut-breasted Partridge	<i>Arborophila mandellii</i>	1552, 1692	UWICER
9	Hill Partridge	<i>Arborophila torqueola</i>	1381 - 1722	UWICER
10	Great Barbet	<i>Megalaima virens</i>	732 - 1883	UWICER
11	Greater Yellownape	<i>Picus flavinucha</i>	732 - 1692	UWICER
12	Rusty-cheeked Scimitar Babbler	<i>Pomatorhinus erythrogenys</i>	970 - 1765	UWICER
13	Grey Treepie	<i>Dendrocitta formosae</i>	909 - 1761	UWICER
14	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	383 - 1774	UWICER
15	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	242 - 1867	UWICER
16	Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	242, 1211 - 1699	UWICER
17	Black Bulbul	<i>Hypsipetes leucocephalus</i>	253 - 1718	UWICER
18	Golden-throated Barbet	<i>Megalaima franklinii</i>	1182 - 1718	UWICER
19	Olive-backed Pipit	<i>Anthus hodgsoni</i>	1391 - 1727	UWICER
20	White-throated Laughingthrush	<i>Garrulax albogularis</i>	1727	UWICER
21	Striated Laughingthrush	<i>Garrulax striatus</i>	1182 - 1727	UWICER
22	Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	1715 - 1727	UWICER
23	Black-throated Tit	<i>Aegithalos concinnus</i>	1572 - 1809	UWICER
24	Green-tailed Sunbird	<i>Aethopyga nipalensis</i>	1246 - 1883	UWICER
25	Nepal Fulvetta	<i>Alcippe nipalensis</i>	1059 - 1867	UWICER
26	Fire-breasted Flowerpecker	<i>Dicaeum ignipectus</i>	862 - 1883	UWICER
27	Yellow-cheeked Tit	<i>Parus spilonotus</i>	1714	UWICER
28	Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	1340 - 1883	UWICER
29	White-tailed Nuthatch	<i>Sitta himalayensis</i>	1714 - 1730	UWICER
30	Striated Bulbul	<i>Pycnonotus striatus</i>	1230 - 1875	UWICER
31	Yellow-bellied Fantail	<i>Chelidorhynch hypoxanthus</i>	1076 - 1722	UWICER
32	Yellow-breasted Greenfinch	<i>Chloris spinoides</i>	1722	UWICER
33	Stripe-throated Yuhina	<i>Yuhina gularis</i>	1630 - 1722	UWICER
34	Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	1410 - 1833	UWICER
35	Greenish Warbler	<i>Phylloscopus trochiloides</i>	365, 1410 - 1698	UWICER
36	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	519 - 1630	UWICER
37	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	753 - 1765	UWICER
38	Red-vented Bulbul	<i>Pycnonotus cafer</i>	206 - 1779	UWICER
39	Rusty-fronted Barwing	<i>Actinodura egertoni</i>	1391 - 1767	UWICER
40	Ashy Drongo	<i>Dicrurus leucophaeus</i>	208 - 1779	UWICER
41	Mountain Bulbul	<i>Ixos mcclllandii</i>	1246 - 1698	UWICER
42	Crested Goshawk	<i>Accipiter trivirgatus</i>	1664	UWICER
43	Rufous-gorgeted Flycatcher	<i>Ficedula strophciata</i>	1197 - 1833	UWICER
44	Crimson-breasted Woodpecker	<i>Dendrocopos cathpharius</i>	1730	UWICER
45	Bhutan Laughingthrush	<i>Garrulax imbricatus</i>	1059 - 1869	UWICER

46	Barred Cuckoo Dove	<i>Macropygia unchall</i>	1666- 1765	UWICER
47	Grey-chinned Minivet	<i>Pericrocotus solaris</i>	1730 - 1809	UWICER
48	Scarlet Finch	<i>Carpodacus sipahi</i>	1281 - 1875	UWICER
49	Himalayan Vulture	<i>Gyps himalayensis</i>	1767	UWICER
50	Greater Rufous-headed Parrotbill	<i>Psittiparus ruficeps</i>	1418 - 1767	UWICER
51	Blue-winged Siva	<i>Siva cyanouroptera</i>	519, 1269 - 1867	UWICER
52	Rusty-flanked Treecreeper	<i>Certhia nipalensis</i>	1809, 1833	UWICER
53	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	401, 1698 - 1849	UWICER
54	Mountain Hawk Eagle	<i>Nisaetus nipalensis</i>	932, 1859	UWICER
55	Black Eagle	<i>Ictinaetus malayensis</i>	1391 - 1869	UWICER
56	Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i>	242 - 1883	UWICER
57	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	1059 - 1852	UWICER
58	Ashy Wood Swallow	<i>Artama fuscus</i>	679, 1779	UWICER
59	Rufous-chinned Laughingthrush	<i>Garrulax rufogularis</i>	1779	UWICER
60	Long-tailed Shrike	<i>Lanius schach</i>	1779	UWICER
61	Rufous-bellied Eagle	<i>Lophotriorchis kienerii</i>	1557 - 1779	UWICER
62	Blue-throated Barbet	<i>Megalaima asiatica</i>	556 - 1779	UWICER
63	Grey-sided Laughingthrush	<i>Garrulax caeruleus</i>	1418, 1765	UWICER
64	Blue-bearded Bee-eater	<i>Nyctornis athertoni</i>	242, 1238 - 1754	UWICER
65	Common Tailorbird	<i>Orthotomus sutorius</i>	208 - 1740	UWICER
66	Grey-headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	283 - 1698	UWICER
67	Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i>	1051 - 1698	UWICER
68	Chestnut-crowned Warbler	<i>Phylloscopus castaniceps</i>	242 - 1698	UWICER
69	Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	1394 - 1698	UWICER
70	Black-eared Shrike Babbler	<i>Pteruthius melanotis</i>	1698	UWICER
71	White-throated Fantail	<i>Rhipidura albicollis</i>	242, 1059 - 1698	UWICER
72	Golden Babbler	<i>Stachyridopsis chrysaea</i>	1182, 1698	UWICER
73	Grey-throated Babbler	<i>Stachyris nigriceps</i>	242, 1059 - 1698	UWICER
74	Oriental White-Eye	<i>Zosterops palpebrosus</i>	315 - 1698	UWICER
75	Grey-headed Woodpecker	<i>Picus canus</i>	1165 - 1666	UWICER
76	Sultan Tit	<i>Melanochlora sultanea</i>	315 - 1638	UWICER
77	Bronzed Drongo	<i>Dicrurus aeneus</i>	228 - 1623	UWICER
78	Spotted Forktail	<i>Enicurus maculatus</i>	932 - 1612	UWICER
79	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	436, 1455 - 1612	UWICER
80	Streaked Spiderhunter	<i>Arachnothera magna</i>	215 - 1604	UWICER
81	Kalij Pheasant	<i>Lophura leucomelanos lathami</i>	1597	UWICER
82	Nepal House Martin	<i>Delichon nipalense</i>	1581	UWICER
83	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1572	UWICER
84	White-spectacled Warbler	<i>Seicerus affinis</i>	1572	UWICER
85	Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i>	206 - 1557	UWICER
86	Blue-winged Laughingthrush	<i>Garrulax squamatus</i>	1148 - 1557	UWICER
87	Rufous-necked Hornbill	<i>Aceros nipalensis</i>	1224 - 1552	UWICER
88	Rufous-throated Partridge	<i>Arborophila rufogularis</i>	1211 - 1552	UWICER
89	Chestnut-crowned Laughingthrush	<i>Garrulax erythrocephalus</i>	1393 - 1552	UWICER
90	Aberrant Bush Warbler	<i>Horornis flavolivaceus</i>	1515	UWICER

91	Red-faced Liocichla	<i>Liocichla phoenicea</i>	1211 - 1515	UWICER
92	Chestnut-headed Tesia	<i>Oligura castaneocoronata</i>	1165 - 1515	UWICER
93	Common Green Magpie	<i>Cissa chinensis</i>	1238, 1466	UWICER
94	Eurasian Tree Sparrow	<i>Passer montanus</i>	535 - 1455	UWICER
95	Crested Serpent Eagle	<i>Spilornis cheela</i>	250, 1455	UWICER
96	Russet Sparrow	<i>Passer cinnamomeus</i>	1396	UWICER
97	Black-faced Warbler	<i>Abroscopus schisticeps</i>	1393	UWICER
98	Black-throated Sunbird	<i>Aethopyga saturata</i>	365 - 1393	UWICER
99	Himalayan Bluetail	<i>Tarsiger rufilatus</i>	1393 - 1410	UWICER
100	Scaly-breasted Wren Babbler	<i>Pnoepyga albiventer</i>	1182 - 1381	UWICER
101	Black-throated Prinia	<i>Prinia atrogularis</i>	1253 - 1381	UWICER
102	Long-billed Wren Babbler	<i>Rimator malacoptilus</i>	1410	UWICER
103	Oriental Magpie Robin	<i>Copsychus saularis</i>	247 - 1391	UWICER
104	Rufous-necked Laughingthrush	<i>Garrulax ruficollis</i>	932, 1391	UWICER
105	Fire-tailed Sunbird	<i>Aethopyga ignicauda</i>	1340	UWICER
106	Orange-bellied Leafbird	<i>Chloropsis hardwickii</i>	215 - 1340	UWICER
107	Red-tailed Minla	<i>Minla ignotincta</i>	1340	UWICER
108	Striated Yuhina	<i>Staphida castaniceps</i>	662, 1315	UWICER
109	Chestnut-bellied Nuthatch	<i>Sitta cinnamoventris</i>	556 - 662, 1301	UWICER
110	Beautiful Nuthatch	<i>Sitta formosa</i>	1301	UWICER
111	Long-tailed Sibia	<i>Heterophasia picaoides</i>	1008 - 1281	UWICER
112	Asian House Martin	<i>Delichon dasypus</i>	1230 - 1269	UWICER
113	Slender-billed Scimitar Babbler	<i>Pomatorhinus supercilialis</i>	1230	UWICER
114	Ashy Bulbul	<i>Hemixos flava</i>	283, 1241	UWICER
115	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	1051 - 1246	UWICER
116	Pygmy Wren Babbler	<i>Pnoepyga pusilla</i>	1224	UWICER
117	Silver-eared Mesia	<i>Leiothrix argentauris</i>	1197	UWICER
118	Emerald Dove	<i>Chalcophaps indica</i>	1182	UWICER
119	Green-crowned Warbler	<i>Phylloscopus burkii</i>	1059, 1182	UWICER
120	White-naped Yuhina	<i>Yuhina bakeri</i>	1076 - 1182	UWICER
121	Yellow-vented Warbler	<i>Phylloscopus cantator</i>	986	UWICER
122	Common Myna	<i>Acridotheres tristis</i>	253 - 950	UWICER
123	Siberian Rubythroat	<i>Luscinia calliope</i>	572 - 932	UWICER
124	White Wagtail	<i>Motacilla alba</i>	250, 932	UWICER
125	Little Pied Flycatcher	<i>Ficedula westermanni</i>	206 - 909	UWICER
126	Small Niltava	<i>Niltava macgrigoriae</i>	909	UWICER
127	Common Pigeon	<i>Columba livia</i>	253, 894	UWICER
128	Black-hooded Oriole	<i>Oriolus xanthornus</i>	253 - 894	UWICER
129	Spotted Dove	<i>Stigmatopelia chinensis</i>	315 - 894	UWICER
130	Chestnut-tailed Starling	<i>Sturnia malabarica</i>	253 - 894	UWICER
131	Common Iora	<i>Aegithina tiphia</i>	228 - 877	UWICER
132	Grey-backed Shrike	<i>Lanius tephronotus</i>	350 - 932	UWICER
133	Crimson Sunbird	<i>Aethopyga siparaja</i>	215 - 812	UWICER
134	Pin-striped Tit Babbler	<i>Macronus gularis</i>	242 - 812	UWICER
135	Black-crested Bulbul	<i>Pycnonotus flaviventris</i>	206 - 812	UWICER
136	Hair-crested Drongo	<i>Dicrurus hottentottus</i>	253 - 807	UWICER
137	Scaly-breasted Munia	<i>Lonchura punctulata</i>	807	UWICER
138	Daurian Redstart	<i>Phoenicurus aureus</i>	772	UWICER
139	Golden-fronted Leafbird	<i>Chloropsis aurifrons</i>	644, 732	UWICER
140	Barn Swallow	<i>Hirundo rustica</i>	679	UWICER
141	Besra	<i>Accipiter virgatus</i>	644	UWICER
142	Peregrine Falcon	<i>Falco peregrinus</i>	644	UWICER

143	Common Hill Myna	<i>Gracula religiosa</i>	572 - 610	UWICER
144	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	247 - 610	UWICER
145	Black-winged Cuckooshrike	<i>Coracina melaschistos</i>	588	UWICER
146	Pin-tailed Green Pigeon	<i>Treron apicauda</i>	556	UWICER
147	White-rumped Munia	<i>Lonchura striata</i>	535	UWICER
148	Plain Flowerpecker	<i>Dicaeum concolor</i>	215 - 519	UWICER
149	Scarlet Minivet	<i>Pericrocotus flammeus</i>	242 - 519	UWICER
150	Shikra	<i>Accipiter badius</i>	502	UWICER
151	Slaty-backed Forktail	<i>Enicurus schistaceus</i>	250, 436	UWICER
152	Rufescent Prinia	<i>Prinia rufescens</i>	436	UWICER
153	Lesser Yellownappe	<i>Picus chlorolophus</i>	418	UWICER
154	Blue Rock Thrush	<i>Monticola solitarius</i>	365	UWICER
155	Maroon Oriole	<i>Oriolus traillii</i>	283 - 350	UWICER
156	Wreathed Hornbill	<i>Rhyticeros undulatus</i>	334	UWICER
157	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	283	UWICER
158	White-rumped Shama	<i>Copsychus malabaricus</i>	250	UWICER
159	Plumbeous Water Redstart	<i>Rhyacornis fuliginosa</i>	250	UWICER
160	Ruby-cheeked Sunbird	<i>Chalcoparia singalensis</i>	242	UWICER
161	Whistler's Warbler	<i>Seicercus whistleri</i>	242	UWICER
162	Jungle Myna	<i>Acridotheres fuscus</i>	253	UWICER
163	Asian Fairy Bluebird	<i>Irena puella</i>	206, 215	UWICER
164	Greater Goldenback	<i>Chrysocolaptes lucidus</i>	206	UWICER
165	Little Egret	<i>Egretta garzetta</i>		Neils Bomholt
166	Cattle Egret	<i>Bubulcus ibis</i>		Neils Bomholt
167	Indian Pond Heron	<i>Ardeola grayii</i>		Neils Bomholt
168	Great Tit	<i>Parus major</i>		Neils Bomholt
169	Brown Shrike	<i>Lanius cristatus</i>		Teresa Cohen
170	Great Cormorant	<i>Phalacrocorax carbo</i>		Teresa Cohen
171	Pale-billed Flowerpecker	<i>Dicaeum erythrorhynchos</i>		Hugo Sampaio
172	Purple Sunbird	<i>Cinnyris asiaticus</i>		Teresa Cohen
173	House Swift	<i>Apus nipalensis</i>		Dibyendu Ash
174	White-browed Shrike Babbler	<i>Pteruthius flavicapis</i>		Baris Karadogan
175	Chestnut-crowned Bush Warbler	<i>Cettia major</i>		Baris Karadogan
176	Rufous-vented Yuhina	<i>Yuhina occipitalis</i>		Baris Karadogan
177	Red-breasted Flycatcher	<i>Ficedula parva</i>		Baris Karadogan
178	Spot-winged Grosbeak	<i>Mycerobas melanozanthos</i>		Baris Karadogan
179	Citrine Wagtail	<i>Motacilla citreola</i>		Tashi Tashi
180	Common Kestrel	<i>Falco tinnunculus</i>		Jej Kumar Nepal
181	Slaty-headed Parakeet	<i>Psittacula himalayana</i>		Jej Kumar Nepal
182	Spotted Laughingthrush	<i>Garrulax ocellatus</i>		Jej Kumar Nepal
183	Grey-crested Tit	<i>Lophophanes dichrous</i>		Jej Kumar Nepal
184	Plain Prinia	<i>Prinia inornata</i>		Eejay Eajay
185	Abbott's Babbler	<i>Malacocincla abbotti</i>		Eejay Eajay
186	White-tailed Robin	<i>Myiomela leucura</i>		Eejay Eajay
187	Dark-sided Flycatcher	<i>Muscicapa sibirica</i>		Aaron Lang
188	Long-billed Thrush	<i>Zoothera monticola</i>		Cagan Hakki
189	Green Sandpiper	<i>Tringa ochropus</i>		Chencho Wangdi
190	Scaly Thrush	<i>Zoothera dauma</i>		Chencho Wangdi
191	Stripe-throated Yuhina	<i>Yuhina gularis</i>		Brodie Cass Talbot
192	Maroon-backed Accentor	<i>Prunella immaculata</i>		Brodie Cass Talbot

193	Dark-breasted Rosefinch	<i>Carpodacus nipalensis</i>		Brodie Cass Talbot
194	Spot-bellied Eagle Owl	<i>Bubo nipalensis</i>		Brodie Cass Talbot
195	White-collared Blackbird	<i>Turdus albocinctus</i>		Brodie Cass Talbot
196	Common Rosefinch	<i>Carpodacus erythrinus</i>		Brodie Cass Talbot
197	White-crowned Forktail	<i>Enicurus leschenaulti</i>		Brodie Cass Talbot
198	Eurasian Jay	<i>Garrulus glandarius</i>		Rand Rudland
199	Great Parrotbill	<i>Conostoma aemodium</i>		Craig Morley
200	Indian Robin	<i>Copsychus fulicatus</i>		Rand Rudland
201	Common Greenshank	<i>Tringa nebularia</i>		Brodie Cass Talbot
202	Ashy-headed Green Pigeon	<i>Treron phayrei</i>		Brodie Cass Talbot
203	Black-throated Thrush	<i>Turdus atrogularis</i>		Tshering Dendup
204	Paddyfield Pipit	<i>Anthus rufulus</i>		Jaydev Mandal
205	Green-billed Malkoha	<i>Phaenicophaeus tristis</i>		Cagan Hakki
206	Wedge-tailed Green Pigeon	<i>Treron sphenurus</i>		Cagan Hakki
207	Plaintive Cuckoo	<i>Cacomantis merulinus</i>		Brodie Cass Talbot
208	Golden Bush Robin	<i>Tarsiger chrysaeus</i>		Brodie Cass Talbot
209	Sapphire Flycatcher	<i>Ficedula sapphira</i>		Brodie Cass Talbot
210	Collared Treepie	<i>Dendrocitta frontalis</i>		Brodie Cass Talbot

3.1.7. Annexure III: Annotated checklist of the bird species observed along NSJ during the Spring Season.

Sl.No	English Name	Species	Altitude (m)	Source
1	Brown-flanked Bush Warbler	<i>Cettia fortipes</i>	1394 - 1867	UWICER
2	Himalayan Cuckoo	<i>Cuculus saturatus</i>	862 - 1727	UWICER
3	Ashy Drongo	<i>Dicrurus leucophaeus</i>	792 - 1852	UWICER
4	White-throated Laughingthrush	<i>Garrulax albogularis</i>	1697 - 1852	UWICER
5	Large Hawk Cuckoo	<i>Hierococcyx sparverioides</i>	855 - 1875	UWICER
6	Golden-throated Barbet	<i>Megalaima franklinii</i>	244 - 1875	UWICER
7	Great Barbet	<i>Megalaima virens</i>	208 - 1875	UWICER
8	Eurasian Tree Sparrow	<i>Passer montanus</i>	198 - 1697	UWICER
9	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	1638 - 1754	UWICER
10	Black-throated Thrush	<i>Turdus atrogularis</i>	1697, 1699	UWICER
11	Rufous-necked Hornbill	<i>Aceros nipalensis</i>	1031 - 1809	UWICER
12	Black-throated Sunbird	<i>Aethopyga saturata</i>	909 - 1875	UWICER
13	Olive-backed Pipit	<i>Anthus hodgsoni</i>	1406 - 1695	UWICER
14	Oriental Magpie Robin	<i>Copsychus saularis</i>	198 - 1695	UWICER
15	Bhutan Laughingthrush	<i>Garrulax imbricatus</i>	1612 - 1867	UWICER
16	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	970 - 1828	UWICER
17	Barred Cuckoo Dove	<i>Macropygia unchall</i>	1148 - 1695	UWICER
18	Russet Sparrow	<i>Passer cinnamomeus</i>	1406 - 1754	UWICER
19	White-throated Fantail	<i>Rhipidura albicollis</i>	862 - 1873	UWICER
20	White-gorgeted Flycatcher	<i>Anthipes monileger</i>	1051 - 1692	UWICER
21	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	1094 - 1849	UWICER
22	Black-winged Cuckooshrike	<i>Coracina melaschistos</i>	198 - 1883	UWICER
23	Grey Treepie	<i>Dendrocitta formosae</i>	228 - 1730	UWICER
24	Verditer Flycatcher	<i>Eumyias thalassinus</i>	556 - 1875	UWICER
25	Little Pied Flycatcher	<i>Ficedula westermanni</i>	1391 - 1869	UWICER
26	Striated Laughingthrush	<i>Garrulax striatus</i>	986 - 1867	UWICER
27	Silver-eared Mesia	<i>Leiothrix argentauris</i>	862 - 1727	UWICER
28	Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	877 - 1779	UWICER
29	Whiskered Yuhina	<i>Yuhina flavicollis</i>	1281 - 1873	UWICER
30	Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i>	208, 1699 - 1718	UWICER
31	Scaly-breasted Wren Babbler	<i>Pnoepyga albiventer</i>	1594, 1699	UWICER
32	Blue-winged Siva	<i>Siva cyanouroptera</i>	1031 - 1875	UWICER
33	Grey-throated Babbler	<i>Stachyris nigriceps</i>	198 - 1767	UWICER
34	Brown-throated Treecreeper	<i>Certhia discolor</i>	1718	UWICER
35	Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i>	1224 - 1718	UWICER
36	Collared Owlet	<i>Glaucidium brodiei</i>	855 - 1718	UWICER
37	Rufous Sibia	<i>Heterophasia capistrata</i>	1211 - 1867	UWICER
38	Mountain Bulbul	<i>Ixos mccllellandii</i>	1393 - 1828	UWICER
39	Yellow-cheeked Tit	<i>Parus spilonotus</i>	1572 - 1856	UWICER
40	Golden Babbler	<i>Stachyridopsis chrysaea</i>	610 - 1718	UWICER
41	White-naped Yuhina	<i>Yuhina bakeri</i>	986, 1455 - 1718	UWICER
42	Hill Partridge	<i>Arborophila torqueola</i>	894 - 1867	UWICER
43	Common Green Magpie	<i>Cissa chinensis</i>	862 - 1727	UWICER
44	White-tailed Robin	<i>Myiomela leucura</i>	970 - 1727	UWICER
45	Green-backed Tit	<i>Parus monticolus</i>	1249 - 1883	UWICER

46	Black-throated Tit	<i>Aegithalos concinnus</i>	1466 - 1875	UWICER
47	Fire-breasted Flowerpecker	<i>Dicaeum ignipectus</i>	1557 - 1867	UWICER
48	Blue-capped Rock Thrush	<i>Monticola cinclorhyncha</i>	1666 - 1722	UWICER
49	Small Niltava	<i>Niltava macgrigoriae</i>	1051 - 1774	UWICER
50	Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	1630, 1714	UWICER
51	White-browed Shrike Babbler	<i>Pteruthius flaviscapis</i>	1031 - 1875	UWICER
52	Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	1581 - 1715	UWICER
53	Striated Bulbul	<i>Pycnonotus striatus</i>	1111 - 1883	UWICER
54	Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	1393 - 1722	UWICER
55	Eurasian Jay	<i>Garrulus glandarius</i>	1722	UWICER
56	Yellow-bellied Fantail	<i>Chelidorhynch hypoxanthus</i>	1714	UWICER
57	Himalayan Cutia	<i>Cutia nipalensis</i>	1690 - 1714	UWICER
58	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	877 - 1883	UWICER
59	Grey-headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	535 - 1875	UWICER
60	Ashy Bulbul	<i>Hemixos flava</i>	248, 1698	UWICER
61	Maroon Oriole	<i>Oriolus traillii</i>	267 - 1849	UWICER
62	Scarlet Minivet	<i>Pericrocotus flammeus</i>	198 - 1867	UWICER
63	Black Bulbul	<i>Hypsipetes leucocephalus</i>	238 - 1849	UWICER
64	Large Niltava	<i>Niltava grandis</i>	1224 - 1856	UWICER
65	Rufous-throated Partridge	<i>Arborophila rufogularis</i>	970 - 1852	UWICER
66	Large-billed Crow	<i>Corvus macrorhynchos</i>	198 - 1676	UWICER
67	Black-throated Prinia	<i>Prinia atrogularis</i>	1048 - 1761	UWICER
68	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	1648	UWICER
69	Red-vented Bulbul	<i>Pycnonotus cafer</i>	198 - 1754	UWICER
70	Grey Bushchat	<i>Saxicola ferreus</i>	1623 - 1869	UWICER
71	Streaked Spiderhunter	<i>Arachnothera magna</i>	198 - 1856	UWICER
72	Rufous-gorgeted Flycatcher	<i>Ficedula strophiatea</i>	1767	UWICER
73	White-tailed Nuthatch	<i>Sitta himalayensis</i>	1765 - 1779	UWICER
74	Rusty-fronted Barwing	<i>Actinodura egertoni</i>	1253 - 1856	UWICER
75	Grey-chinned Minivet	<i>Pericrocotus solaris</i>	1581 - 1774	UWICER
76	Grey-headed Woodpecker	<i>Picus canus</i>	265 - 1774	UWICER
77	Chestnut-bellied Nuthatch	<i>Sitta cinnamoventris</i>	301 - 1875	UWICER
78	Fork-tailed Swift	<i>Apus pacificus</i>	716 - 1792	UWICER
79	Greater Rufous-headed Parrotbill	<i>Psittiparus ruficeps</i>	1253 - 1828	UWICER
80	Slaty-bellied Tesia	<i>Tesia olivea</i>	1111 - 1828	UWICER
81	Chestnut-breasted Partridge	<i>Arborophila mandellii</i>	970 - 1849	UWICER
82	Grey-bellied Tesia	<i>Tesia cyaniventer</i>	1393, 1849	UWICER
83	Mountain Hawk Eagle	<i>Nisaetus nipalensis</i>	1875	UWICER
84	Spot-winged Grosbeak	<i>Mycerobas melanozanthos</i>	1581 - 1867	UWICER
85	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	198 - 1833	UWICER
86	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	1552, 1779	UWICER
87	Crested Serpent Eagle	<i>Spilornis cheela</i>	418 - 1779	UWICER
88	Mrs Gould's Sunbird	<i>Aethopyga gouldiae</i>	1740 - 1754	UWICER
89	Plaintive Cuckoo	<i>Cacomantis merulinus</i>	1740, 1754	UWICER
90	Orange-bellied Leafbird	<i>Chloropsis hardwickii</i>	206 - 1754	UWICER
91	Eurasian Wryneck	<i>Jynx torquilla</i>	1740, 1754	UWICER
92	Mountain Scops Owl	<i>Otus spilocephalus</i>	1740, 1754	UWICER
93	Grey Peacock Pheasant	<i>Polyplectron bicalcaratum</i>	986 - 1754	UWICER
94	Spotted Dove	<i>Stigmatopelia chinensis</i>	198 - 1754	UWICER
95	Greater Spotted Eagle	<i>Clanga clanga</i>	1698	UWICER
96	Bronzed Drongo	<i>Dicrurus aeneus</i>	202 - 1687	UWICER
97	Sultan Tit	<i>Melanochloa sultanea</i>	334 - 1687	UWICER

98	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	198-208, 1594-1666	UWICER
99	Chestnut-crowned Laughingthrush	<i>Garrulax erythrocephalus</i>	1604	UWICER
100	Pygmy Wren Babbler	<i>Pnoepyga pusilla</i>	1597	UWICER
101	Yellow-throated Fulvetta	<i>Pseudominla cinerea</i>	1232 - 1581	UWICER
102	Scarlet Finch	<i>Carpodacus sipahi</i>	1396 - 1844	UWICER
103	Greater Yellownape	<i>Picus flavinucha</i>	1557	UWICER
104	Mountain Imperial Pigeon	<i>Ducula badia</i>	862 - 1552	UWICER
105	Red-faced Liocichla	<i>Liocichla phoenicea</i>	1094 - 1552	UWICER
106	Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i>	334 - 1515	UWICER
107	Mountain Tailorbird	<i>Phyllergates cucullatus</i>	1454, 1515	UWICER
108	Green Cochoa	<i>Cochoa viridis</i>	1500	UWICER
109	Long-tailed Sibia	<i>Heterophasia picaoides</i>	877 - 1475	UWICER
110	Asian Emerald Cuckoo	<i>Chrysococcyx maculatus</i>	1051 - 1455	UWICER
111	Short-billed Minivet	<i>Pericrocotus brevirostris</i>	1455	UWICER
112	Whistler's Warbler	<i>Seicercus whistleri</i>	1008, 1454	UWICER
113	Steppe Eagle	<i>Aquila nipalensis</i>	1406	UWICER
114	Red-tailed Minla	<i>Minla ignotincta</i>	1406	UWICER
115	Common Tailorbird	<i>Orthotomus sutorius</i>	212 - 1406	UWICER
116	Coral-billed Scimitar Babbler	<i>Pomatorhinus ferruginosus</i>	1269 - 1396	UWICER
117	Spotted Forktail	<i>Enicurus maculatus</i>	250, 1393	UWICER
118	Oriental White-Eye	<i>Zosterops palpebrosus</i>	198 - 1381	UWICER
119	Bar-winged Flycatcher-shrike	<i>Hemipus picatus</i>	1238 - 1391	UWICER
120	Blue-winged Laughingthrush	<i>Garrulax squamatus</i>	1051 - 1394	UWICER
121	White-spectacled Warbler	<i>Seicercus affinis</i>	1232, 1394	UWICER
122	Eurasian Cuckoo	<i>Cuculus canorus</i>	1410, 1340	UWICER
123	Rufous-necked Laughingthrush	<i>Garrulax ruficollis</i>	662 - 1340	UWICER
124	Slaty Blue Flycatcher	<i>Ficedula tricolor</i>	1322	UWICER
125	Chestnut-tailed Starling	<i>Sturnia malabarica</i>	198 - 215, 1315	UWICER
126	Slaty-backed Flycatcher	<i>Ficedula erithacus</i>	1301	UWICER
127	Striated Yuhina	<i>Staphida castaniceps</i>	842 - 1281	UWICER
128	Chestnut-headed Tesia	<i>Oligura castaneocoronata</i>	1232	UWICER
129	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	970 - 1246	UWICER
130	Hodgson's Hawk Cuckoo	<i>Hierococcyx fugax</i>	1211 - 1224	UWICER
131	Yellow-vented Warbler	<i>Phylloscopus cantator</i>	228 - 1182	UWICER
132	Spotted Elachura	<i>Elachura formosa</i>	1129	UWICER
133	Grey Wagtail	<i>Motacilla cinerea</i>	208, 1051 - 1111	UWICER
134	Blue-throated Barbet	<i>Megalaima asiatica</i>	269 - 1048	UWICER
135	Rufous Woodpecker	<i>Micropternus brachyurus</i>	212 - 248, 1048	UWICER
136	Lesser Yellownape	<i>Picus chlorolophus</i>	198, 1051	UWICER
137	Nepal Fulvetta	<i>Alcippe nipalensis</i>	1031	UWICER
138	Black-headed Shrike Babbler	<i>Pteruthius rufiventer</i>	1031	UWICER
139	Lesser Necklaced Laughingthrush	<i>Garrulax monileger</i>	894 - 986	UWICER
140	Pale Blue Flycatcher	<i>Cyornis unicolor</i>	877 - 970	UWICER
141	Common Iora	<i>Aegithina tiphia</i>	248 - 950	UWICER
142	Emerald Dove	<i>Chalcophaps indica</i>	950	UWICER
143	White-rumped Shama	<i>Copsychus malabaricus</i>	198 - 932	UWICER
144	Collared Treepie	<i>Dendrocitta frontalis</i>	932	UWICER

145	Red Junglefowl	<i>Gallus gallus</i>	212 - 932	UWICER
146	Pale-headed Woodpecker	<i>Gecinulus grantia</i>	932	UWICER
147	Black-naped Monarch	<i>Hypothymis azurea</i>	269 - 932	UWICER
148	White-rumped Munia	<i>Lonchura striata</i>	932	UWICER
149	Puff-throated Babbler	<i>Pellorneum ruficeps</i>	202 - 932	UWICER
150	Crimson Sunbird	<i>Aethopyga siparaja</i>	198 - 894	UWICER
151	Rufescent Prinia	<i>Prinia rufescens</i>	679 - 877	UWICER
152	Greater Necklaced Laughingthrush	<i>Garrulax pectoralis</i>	862	UWICER
153	Chestnut-headed Bee-eater	<i>Merops leschenaulti</i>	198, 862	UWICER
154	Speckled Piculet	<i>Picumnus innominatus</i>	862	UWICER
155	Grey-capped Pygmy Woodpecker	<i>Dendrocopos canicapillus</i>	238, 855	UWICER
156	Fulvous-breasted Woodpecker	<i>Dendrocopos macei</i>	843, 855	UWICER
157	Grey-headed Parrotbill	<i>Psittiparus gularis</i>	855	UWICER
158	Common Myna	<i>Acridotheres tristis</i>	198 - 843	UWICER
159	Red-rumped Swallow	<i>Cecropis daurica</i>	535 - 843	UWICER
160	Grey-backed Shrike	<i>Lanius tephronotus</i>	843	UWICER
161	Common Pigeon	<i>Columba livia</i>	198 - 812	UWICER
162	Lesser Coucal	<i>Centropus bengalensis</i>	807	UWICER
163	Taiga Flycatcher	<i>Ficedula albicilla</i>	238 - 792	UWICER
164	Jungle Babbler	<i>Turdoides striata</i>	792	UWICER
165	Common Hoopoe	<i>Upupa epops</i>	253, 753	UWICER
166	White-throated Bulbul	<i>Alophoixus flaveolus</i>	215 - 644	UWICER
167	Blue-throated Blue Flycatcher	<i>Cyornis rubeculoides</i>	253 - 644	UWICER
168	Black-crested Bulbul	<i>Pycnonotus flaviventris</i>	198 - 644	UWICER
169	Great Hornbill	<i>Buceros bicornis</i>	418 - 627	UWICER
170	Plain Flowerpecker	<i>Dicaeum concolor</i>	238 - 627	UWICER
171	Rufous-bellied Eagle	<i>Lophotriorchis kienerii</i>	519	UWICER
172	Pin-striped Tit Babbler	<i>Macronus gularis</i>	212 - 502	UWICER
173	Golden-fronted Leafbird	<i>Chloropsis aurifrons</i>	212 - 469	UWICER
174	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	202 - 469	UWICER
175	Asian fairy Bluebird	<i>Irena puella</i>	198 - 436	UWICER
176	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	198, 418	UWICER
177	Dollarbird	<i>Eurystomus orientalis</i>	250 - 418	UWICER
178	Blue-eared Barbet	<i>Megalaima australis</i>	232 - 418	UWICER
179	Black Redstart	<i>Phoenicurus ochruros</i>	383	UWICER
180	White-browed Scimitar Babbler	<i>Pomatorhinus schisticeps</i>	198 - 228	UWICER
181	Common Hill Myna	<i>Gracula religiosa</i>	198 - 215	UWICER
182	Common Kingfisher	<i>Alcedo atthis</i>	206	UWICER
183	Yellow-vented Flowerpecker	<i>Dicaeum chrysorrheum</i>	206	UWICER
184	Crested Kingfisher	<i>Megaceryle lugubris</i>	206	UWICER
185	Black-backed Forktail	<i>Enicurus immaculatus</i>	208	UWICER
186	Lineated Barbet	<i>Megalaima lineata</i>	198 - 238	UWICER
187	Asian Koel	<i>Eudynamys scolopaceus</i>	198 - 232	UWICER
188	White Wagtail	<i>Motacilla alba</i>	198	UWICER
189	House Swift	<i>Apus nipalensis</i>	198	UWICER
190	Asian Pied Starling	<i>Gracupica contra</i>	198	UWICER
191	House Sparrow	<i>Passer domesticus</i>	198	UWICER
192	Siberian Rubythroat	<i>Luscinia calliope</i>	212	UWICER
193	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	232	UWICER
194	Blue-bearded Bee-eater	<i>Nyctornis athertoni</i>	232 - 248	UWICER
195	Pin-tailed Green Pigeon	<i>Treron apicauda</i>	248	UWICER

196	Wedge-tailed Green Pigeon	<i>Treron sphenurus</i>	248	UWICER
197	Asian Barred Owlet	<i>Glaucidium cuculoides</i>	238	UWICER
198	Oriental Honey-buzzard	<i>Pernis ptilorhynchus</i>	238	UWICER
199	Dark-rumped Swift	<i>Apus acuticauda</i>		Debbie Garner
200	Large Woodshrike	<i>Tephrodornis virgatus</i>		Debbie Garner
201	Little Cormorant	<i>Microcarbo niger</i>		Jim Pompy
202	Black Kite	<i>Milvus migrans</i>		Jim Pompy
203	Scaly-breasted Munia	<i>Lonchura punctulata</i>		Jim Pompy
204	Crested Treeswift	<i>Hemiprocne coronata</i>		Susan Steele
205	Cattle Egret	<i>Bubulcus ibis</i>		Susan Steele
206	Black Eagle	<i>Ictinaetus malaiensis</i>		Susan Steele
207	Crested Goshawk	<i>Accipiter trivirgatus</i>		Susan Steele
208	Red-headed Trogon	<i>Harpactes erythrocephalus</i>		Susan Steele
209	Black Drongo	<i>Dicrurus macrocercus</i>		Susan Steele
210	Pygmy Wren Babbler	<i>Pnoepyga pusilla</i>		Susan Steele
211	Hume's Warbler	<i>Phylloscopus humei</i>		Susan Steele
212	Thick-billed Warbler	<i>Phragamaticola aedon</i>		Susan Steele
213	Common Stonechat	<i>Saxicola torquatus</i>		Susan Steele
214	Black Stork	<i>Ciconia nigra</i>		Susan Steele
215	Coppersmith Barbet	<i>Megalaima haemacephala</i>		Susan Steele
216	Indian Pond Heron	<i>Ardeola grayii</i>		Susan Steele
217	Greater Coucal	<i>Centropus sinensis</i>		Susan Steele
218	Indian Cuckoo	<i>Cuculus micropterus</i>		Tashi Tashi
219	Spotted Owlet	<i>Athene brama</i>		Tashi Tashi
220	Oriental Pied Hornbill	<i>Anthracoceros albirostris</i>		Tashi Tashi
221	Wreathed Hornbill	<i>Rhyticeros undulatus</i>		Tashi Tashi
222	Indian Roller	<i>Coracias benghalensis</i>		Tashi Tashi
223	Rose-ringed Parakeet	<i>Psittacula krameri</i>		Tashi Tashi
224	Fire-capped Tit	<i>Cephalopyrus flammiceps</i>		Tashi Tashi
225	Baya Weaver	<i>Ploceus philippinus</i>		Tashi Tashi
226	Citrine Wagtail	<i>Motacilla citreola</i>		Tashi Tashi
227	Grey-bellied Cuckoo	<i>Cacomantis passerinus</i>		Jim Pompy
228	Himalayan Swiftlet	<i>Collacalia brevirostris</i>		Jim Pompy
229	Black-tailed Crane	<i>Prozana bicolor</i>		Jim Pompy
230	Himalayan Vulture	<i>Gyps himalayensis</i>		Jim Pompy
231	Yellow-rumped Honeyguide	<i>Indicator xanthonotus</i>		Jim Pompy
232	Long-tailed Broadbill	<i>Psarisomus dalhousiae</i>		Jim Pompy
233	Long-tailed Shrike	<i>Lanius schach</i>		Jim Pompy
234	Yellow-browed Tit	<i>Sylviparus modestus</i>		Jim Pompy
235	Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>		Jim Pompy
236	Lesser Rufous-headed Parrotbill	<i>Chleuasicus atrosuperciliaris</i>		Jim Pompy
237	Hodgson's Treecreeper	<i>Certhia hodgsoni</i>		Jim Pompy
238	Yellow-bellied Flowerpecker	<i>Dicaeum melanozanthum</i>		Jim Pompy
239	Yellow-breasted Greenfinch	<i>Carduelis spinoides</i>		Jim Pompy
240	Violet Cuckoo	<i>Chrysococcyx xanthorhynchus</i>		Jim Pompy
241	Drongo Cuckoo	<i>Surniculus lugubris</i>		Jim Pompy
242	Yellow-footed Green Pigeon	<i>Treron phoenicoptera</i>		Jim Pompy
243	Speckled Wood Pigeon	<i>Columba hodgsonii</i>		Jim Pompy
244	Banded Bay Cuckoo	<i>Cacomantis sonnerati</i>		Jim Pompy
245	Asian Paradise Flycatcher	<i>Terpsiphone paradisi</i>		Jim Pompy
246	Himalayan Bulbul	<i>Pycnonotus leucogenys</i>		Jim Pompy
247	Scarlet-backed Flowerpecker	<i>Dicaeum cruentatum</i>		Jim Pompy

248	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>		Nitu S
249	Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		Benoit Maire
250	Pallas's Fish Eagle	<i>Haliaeetus leucoryphus</i>		Benoit Maire
251	Blyth's Kingfisher	<i>Alcedo hercules</i>		Benoit Maire
252	Plain Prinia	<i>Prinia inornata</i>		Benoit Maire
253	Little Spiderhunter	<i>Arachnothera longirostra</i>		Susan Myers
254	Brown Shrike	<i>Lanius cristatus</i>		Susan Steele
255	Grey-sided Bush Warbler	<i>Cettia brunnifrons</i>		Susan Steele
256	Rufous-vented Yuhina	<i>Yuhina occipitalis</i>		Susan Steele
257	Thick-billed Green Pigeon	<i>Treron curvirostra</i>		Susan Steele
258	Changeable Hawk-Eagle	<i>Nisaetus limnaeetus</i>		Susan Steele
259	Ashy Woodswallow	<i>Artamus fuscus</i>		Susan Steele
260	Grey-winged Blackbird	<i>Turdus boulboul</i>		Susan Steele
261	Yellow-browed Warbler	<i>Phylloscopus inornatus</i>		Susan Steele
262	Dusky Warbler	<i>Phylloscopus fuscatus</i>		Susan Steele
263	Great Myna	<i>Acridotheres grandis</i>		Susan Steele
264	Pale-chinned Blue Flycatcher	<i>Cyornis poliogenys</i>		Susan Steele
265	Hodgson's Redstart	<i>Phoenicurus hodgsoni</i>		Susan Steele
266	River Lapwing	<i>Vanellus duvaucelii</i>		Pema Tshering
267	Common Teal	<i>Anas crecca</i>		Pema Tshering
268	Common Merganser	<i>Mergus merganser</i>		Pema Tshering
269	Great Cormorant	<i>Phalacrocorax carbo</i>		Pema Tshering
270	Shikra	<i>Accipiter badius</i>		Niels Bomholt
271	Black-eared Shrike Babbler	<i>Pteruthius melanotis</i>		Niels Bomholt
272	Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>		Niels Bomholt
273	Beautiful Nuthatch	<i>Sitta formosa</i>		Niels Bomholt
274	Himalayan Bluetail	<i>Tarsiger rufilatus</i>		Niels Bomholt
275	Green-tailed Sunbird	<i>Aethopyga nipalensis</i>		Niels Bomholt
276	Besra	<i>Accipiter virgatus</i>		Niels Bomholt
277	Brown Dipper	<i>Cinclus pallasii</i>		Niels Bomholt
278	Collared Scops Owl	<i>Otus lettia</i>		Niels Bomholt
279	House Crow	<i>Corvus splendens</i>		Jason Boyce
280	Common Sandpiper	<i>Actitis hypoleucos</i>		Chris Burney
281	Crimson-breasted Woodpecker	<i>Dendrocopos cathpharius</i>		Chris Burney
282	Peregrine Falcon	<i>Falco peregrinus</i>		Chris Burney
283	Crow-billed Drongo	<i>Dicrurus annectens</i>		Chris Burney
284	Barn Swallow	<i>Hirundo rustica</i>		Chris Burney
285	Wallcreeper	<i>Tichodroma muraria</i>		Don Roberson
286	Gold-naped Finch	<i>Pyrrhoptes epauletta</i>		Don Roberson
287	Rufous-breasted Accentor	<i>Prunella strophiatea</i>		Don Roberson
288	Striated Prinia	<i>Prinia crinigera</i>		Don Roberson
289	Northern Goshawk	<i>Accipiter gentilis</i>		Guy Poisson
290	Himalayan Buzzard	<i>Buteo burmanicus</i>		Peter Dunwiddie
291	Brown-capped Pygmy Woodpecker	<i>Dendrocopos nanus</i>		Holger Teichmann
292	Red Collared Dove	<i>Streptopelia tranquebarica</i>		Holger Teichmann
293	Alpine Thrush	<i>Zoothera mollissima</i>		Dibyendu Ash
294	Crested Bunting	<i>Emberiza lathami</i>		Thinley Dorji
295	Blyth's Pipit	<i>Anthus godlewskii</i>		Benoit Maire
296	Little Bunting	<i>Emberiza pusilla</i>		Benoit Maire
297	Rufous-throated Wren Babbler	<i>Spelaeoris caudatus</i>		Brodie Cass Talbot

298	Lesser Shortwing	<i>Brachypteryx leucophri</i>		Jon Irvine
299	Long-billed Wren Babbler	<i>Rimator malacoptilus</i>		Lisa Hamilton
300	Brown Bullfinch	<i>Pyrrhula nipalensis</i>		Markus Lilje
301	Collared Grosbeak	<i>Mycerobas affinis</i>		Susan Myers
302	Ashy Wood Pigeon	<i>Columba pulchricollis</i>		Susan Myers
303	Scaly Laughingthrush	<i>Garrulax subunicolor</i>		Susan Myers
304	Ward's Trogon	<i>Harpactes wardi</i>		Hemant Dhadnekar
305	Rufous-backed Sibia	<i>Heterophasia annectens</i>		Frank Thierfelder
306	Greenish Warbler	<i>Phylloscopus trochiloides</i>		Rosemary Lloyd
307	Daurian Redstart	<i>Phoenicurus aureus</i>		Brodie Cass Talbot

3.1.8. Annexure IV: Checklist of bird species along different stretches of the NSJ bird watching route.

Sl. No.	Narphu - Morong	Morong - Aerong	Aerong - Dewathang	Dewathang - Samdrup Jongkhar
1	Ashy Bulbul	Aberrant Bush Warbler	Ashy Bulbul	Ashy Bulbul
2	Ashy Drongo	Ashy Drongo	Ashy Drongo	Ashy Drongo
3	Ashy Wood Swallow	Ashy-throated Warbler	Asian Barred Owlet	Ashy Wood Swallow
4	Ashy-throated Warbler	Asian Emerald Cuckoo	Asian Emerald Cuckoo	Ashy-throated Warbler
5	Asian Barred Owlet	Barred Cuckoo Dove	Asian House Martin	Asian Barred Owlet
6	Barred Cuckoo Dove	Bar-winged Flycatcher-shrike	Barn Swallow	Asian Brown Flycatcher
7	Bar-throated Siva	Bay Woodpecker	Barred Cuckoo Dove	Asian Fairy Bluebird
8	Bay Woodpecker	Bhutan Laughingthrush	Bar-winged Flycatcher-shrike	Asian Koel
9	Beautiful Nuthatch	Black Bulbul	Bay Woodpecker	Asian Palm Swift
10	Bhutan Laughingthrush	Black Eagle	Beautiful Nuthatch	Asian Pied Starling
11	Black Bulbul	Black-eared Shrike Babbler	Bhutan Laughingthrush	Barn Swallow
12	Black Eagle	Black-faced Warbler	Black Bulbul	Besra
13	Black-throated Prinia	Black-throated Prinia	Black Eagle	Black Bulbul
14	Black-throated Sunbird	Black-throated Sunbird	Black-chinned Yuhina	Black Redstart
15	Black-throated Thrush	Black-throated Tit	Black-crested Bulbul	Black-backed Forktail
16	Black-throated Tit	Black-winged Cuckooshrike	Black-headed Shrike Babbler	Black-crested Bulbul
17	Black-winged Cuckooshrike	Blue Whistling Thrush	Black-hooded Oriole	Black-hooded Oriole
18	Blue Whistling Thrush	Blue-bearded Bee-eater	Black-naped Monarch	Black-naped Monarch
19	Blue-bearded Bee-eater	Blue-capped Rock Thrush	Black-throated Prinia	Black-throated Sunbird
20	Blue-capped Rock Thrush	Blue-fronted Redstart	Black-throated Sunbird	Black-winged Cuckooshrike
21	Blue-fronted Redstart	Blue-throated Barbet	Black-winged Cuckooshrike	Blue Rock Thrush
22	Blue-throated Barbet	Blue-winged Laughingthrush	Blue Whistling Thrush	Blue Whistling Thrush
23	Blue-winged Laughingthrush	Blue-winged Siva	Blue-bearded Bee-eater	Blue-bearded Bee-eater
24	Blue-winged Siva	Blyth's Leaf Warbler	Blue-fronted Redstart	Blue-eared Barbet
25	Blyth's Leaf Warbler	Bronzed Drongo	Blue-throated Barbet	Blue-throated Barbet
26	Brown-flanked Bush Warbler	Brown-flanked Bush Warbler	Blue-winged Laughingthrush	Blue-throated Blue Flycatcher
27	Brown-throated Treecreeper	Buff-barred Warbler	Blue-winged Siva	Blue-winged Siva
28	Buff-barred Warbler	Chestnut-bellied Nuthatch	Blyth's Leaf Warbler	Blyth's Leaf Warbler
29	Chestnut-bellied Nuthatch	Chestnut-bellied Rock Thrush	Bronzed Drongo	Bronzed Drongo
30	Chestnut-bellied Rock Thrush	Chestnut-breasted Partridge	Chestnut-bellied Nuthatch	Chestnut-bellied Nuthatch

31	Chestnut-breasted Partridge	Chestnut-crowned Laughingthrush	Chestnut-bellied Rock Thrush	Chestnut-bellied Rock Thrush
32	Chestnut-crowned Laughingthrush	Chestnut-crowned Warbler	Chestnut-crowned Warbler	Chestnut-crowned Warbler
33	Collared Owlet	Chestnut-headed Tesia	Chestnut-headed Bee-eater	Chestnut-headed Bee-eater
34	Common Green Magpie	Collared Owlet	Chestnut-headed Tesia	Chestnut-tailed Starling
35	Common Rosefinch	Common Green Magpie	Chestnut-tailed Starling	Common Green Magpie
36	Common Tailorbird	Common Hoopoe	Collared Owlet	Common Hill Myna
37	Crested Goshawk	Common Tailorbird	Collared Treepie	Common Hoopoe
38	Crested Serpent Eagle	Coral-billed Scimitar Babbler	Common Green Magpie	Common Iora
39	Crimson-breasted Woodpecker	Crested Serpent Eagle	Common Iora	Common Kingfisher
40	Dark-rumped Swift	Dark-sided Flycatcher	Common Myna	Common Myna
41	Dark-sided Flycatcher	Emerald Dove	Common Pigeon	Common Pigeon
42	Eurasian Jay	Eurasian Cuckoo	Common Tailorbird	Common Stonechat
43	Eurasian Tree Sparrow	Eurasian Sparrowhawk	Coral-billed Scimitar Babbler	Common Tailorbird
44	Eurasian Wryneck	Eurasian Tree Sparrow	Crested Serpent Eagle	Crested Kingfisher
45	Fire-breasted Flowerpecker	Fire-breasted Flowerpecker	Crimson Sunbird	Crested Serpent Eagle
46	Fork-tailed Swift	Golden Babbler	Dark-rumped Swift	Crimson Sunbird
47	Golden Babbler	Golden-throated Barbet	Emerald Dove	Dark-rumped Swift
48	Golden-throated Barbet	Great Barbet	Eurasian Cuckoo	Dark-sided Flycatcher
49	Great Barbet	Greater Racket-tailed Drongo	Eurasian Hobby	Daurian Redstart
50	Greater Rufous-headed Parrotbill	Greater Rufous-headed Parrotbill	Eurasian Tree Sparrow	Dollarbird
51	Greater Yellownape	Greater Spotted Eagle	Fire-breasted Flowerpecker	Eurasian Tree Sparrow
52	Green-backed Tit	Greater Yellownape	Fire-tailed Sunbird	Fire-breasted Flowerpecker
53	Greenish Warbler	Green Cochoa	Fulvous-breasted Woodpecker	Fork-tailed Swift
54	Green-tailed Sunbird	Green-backed Tit	Golden Babbler	Fulvous-breasted Woodpecker
55	Grey Bushchat	Greenish Warbler	Golden-throated Barbet	Golden Babbler
56	Grey Peacock Pheasant	Green-tailed Sunbird	Great Barbet	Golden-fronted Leafbird
57	Grey Treepie	Grey Bushchat	Great Hornbill	Golden-throated Barbet
58	Grey Wagtail	Grey Treepie	Greater Necklaced Laughingthrush	Great Barbet
59	Grey-backed Shrike	Grey Wagtail	Greater Racket-tailed Drongo	Great Hornbill
60	Grey-bellied Tesia	Grey-bellied Tesia	Greater Rufous-headed Parrotbill	Greater Goldenback
61	Grey-cheeked Warbler	Grey-cheeked Warbler	Greater Yellownape	Greater Necklaced Laughingthrush

62	Grey-chinned Minivet	Grey-chinned Minivet	Green-backed Tit	Greater Racket-tailed Drongo
63	Grey-headed Canary Flycatcher	Grey-headed Canary Flycatcher	Green-crowned Warbler	Greater Yellownape
64	Grey-headed Woodpecker	Grey-headed Woodpecker	Green-tailed Sunbird	Greenish Warbler
65	Grey-hooded Warbler	Grey-hooded Warbler	Grey Bushchat	Grey Treepie
66	Grey-sided Bush Warbler	Grey-sided Laughingthrush	Grey Peacock Pheasant	Grey Wagtail
67	Grey-sided Laughingthrush	Grey-throated Babbler	Grey Treepie	Grey-backed Shrike
68	Grey-throated Babbler	Hill Partridge	Grey Wagtail	Grey-capped Pygmy Woodpecker
69	Hill Partridge	Himalayan Bluetail	Grey-backed Shrike	Grey-headed Canary Flycatcher
70	Himalayan Cuckoo	Himalayan Cuckoo	Grey-capped Pygmy Woodpecker	Grey-headed Woodpecker
71	Himalayan Cutia	Kalij Pheasant	Grey-cheeked Warbler	Grey-throated Babbler
72	Himalayan Vulture	Large Hawk Cuckoo	Grey-headed Canary Flycatcher	Hair-crested Drongo
73	Large Hawk Cuckoo	Large Niltava	Grey-headed Parrotbill	House Sparrow
74	Large Niltava	Large-billed Leaf Warbler	Grey-headed Woodpecker	House Swift
75	Large-billed Crow	Lemon-rumped Warbler	Grey-hooded Warbler	Jungle Babbler
76	Large-billed Leaf Warbler	Lesser Racket-tailed Drongo	Grey-throated Babbler	Jungle Myna
77	Lesser Racket-tailed Drongo	Lesser Yellownape	Hill Partridge	Large-billed Crow
78	Little Pied Flycatcher	Little Pied Flycatcher	Himalayan Cuckoo	Large-billed Leaf Warbler
79	Long-tailed Shrike	Long-billed Wren Babbler	Hodgson's Hawk Cuckoo	Lesser Coucal
80	Maroon Oriole	Long-tailed Sibia	Large Hawk Cuckoo	Lesser Racket-tailed Drongo
81	Mountain Bulbul	Maroon Oriole	Large Niltava	Lesser Yellownape
82	Mountain Hawk Eagle	Mountain Bulbul	Large-billed Crow	Lineated Barbet
83	Mountain Scops Owl	Mountain Imperial Pigeon	Large-billed Leaf Warbler	Little Pied Flycatcher
84	Mountain Tailorbird	Mountain Tailorbird	Lesser Necklaced Laughingthrush	Maroon Oriole
85	Mrs Gould's Sunbird	Nepal Fulvetta	Lesser Racket-tailed Drongo	Nepal Fulvetta
86	Nepal Fulvetta	Nepal House Martin	Lesser Yellownape	Olive-backed Pipit
87	Northern Goshawk	Olive-backed Pipit	Little Pied Flycatcher	Orange-bellied Leafbird
88	Olive-backed Pipit	Orange-bellied Leafbird	Long-tailed Sibia	Oriental Honey-buzzard
89	Orange-bellied Leafbird	Oriental Magpie Robin	Maroon Oriole	Oriental Magpie Robin
90	Oriental Magpie Robin	Oriental Turtle Dove	Mountain Bulbul	Oriental Turtle Dove
91	Oriental Turtle Dove	Oriental White-Eye	Mountain Hawk Eagle	Oriental White-Eye
92	Oriental White-Eye	Pin-tailed Green Pigeon	Mountain Imperial Pigeon	Peregrine Falcon
93	Plaintive Cuckoo	Plumbeous Water Redstart	Nepal Fulvetta	Pin-striped Tit Babbler
94	Red-faced Liocichla	Pygmy Wren Babbler	Orange-bellied Leafbird	Pin-tailed Green Pigeon
95	Red-tailed Minla	Red-faced Liocichla	Oriental Magpie Robin	Plain Flowerpecker
96	Red-vented Bulbul	Red-tailed Minla	Oriental Turtle Dove	Plumbeous Water Redstart

97	Rufous Sibia	Red-vented Bulbul	Oriental White-Eye	Puff-throated Babbler
98	Rufous-bellied Eagle	Rufous Sibia	Pale Blue Flycatcher	Red Junglefowl
99	Rufous-capped Babbler	Rufous-bellied Eagle	Pale-headed Woodpecker	Red-rumped Swallow
100	Rufous-chinned Laughingthrush	Rufous-capped Babbler	Pin-striped Tit Babbler	Red-vented Bulbul
101	Rufous-gorgeted Flycatcher	Rufous-chinned Laughingthrush	Puff-throated Babbler	Red-whiskered Bulbul
102	Rufous-necked Hornbill	Rufous-gorgeted Flycatcher	Pygmy Wren Babbler	Ruby-cheeked Sunbird
103	Rufous-necked Laughingthrush	Rufous-necked Hornbill	Red Junglefowl	Rufescent Prinia
104	Rufous-throated Partridge	Rufous-necked Laughingthrush	Red-faced Liocichla	Rufous Treepie
105	Russet Sparrow	Rufous-throated Partridge	Red-rumped Swallow	Rufous Woodpecker
106	Rusty-cheeked Scimitar Babbler	Russet Sparrow	Red-tailed Minla	Rufous-bellied Eagle
107	Rusty-flanked Treecreeper	Rusty-fronted Barwing	Red-vented Bulbul	Rufous-capped Babbler
108	Rusty-fronted Barwing	Scaly Laughingthrush	Rufescent Prinia	Rufous-necked Laughingthrush
109	Scaly Laughingthrush	Scaly-breasted Wren Babbler	Rufous Sibia	Rusty-cheeked Scimitar Babbler
110	Scaly-breasted Wren Babbler	Scarlet Finch	Rufous Woodpecker	Scaly-breasted Munia
111	Scarlet Finch	Short-billed Minivet	Rufous-bellied Eagle	Scarlet Minivet
112	Scarlet Minivet	Silver-eared Mesia	Rufous-capped Babbler	Shikra
113	Silver-eared Mesia	Slaty-bellied Tesia	Rufous-chinned Laughingthrush	Siberian Rubythroat
114	Slaty-bellied Tesia	Small Niltava	Rufous-gorgeted Flycatcher	Slaty-backed Forktail
115	Small Niltava	Spotted Forktail	Rufous-necked Hornbill	Spotted Dove
116	Spotted Dove	Spot-winged Grosbeak	Rufous-necked Laughingthrush	Spotted Forktail
117	Spot-winged Grosbeak	Steppe Eagle	Rufous-throated Partridge	Streaked Spiderhunter
118	Streak-breasted Scimitar Babbler	Streak-breasted Scimitar Babbler	Rusty-cheeked Scimitar Babbler	Striated Yuhina
119	Streaked Spiderhunter	Streaked Spiderhunter	Rusty-fronted Barwing	Sultan Tit
120	Striated Bulbul	Striated Bulbul	Scaly-breasted Munia	Taiga Flycatcher
121	Striated Laughingthrush	Striated Laughingthrush	Scaly-breasted Wren Babbler	Verditer Flycatcher
122	Stripe-throated Yuhina	Sultan Tit	Scarlet Finch	Wedge-tailed Green Pigeon
123	Sultan Tit	Thick-billed Green Pigeon	Scarlet Minivet	Whistler's Warbler
124	Tickell's Leaf Warbler	Verditer Flycatcher	Siberian Rubythroat	White Wagtail
125	Verditer Flycatcher	Wedge-tailed Green Pigeon	Silver-eared Mesia	White-browed Scimitar Babbler
126	Wedge-tailed Green Pigeon	Whiskered Yuhina	Slaty Blue Flycatcher	White-capped Redstart
127	Whiskered Yuhina	Whistler's Warbler	Slaty-backed Flycatcher	White-rumped Munia
128	White Wagtail	White-browed Shrike Babbler	Slaty-bellied Tesia	White-rumped Shama
129	White-browed Shrike Babbler	White-capped Redstart	Slender-billed Scimitar Babbler	White-throated Bulbul
130	White-crested Laughingthrush	White-crested Laughingthrush	Small Niltava	White-throated Fantail
131	White-gorgeted Flycatcher	White-gorgeted Flycatcher	Speckled Piculet	White-throated Kingfisher

132	White-naped Yuhina	White-naped Yuhina	Spotted Dove	Wreathed Hornbill
133	White-tailed Nuthatch	White-spectacled Warbler	Spotted Elachura	Yellow-bellied Warbler
134	White-tailed Robin	White-tailed Robin	Spotted Forktail	Yellow-vented Flowerpecker
135	White-throated Fantail	White-throated Fantail	Streaked Spiderhunter	Yellow-vented Warbler
136	White-throated Laughingthrush	Yellow-bellied Fantail	Striated Bulbul	
137	Yellow-bellied Fantail	Yellow-cheeked Tit	Striated Laughingthrush	
138	Yellow-breasted Greenfinch	Yellow-throated Fulvetta	Striated Yuhina	
139	Yellow-browed Warbler	Yellow-vented Warbler	Sultan Tit	
140	Yellow-cheeked Tit		Verditer Flycatcher	
141	Yellow-throated Fulvetta		Wedge-tailed Green Pigeon	
142	Yellow-vented Warbler		Whiskered Yuhina	
143			Whistler's Warbler	
144			White Wagtail	
145			White-bellied Erpornis	
146			White-browed Scimitar Babbler	
147			White-browed Shortwing	
148			White-crested Laughingthrush	
149			White-gorgeted Flycatcher	
150			White-naped Yuhina	
151			White-rumped Munia	
152			White-rumped Shama	
153			White-spectacled Warbler	
154			White-tailed Robin	
155			White-throated Fantail	
156			Yellow-bellied Fantail	
157			Yellow-browed Warbler	
158			Yellow-cheeked Tit	
159			Yellow-throated Fulvetta	
160			Yellow-vented Warbler	



Shechamthang to Waklaytar Bird Watching Route



3.2. Shechamthang to Waklaytar (SWK) Bird Watching Route

3.2.1. Geophysical Information



Figure 10: Figure shows the point count stations from Shechamthang - Waklaytar bird watching route.

The Shechamthang – Waklaytar birding route transects from Sarpang, Tsirang and Wangdi Phodrang Dzongkhags (Figure 10). The altitude ranges from 311 – 1960m. This birding route traverses through three major habitat types, namely the subtropical broadleaf forests (200 – 1000m), warm broadleaf forests (1000 – 2000m) and subtropical dry chirpine and riverine forest (200 – 900m). Shechamthang is 33KM west of Gelephug municipality- a central entry point to Bhutan by land. The birding route begins at Shechamthang Zam (311m) on the floodplains of the southern foothills of Sarpang Dzongkhag. The national highway circumvents Shechamthang township and winds uphill to Phuntshogang (515m) through the subtropical broadleaf forests. Then the birding route gently climbs to Rilangthang settlement (731m), Reception Site (831m) - Department of Roads, encompassed with

settlements, woodlands, rocky cliffs and forests. From the Reception Site, birding road snakes uphill to Toribari (961m), Loring Zam (1105m) & Loring Fall, and Jachu (1429m) on the south facing slopes of the Darachu ridgeline. Enroute from Jachu to Darachu, the road passes through Muga junction (1631m) and Ekratey (1729m) with good forests with cardamom plantation along the roads at a couple of locations. From Ekratey, road loops to ascend to Darachu (1950m) summit. Darachu summit is the highest point along this birding route. Upon crossing Darachu, we enter into the Punatshangchu watershed and road rolls almost along a contour line until Damphu, mostly through settlements of Patshaling Toed (1918), Thakhorling (1780m), Reserphu (1778m), Rangthangling (1800m), Nemedsa (1749m), Darchargang (1664) & Damphu (1469m). Damphu is the Head Quarter of Tsirang Dzongkhag. From Damphu, the birding road winds and bends through woodlands, patches of forests and the villages of Tsholingkhar (1138m) and Gomsoom (739m), and descends to Changche (350m) by the Punatshangchu. Birding from Changche to Waklaytar (451m) is restricted along Punatshangchu's riverine and subtropical dry chirpine forests. Between Changche and Waklaytar are settlements of Serutar (402m), Burichu (377m), Syergithang junction, Norbugang (595m) and Rilangthang (538m). At Serutar and Burichu Farmers' Sale Sheds, organic country farm produce and products are readily available.

3.2.2. Species Richness, Shannon Diversity Index (H) and Mann-Whitney U Test

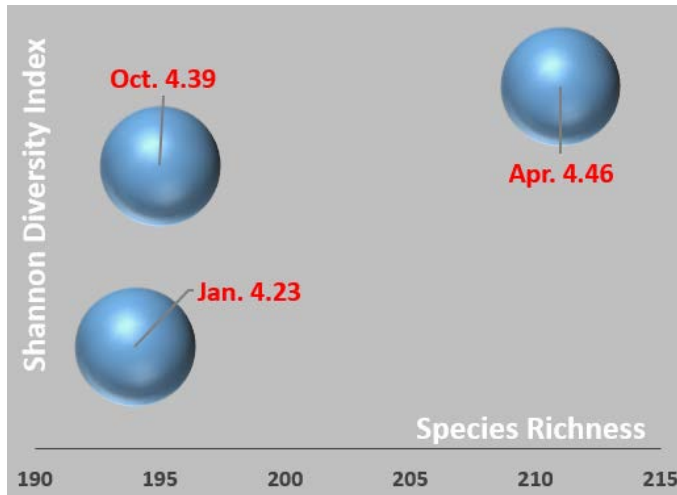


Figure 11: The plot represents seasonal bird species richness and the Shannon - Wiener Diversity Index of Shechamthang - Waklaytar bird watching route.

determined that birding in this route was better in Spring and in Fall, however this does not mean birds are not found in the Winter (Figure 11). Mann-Whitney U Test between seasons (Fall & Winter [$z = -3.05, p = 0.002$], Fall & Spring [$z = 4.09, p = 0.000$]) were statistically significant. Whereas for the Winter & Spring [$z = 0.91, p = 0.36$] showed statistically not significant.

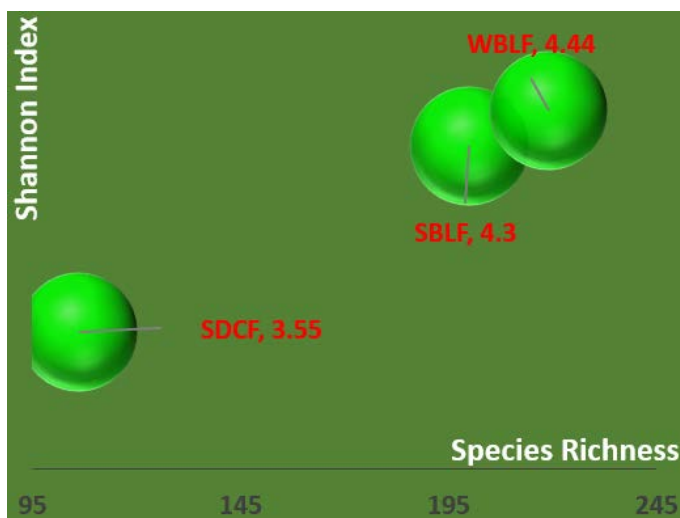


Figure 12: The plot show the bird species richness and H index of the subtropical broadleaf, warm broadleaf and subtropical dry chirpine and riverine forests found along SWK bird watching route.

A total transect length run along SWK route in 3 seasons was 273KM (singleton transect was 91KM). We surveyed at 909 point locations (303 singleton points). A cumulative running bird species list was 291. In the Fall, 195 bird species were listed, and in the subsequent seasons (Winter and Spring), the survey recorded 194 and 211 species respectively. In the SWK birding route, the Shannon Diversity Index (H) indicated highest species richness and diversity in Spring (H = 4.46), followed by Fall (H = 4.39) and Winter (H = 4.23). The H

We also delved into whether differences in H value existed at habitat levels. The SWK birding route has subtropical broadleaf forests (SBLF), subtropical dry chirpine forests (SDCF) and warm broadleaf forests (WBLF). Across the three seasons, we observed 106, 200 and 219 bird species in SDCF, SBLF and WBLF respectively (Figure 12). In our Shanon Diversity Index, WBLF (H = 4.44) has greater species richness and diversity compared to SBLF (H = 4.30) and SDCF (H = 3.55). The Mann-Whitney U Test between SDCF & SBLF ($z = 0.88, p = 0.37$) revealed not significant, however in comparison of SDCF & WBLF ($z = 3.93, p = 0.000$) and SBLF & WBLF ($z = 4.05, p = 0.000$) indicated significance at $p < 0.05$ significant level. This H and

U Test results supported that birding was better in warm broadleaf forests than subtropical broadleaf forests and subtropical dry chirpine and riverine forests.

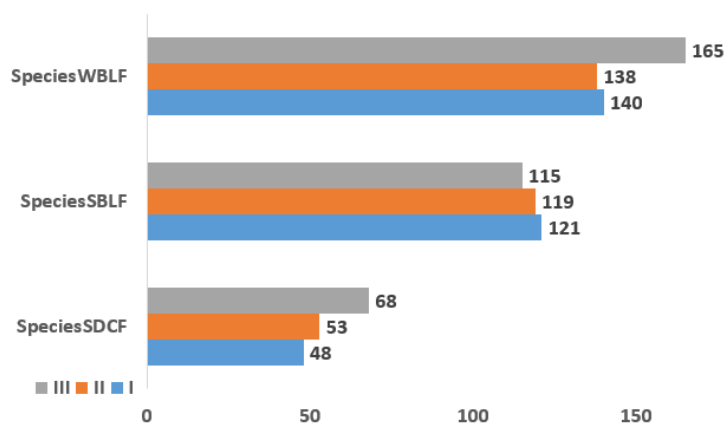


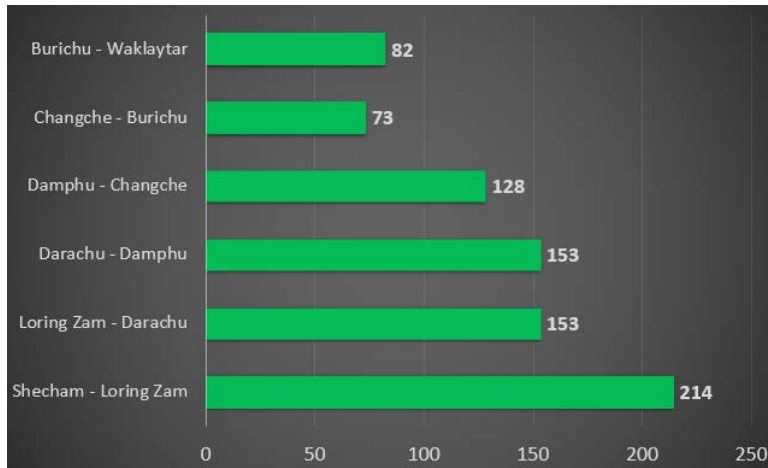
Figure 13: The chart represents seasonal bird species richness in warm broadleaf, subtropical broadleaf and subtropical dry chirpine and riverine forests along the SWK bird watching route.

Species richness in three seasons in SDCF (Fall = 48, Winter = 53, Spring = 68), SBLF (Fall = 121, Winter = 119, Spring = 115) and in WBLF (Fall = 140, Winter = 138, Spring = 165) (Figure 13). In our analysis for Shannon Diversity Index by habitat and season matrix, the warm broadleaf forests in Spring ($H = 4.35$) had the highest species diversity when compared to WBLF & Winter ($H = 4.21$), and WBLF &

Fall ($H = 3.90$). The subtropical broadleaf forests across the season ([SBLF & Fall, $H = 3.94$], [SBLF & Winter, $H = 4.10$], [SBLF & Spring, $H = 3.91$]) had lower H compared to WBLF, and the highest H was in Winter. The subtropical dry chirpine & riverine forests across the season ([SDCF & Fall, $H = 3.27$], [SDCF & Winter, $H = 2.80$], [SDCF & Spring, $H = 3.311$]) had lowest H compared to SBLF and WBLF. From these results, we inferred the WBLF have better birding opportunity. Our Mann-Whitney U Test in season by habitat was not significant in Fall & habitat ([Fall: SDCF & SBLF, $z = 0.39$, $p = 0.69$], [Fall: SDCF & WBLF, $z = 1.58$, $p = 0.114$], [Fall: SBLF & WBLF, $z = 1.59$, $p = 0.111$]). This U Test, we inferred, statistically the species diversity in Fall did not differ much in subtropical dry chirpine and riverine forests and subtropical broadleaf forest. However, in the Winter, Mann-Whitney U Test resulted significant when compared across the habitats ([Winter: SDCF & SBLF, $z = 1.97$, $p = 0.048$], [Fall: SDCF & WBLF, $z = 3.46$, $p = 0.000$], [Fall: SBLF & WBLF, $z = 1.97$, $p = 0.048$]). From this test result, we conclude, in Winter, species diversity is different from one another. In the Spring Season U Test was not significant, when compared between SDCF & SBLF (Spring: [SDCF & SBLF, $z = -1.48$, $p = 0.138$]) and SDCF & WBLF (Spring: [SDCF & WBLF, $z = -1.86$, $p = 0.063$]), but significance was observed between SBLF & WBLF (Spring: [SBLF & WBLF, $z = 4.35$, $p = 0.000$]). From this U Test result, we deduced in Spring, species richness and diversity significantly differed between SBLF & WBLF.

3.2.3. Birding Areas and Species of Birding Interest(BABI)

Within the Shechamthang – Waklaytar birding route, we sub-divided the route to 6 divisions (Shechamthang to Loring Zam (20KM), Loring Zam to Darachu (16KM), Darachu to Damphu (KM), Damphu to Changche (KM), Changche to Burichu (11KM), and Burichu to Waklaytar(KM). From Figure 14, we inferred, Shechamthang to Loring



Zam (214 species) had the highest number of bird species, followed by Loring Zam to Darachu (153) and Darachu to Damphu (153) at tie, Damphu to Changche (128), Changche to Burichu (73) and Burichu to Waklaytar (82). While the species richness from Changche to Waklaytar is poor, this section inhabits the White-

bellied Heron (*Ardea insignis*) one of the critically endangered species on earth.

Eastern Imperial Eagle: On 30th October 2019, two Eastern Imperial Eagles were sighted flying over the Shechamthang at 311m. It is hardly seen in Bhutan.

Figure 14: Richness of bird species in sub-divided sections of Shechamthang - Waklaytar birding route: Shechamthang to Loring Zam, Loring Zam to Darachu, Darachu to Damphu, and Damphu to Changche, Changche – Burichu and Burichu to Waklaytar.

Velvet-fronted Nuthatch: This species occurs in subtropical and warm broadleaf forests.

During the Fall survey, two birds were observed at 418m between Shechamthang to Phuntshogang on the 30th October 2019. In the Spring survey, a pair was sighted on the 13th April 2020 at 1283m between Loring and Jachu.

Hodgson’s Frogmouth: Hodgson’s Frogmouth was a first record for Sarpang Dzongkhag. 2 birds were heard at the Rilangthang Reception Site (853m) for the entire camping duration (second week of April 2020). The birds were visually observed and photographed on its response to the playback of its acoustics. Its call repertoires were recorded.

Beautiful Nuthatch: A pair was observed at 0700hrs on 13th April 2020, at 1072m between Toribari to Loring Fall. It is the largest nuthatch in Bhutan. Karma Wangda observed an individual (26.91, 90.207) on 31st May 2020 between Darachu and Shechamthang. On 19th November 2014, 5 birds were sighted on the *Toona ciliata* tree about 1KM to Jachu from Darachu by Martin and his team of bird watchers.

Mountain Tailorbird: A tiny bird quite often confused with the Broad-billed Warbler is a beautiful species to watch. However, it can be easily identified from warbler from its distinctivel call. Three birds were sighted between Ekratey and Daradhu. Two additional birds were observed between Baluchop and Thakhorling.

White-bellied Heron: The largest heron in Bhutan, and one of the 50 most critically endangered birds globally was observed at Burichu on 5th November 2019. Another bird

was observed on 18th April 2020, about 100m north of the Burichu & Punatshangchu confluence. On the 19th April 2020, one bird was observed as a result of its incessant call in the morning. The bird flew south along Punatshangchu. The is known to breed along the stretch between Changche and Waklaytar.

Other bird species of interest are Oriental Pied Hornbill, Rufous-necked Hornbill, Great Hornbill, Greater Rufous-headed Parrotbill, Coral-billed Scimitar Babbler, White-browed Scimitar Babbler, Red-headed Trogon, Long-tailed Broadbill, Broad-billed Warbler, Grey-sided Laughingthrush, Long-billed Wren Babbler, and Chestnut-headed Tesia.

3.2.4. Campsites, Homestays, Birding Access & Other Attractions

Table 2: Shows the existing and proposed sites for development of camping and overnight amenities along SWK route.

Sl. No.	Location	Existing	Proposed	Birding Access
1	Shechamthang	NA	Homestay & Hotels	Shechamchu, Dekiling, Themba, Phuntshogang, Rilangthang
2	Rilanthang (DoR Reception Site)	Camp	Camp	Rilangthang, Phuntshogang, Shechamthang, Shechamchu, Themba, Dekiling, Gakidling, Loring Fall, Jachu, Farmroads (<i>other attraction – water falls, oranges & cardamom, agri-farms</i>)
3	Darachu	NA	Camp & Homestay	Betini, Patsaling, Thakhorling, Ekratey, Muga (<i>other attraction – Sherpa community</i>)
4	Changche	NA	Camp	Gomsoom, Tsholingkhar, Damphu, toward Dagana, Burichu, Waklaytar, Syergithang (<i>other attraction – farm produce, WBH</i>)

Bird watching within the Shechamthang - Waklaytar route, can be availed from 4 locations, namely Shechamthang, Rilangthang, Darachu and Changche.

From Shechamthang, bird watchers can be lodged in various hotels, and access for bird watching from Shechamthang to Dekiling, Shechamchu (Sarpang Khola), Themba, Phuntshogang and Rilangthang. Bird watching can be also accessed along farm roads.

At Rilangthang, we suggest establishing a new campsite at Rilangthang proper, otherwise, the current reception site managed by the Department of Roads (DoR) can be used. From the DoR reception site, bird watching can be accessed to Rilangthang, Phuntshogang, Shechamthang, Shechamchu, Themba, Dekiling, Gakidling, Loring Fall

and Jachu. Existing farm roads can be explored for bird watching. The other attractions around this campsite are waterfalls, oranges, cardamom, and organic farming practices.

We propose a campsite at Darachu. A hotel is also being constructed at Darachu with lodging space. Houses with potentials for homestays are available too. From Darachu, bird watching can be accessed to Betini, Padtshaling, Thakorling, Ekratey, and Muga. Bird watching can also be performed on the Darachu ridgeline. The other attractions around Darachu are the Sherpa communities and their ways of life.

In Changche, it is suggested for the creation of a new campsite. From Changche, bird watchers can access birding to Gomsoom, Tsholingkhar, Damphu, toward Dagana, Burichu, Waklaytar and Syergithang. Some other attractions at Changche are the breeding center for White-bellied Heron, mighty Puntshangchu and river rafting.

Some important bird species along the Shechamthang – Waklaytar birding route



Rufous-necked Hornbill (Phub Dorji)



Wreathed Hornbill



Sultan Tit (Sonam Dorji)



White-bellied Heron (Phub Dorji)



Hodgson's Frogmouth (Dorji Rabten)



Coral-billed Scimitar Babbler (eBird)



Beautiful Nuthatch (Phub Dorji)



Indian Blue Robin (Sonam Dorji)

3.2.5. Annexure I: Annotated checklist of the bird species observed along SWK during the Fall Season.

Sl.No	English Name	Species	Altitude (m)	Source
1	Common Myna	<i>Acridotheres tristis</i>	311 - 537, 1469	UWICER
2	Eastern Imperial Eagle	<i>Aquila heliaca</i>	311	UWICER
3	Striated Heron	<i>Butorides striata</i>	311	UWICER
4	Little Egret	<i>Egretta garzetta</i>	311	UWICER
5	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	311 - 451, 1183 - 1749	UWICER
6	Plumbeous Water Redstart	<i>Rhyacornis fuliginosa</i>	311 - 490, 1749	UWICER
7	House Swift	<i>Apus nipalensis</i>	312	UWICER
8	Oriental Magpie Robin	<i>Copsychus saularis</i>	312 - 388	UWICER
9	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	312, 351	UWICER
10	Red-vented Bulbul	<i>Pycnonotus cafer</i>	312 - 1813	UWICER
11	Indian Roller	<i>Coracias benghalensis</i>	324	UWICER
12	Grey-headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	324 - 1452	UWICER
13	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	324 - 760, 1047 - 1283	UWICER
14	White-throated Fantail	<i>Rhipidura albicollis</i>	324 - 1884	UWICER
15	Common Tailorbird	<i>Orthotomus sutorius</i>	338 - 1452	UWICER
16	Himalayan Buzzard	<i>Buteo burmanicus</i>	351 - 697, 1792	UWICER
17	Barn Swallow	<i>Hirundo rustica</i>	351	UWICER
18	Common Iora	<i>Aegithina tiphia</i>	364 - 693	UWICER
19	Greater Goldenback	<i>Chrysocolaptes lucidus</i>	364, 742	UWICER
20	Oriental Honey-buzzard	<i>Pernis ptilorhynchus</i>	364, 418	UWICER
21	Oriental White-Eye	<i>Zosterops palpebrosus</i>	364 - 1477	UWICER
22	White-rumped Shama	<i>Copsychus malabaricus</i>	378 - 515	UWICER
23	Ashy Drongo	<i>Dicrurus leucophaeus</i>	378 - 1779	UWICER
24	Greater Yellowthroat	<i>Picus flavinucha</i>	378 - 949, 1613	UWICER
25	Spotted Dove	<i>Stigmatopelia chinensis</i>	378	UWICER
26	Ruby-cheeked Sunbird	<i>Chalcoparia singalensis</i>	418, 732	UWICER
27	Plain Flowerpecker	<i>Dicaeum concolor</i>	418 - 681	UWICER
28	Pin-striped Tit Babbler	<i>Macronus gularis</i>	418 - 742	UWICER
29	Yellow-browed Warbler	<i>Phylloscopus inornatus</i>	418	UWICER
30	Velvet-fronted Nuthatch	<i>Sitta frontalis</i>	418	UWICER
31	Plaintive Cuckoo	<i>Cacomantis merulinus</i>	446	UWICER
32	Dark-sided Flycatcher	<i>Muscicapa sibirica</i>	462 - 1797	UWICER
33	Grey Treepie	<i>Dendrocitta formosae</i>	481 - 1941	UWICER
34	Small Niltava	<i>Niltava macgrigoriae</i>	499 - 1150	UWICER
35	Asian Emerald Cuckoo	<i>Chrysococcyx maculatus</i>	515, 650	UWICER
36	Sultan Tit	<i>Melanochlora sultanea</i>	515 - 826	UWICER
37	Large Woodshrike	<i>Tephrodornis virgatus</i>	515	UWICER
38	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	535 - 1590	UWICER
39	Blue-bearded Bee-eater	<i>Nyctornis athertoni</i>	535, 1447	UWICER

40	White-throated Bulbul	<i>Alophoixus flaveolus</i>	613 - 919	UWICER
41	Black-winged Cuckooshrike	<i>Coracina melaschistos</i>	650	UWICER
42	Hair-crested Drongo	<i>Dicrurus hottentottus</i>	650, 949	UWICER
43	Asian Barred Owlet	<i>Glaucidium cuculoides</i>	578 - 826	UWICER
44	Great Barbet	<i>Megalaima virens</i>	650 - 1819	UWICER
45	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	650	UWICER
46	Great Hornbill	<i>Buceros bicornis</i>	681 - 961, 1741	UWICER
47	Blue-winged Laughingthrush	<i>Garrulax squamatus</i>	681, 1150 - 1763	UWICER
48	Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	717, 1836	UWICER
49	Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i>	717 - 1884	UWICER
50	Greater Necklaced Laughingthrush	<i>Garrulax pectoralis</i>	729, 1613	UWICER
51	Rufous-winged Fulvetta	<i>Alcippe castaneiceps</i>	732, 1687 - 1879	UWICER
52	Nepal Fulvetta	<i>Alcippe nipalensis</i>	732 - 869, 1283 - 1761	UWICER
53	Black-naped Monarch	<i>Hypothymis azurea</i>	732	UWICER
54	Red-tailed Minla	<i>Minla ignotincta</i>	732, 1150 - 1761	UWICER
55	Lesser Yellownape	<i>Picus chlorolophus</i>	732 - 961	UWICER
56	Wreathed Hornbill	<i>Rhyticeros undulatus</i>	732	UWICER
57	Whistler's Warbler	<i>Seicercus whistleri</i>	732, 1302 - 1436	UWICER
58	Golden Babbler	<i>Stachyridopsis chrysaea</i>	732 - 1879	UWICER
59	Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	732, 1687 - 1879	UWICER
60	Rufous-necked Hornbill	<i>Aceros nipalensis</i>	742 - 1751	UWICER
61	Rufous-throated Partridge	<i>Arborophila rufogularis</i>	826 - 1631	UWICER
62	Banded Bay Cuckoo	<i>Cacomantis sonneratii</i>	826	UWICER
63	Emerald Dove	<i>Chalcophaps indica</i>	826 - 853, 1047	UWICER
64	Indian Cuckoo	<i>Cuculus micropterus</i>	826	UWICER
65	Crow-billed Drongo	<i>Dicrurus annectens</i>	826	UWICER
66	Mountain Imperial Pigeon	<i>Ducula badia</i>	826, 1003	UWICER
67	Collared Owlet	<i>Glaucidium brodiei</i>	826, 1751	UWICER
68	Large Hawk Cuckoo	<i>Hierococcyx sparverioides</i>	826	UWICER
69	Red-faced Liocichla	<i>Liocichla phoenicea</i>	826 - 961, 1613 - 1819	UWICER
70	Barred Cuckoo Dove	<i>Macropygia unchall</i>	826, 1794 - 1819	UWICER
71	Maroon Oriole	<i>Oriolus traillii</i>	826 - 1558	UWICER
72	Mountain Scops Owl	<i>Otus spilocephalus</i>	826	UWICER
73	Puff-throated Babbler	<i>Pellorneum ruficeps</i>	373, 826	UWICER
74	Long-tailed Broadbill	<i>Psarisomus dalhousiae</i>	826	UWICER
75	Red-breasted Parakeet	<i>Psittacula alexandri</i>	826	UWICER
76	Wedge-tailed Green Pigeon	<i>Treron sphenurus</i>	826, 1827 - 1875	UWICER
77	Brown-flanked Bush Warbler	<i>Cettia fortipes</i>	869, 1763	UWICER
78	Silver-eared Mesia	<i>Leiothrix argenteauris</i>	869, 1762	UWICER
79	Rusty-cheeked Scimitar Babbler	<i>Pomatorhinus erythrogenys</i>	919, 949	UWICER
80	Spotted Forktail	<i>Enicurus maculatus</i>	949, 1730 - 1762	UWICER
81	Rufous Woodpecker	<i>Micropternus brachyurus</i>	949	UWICER

82	Coral-billed Scimitar Babbler	<i>Pomatorhinus ferruginosus</i>	949	UWICER
83	Greater Rufous-headed Parrotbill	<i>Psittiparus ruficeps</i>	949, 1231	UWICER
84	Black-headed Shrike Babbler	<i>Pteruthius rufiventer</i>	949	UWICER
85	White-browed Shortwing	<i>Brachypteryx montana</i>	961	UWICER
86	Long-tailed Sibia	<i>Heterophasia picaoides</i>	961 - 1283	UWICER
87	Grey Wagtail	<i>Motacilla cinerea</i>	961, 1720 - 1781	UWICER
88	Scaly-breasted Wren Babbler	<i>Pnoepyga albiventer</i>	961, 1150	UWICER
89	Slaty-bellied Tesia	<i>Tesia olivea</i>	961 - 1729	UWICER
90	Olive-backed Pipit	<i>Anthus hodgsoni</i>	991, 1285 - 1941	UWICER
91	Chestnut-crowned Laughingthrush	<i>Garrulax erythrocephalus</i>	991, 1558 -1918	UWICER
92	Striated Laughingthrush	<i>Garrulax striatus</i>	1019 - 1913	UWICER
93	Scaly Laughingthrush	<i>Garrulax subunicolor</i>	1019	UWICER
94	Black Eagle	<i>Ictinaetus malayensis</i>	1025 - 1926	UWICER
95	Striated Bulbul	<i>Pycnonotus striatus</i>	1025 - 1950	UWICER
96	Scarlet Finch	<i>Carpodacus sipahi</i>	1047	UWICER
97	Fire-breasted Flowerpecker	<i>Dicaeum ignipectus</i>	1072 - 1956	UWICER
98	Verditer Flycatcher	<i>Eumyias thalassinus</i>	1072 - 1827	UWICER
99	Hoary-throated Barwing	<i>Actinodura nipalensis</i>	1150	UWICER
100	Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	1150, 1762	UWICER
101	Yellow-throated Fulvetta	<i>Pseudominla cinerea</i>	1150, 1879	UWICER
102	Rusty-fronted Barwing	<i>Actinodura egertoni</i>	1209 - 1879	UWICER
103	Yellow-cheeked Tit	<i>Parus spilonotus</i>	1231 - 1802	UWICER
104	White-naped Yuhina	<i>Yuhina bakeri</i>	1231	UWICER
105	Himalayan Cutia	<i>Cutia nipalensis</i>	1283	UWICER
106	Collared Treepie	<i>Dendrocitta frontalis</i>	1283	UWICER
107	Rufous Sibia	<i>Heterophasia capistrata</i>	1283 - 1956	UWICER
108	Short-billed Minivet	<i>Pericrocotus brevirostris</i>	1283 - 1875	UWICER
109	White-spectacled Warbler	<i>Seicerus affinis</i>	1283	UWICER
110	Golden-throated Barbet	<i>Megalaima franklinii</i>	1381 - 1869	UWICER
111	White-tailed Nuthatch	<i>Sitta himalayensis</i>	1526 - 1926	UWICER
112	Rufous-throated Wren Babbler	<i>Spelaeornis caudatus</i>	1590	UWICER
113	Red-headed Trogon	<i>Harpactes erythrocephalus</i>	1613	UWICER
114	Large Niltava	<i>Niltava grandis</i>	1648, 1729	UWICER
115	Rusty-flanked Treecreeper	<i>Certhia nipalensis</i>	1687, 1797	UWICER
116	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	1729, 1754	UWICER
117	Changeable Hawk Eagle	<i>Nisaetus limnaetus</i>	1751	UWICER
118	Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	1802	UWICER
119	Bar-throated Siva	<i>Siva strigula</i>	1864	UWICER
120	Kalij Pheasant	<i>Lophura leucomelanos lathami</i>	1913, 1926	UWICER
121	Bhutan Laughingthrush	<i>Garrulax imbricatus</i>	1926	UWICER
122	Brown Wood Owl	<i>Strix leptogrammica</i>	1926	UWICER
123	Asian Brown Flycatcher	<i>Muscicapa dauurica</i>	1941	UWICER
124	Red-billed Leiothrix	<i>Leiothrix lutea</i>	1762, 1879	UWICER

125	Hodgson's Redstart	<i>Phoenicurus hodgsoni</i>	350- 373, 1813	UWICER
126	Grey-bellied Tesia	<i>Tesia cyaniventer</i>	1797	UWICER
127	Brown-throated Treecreeper	<i>Certhia discolor</i>	1093, 1762	UWICER
128	Rufous-bellied Eagle	<i>Lophotriorchis kienerii</i>	1761, 1794	UWICER
129	Black-throated Tit	<i>Aegithalos concinnus</i>	1746 - 1875	UWICER
130	Crested Serpent Eagle	<i>Spilornis cheela</i>	1761	UWICER
131	Nepal House Martin	<i>Delichon nipalense</i>	1093, 1778	UWICER
132	Mountain Hawk Eagle	<i>Nisaetus nipalensis</i>	1741, 1769	UWICER
133	Eurasian Tree Sparrow	<i>Passer montanus</i>	414, 1477	UWICER
134	Pale-chinned Flycatcher	<i>Cyornis poliogenys</i>	1452	UWICER
135	Yellow-bellied Fantail	<i>Chelidorhynch hypoxanthus</i>	1436	UWICER
136	Large-billed Crow	<i>Corvus macrorhynchos</i>	1417	UWICER
137	Common Kestrel	<i>Falco tinnunculus</i>	380, 1093	UWICER
138	Little Pied Flycatcher	<i>Ficedula westermanni</i>	1093	UWICER
139	Pygmy Wren Babbler	<i>Pnoepyga pusilla</i>	1093	UWICER
140	Green-backed Tit	<i>Parus monticolus</i>	1031 - 1875	UWICER
141	Black Bulbul	<i>Hypsipetes leucocephalus</i>	782 - 905, 1792 - 1918	UWICER
142	Green-billed Malkoha	<i>Phaenicophaeus tristis</i>	693	UWICER
143	White-browed Scimitar Babbler	<i>Pomatorhinus schisticeps</i>	693 - 949, 1879	UWICER
144	Whiskered Yuhina	<i>Yuhina flavicollis</i>	693 - 1879	UWICER
145	Hill Partridge	<i>Arborophila torqueola</i>	545, 1199 - 1926	UWICER
146	Grey-headed Woodpecker	<i>Picus canus</i>	545 - 949	UWICER
147	Blue-throated Barbet	<i>Megalaima asiatica</i>	536 - 1792	UWICER
148	Dusky Warbler	<i>Phylloscopus fuscatus</i>	410	UWICER
149	Grey-capped Pygmy Woodpecker	<i>Dendrocopos canicapillus</i>	388 - 717	UWICER
150	Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i>	388 -1869	UWICER
151	Chestnut-bellied Nuthatch	<i>Sitta cinnamoventris</i>	388 - 1631	UWICER
152	Green-tailed Sunbird	<i>Aethopyga nipalensis</i>	373, 431, 1480 - 1884	UWICER
153	Crimson Sunbird	<i>Aethopyga siparaja</i>	373 - 578, 1150	UWICER
154	Streaked Spiderhunter	<i>Arachnothera magna</i>	373 - 1956	UWICER
155	Thick-billed Warbler	<i>Fragamaticola aedon</i>	373, 533	UWICER
156	Grey-backed Shrike	<i>Lanius tephronotus</i>	373 - 766, 1755	UWICER
157	Taiga Flycatcher	<i>Ficedula albicilla</i>	350	UWICER
158	Common Green Magpie	<i>Cissa chinensis</i>	341 - 1802	UWICER
159	Blue-capped Rock Thrush	<i>Monticola cinclorhyncha</i>	341	UWICER
160	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	341 - 1897	UWICER
161	Speckled Piculet	<i>Picumnus innominatus</i>	341 - 991, 1761	UWICER
162	Yellow-bellied Warbler	<i>Abroscopus supercilii</i>	333, 355	UWICER
163	Black-throated Sunbird	<i>Aethopyga saturata</i>	333 - 549, 1341 - 1721	UWICER
164	Golden-fronted Leafbird	<i>Chloropsis aurifrons</i>	333 - 609	UWICER
165	Orange-bellied Leafbird	<i>Chloropsis hardwickii</i>	333 - 1710	UWICER
166	Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i>	333 - 1613	UWICER

167	White-bellied Erpornis	<i>Erpornis zantholeuca</i>	333 - 732, 1436	UWICER
168	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	333 - 1776	UWICER
169	Ashy Bulbul	<i>Hemixos flavala</i>	333 - 1613	UWICER
170	Great Cormorant	<i>Phalacrocorax carbo</i>	333 - 431	UWICER
171	Yellow-vented Warbler	<i>Phylloscopus cantator</i>	333 - 1093	UWICER
172	Chestnut-crowned Warbler	<i>Phylloscopus castaniceps</i>	333 - 355, 1283 - 1687	UWICER
173	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	333 - 1797	UWICER
174	Black-eared Shrike Babbler	<i>Pteruthius melanotis</i>	333 - 732, 1884	UWICER
175	Black-crested Bulbul	<i>Pycnonotus flaviventris</i>	333 - 1194	UWICER
176	Blue-winged Siva	<i>Siva cyanouroptera</i>	333 - 1879	UWICER
177	Grey-throated Babbler	<i>Stachyris nigriceps</i>	333 - 1436	UWICER
178	Ultramarine Flycatcher	<i>Ficedula supercilialis</i>	335	UWICER
179	Scarlet Minivet	<i>Pericrocotus flammeus</i>	348 - 1687	UWICER
180	Striated Yuhina	<i>Staphida castaniceps</i>	350 - 389, 1059	UWICER
181	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	350 - 1436	UWICER
182	Pale Blue Flycatcher	<i>Cyornis unicolor</i>	355 - 853	UWICER
183	Rufous-bellied Niltava	<i>Niltava sundara</i>	355 - 1003	UWICER
184	Bronzed Drongo	<i>Dicrurus aeneus</i>	383 - 1059	UWICER
185	White-bellied Heron	<i>Ardea insignis</i>	377	UWICER
186	Brown Dipper	<i>Cinclus pallasii</i>	377	UWICER
187	Slaty-backed Forktail	<i>Enicurus schistaceus</i>	377	UWICER
188	Crested Kingfisher	<i>Megaceryle lugubris</i>	377	UWICER
189	Grey Bushchat	<i>Saxicola ferreus</i>	377 - 766, 1721 - 1950	UWICER
190	Blue Rock Thrush	<i>Monticola solitarius</i>	595	UWICER
191	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	595, 1093 - 1477	UWICER
192	Long-tailed Shrike	<i>Lanius schach</i>	537	UWICER
193	Little Forktail	<i>Enicurus scouleri</i>	490	UWICER
194	Banded Bay Cuckoo	<i>Cacomantis sonneratii</i>		Aaron Lang

3.2.6. Annexure II: Annotated checklist of the bird species observed along SWK during the Winter Season.

Sl.No	English Name	Species	Altitude (m)	Source
1	Common Kingfisher	<i>Alcedo atthis</i>	311	UWICER
2	Indian Pond Heron	<i>Ardeola grayii</i>	311	UWICER
3	Little Egret	<i>Egretta garzetta</i>	311, 338	UWICER
4	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	311	UWICER
5	Crested Kingfisher	<i>Megaceryle lugubris</i>	311	UWICER
6	Goosander	<i>Mergus merganser</i>	311	UWICER
7	Blue Rock Thrush	<i>Monticola solitarius</i>	311 - 582	UWICER
8	White Wagtail	<i>Motacilla alba</i>	311	UWICER
9	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	311	UWICER
10	Great Cormorant	<i>Phalacrocorax carbo</i>	311 - 388	UWICER
11	Daurian Redstart	<i>Phoenicurus aureoreus</i>	311	UWICER
12	Plumbeous Water Redstart	<i>Rhyacornis fuliginosa</i>	311 - 414, 1763	UWICER
13	Common Myna	<i>Acridotheres tristis</i>	312 - 766	UWICER
14	Greater Goldenback	<i>Chrysocolaptes lucidus</i>	312 - 519	UWICER
15	Common Pigeon	<i>Columba livia</i>	312 -351	UWICER
16	Oriental Magpie Robin	<i>Copsychus saularis</i>	312 - 801	UWICER
17	Red-vented Bulbul	<i>Pycnonotus cafer</i>	312 - 1794	UWICER
18	Little Pied Flycatcher	<i>Ficedula westermanni</i>	324 - 1748	UWICER
19	Pin-striped Tit Babbler	<i>Macronus gularis</i>	324, 338	UWICER
20	Common Tailorbird	<i>Orthotomus sutorius</i>	324 - 1052	UWICER
21	Streaked Spiderhunter	<i>Arachnothera magna</i>	338 - 1778	UWICER
22	Hair-crested Drongo	<i>Dicrurus hottentottus</i>	338 - 1301	UWICER
23	Grey-backed Shrike	<i>Lanius tephronotus</i>	338 - 777, 1590	UWICER
24	Siberian Rubythroat	<i>Luscinia calliope</i>	338, 477	UWICER
25	Crested Serpent Eagle	<i>Spilornis cheela</i>	338 - 584	UWICER
26	Spotted Dove	<i>Stigmatopelia chinensis</i>	338 - 572	UWICER
27	Chestnut-tailed Starling	<i>Sturnia malabarica</i>	338 - 499	UWICER
28	Oriental White-Eye	<i>Zosterops palpebrosus</i>	338 - 1794	UWICER
29	Common Iora	<i>Aegithina tiphia</i>	351 - 572	UWICER
30	Sultan Tit	<i>Melanochlora sultanea</i>	351 - 1105	UWICER
31	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	351 - 1860	UWICER
32	Grey-headed Woodpecker	<i>Picus canus</i>	351 - 1031	UWICER
33	Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i>	364 - 1025	UWICER
34	Great Barbet	<i>Megalaima virens</i>	364 - 1950	UWICER
35	Maroon Oriole	<i>Oriolus traillii</i>	364 - 1252	UWICER
36	Black-hooded Oriole	<i>Oriolus xanthornus</i>	364 - 584	UWICER
37	Black-throated Sunbird	<i>Aethopyga saturata</i>	378 - 1769	UWICER
38	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	378 - 1941	UWICER
39	Greater Yellownape	<i>Picus flavinucha</i>	393 - 1743	UWICER
40	Black-crested Bulbul	<i>Pycnonotus flaviventris</i>	393 - 1715	UWICER
41	Eastern Jungle Crow	<i>Corvus levaillantii</i>	404	UWICER
42	Ashy Drongo	<i>Dicrurus leucophaeus</i>	404 - 1799	UWICER
43	Olive-backed Pipit	<i>Anthus hodgsoni</i>	418 - 801, 1014 - 1956	UWICER
44	Red Junglefowl	<i>Gallus gallus</i>	418	UWICER
45	Blue-throated Barbet	<i>Megalaima asiatica</i>	418 - 1864	UWICER
46	Lineated Barbet	<i>Megalaima lineata</i>	430	UWICER

47	Pin-tailed Green Pigeon	<i>Treron apicauda</i>	446, 626	UWICER
48	Black-winged Cuckooshrike	<i>Coracina melaschistos</i>	462 - 1526	UWICER
49	Greater Necklaced Laughingthrush	<i>Garrulax pectoralis</i>	462, 813	UWICER
50	Lesser Yellownape	<i>Picus chlorolophus</i>	462, 826	UWICER
51	Oriental Pied Hornbill	<i>Anthracoceros albirostris</i>	481, 626	UWICER
52	Nepal House Martin	<i>Delichon nipalense</i>	499 - 1194	UWICER
53	Plum-headed Parakeet	<i>Psittacula cyanocephala</i>	499	UWICER
54	Slaty-headed Parakeet	<i>Psittacula himalayana</i>	499	UWICER
55	White-throated Bulbul	<i>Alophoixus flaveolus</i>	515 - 1003	UWICER
56	Grey-capped Pygmy Woodpecker	<i>Dendrocopos canicapillus</i>	515 - 1216	UWICER
57	Short-billed Minivet	<i>Pericrocotus brevirostris</i>	515 - 1778	UWICER
58	Large Woodshrike	<i>Tephrodornis virgatus</i>	515, 732	UWICER
59	Thick-billed Warbler	<i>Fragamaticola aedon</i>	549	UWICER
60	Small Niltava	<i>Niltava macgrigoriae</i>	549 - 650	UWICER
61	Long-tailed Broadbill	<i>Psarisomus dalhousiae</i>	572 - 826	UWICER
62	Asian Fairy Bluebird	<i>Irena puella</i>	584	UWICER
63	Crested Goshawk	<i>Accipiter trivirgatus</i>	598	UWICER
64	Common Hill Myna	<i>Gracula religiosa</i>	626	UWICER
65	Rufous-gorgeted Flycatcher	<i>Ficedula strophitata</i>	637 - 1956	UWICER
66	Grey Treepie	<i>Dendrocitta formosae</i>	665 - 1879	UWICER
67	Slaty Blue Flycatcher	<i>Ficedula tricolor</i>	665, 740	UWICER
68	Rufous-bellied Eagle	<i>Lophotriorchis kienerii</i>	665	UWICER
69	Rufous Sibia	<i>Heterophasia capistrata</i>	740 - 1956	UWICER
70	White-bellied Erpornis	<i>Erpornis zantholeuca</i>	732, 1283	UWICER
71	Coral-billed Scimitar Babbler	<i>Pomatorhinus ferruginosus</i>	732 - 1059	UWICER
72	Rufous-necked Hornbill	<i>Aceros nipalensis</i>	742 - 1509	UWICER
73	Hume's Warbler	<i>Phylloscopus humei</i>	760, 892	UWICER
74	White-spectacled Warbler	<i>Seicerus affinis</i>	760, 1283	UWICER
75	Rufous-throated Partridge	<i>Arborophila rufogularis</i>	826 - 1252	UWICER
76	Mountain Scops Owl	<i>Otus spilocephalus</i>	826	UWICER
77	Brown Wood Owl	<i>Strix leptogrammica</i>	826, 1607	UWICER
78	Scarlet Finch	<i>Carpodacus sipahi</i>	869 - 1751	UWICER
79	Long-tailed Sibia	<i>Heterophasia picaoides</i>	906 - 1131	UWICER
80	Himalayan Cutia	<i>Cutia nipalensis</i>	933, 1019	UWICER
81	Rusty-fronted Barwing	<i>Actinodura egertoni</i>	976 - 1802	UWICER
82	Grey-sided Bush Warbler	<i>Cettia brunnifrons</i>	976, 1794	UWICER
83	Red-faced Liocichla	<i>Liocichla phoenicea</i>	976 - 1558	UWICER
84	Chestnut-headed Tesia	<i>Oligura castaneocoronata</i>	976 - 1216	UWICER
85	Spotted Forktail	<i>Enicurus maculatus</i>	1003 - 1813	UWICER
86	Striated Laughingthrush	<i>Garrulax striatus</i>	1003 - 1891	UWICER
87	Barred Cuckoo Dove	<i>Macropygia unchall</i>	1019 - 1778	UWICER
88	Blue-naped Pitta	<i>Pitta nipalensis</i>	1025	UWICER
89	Red-tailed Minla	<i>Minla ignotincta</i>	1047 - 1779	UWICER
90	Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i>	1047 - 1779	UWICER
91	Greater Rufous-headed Parrotbill	<i>Psittiparus ruficeps</i>	1047, 1059	UWICER
92	Black-eared Shrike Babbler	<i>Pteruthius melanotis</i>	1047, 1283	UWICER
93	Golden Babbler	<i>Stachyridopsis chrysaea</i>	1047 - 1781	UWICER
94	Wedge-tailed Green Pigeon	<i>Treron sphenurus</i>	1047, 1087	UWICER
95	Yellow-cheeked Tit	<i>Parus spilonotus</i>	1072 - 1526	UWICER
96	Grey-chinned Minivet	<i>Pericrocotus solaris</i>	1072 - 1879	UWICER
97	Himalayan Swiftlet	<i>Collocalia brevirostris</i>	1169, 1180	UWICER

98	Black Eagle	<i>Ictinaetus malayensis</i>	1194 - 1836	UWICER
99	Long-tailed Minivet	<i>Pericrocotus ethologus</i>	1231	UWICER
100	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1283	UWICER
101	Chestnut-crowned Warbler	<i>Phylloscopus castaniceps</i>	1283, 1526	UWICER
102	Mountain Hawk Eagle	<i>Nisaetus nipalensis</i>	782, 1327	UWICER
103	Slaty-backed Forktail	<i>Enicurus schistaceus</i>	1344 - 1763	UWICER
104	Asian Barred Owlet	<i>Glaucidium cuculoides</i>	1344	UWICER
105	Striated Bulbul	<i>Pycnonotus striatus</i>	1344 - 1956	UWICER
106	Kalij Pheasant	<i>Lophura leucomelanos lathami</i>	1412	UWICER
107	Hill Partridge	<i>Arborophila torqueola</i>	1494 - 1762	UWICER
108	White-tailed Nuthatch	<i>Sitta himalayensis</i>	1494 - 1926	UWICER
109	Brown-throated Treecreeper	<i>Certhia discolor</i>	1509 - 1761	UWICER
110	Rufous-winged Fulvetta	<i>Alcippe castaneiceps</i>	1526, 1799	UWICER
111	Rufous-vented Yuhina	<i>Yuhina occipitalis</i>	1526	UWICER
112	Large Niltava	<i>Niltava grandis</i>	1542 - 1897	UWICER
113	White-naped Yuhina	<i>Yuhina bakeri</i>	1542 - 1776	UWICER
114	Blue-winged Laughingthrush	<i>Garrulax squamatus</i>	1558, 1668	UWICER
115	Scaly-breasted Wren Babbler	<i>Pnoepyga albiventer</i>	1558, 1631	UWICER
116	Buff-barred Warbler	<i>Phylloscopus pulcher</i>	1574 - 1794	UWICER
117	Chestnut-crowned Laughingthrush	<i>Garrulax erythrocephalus</i>	1631, 1778	UWICER
118	Himalayan Bluetail	<i>Tarsiger rufilatus</i>	1648 - 1879	UWICER
119	Mountain Bulbul	<i>Ixos mccllellandii</i>	1687 - 1956	UWICER
120	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	1778, 1950	UWICER
121	Stripe-throated Yuhina	<i>Yuhina gularis</i>	553, 1864	UWICER
122	Darjeeling Woodpecker	<i>Dendrocopos darjellensis</i>	1884	UWICER
123	Common Rosefinch	<i>Carpodacus erythrinus</i>	1875	UWICER
124	Grey-winged Blackbird	<i>Turdus boulboul</i>	1869	UWICER
125	Rufous-bellied Niltava	<i>Niltava sundara</i>	1761, 1763	UWICER
126	Black-throated Tit	<i>Aegithalos concinnus</i>	1748, 1779	UWICER
127	Bar-throated Siva	<i>Siva strigula</i>	1779	UWICER
128	Broad-billed Warbler	<i>Tickellia hodgsoni</i>	1779	UWICER
129	Common Kestrel	<i>Falco tinnunculus</i>	346, 1794	UWICER
130	Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	1794	UWICER
131	Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	1799	UWICER
132	Aberrant Bush Warbler	<i>Horornis flavolivaceus</i>	1745	UWICER
133	Black-throated Prinia	<i>Prinia atrogularis</i>	1745, 1779	UWICER
134	Spot-winged Grosbeak	<i>Mycerobas melanozanthos</i>	1720	UWICER
135	Fulvous-breasted Woodpecker	<i>Dendrocopos macei</i>	1735	UWICER
136	Bhutan Laughingthrush	<i>Garrulax imbricatus</i>	1715 - 1794	UWICER
137	Red-billed Leiothrix	<i>Leiothrix lutea</i>	1664 - 1761	UWICER
138	Slaty-backed Flycatcher	<i>Ficedula erithacus</i>	1636	UWICER
139	Tickell's Leaf Warbler	<i>Phylloscopus affinis</i>	1636	UWICER
140	Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	1607 - 1956	UWICER
141	Grey Bushchat	<i>Saxicola ferreus</i>	1607 - 1792	UWICER
142	Taiga Flycatcher	<i>Ficedula albicilla</i>	588, 1452	UWICER
143	Lesser Necklaced Laughingthrush	<i>Garrulax monileger</i>	1216	UWICER
144	Large-billed Crow	<i>Corvus macrorhynchos</i>	539, 1069	UWICER
145	Eurasian Tree Sparrow	<i>Passer montanus</i>	914	UWICER
146	Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	872 - 1779	UWICER
147	Whistler's Warbler	<i>Seicercus whistleri</i>	872	UWICER

148	Great Hornbill	<i>Buceros bicornis</i>	706	UWICER
149	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	706 - 1869	UWICER
150	White-browed Scimitar Babbler	<i>Pomatorhinus schisticeps</i>	706 - 914	UWICER
151	Barn Swallow	<i>Hirundo rustica</i>	642	UWICER
152	Golden-throated Barbet	<i>Megalaima franklinii</i>	642 - 1762	UWICER
153	Nepal Fulvetta	<i>Alcippe nipalensis</i>	536 - 626, 1047 - 1799	UWICER
154	Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i>	536 - 1526	UWICER
155	Speckled Piculet	<i>Picumnus innominatus</i>	536	UWICER
156	Rufescent Prinia	<i>Prinia rufescens</i>	536, 537	UWICER
157	Blue-winged Siva	<i>Siva cyanouroptera</i>	536 - 1941	UWICER
158	Grey-throated Babbler	<i>Stachyris nigriceps</i>	536 - 1047, 1749	UWICER
159	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	519 - 1918	UWICER
160	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	502 - 1778	UWICER
161	White-throated Fantail	<i>Rhipidura albicollis</i>	502 - 1749	UWICER
162	Yellow-bellied Warbler	<i>Abroscopus superciliaris</i>	446 - 559	UWICER
163	White-throated Laughingthrush	<i>Garrulax albogularis</i>	446, 1231 - 1891	UWICER
164	Grey-headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	373 - 1301	UWICER
165	Bar-winged Flycatcher-shrike	<i>Hemipus picatus</i>	373 - 1778	UWICER
166	Black Bulbul	<i>Hypsipetes leucocephalus</i>	373 - 1956	UWICER
167	Scarlet Minivet	<i>Pericrocotus flammeus</i>	373 - 1716	UWICER
168	Golden-fronted Leafbird	<i>Chloropsis aurifrons</i>	346 - 932	UWICER
169	Orange-bellied Leafbird	<i>Chloropsis hardwickii</i>	346 - 1748	UWICER
170	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	346 - 1776	UWICER
171	Yellow-bellied Fantail	<i>Chelidorhynch hypoxanthus</i>	341 - 1743	UWICER
172	Ashy Bulbul	<i>Hemixos flava</i>	341 - 1093	UWICER
173	Crimson Sunbird	<i>Aethopyga siparaja</i>	335 - 932	UWICER
174	Brown Dipper	<i>Cinclus pallasii</i>	355	UWICER
175	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	411 - 1749	UWICER
176	Bronzed Drongo	<i>Dicrurus aeneus</i>	367 - 1799	UWICER
177	Chestnut-bellied Nuthatch	<i>Sitta cinnamoventris</i>	388 - 1724	UWICER
178	Common Green Magpie	<i>Cissa chinensis</i>	445 - 1724	UWICER
179	Striated Yuhina	<i>Staphida castaniceps</i>	445 - 595	UWICER
180	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	445 - 1799	UWICER
181	Fire-breasted Flowerpecker	<i>Dicaeum ignipectus</i>	477 - 1819	UWICER
182	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	510 - 1869	UWICER
183	Hodgson's Redstart	<i>Phoenicurus hodgsoni</i>	525, 539	UWICER
184	Rusty-cheeked Scimitar Babbler	<i>Pomatorhinus erythrogeus</i>	539 - 1781	UWICER
185	Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	585, 1715 - 1897	UWICER
186	White-rumped Munia	<i>Lonchura striata</i>	582	UWICER
187	Green-tailed Sunbird	<i>Aethopyga nipalensis</i>	553, 1252 - 1926	UWICER
188	Grey Wagtail	<i>Motacilla cinerea</i>	553 - 1799	UWICER
189	Green-crowned Warbler	<i>Phylloscopus burkii</i>	553	UWICER
190	Indian Roller	<i>Coracias benghalensis</i>	539	UWICER
191	Long-tailed Shrike	<i>Lanius schach</i>	539 - 1794	UWICER
192	Pied Bushchat	<i>Saxicola caprata</i>	539	UWICER
193	Whiskered Yuhina	<i>Yuhina flavicollis</i>	517 - 1939	UWICER
194	Green-backed Tit	<i>Parus monticolus</i>	490 - 1875	UWICER
195	Black-faced Warbler	<i>Abroscopus schisticeps</i>		Namgay Tshering
196	Black-faced Laughingthrush	<i>Garrulax affinis</i>		Dorji Gyeltshen
197	White-browed Piculet	<i>Sasia ochracea</i>		Sangay Tenzin

198	Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>		Sangay Tenzin
199	White-gorgeted Flycatcher	<i>Anthipes monileger</i>		Sangay Tenzin
200	Common Teal	<i>Anas crecca</i>		Karma Chopel
201	Black Stork	<i>Ciconia nigra</i>		Karma Chopel
202	Sandlark	<i>Calandrella raytal</i>		Eejay Eejay
203	Rufous-throated Wren Babbler	<i>Spelaeoris caudatus</i>		Sonam Dorji
204	Fire-tailed Myzornis	<i>Myzornis pyrrhoura</i>		Sonam Pelen

3.2.7. Annexure III: Annotated checklist of the bird species observed along SWK during the Spring Season.

Sl.No	English Name	Species	Altitude (m)	Source
1	Great Myna	<i>Acridotheres grandis</i>	311 - 364	UWICER
2	Common Myna	<i>Acridotheres tristis</i>	311 - 1730	UWICER
3	Indian Pond Heron	<i>Ardeola grayii</i>	311	UWICER
4	Common Pigeon	<i>Columba livia</i>	311 - 1469	UWICER
5	Oriental Magpie Robin	<i>Copsychus saularis</i>	311 - 1684	UWICER
6	Indian Roller	<i>Coracias benghalensis</i>	311, 324	UWICER
7	Large-billed Crow	<i>Corvus macrorhynchos</i>	311 - 1485	UWICER
8	Plain Flowerpecker	<i>Dicaeum concolor</i>	311 - 949	UWICER
9	Little Egret	<i>Egretta garzetta</i>	311, 324	UWICER
10	Crested Kingfisher	<i>Megaceryle lugubris</i>	311, 411	UWICER
11	Blue-throated Barbet	<i>Megalaima asiatica</i>	311 - 1452	UWICER
12	Great Barbet	<i>Megalaima virens</i>	311 - 1939	UWICER
13	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	311	UWICER
14	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	311 - 1869	UWICER
15	Eurasian Tree Sparrow	<i>Passer montanus</i>	311 - 1689	UWICER
16	Little Cormorant	<i>Phalacrocorax niger</i>	311	UWICER
17	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	311 - 366, 1730	UWICER
18	Red-vented Bulbul	<i>Pycnonotus cafer</i>	311 - 1827	UWICER
19	Chestnut-tailed Starling	<i>Sturnia malabarica</i>	311, 1324	UWICER
20	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	312	UWICER
21	Asian Pied Starling	<i>Gracupica contra</i>	312, 338	UWICER
22	Common Tailorbird	<i>Orthotomus sutorius</i>	312 - 1664	UWICER
23	Crimson Sunbird	<i>Aethopyga siparaja</i>	324 - 848	UWICER
24	Grey-backed Shrike	<i>Lanius tephronotus</i>	324, 1069	UWICER
25	Oriental White-Eye	<i>Zosterops palpebrosus</i>	324 - 1761	UWICER
26	Pin-striped Tit Babbler	<i>Macronus gularis</i>	338 - 626	UWICER
27	Chestnut-bellied Nuthatch	<i>Sitta cinnamoventris</i>	338 - 1234	UWICER
28	Spotted Dove	<i>Stigmatopelia chinensis</i>	338 - 1781	UWICER
29	Common Iora	<i>Aegithina tiphia</i>	351 - 1052	UWICER
30	Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i>	351 - 853	UWICER
31	Grey-capped Pygmy Woodpecker	<i>Dendrocopos canicapillus</i>	364 - 637	UWICER
32	Pin-tailed Green Pigeon	<i>Treron apicauda</i>	364	UWICER
33	Great Hornbill	<i>Buceros bicornis</i>	378, 1117	UWICER
34	White-throated Bulbul	<i>Alophoixus flaveolus</i>	393 - 1025	UWICER
35	Plaintive Cuckoo	<i>Cacomantis merulinus</i>	404 - 853, 1723	UWICER
36	Puff-throated Babbler	<i>Pellorneum ruficeps</i>	418 - 572	UWICER
37	Golden-fronted Leafbird	<i>Chloropsis aurifrons</i>	430, 584	UWICER
38	Large Cuckooshrike	<i>Coracina macei</i>	430	UWICER
39	Hair-crested Drongo	<i>Dicrurus hottentottus</i>	430 - 572	UWICER
40	Common Hill Myna	<i>Gracula religiosa</i>	430	UWICER
41	Wedge-tailed Green Pigeon	<i>Treron sphenurus</i>	430, 1059 - 1729	UWICER
42	Yellow-vented Flowerpecker	<i>Dicaeum chrysorrheum</i>	446, 549	UWICER
43	Green-billed Malkoha	<i>Phaenicophaeus tristis</i>	462, 782	UWICER
44	Common Green Magpie	<i>Cissa chinensis</i>	481 - 1918	UWICER

45	Golden-throated Barbet	<i>Megalaima franklinii</i>	481 - 1950	UWICER
46	Lineated Barbet	<i>Megalaima lineata</i>	481, 515	UWICER
47	Pale Blue Flycatcher	<i>Cyornis unicolor</i>	499 - 1526	UWICER
48	Blue-eared Barbet	<i>Megalaima australis</i>	515	UWICER
49	White-rumped Shama	<i>Copsychus malabaricus</i>	549 - 853	UWICER
50	Black-hooded Oriole	<i>Oriolus xanthornus</i>	549	UWICER
51	Large Woodshrike	<i>Tephrodornis virgatus</i>	549	UWICER
52	Crested Serpent Eagle	<i>Spilornis cheela</i>	584 - 1941	UWICER
53	Long-tailed Broadbill	<i>Psarisomus dalhousiae</i>	613 - 1741	UWICER
54	Red-headed Trogon	<i>Harpactes erythrocephalus</i>	650, 1648	UWICER
55	Lesser Necklaced Laughingthrush	<i>Garrulax monileger</i>	665, 991	UWICER
56	Black-throated Sunbird	<i>Aethopyga saturata</i>	697 - 1884	UWICER
57	Blue Rock Thrush	<i>Monticola solitarius</i>	539 - 726	UWICER
58	Banded Bay Cuckoo	<i>Cacomantis sonneratii</i>	341, 726	UWICER
59	Himalayan Cuckoo	<i>Cuculus saturatus</i>	737 - 1950	UWICER
60	Rufous-fronted Babbler	<i>Stachyridopsis rufifrons</i>	742 - 1687	UWICER
61	Maroon Oriole	<i>Oriolus traillii</i>	760 - 1941	UWICER
62	Nepal Fulvetta	<i>Alcippe nipalensis</i>	796 - 1769	UWICER
63	Nepal House Martin	<i>Delichon nipalense</i>	796	UWICER
64	Large Hawk Cuckoo	<i>Hierococcyx sparverioides</i>	813 - 1956	UWICER
65	Brown Wood Owl	<i>Strix leptogrammica</i>	826, 853	UWICER
66	Rufous-necked Hornbill	<i>Aceros nipalensis</i>	853 - 1926	UWICER
67	Oriental Pied Hornbill	<i>Anthracoceros albirostris</i>	853	UWICER
68	Hodgson's Frogmouth	<i>Batrachostomus hodgsoni</i>	853	UWICER
69	Fire-breasted Flowerpecker	<i>Dicaeum ignipectus</i>	853 - 1875	UWICER
70	Kalij Pheasant	<i>Lophura leucomelanos lathami</i>	853	UWICER
71	Mountain Scops Owl	<i>Otus spilocephalus</i>	341 - 853, 1891	UWICER
72	Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i>	884 - 1463	UWICER
73	Sultan Tit	<i>Melanochlora sultanea</i>	895 - 1366	UWICER
74	Blue-winged Siva	<i>Siva cyanouroptera</i>	895 - 1939	UWICER
75	Rufous-chinned Laughingthrush	<i>Garrulax rufogularis</i>	906 - 1730	UWICER
76	Long-tailed Sibia	<i>Heterophasia picaoides</i>	933 - 1283	UWICER
77	Hodgson's Hawk Cuckoo	<i>Hierococcyx fugax</i>	933 - 1344	UWICER
78	White-gorgeted Flycatcher	<i>Anthipes monileger</i>	949 - 1526	UWICER
79	Streaked Spiderhunter	<i>Arachnothera magna</i>	961 - 1452	UWICER
80	Blue-winged Laughingthrush	<i>Garrulax squamatus</i>	961 - 1729	UWICER
81	Mountain Imperial Pigeon	<i>Ducula badia</i>	991 - 1941	UWICER
82	Common Hawk Cuckoo	<i>Hierococcyx varius</i>	991, 1047	UWICER
83	Whiskered Yuhina	<i>Yuhina flavicollis</i>	991 - 1956	UWICER
84	Striated Laughingthrush	<i>Garrulax striatus</i>	1003 - 1879	UWICER
85	Barred Cuckoo Dove	<i>Macropygia unchall</i>	1003 - 1869	UWICER
86	Small Niltava	<i>Niltava macgrigoriae</i>	1003 - 1797	UWICER
87	Rusty-fronted Barwing	<i>Actinodura egertoni</i>	1019 - 1950	UWICER
88	White-tailed Robin	<i>Myiomela leucura</i>	1019 - 1845	UWICER
89	Striated Bulbul	<i>Pycnonotus striatus</i>	1019 - 1950	UWICER
90	Hill Partridge	<i>Arborophila torqueola</i>	1025 - 1749	UWICER
91	Collared Treepie	<i>Dendrocitta frontalis</i>	1025	UWICER
92	Spotted Elachura	<i>Elachura formosa</i>	1025 - 1797	UWICER
93	Spotted Forktail	<i>Enicurus maculatus</i>	1025 - 1797	UWICER
94	Large Niltava	<i>Niltava grandis</i>	1025 - 1864	UWICER
95	Coral-billed Scimitar Babbler	<i>Pomatorhinus ferruginosus</i>	1025	UWICER

96	White-naped Yuhina	<i>Yuhina bakeri</i>	1025 - 1613	UWICER
97	Asian Emerald Cuckoo	<i>Chrysococcyx maculatus</i>	1047, 1283	UWICER
98	Silver-eared Mesia	<i>Leiothrix argentauris</i>	1047 - 1879	UWICER
99	Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	1047 - 1879	UWICER
100	Little Pied Flycatcher	<i>Ficedula westermanni</i>	1072 - 1891	UWICER
101	Beautiful Nuthatch	<i>Sitta formosa</i>	1072	UWICER
102	Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	1087 - 1939	UWICER
103	Black-throated Prinia	<i>Prinia atrogularis</i>	1131 - 1786	UWICER
104	White-throated Fantail	<i>Rhipidura albicollis</i>	1180 - 1950	UWICER
105	Golden Babbler	<i>Stachyridopsis chrysaea</i>	1180 - 1869	UWICER
106	Red-tailed Minla	<i>Minla ignotincta</i>	1194	UWICER
107	Rufous-gorgeted Flycatcher	<i>Ficedula strophitata</i>	1209	UWICER
108	Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	1209 - 1926	UWICER
109	Chestnut-crowned Laughingthrush	<i>Garrulax erythrocephalus</i>	1252 - 1956	UWICER
110	Mountain Bulbul	<i>Ixos mcclellandii</i>	1252 - 1875	UWICER
111	Rufous Sibia	<i>Heterophasia capistrata</i>	1274 - 1950	UWICER
112	Red-faced Liocichla	<i>Liocichla phoenicea</i>	1283, 1781	UWICER
113	Dark-sided Flycatcher	<i>Muscicapa sibirica</i>	1283	UWICER
114	White-browed Piculet	<i>Sasia ochracea</i>	1283	UWICER
115	Velvet-fronted Nuthatch	<i>Sitta frontalis</i>	1283	UWICER
116	Himalayan Cutia	<i>Cutia nipalensis</i>	1341 - 1463	UWICER
117	Yellow-cheeked Tit	<i>Parus sibilnotus</i>	1341 - 1913	UWICER
118	Grey-chinned Minivet	<i>Pericrocotus solaris</i>	1366 - 1720	UWICER
119	Chestnut-crowned Warbler	<i>Phylloscopus castaniceps</i>	1366 - 1950	UWICER
120	Black-throated Tit	<i>Aegithalos concinnus</i>	1381 - 1913	UWICER
121	Slaty-bellied Tesia	<i>Tesia olivea</i>	1381 - 1729	UWICER
122	Common Rosefinch	<i>Carpodacus erythrinus</i>	553, 1395 - 1708	UWICER
123	Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	1429 - 1926	UWICER
124	Bhutan Laughingthrush	<i>Garrulax imbricatus</i>	1429 - 1941	UWICER
125	Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i>	1429 - 1941	UWICER
126	Whistler's Warbler	<i>Seicercus whistleri</i>	1429 - 1765	UWICER
127	Emerald Dove	<i>Chalcophaps indica</i>	1494	UWICER
128	Grey Peacock Pheasant	<i>Polyplectron bicalcaratum</i>	1574	UWICER
129	Brown-flanked Bush Warbler	<i>Cettia fortipes</i>	1590 - 1941	UWICER
130	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	1590, 1851	UWICER
131	Yellow-throated Fulvetta	<i>Pseudominla cinerea</i>	1590 - 1950	UWICER
132	Black Eagle	<i>Ictinaetus malayensis</i>	1613 - 1792	UWICER
133	Rufous-bellied Niltava	<i>Niltava sundara</i>	1631 - 1860	UWICER
134	Brown-throated Treecreeper	<i>Certhia discolor</i>	1648 - 1786	UWICER
135	Red-billed Leiothrix	<i>Leiothrix lutea</i>	1751 - 1950	UWICER
136	Spot-winged Grosbeak	<i>Mycerobas melanozanthos</i>	1751	UWICER
137	Grey-bellied Tesia	<i>Tesia cyaniventer</i>	1778 - 1875	UWICER
138	Scarlet Finch	<i>Carpodacus sipahi</i>	1864	UWICER
139	Grey Nightjar	<i>Caprimulgus jotaka</i>	350, 1941	UWICER
140	Pygmy Wren Babbler	<i>Pnoepyga pusilla</i>	1875	UWICER
141	Bar-throated Siva	<i>Siva strigula</i>	1869	UWICER
142	Plumbeous Water Redstart	<i>Rhyacornis fuliginosa</i>	1754	UWICER
143	Mountain Tailorbird	<i>Phyllergates cucullatus</i>	1730 - 1897	UWICER
144	Lesser Yellownape	<i>Picus chlorolophus</i>	1052, 1786	UWICER
145	Buff-barred Warbler	<i>Phylloscopus pulcher</i>	1781	UWICER

146	Stripe-throated Yuhina	<i>Yuhina gularis</i>	1774 - 1891	UWICER
147	White-tailed Nuthatch	<i>Sitta himalayensis</i>	1741 - 1879	UWICER
148	Grey-winged Blackbird	<i>Turdus boulboul</i>	1741 - 1891	UWICER
149	Green-tailed Sunbird	<i>Aethopyga nipalensis</i>	1741 - 1956	UWICER
150	Ashy Wood Swallow	<i>Artama fuscus</i>	1267 - 1724	UWICER
151	Russet Sparrow	<i>Passer cinnamomeus</i>	1691 - 1827	UWICER
152	Grey Bushchat	<i>Saxicola ferreus</i>	1664 - 1956	UWICER
153	White-browed Shrike Babbler	<i>Pteruthius flaviscapis</i>	1485 - 1918	UWICER
154	Long-tailed Shrike	<i>Lanius schach</i>	1250 - 1956	UWICER
155	Rufous-throated Partridge	<i>Arborophila rufogularis</i>	1186 - 1891	UWICER
156	Grey Wagtail	<i>Motacilla cinerea</i>	1138 - 1797	UWICER
157	Slender-billed Oriole	<i>Oriolus tenuirostris</i>	539, 1052	UWICER
158	Rufescent Prinia	<i>Prinia rufescens</i>	1031	UWICER
159	Orange-headed Thrush	<i>Zoothera citrina</i>	1014	UWICER
160	Lesser Coucal	<i>Centropus bengalensis</i>	983 - 1052	UWICER
161	Greater Yellownappe	<i>Picus flavinucha</i>	983 - 1869	UWICER
162	Eurasian Cuckoo	<i>Cuculus canorus</i>	932 - 1869	UWICER
163	Red-rumped Swallow	<i>Cecropis daurica</i>	914 - 1827	UWICER
164	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	892 - 1950	UWICER
165	Green-backed Tit	<i>Parus monticolus</i>	801 - 1941	UWICER
166	Long-tailed Minivet	<i>Pericrocotus ethologus</i>	755	UWICER
167	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	502 - 1194	UWICER
168	Red Junglefowl	<i>Gallus gallus</i>	350 - 572	UWICER
169	Collared Falconet	<i>Microhierax caerulescens</i>	350	UWICER
170	Short-billed Minivet	<i>Pericrocotus brevirostris</i>	350 - 1875	UWICER
171	Scarlet Minivet	<i>Pericrocotus flammeus</i>	350 - 1745	UWICER
172	Black-winged Cuckooshrike	<i>Coracina melaschistos</i>	346 - 1941	UWICER
173	Grey Treepie	<i>Dendrocitta formosae</i>	346 - 1891	UWICER
174	Bronzed Drongo	<i>Dicrurus aeneus</i>	346 - 1395	UWICER
175	Ashy Bulbul	<i>Hemixos flavela</i>	346 - 1366	UWICER
176	Chestnut-headed Bee-eater	<i>Merops leschenaulti</i>	346 - 373	UWICER
177	Grey-headed Woodpecker	<i>Picus canus</i>	346 - 1052	UWICER
178	Spot-bellied Eagle Owl	<i>Bubo nipalensis</i>	341	UWICER
179	Yellow-bellied Warbler	<i>Abroscopus superciliaris</i>	333 - 1175	UWICER
180	Blue-throated Blue Flycatcher	<i>Cyornis rubeculoides</i>	333 - 919	UWICER
181	Taiga Flycatcher	<i>Ficedula albicilla</i>	333 - 549	UWICER
182	Grey-throated Babbler	<i>Stachyris nigriceps</i>	333 - 1741	UWICER
183	Striated Yuhina	<i>Staphida castaniceps</i>	333 - 1180	UWICER
184	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	335 - 1636	UWICER
185	Black Bulbul	<i>Hypsipetes leucocephalus</i>	335 - 1813	UWICER
186	Yellow-vented Warbler	<i>Phylloscopus cantator</i>	335 - 1381	UWICER
187	Fork-tailed Swift	<i>Apus pacificus</i>	348 - 1691	UWICER
188	Grey-headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	348 - 1918	UWICER
189	Ashy Drongo	<i>Dicrurus leucophaeus</i>	348 - 1956	UWICER
190	Collared Owlet	<i>Glaucidium brodiei</i>	348 - 1827	UWICER
191	Bar-winged Flycatcher-shrike	<i>Hemipus picatus</i>	348 - 1729	UWICER
192	White-throated Needletail	<i>Hirundapus caudacutus</i>	348 - 826	UWICER
193	Rusty-cheeked Scimitar Babbler	<i>Pomatorhinus erythrognys</i>	348 - 1776	UWICER
194	Black-crested Bulbul	<i>Pycnonotus flaviventris</i>	345 - 1186	UWICER
195	White-bellied Erpornis	<i>Erpornis zantholeuca</i>	355	UWICER
196	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	377 - 642	UWICER
197	Himalayan Swiftlet	<i>Collocalia brevirostris</i>	372 - 1417	UWICER

198	Blue-capped Rock Thrush	<i>Monticola cinclorhyncha</i>	372 -1860	UWICER
199	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	372 - 1926	UWICER
200	Eurasian Crag Martin	<i>Ptyonoprogne rupestris</i>	372 - 398	UWICER
201	Orange-bellied Leafbird	<i>Chloropsis hardwickii</i>	398 - 1729	UWICER
202	Rufous Woodpecker	<i>Micropternus brachyurus</i>	422 - 549	UWICER
203	Brown Dipper	<i>Cinclus pallasii</i>	445	UWICER
204	Asian Barred Owlet	<i>Glaucidium cuculoides</i>	465 - 1302	UWICER
205	Chestnut-winged Cuckoo	<i>Clamator coromandus</i>	477 - 1059	UWICER
206	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	588 - 1941	UWICER
207	Olive-backed Pipit	<i>Anthus hodgsoni</i>	595 - 1797	UWICER
208	Common Kestrel	<i>Falco tinnunculus</i>	477, 533	UWICER
209	Tickell's Leaf Warbler	<i>Phylloscopus affinis</i>	529 - 1429	UWICER
210	Verditer Flycatcher	<i>Eumyias thalassinus</i>	486 - 1950	UWICER
211	Striated Prinia	<i>Prinia crinigera</i>	477 - 1749	UWICER
212	Cattle Egret	<i>Bubulcus ibis</i>		Sangay Nidup
213	Green Imperial Pigeon	<i>Ducula aenea</i>		Kinlay Kinlay
214	Asian Koel	<i>Eudynamys scolopaceus</i>		Kinlay Kinlay
215	Red-wattled Lapwing	<i>Vanellus indicus</i>		Kinlay Kinlay
216	Lesser Adjutant	<i>Leptoptilos javanicus</i>		Kinlay Kinlay
217	Red-breasted Parakeet	<i>Psittacula alexandri</i>		Kinlay Kinlay
218	Black Drongo	<i>Dicrurus macrocercus</i>		Kinlay Kinlay
219	Black-winged Kite	<i>Elanus caeruleus</i>		Kinlay Kinlay
220	Rufous Treepie	<i>Dendrocitta vagabunda</i>		Kinlay Kinlay
221	Red-naped Ibis	<i>Pseudibis papillosa</i>		Kinlay Kinlay
222	Barn Swallow	<i>Hirundo rustica</i>		Kinlay Kinlay
223	Red Collared Dove	<i>Streptopelia tranquebarica</i>		Dago Dorji
224	Lesser Cuckoo	<i>Cuculus poliocephalus</i>		Sonam Dorji
225	Tickell's Thrush	<i>Turdus unicolor</i>		Sonam Dorji
226	Drongo Cuckoo	<i>Surniculus lugubris</i>		Sonam Dorji
227	Long-billed Wren Babbler	<i>Rimator malacoptilus</i>		Sonam Dorji
228	Hoary-throated Barwing	<i>Actinodura nipalensis</i>		Sonam Dorji
229	Eurasian Wryneck	<i>Jynx torquilla</i>		Karma Wangda
230	Yellow-browed Tit	<i>Sylviparus modestus</i>		Helen Larson
231	Fire-tailed Sunbird	<i>Aethopyga ignicauda</i>		Helen Larson

3.2.8. Annexure IV: Checklist of bird species along different stretches of the SWK bird watching route.

Sl. No.	Shechamthang - Loring Zam	Loring Zam - Darachu	Darachu - Damphu	Damphu - Changche	Changche - Burichu	Burichu - Waklaytar
1	Ashy Bulbul	Ashy Bulbul	Aberrant Bush Warbler	Ashy Bulbul	Ashy Bulbul	Ashy Bulbul
2	Ashy Drongo	Ashy Drongo	Ashy Drongo	Ashy Drongo	Ashy Drongo	Ashy Drongo
3	Asian Barred Owlet	Ashy-throated Warbler	Ashy Wood Swallow	Ashy Wood Swallow	Banded Bay Cuckoo	Asian Barred Owlet
4	Asian Emerald Cuckoo	Asian Barred Owlet	Ashy-throated Warbler	Asian Barred Owlet	Bar-winged Flycatcher-shrike	Bar-winged Flycatcher-shrike
5	Asian Fairy Bluebird	Asian Emerald Cuckoo	Asian Brown Flycatcher	Barn Swallow	Black Bulbul	Bay Woodpecker
6	Asian Palm Swift	Barred Cuckoo Dove	Barred Cuckoo Dove	Bar-winged Flycatcher-shrike	Black-chinned Yuhina	Black Bulbul
7	Asian Pied Starling	Bar-throated Siva	Bar-throated Siva	Bay Woodpecker	Black-crested Bulbul	Black-chinned Yuhina
8	Banded Bay Cuckoo	Bar-winged Flycatcher-shrike	Bar-winged Flycatcher-shrike	Black Bulbul	Black-eared Shrike Babbler	Black-crested Bulbul
9	Barn Swallow	Bay Woodpecker	Bay Woodpecker	Black-chinned Yuhina	Black-throated Sunbird	Black-throated Sunbird
10	Barred Cuckoo Dove	Bhutan Laughingthrush	Bhutan Laughingthrush	Black-crested Bulbul	Black-winged Cuckooshrike	Black-winged Cuckooshrike
11	Bar-winged Flycatcher-shrike	Black Bulbul	Black Bulbul	Black-throated Sunbird	Blue Rock Thrush	Blue Rock Thrush
12	Bay Woodpecker	Black Eagle	Black Eagle	Black-winged Cuckooshrike	Blue Whistling Thrush	Blue Whistling Thrush
13	Beautiful Nuthatch	Black-chinned Yuhina	Black-chinned Yuhina	Blue Whistling Thrush	Blue-capped Rock Thrush	Blue-capped Rock Thrush
14	Black Bulbul	Black-crested Bulbul	Black-crested Bulbul	Blue-capped Rock Thrush	Blue-throated Barbet	Blue-throated Barbet
15	Black Eagle	Black-eared Shrike Babbler	Black-throated Prinia	Blue-throated Barbet	Blue-throated Blue Flycatcher	Blue-throated Blue Flycatcher
16	Black-chinned Yuhina	Black-throated Prinia	Black-throated Sunbird	Blue-throated Blue Flycatcher	Blue-winged Siva	Brown Dipper
17	Black-crested Bulbul	Black-throated Sunbird	Black-throated Tit	Blue-winged Siva	Bronzed Drongo	Chestnut-bellied Nuthatch
18	Black-eared Shrike Babbler	Black-throated Tit	Black-winged Cuckooshrike	Blyth's Leaf Warbler	Brown Dipper	Chestnut-winged Cuckoo
19	Black-headed Shrike Babbler	Black-winged Cuckooshrike	Blue Whistling Thrush	Bronzed Drongo	Chestnut-bellied Nuthatch	Collared Owlet
20	Black-hooded Oriole	Blue Whistling Thrush	Blue-capped Rock Thrush	Brown-throated Treecreeper	Chestnut-crowned Warbler	Common Green Magpie

21	Black-naped Monarch	Blue-bearded Bee-eater	Blue-fronted Redstart	Chestnut-bellied Nuthatch	Chestnut-headed Bee-eater	Common Iora
22	Black-throated Sunbird	Blue-fronted Redstart	Blue-throated Barbet	Chestnut-bellied Rock Thrush	Collared Owlet	Common Kestrel
23	Black-winged Cuckooshrike	Blue-throated Barbet	Blue-winged Laughingthrush	Chestnut-crowned Warbler	Common Green Magpie	Common Myna
24	Blue Rock Thrush	Blue-winged Laughingthrush	Blue-winged Siva	Chestnut-headed Bee-eater	Common Iora	Common Rosefinch
25	Blue Whistling Thrush	Blue-winged Siva	Blyth's Leaf Warbler	Chestnut-headed Tesia	Common Kestrel	Common Tailorbird
26	Blue-bearded Bee-eater	Blyth's Leaf Warbler	Broad-billed Warbler	Chestnut-tailed Starling	Common Myna	Crested Serpent Eagle
27	Blue-eared Barbet	Bronzed Drongo	Bronzed Drongo	Collared Falconet	Common Tailorbird	Crimson Sunbird
28	Blue-naped Pitta	Brown Wood Owl	Brown Wood Owl	Common Green Magpie	Crested Kingfisher	Eurasian Crag Martin
29	Blue-throated Barbet	Brown-flanked Bush Warbler	Brown-flanked Bush Warbler	Common Iora	Crested Serpent Eagle	Eurasian Tree Sparrow
30	Blue-throated Blue Flycatcher	Brown-throated Treecreeper	Brown-throated Treecreeper	Common Kestrel	Crimson Sunbird	Fire-breasted Flowerpecker
31	Blue-winged Laughingthrush	Buff-barred Warbler	Buff-barred Warbler	Common Myna	Eurasian Crag Martin	Fork-tailed Swift
32	Blue-winged Siva	Changeable Hawk Eagle	Chestnut-bellied Nuthatch	Common Pigeon	Eurasian Tree Sparrow	Golden-fronted Leafbird
33	Blyth's Leaf Warbler	Chestnut-bellied Nuthatch	Chestnut-bellied Rock Thrush	Common Tailorbird	Fork-tailed Swift	Great Barbet
34	Bronzed Drongo	Chestnut-bellied Rock Thrush	Chestnut-crowned Laughingthrush	Crimson Sunbird	Golden-fronted Leafbird	Green-backed Tit
35	Brown Wood Owl	Chestnut-crowned Laughingthrush	Chestnut-crowned Warbler	Dark-sided Flycatcher	Great Barbet	Green-crowned Warbler
36	Brown-flanked Bush Warbler	Chestnut-crowned Warbler	Collared Owlet	Dusky Warbler	Great Cormorant	Green-tailed Sunbird
37	Chestnut-bellied Nuthatch	Collared Owlet	Common Green Magpie	Eurasian Cuckoo	Greater Racket-tailed Drongo	Grey Bushchat
38	Chestnut-bellied Rock Thrush	Collared Treepie	Common Kestrel	Eurasian Tree Sparrow	Grey Bushchat	Grey Treepie
39	Chestnut-crowned Laughingthrush	Common Green Magpie	Common Myna	Fire-breasted Flowerpecker	Grey Treepie	Grey Wagtail
40	Chestnut-headed Tesia	Common Rosefinch	Common Rosefinch	Fork-tailed Swift	Grey-backed Shrike	Grey-backed Shrike
41	Chestnut-tailed Starling	Crested Serpent Eagle	Common Tailorbird	Golden-fronted Leafbird	Grey-headed Canary Flycatcher	Grey-capped Pygmy Woodpecker

42	Chestnut-winged Cuckoo	Crimson Sunbird	Crested Serpent Eagle	Golden-throated Barbet	Grey-headed Woodpecker	Grey-headed Canary Flycatcher
43	Collared Owlet	Darjeeling Woodpecker	Dark-sided Flycatcher	Great Barbet	Grey-hooded Warbler	Grey-headed Woodpecker
44	Collared Treepie	Dark-sided Flycatcher	Eurasian Cuckoo	Great Cormorant	Grey-throated Babbler	Grey-hooded Warbler
45	Common Green Magpie	Emerald Dove	Eurasian Tree Sparrow	Great Hornbill	Hair-crested Drongo	Hair-crested Drongo
46	Common Hawk Cuckoo	Eurasian Sparrowhawk	Fire-breasted Flowerpecker	Greater Goldenback	Himalayan Swiftlet	Himalayan Swiftlet
47	Common Hill Myna	Fire-breasted Flowerpecker	Fork-tailed Swift	Greater Yellownape	Mountain Scops Owl	Hodgson's Redstart
48	Common Iora	Fork-tailed Swift	Fulvous-breasted Woodpecker	Green-backed Tit	Orange-bellied Leafbird	Indian Roller
49	Common Kingfisher	Golden Babbler	Golden Babbler	Green-billed Malkoha	Oriental Magpie Robin	Large-billed Crow
50	Common Myna	Golden-throated Barbet	Golden-throated Barbet	Green-tailed Sunbird	Oriental White-Eye	Little Forktail
51	Common Pigeon	Great Barbet	Great Barbet	Grey Bushchat	Pale Blue Flycatcher	Long-tailed Shrike
52	Common Tailorbird	Greater Necklaced Laughingthrush	Great Hornbill	Grey Nightjar	Plumbeous Water Redstart	Olive-backed Pipit
53	Coral-billed Scimitar Babbler	Greater Racket-tailed Drongo	Greater Yellownape	Grey Treepie	Red-vented Bulbul	Orange-bellied Leafbird
54	Crested Goshawk	Greater Rufous-headed Parrotbill	Green-backed Tit	Grey Wagtail	Rufous-bellied Niltava	Oriental Magpie Robin
55	Crested Kingfisher	Greater Yellownape	Green-tailed Sunbird	Grey-backed Shrike	Rusty-cheeked Scimitar Babbler	Oriental Turtle Dove
56	Crested Serpent Eagle	Green-backed Tit	Grey Bushchat	Grey-capped Pygmy Woodpecker	Scarlet Minivet	Oriental White-Eye
57	Crimson Sunbird	Green-tailed Sunbird	Grey Nightjar	Grey-headed Canary Flycatcher	Slaty-backed Forktail	Pied Bushchat
58	Crow-billed Drongo	Grey Bushchat	Grey Treepie	Grey-headed Woodpecker	Speckled Piculet	Plumbeous Water Redstart
59	Dark-sided Flycatcher	Grey Peacock Pheasant	Grey Wagtail	Grey-hooded Warbler	Spot-bellied Eagle Owl	Red Junglefowl
60	Daurian Redstart	Grey Treepie	Grey-backed Shrike	Grey-hooded Warbler	Spotted Dove	Red-vented Bulbul
61	Eastern Imperial Eagle	Grey-backed Shrike	Grey-bellied Tesia	Grey-throated Babbler	Streaked Spiderhunter	Rufescent Prinia
62	Eastern Jungle Crow	Grey-bellied Tesia	Grey-cheeked Warbler	Hair-crested Drongo	Striated Yuhina	Rufous Woodpecker
63	Emerald Dove	Grey-cheeked Warbler	Grey-chinned Minivet	Hill Partridge	Taiga Flycatcher	Rusty-cheeked Scimitar Babbler
64	Eurasian Tree Sparrow	Grey-chinned Minivet	Grey-headed Canary Flycatcher	Himalayan Cuckoo	Ultramarine Flycatcher	Scarlet Minivet

65	Fire-breasted Flowerpecker	Grey-headed Canary Flycatcher	Grey-hooded Warbler	Himalayan Swiftlet	White-bellied Erpornis	Short-billed Minivet
66	Fork-tailed Swift	Grey-hooded Warbler	Grey-sided Bush Warbler	Hodgson's Redstart	White-bellied Heron	Siberian Rubythroat
67	Golden Babbler	Grey-sided Laughingthrush	Grey-sided Laughingthrush	Hume's Warbler	White-capped Redstart	Slender-billed Oriole
68	Golden-fronted Leafbird	Grey-throated Babbler	Grey-throated Babbler	Large Hawk Cuckoo	White-crested Laughingthrush	Spotted Dove
69	Golden-throated Barbet	Hair-crested Drongo	Grey-winged Blackbird	Large-billed Crow	White-throated Kingfisher	Streak-breasted Scimitar Babbler
70	Goosander	Hill Partridge	Hill Partridge	Large-billed Leaf Warbler	White-throated Needletail	Striated Prinia
71	Great Barbet	Hill Partridge	Hill Partridge	Lemon-rumped Warbler	Yellow-bellied Fantail	Striated Yuhina
72	Great Cormorant	Himalayan Bluetail	Himalayan Bluetail	Lesser Coucal	Yellow-bellied Warbler	Stripe-throated Yuhina
73	Great Hornbill	Himalayan Cuckoo	Himalayan Buzzard	Lesser Necklaced Laughingthrush	Yellow-vented Warbler	Thick-billed Warbler
74	Great Myna	Himalayan Cutia	Himalayan Cuckoo	Lesser Racket-tailed Drongo		Tickell's Leaf Warbler
75	Greater Goldenback	Himalayan Swiftlet	Hodgson's Redstart	Lesser Yellownape		Verditer Flycatcher
76	Greater Necklaced Laughingthrush	Hoary-throated Barwing	Large Hawk Cuckoo	Little Pied Flycatcher		Whiskered Yuhina
77	Greater Necklaced Laughingthrush	Hodgson's Hawk Cuckoo	Large Niltava	Long-tailed Broadbill		White-capped Redstart
78	Greater Racket-tailed Drongo	Kalij Pheasant	Large-billed Leaf Warbler	Long-tailed Minivet		White-crested Laughingthrush
79	Greater Rufous-headed Parrotbill	Large Hawk Cuckoo	Lemon-rumped Warbler	Long-tailed Shrike		White-rumped Munia
80	Greater Yellownape	Large Niltava	Lesser Racket-tailed Drongo	Maroon Oriole		White-throated Kingfisher
81	Green-billed Malkoha	Large-billed Leaf Warbler	Lesser Yellownape	Mountain Bulbul		Yellow-bellied Fantail
82	Grey Bushchat	Lemon-rumped Warbler	Little Pied Flycatcher	Mountain Hawk Eagle		Yellow-vented Warbler
83	Grey Treepie	Lesser Racket-tailed Drongo	Long-tailed Broadbill	Nepal Fulvetta		
84	Grey Wagtail	Little Pied Flycatcher	Long-tailed Shrike	Nepal House Martin		
85	Grey-backed Shrike	Long-tailed Minivet	Maroon Oriole	Olive-backed Pipit		
86	Grey-capped Pygmy Woodpecker	Long-tailed Sibia	Mountain Bulbul	Orange-bellied Leafbird		
87	Grey-chinned	Maroon Oriole	Mountain Hawk Eagle	Orange-headed Thrush		

	Minivet			
88	Grey-headed Canary Flycatcher	Mountain Bulbul	Mountain Imperial Pigeon	Oriental Magpie Robin
89	Grey-headed Woodpecker	Mountain Hawk Eagle	Mountain Scops Owl	Oriental Turtle Dove
90	Grey-hooded Warbler	Mountain Imperial Pigeon	Mountain Tailorbird	Oriental White-Eye
91	Grey-sided Bush Warbler	Mountain Tailorbird	Nepal Fulvetta	Pale-chinned Flycatcher
92	Grey-sided Laughingthrush	Nepal Fulvetta	Nepal House Martin	Plain Flowerpecker
93	Grey-throated Babbler	Nepal House Martin	Olive-backed Pipit	Plumbeous Water Redstart
94	Hair-crested Drongo	Olive-backed Pipit	Orange-bellied Leafbird	Puff-throated Babbler
95	Hill Partridge	Orange-bellied Leafbird	Oriental Magpie Robin	Pygmy Wren Babbler
96	Himalayan Buzzard	Oriental Turtle Dove	Oriental Turtle Dove	Red Junglefowl
97	Himalayan Cuckoo	Oriental White-Eye	Oriental White-Eye	Red-rumped Swallow
98	Himalayan Cutia	Pale Blue Flycatcher	Plaintive Cuckoo	Red-tailed Minla
99	Himalayan Palm Swift	Red-billed Leiothrix	Plumbeous Water Redstart	Red-vented Bulbul
100	Hodgson's Frogmouth	Red-faced Liocichla	Pygmy Wren Babbler	Rufescent Prinia
101	Hodgson's Hawk Cuckoo	Red-headed Trogon	Red-billed Leiothrix	Rufous-throated Partridge
102	House Swift	Red-tailed Minla	Red-faced Liocichla	Rusty-cheeked Scimitar Babbler
103	Hume's Warbler	Red-vented Bulbul	Red-rumped Swallow	Scarlet Minivet
104	Indian Cuckoo	Rufous Sibia	Red-tailed Minla	Short-billed Minivet
105	Indian Pond Heron	Rufous-bellied Niltava	Red-vented Bulbul	Slender-billed Oriole
106	Indian Roller	Rufous-capped Babbler	Rufous Sibia	Speckled Piculet
107	Kalij Pheasant	Rufous-fronted Babbler	Rufous-bellied Eagle	Spotted Dove
108	Large Cuckooshrike	Rufous-gorgeted Flycatcher	Rufous-bellied Niltava	Streaked Spiderhunter
109	Large Hawk Cuckoo	Rufous-necked Hornbill	Rufous-capped Babbler	Striated Prinia
110	Large Niltava	Rufous-throated Partridge	Rufous-chinned Laughingthrush	Striated Yuhina
111	Large Woodshrike	Rufous-throated Wren Babbler	Rufous-gorgeted Flycatcher	Sultan Tit

112	Large Woodshrike	Rufous-vented Yuhina	Rufous-necked Hornbill	Taiga Flycatcher
113	Large-billed Crow	Rufous-winged Fulvetta	Rufous-throated Partridge	Thick-billed Warbler
114	Large-billed Leaf Warbler	Rusty-flanked Treecreeper	Rufous-winged Fulvetta	Tickell's Leaf Warbler
115	Lesser Necklaced Laughingthrush	Rusty-fronted Barwing	Russet Sparrow	Verditer Flycatcher
116	Lesser Racket-tailed Drongo	Scaly-breasted Wren Babbler	Rusty-cheeked Scimitar Babbler	Whiskered Yuhina
117	Lesser Yellownappe	Scarlet Finch	Rusty-flanked Treecreeper	Whistler's Warbler
118	Lineated Barbet	Scarlet Minivet	Rusty-fronted Barwing	White-bellied Erpornis
119	Little Cormorant	Short-billed Minivet	Scarlet Minivet	White-browed Scimitar Babbler
120	Little Egret	Silver-eared Mesia	Short-billed Minivet	White-browed Shrike Babbler
121	Little Pied Flycatcher	Slaty-backed Forktail	Silver-eared Mesia	White-capped Redstart
122	Long-tailed Broadbill	Slaty-bellied Tesia	Slaty-backed Flycatcher	White-crested Laughingthrush
123	Long-tailed Sibia	Small Niltava	Slaty-backed Forktail	White-throated Fantail
124	Maroon Oriole	Spotted Forktail	Slaty-bellied Tesia	White-throated Kingfisher
125	Mountain Imperial Pigeon	Spot-winged Grosbeak	Small Niltava	White-throated Laughingthrush
126	Mountain Scops Owl	Streak-breasted Scimitar Babbler	Speckled Piculet	Yellow-bellied Fantail
127	Nepal Fulvetta	Streaked Spiderhunter	Spotted Dove	Yellow-bellied Warbler
128	Nepal House Martin	Striated Bulbul	Spotted Elachura	Yellow-vented Warbler
129	Olive-backed Pipit	Striated Laughingthrush	Spotted Forktail	
130	Orange-bellied Leafbird	Striated Yuhina	Spot-winged Grosbeak	
131	Oriental Honey-buzzard	Stripe-throated Yuhina	Streak-breasted Scimitar Babbler	
132	Oriental Magpie Robin	Sultan Tit	Streaked Spiderhunter	
133	Oriental Pied Hornbill	Tickell's Leaf Warbler	Striated Bulbul	
134	Oriental Turtle Dove	Velvet-fronted Nuthatch	Striated Laughingthrush	
135	Oriental White-Eye	Verditer Flycatcher	Striated Prinia	

136	Pale Blue Flycatcher	Wedge-tailed Green Pigeon	Stripe-throated Yuhina		
137	Pin-striped Tit Babbler	Whiskered Yuhina	Tickell's Leaf Warbler		
138	Pin-tailed Green Pigeon	Whistler's Warbler	Verditer Flycatcher		
139	Plain Flowerpecker	White-bellied Erpornis	Wedge-tailed Green Pigeon		
140	Plaintive Cuckoo	White-browed Piculet	Whiskered Yuhina		
141	Plumbeous Water Redstart	White-browed Shrike Babbler	Whistler's Warbler		
142	Plum-headed Parakeet	White-crested Laughingthrush	White-browed Scimitar Babbler		
143	Puff-throated Babbler	White-gorgeted Flycatcher	White-browed Shrike Babbler		
144	Red Junglefowl	White-naped Yuhina	White-capped Redstart		
145	Red-breasted Parakeet	White-spectacled Warbler	White-crested Laughingthrush		
146	Red-faced Liocichla	White-tailed Nuthatch	White-naped Yuhina		
147	Red-headed Trogon	White-tailed Robin	White-tailed Nuthatch		
148	Red-tailed Minla	White-throated Fantail	White-tailed Robin		
149	Red-vented Bulbul	White-throated Laughingthrush	White-throated Fantail		
150	Ruby-cheeked Sunbird	Yellow-bellied Fantail	White-throated Laughingthrush		
151	Rufous Sibia	Yellow-cheeked Tit	Yellow-bellied Fantail		
152	Rufous Woodpecker	Yellow-throated Fulvetta	Yellow-cheeked Tit		
153	Rufous-bellied Eagle	Yellow-vented Warbler	Yellow-throated Fulvetta		
154	Rufous-bellied Niltava				
155	Rufous-capped Babbler				
156	Rufous-chinned Laughingthrush				
157	Rufous-fronted Babbler				
158	Rufous-gorgeted Flycatcher				

159	Rufous-necked Hornbill				
160	Rufous-throated Partridge				
161	Rufous-winged Fulvetta				
162	Rusty-cheeked Scimitar Babbler				
163	Rusty-fronted Barwing				
164	Scaly Laughingthrush				
165	Scaly-breasted Wren Babbler				
166	Scarlet Finch				
167	Scarlet Minivet				
168	Short-billed Minivet				
169	Siberian Rubythroat				
170	Silver-eared Mesia				
171	Slaty Blue Flycatcher				
172	Slaty-bellied Tesia				
173	Slaty-headed Parakeet				
174	Small Niltava				
175	Speckled Piculet				
176	Spotted Dove				
177	Spotted Elachura				
178	Spotted Forktail				
179	Streak-breasted Scimitar Babbler				
180	Streaked Spiderhunter				
181	Striated Bulbul				
182	Striated Heron				
183	Striated Laughingthrush				
184	Striated Yuhina				
185	Sultan Tit				

186	Taiga Flycatcher				
187	Thick-billed Warbler				
188	Velvet-fronted Nuthatch				
189	Verditer Flycatcher				
190	Wedge-tailed Green Pigeon				
191	Whiskered Yuhina				
192	Whistler's Warbler				
193	White Wagtail				
194	White-bellied Erpornis				
195	White-browed Scimitar Babbler				
196	White-browed Shortwing				
197	White-browed Wagtail				
198	White-capped Redstart				
199	White-crested Laughingthrush				
200	White-gorgeted Flycatcher				
201	White-naped Yuhina				
202	White-rumped Shama				
203	White-spectacled Warbler				
204	White-tailed Robin				
205	White-throated Bulbul				
206	White-throated Fantail				
207	White-throated Kingfisher				
208	White-throated Needletail				

209	Wreathed Hornbill				
210	Yellow-bellied Fantail				
211	Yellow-browed Warbler				
212	Yellow-cheeked Tit				
213	Yellow-vented Flowerpecker				
214	Yellow-vented Warbler				



Rimchu to Gasa Dzong Bird Watching Route



3.3. Rimchu – Gasa Dzong (RGS) Bird Watching Route

3.3.1. Geophysical Information

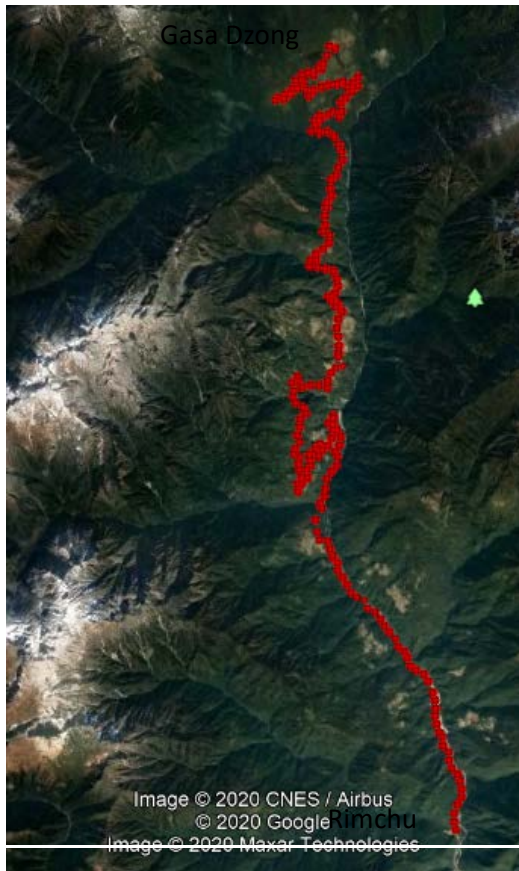


Figure 15: Figure shows the point count stations from Rimchu – Gasa Dzong bird watching route.

Kabena, the bird route traverse and climb uphill through Yemina (1964m) to Panikon (2183m). From Panikon, the birding route continue and ascend to Phuntshogang (2382m), Gathana (2376m), Bjishong (2300m), Layabgang (2238m) and descends to Damji (2250m). Arriving at Gyentey Gang (2344m) vista from Damji, one can enjoy a breathtaking view of Gasa Dzong and the mountains. Zomina (2336m) is a small hamlet with a few households, and the birding road continues to Gayza Zam (2394m). The road from Gayza Zam zig zags to Gayza Village (2492m), and the road gradually descends Zamey Zam(2244m). Takins are frequented in late fall, winter and spring at Domepangchu (2374m) located between Gayza and Zamey Zam. With the little effort Bhutan Takin can be observed on the opposite site of Domepangchu. Upon crossing Zamey Zam are Zamey (2287m) and Baychu (2477m) village. From the Baychu village the feeder road to Gasa Tshachu begins. The final phase of birding toward Gasa Dzong (2817m) begins at Baychu through Remey (2594m). Birding detours can be made to Tokay Menchu and Zabsoel Goempa.

Rimchu is about 18KM north of Punakha enroute to Gasa. The Rimchu (1345m) to Gasa Dzong (2817m) birding route lies within the Jigme Dorji National Park, and transects through Punakha and Gasa Dzongkhags (Figure 15). This birding route is on the right bank of Mochu, indeed very close to the river until Kabena. The route passes through beautiful forests interspersed by settlements at certain locations. Immediately after Rimchu is a small fresh water Targaythang Fishery (1379m) and Yargalmargal (1420m). As the road wiggle through the forest along Mochu until Kabena, settlements enroute are Richena (1463m) – Park Range Office; Kapatapsa (1604m) with Goenshari Gewog Center and School (1506m); Shatem (1519m) has the camping facility; Goen Tshephu junction (1541m), Rabgaythang Zam (1543m), Tashithang (1601m),

Khailo junction (1673m), and Kabena (1778m). In the winter and spring, Bhutan Takin can be observed on the slopes opposite to Kabena. From

The Rimchu – Gasa birding route passes through two major habitats: warm broadleaf forests (1000 – 2000m) and cool broadleaf forests (2000 – 2800m).

3.3.2. Species Richness, Shannon Diversity Index (H) and Mann-Whitney U Test

A total transect length run along SWK route in 3 seasons was 195KM (singleton transect was 65KM). We surveyed at 573 point locations (191 singleton points). A cumulative running bird species list was 204. In the Fall, 109 bird species were listed, and in the subsequent seasons (Winter and Spring), the survey recorded 120 and 161 species respectively.

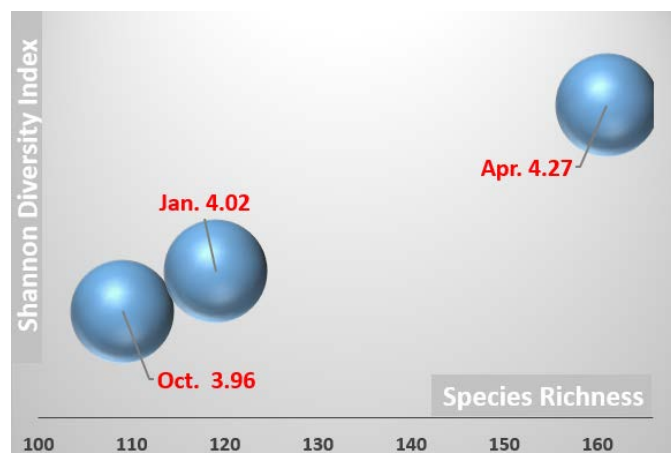


Figure 16: The plot represents seasonal bird species richness and the Shannon - Wiener Diversity Index of Rimchu – Gasa Dzong bird watching route.

In the RGS birding route, the Shannon Diversity Index (H) indicated highest species richness and diversity in Spring (H = 4.27), followed by Winter (H = 4.02) and Fall (H = 3.96). The H indicated that birding in this area was best in Spring, moderate in Winter and poor in Fall (Figure 16). Mann-Whitney U Test between seasons (Fall & Winter [$z = 2.19, p = 0.028$] was significant, while in Fall & Spring [$z = 1.94, p = 0.052$] and Winter & Spring [$z = -0.45, p = 0.65$]) statistically described not significant.

The RGS birding route has warm broadleaf forests (WBLF) and cool broadleaf forests (CBLF). In the three season surveys, CBLF and WBLF enlisted 171 and 142 bird species respectively. We also analyzed for differences in H value at habitat levels. Across the three seasons, we found that CBLF (H = 4.30) has greater species richness and diversity compared to WBLF (H = 4.08). The Mann-Whitney U Test between CBLF & WBLF ($z = 0.888, p = 0.37$) was not significant.

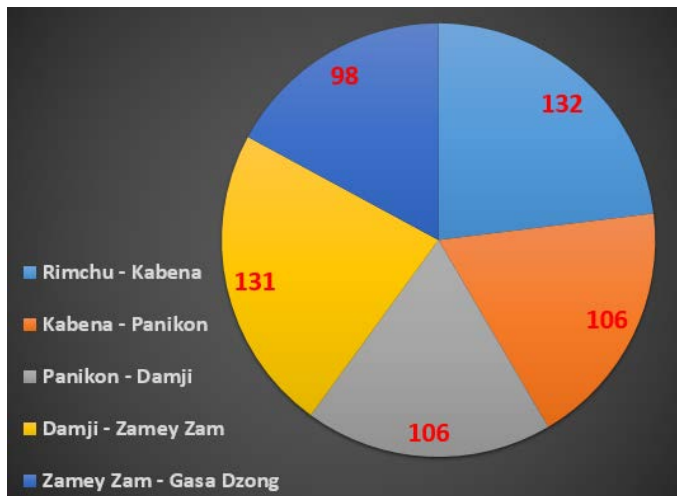


Figure 17: The plot shows the bird species richness and H index of the subtropical broadleaf, warm broadleaf and subtropical dry chirpine and riverine forests found along RGS bird watching route.

Species richness in three seasons in CBLF (Fall = 84, Winter = 82, Spring = 127) and in WBLF (Fall = 74, Winter = 88, Spring = 97). In our analysis for Shannon Diversity Index by habitat and season matrix, the cool broadleaf forests in Spring (H = 4.06), highest species diversity followed by Fall (H = 3.74), and lowest in Winter (H = 3.73), and in the warm broadleaf forests

Spring ($H = 4.06$), diversity index followed by Fall ($H = 4.06$) and Winter ($H = 3.73$) (Figure 17). Mann-Whitney U Test in season by habitat did not show significance in Fall (CBLF & WBLF, $z = -0.218$, $p = 0.825$), but statistical significance was observed in subsequent seasons ([Winter: CBLF & WBLF, $z = -2.69$, $p = 0.007$], [Spring: CBLF & WBLF, $z = 2.085$, $p = 0.037$]) at significance of $p < 0.05$ level. From this U Test result, we deduced that species richness and diversity in two habitats differed in Winter and Spring.

3.3.3. Birding Area and Species of Birding Interest (BABI)



Along the Rimchu – Gasa birding route, we sub-divided the route to 5 divisions (Rimchu – Kabena (KM), Kabena – Panikon (KM), Panikon – Damji (KM), Damji – Zamey Zam (KM) and Zamey Zam – Gasa Dzong (KM). Figure 18 indicated the Rimchu to Kabena (132 species) and Damji to Zamey Zam (131) are the best birding areas along this birding route. Bird species richness in the stretches of Kabena to Panikon (106) and Panikon to Damji (106) were equal, with the lowest species richness in the Zamey Zam to Gasa Dzong section.

Figure 18: Richness of bird species in sub-divided sections of Rimchu - Gasa Dzong birding route: Rimchu to Kabena, Kabena to Panikon, Panikon to Damji, and Damji to Zamey Zam, and Zamey Zam – Gasa Dzong.

Yellow-rumped Honeyguide: Yellow-rumped Honeyguide is the only species that can digest and metabolize

bee wax to derive energy for its living. Its sister species is found in the African continent which reveals in the geologic times of the past, the landmass was together. One bird was sighted at Rabgaythang (1433m) on the 26th January 2020. On the 22nd April 2020, two birds were observed on the cliff face with rockbees between Panikon and Phuntshogang. The bird is regularly found on this cliff.

Black-tailed Crake: Four individuals were observed in the *Acorus calamus* wetland at Panikon (2183m) on 22nd April 2020. Those birds responded to the pre-recorded call. On the 24th April 2020, a bird was heard from below the road between Baychu and Remye. This species also occurs in the wetlands at Tashithang. They are also known to breed in those sighting areas.

Kalij Pheasant: Bhutan definitely has two sub-species of Kalij Pheasants. The sub-species occurring along Rimchu to Gasa Dzong bird watching route is *Lophura leucomelanos melanota* (black body plumage with silver breast). This pheasant is observed at an elevation range of 1420 – 2577m in warm and cool broadleaf forests. During the three surveys we observed this pheasant on 19 occasions and with a cumulative count of 43 birds. Maximum of them were sighted at the proximity of

settlements at Kabena, Yemina and Panikon. More males were encountered than females, and they were mostly observed in the late evening (1630 – 1800hrs) and early morning (0530 – 0800hrs). During the Spring survey, males were observed drumming giving great postural displays.

Bearded Vulture: On the 23rd April 2020, at around 1000hrs, two bearded vultures were observed at Gayza fly over and soar in the thermals scanning for food on the ground. Bearded Vulture is also known by the names Lammergeier and Bone Breaker. It is documented to feed on bone marrow from the long limb bone and also swallow 7inch rib bone. The vulture carries long bones and soars to a height over the rocks, and then drops bones to break open for bone marrow.

3.3.4. Campsites, Homestays, Birding Access & Other Attractions

Table 3: Shows the existing and proposed sites for development of camping and overnight amenities along RGS route.

Sl. No.	Location	Existing	Proposed	Birding Access
1	Yargyal Margyal	NA	Camp	Rimchu, Richena, Kapatapsa (Goenshari), Shatem (other attraction : Chuphu Tshachu, fishery)
2	Shatem	Camp		Rimchu, Kapatapsa, Tashithang, Khailo, Chuphu Tshachu, Goentshephu, Kabena, Yemina, Panikon (other attraction – Goentsephu pilgrimage site, Goenshari monastic school, Bhutan Takin)
3	Gayza	NA	Camp & Homestay	Damji, Bjishong, Gathana, Phuntshogang, Domephangchu, Zamey, Tshachu(other attraction – Zhabdrung’s Relic, Bhutan Takin)
4	Tshachu	Camp/ Guest Houses		Baychu, Zamey, Remey, Gasa Dzong, Koina, Zabsoel Goenpa, Tokay Menchu (other attraction – Bhutan Takin, Gasa Dzong, Tshachu, Menchu)

We propose 4 locations, namely Yargyal Margyal, Shatem, Gayza and Gasa Tshachu, from where bird watching can be staged along the Rimchu – Gasa route.

A new campsite is recommended at Yargyal Margyal. From Yargyal Margyal, visitors can bird watch at Rimchu, Richena, Kapatapsa (Goenshari) and Shatem. Chuphu Tshachu, Hoka Tsho and a small freshwater fishery at Targaythang are some other attractions around this proposed campsite. Bird watching can be also accessed along farm roads.

Shatem has an existing campsite with toiletry, kitchen and camping ground amenities, and the campsite is also fenced with barbed wire. A small waterfall just near to the camp adds to nature's joy. From Shatem, bird watching can be accessed to Rimchu, Kapatapsa, Tashithang, Khailo, Chuphu Tshachu, Goentsephu, Kabena, Yemina and Panikon. Existing farm roads can be explored for bird watching. The other attractions around this campsite are Chuphu Tshachu, Goentshephu pilgrimage site, Goenshari monastic school and Bhutan Takin.

We propose a new campsite at Gayza. A few houses in this small village can also be converted to homestays. From Gayza, bird watching can be carried out at Damji, Bjishong, Gathana, Phuntshogang in the south, and access Domepangchu, Zamey and Gasa Tshachu in the north. The cultural values and significance around Gayza are some other attractions in the area. A household in Damji has a shoe relic of Zhabdrung Rinpochoe. Bhutan Takin- the national mammal of Bhutan frequents roads between Gayza and Zamey Zam, and takins can be easily observed on the opposite side from Domepangchu.

The amenities at Gasa Tshachu can be used by the bird watchers. If the Gasa Tshachu is cumbersome, a campsite can be established at Baychu. Bird watching can be conducted Baychu, Zamey, Remey, Gasa Dzong, Koina, Tokay Menchu and Zabsoel Goenpa. A few homestays already exist in Zamey Village. Some other attractions at this campsite are Gasa Dzong, Tshachu, Menchu, Zamsael Goenpa and relics of Lama Zhabdrung.

Some important bird species along the Rimchu – Gasa Dzong birding route



Slender-billed Scimitar Babbler (S.Dorji)



Yellow-rumped Honeyguide (Phub Dorji)



Pallas's Fish Eagle (Sherub)



Bearded Vulture (Sherub)



Kalij Pheasant (Sherub)



Bay-backed Shrike (Sherub)



Grey-sided Laughingthrush (Sherub)



Red-headed Trogon (eBird)

3.3.5. Annexure I: Annotated checklist of the bird species observed along RGS during the Fall Season.

Sl. No.	English Name	Species	Altitude(m)	Source
1	Common Myna	<i>Acridotheres tristis</i>	1463 - 2817	UWICER
2	Rusty-fronted Barwing	<i>Actinodura egertoni</i>	1494, 1517	UWICER
3	Hoary-throated Barwing	<i>Actinodura nipalensis</i>	2142, 2573	UWICER
4	Black-throated Tit	<i>Aegithalos concinnus</i>	2472	UWICER
5	Mrs Gould's Sunbird	<i>Aethopyga gouldiae</i>	1486	UWICER
6	Green-tailed Sunbird	<i>Aethopyga nipalensis</i>	1415 - 2573	UWICER
7	Black-throated Sunbird	<i>Aethopyga saturata</i>	2354	UWICER
8	Rufous-winged Fulvetta	<i>Alcippe castaneiceps</i>	1379 - 2368	UWICER
9	Nepal Fulvetta	<i>Alcippe nipalensis</i>	1483 - 2493	UWICER
10	White-gorgeted Flycatcher	<i>Anthipes monileger</i>	1727 - 2577	UWICER
11	Olive-backed Pipit	<i>Anthus hodgsoni</i>	2300 - 2354	UWICER
12	Golden Eagle	<i>Aquila chrysaetos</i>	2249	UWICER
13	Hill Partridge	<i>Arborophila torqueola</i>	1420 - 2389	UWICER
14	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	1682 - 2396	UWICER
15	Long-legged Buzzard	<i>Buteo rufinus</i>	2300	UWICER
16	Brown-throated Treecreeper	<i>Certhia discolor</i>	1486 -1496	UWICER
17	Rusty-flanked Treecreeper	<i>Certhia nipalensis</i>	1379 - 2493	UWICER
18	Grey-sided Bush Warbler	<i>Cettia brunnifrons</i>	2270	UWICER
19	Yellow-bellied Fantail	<i>Chelidorhynch hypoxanthus</i>	1366 - 2496	UWICER
20	Orange-bellied Leafbird	<i>Chloropsis hardwickii</i>	1494 - 1525	UWICER
21	Brown Dipper	<i>Cinclus pallasii</i>	1513 - 1540	UWICER
22	Hen Harrier	<i>Circus cyaneus</i>	2293	UWICER
23	Large-billed Crow	<i>Corvus macrorhynchos</i>	1601 - 2817	UWICER
24	Himalayan Cutia	<i>Cutia nipalensis</i>	1778	UWICER
25	Nepal House Martin	<i>Delichon nipalense</i>	1376 - 2357	UWICER
26	Grey Treepie	<i>Dendrocitta formosae</i>	1494 - 2568	UWICER
27	Crimson-breasted Woodpecker	<i>Dendrocopos cathpharius</i>	1778	UWICER
28	Fire-breasted Flowerpecker	<i>Dicaeum ignipectus</i>	1519 - 1659	UWICER
29	Ashy Drongo	<i>Dicrurus leucophaeus</i>	1778	UWICER
30	Spotted Forktail	<i>Enicurus maculatus</i>	1540, 2378	UWICER
31	Slaty-backed Forktail	<i>Enicurus schistaceus</i>	1758	UWICER
32	Little Forktail	<i>Enicurus scouleri</i>	1556 - 1682	UWICER
33	Verditer Flycatcher	<i>Eumyias thalassinus</i>	1496	UWICER
34	Oriental Hobby	<i>Falco severus</i>	2357	UWICER
35	Common Kestrel	<i>Falco tinnunculus</i>	1376 - 2379	UWICER
36	Pygmy Blue Flycatcher	<i>Ficedula hodgsoni</i>	2472	UWICER
37	Rufous-gorgeted Flycatcher	<i>Ficedula strophciata</i>	1666 - 2576	UWICER
38	White-browed Fulvetta	<i>Fulvetta vinipectus</i>	2231 - 2657	UWICER
39	Black-faced Laughingthrush	<i>Garrulax affinis</i>	2579	UWICER
40	White-throated Laughingthrush	<i>Garrulax albogularis</i>	1901 - 2354	UWICER
41	Chestnut-crowned Laughingthrush	<i>Garrulax erythrocephalus</i>	1463 - 2571	UWICER
42	Bhutan Laughingthrush	<i>Garrulax imbricatus</i>	1763 - 2554	UWICER
43	White-crested Laughingthrush	<i>Garrulax leucolophus</i>	1420 - 1901	UWICER
44	Rufous-chinned Laughingthrush	<i>Garrulax rufogularis</i>	1494	UWICER
45	Striated Laughingthrush	<i>Garrulax striatus</i>	1366 - 2568	UWICER
46	Eurasian Jay	<i>Garrulus glandarius</i>	2372 - 2577	UWICER

47	Collared Owlet	<i>Glaucidium brodiei</i>	2249	UWICER
48	Rufous Sibia	<i>Heterophasia capistrata</i>	1496 - 2674	UWICER
49	Black Bulbul	<i>Hypsipetes leucocephalus</i>	2231 - 2657	UWICER
50	Black Eagle	<i>Ictinaetus malayensis</i>	2089 - 2472	UWICER
51	Mountain Bulbul	<i>Ixos mcclllandii</i>	1345 - 2104	UWICER
52	Grey-backed Shrike	<i>Lanius tephronotus</i>	1513 - 2379	UWICER
53	Red-billed Leiothrix	<i>Leiothrix lutea</i>	2334, 2368	UWICER
54	Kalij Pheasant	<i>Lophura leucomelanos melanota</i>	1420 - 2388	UWICER
55	Great Barbet	<i>Megalaima virens</i>	1366 - 2436	UWICER
56	Red-tailed Minla	<i>Minla ignotincta</i>	1415 - 2249	UWICER
57	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	1778 - 2357	UWICER
58	Dark-sided Flycatcher	<i>Muscicapa sibirica</i>	1682	UWICER
59	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	1415 - 2571	UWICER
60	Large Niltava	<i>Niltava grandis</i>	1727	UWICER
61	Small Niltava	<i>Niltava macgrigoriae</i>	1425	UWICER
62	Rufous-bellied Niltava	<i>Niltava sundara</i>	1366, 1425	UWICER
63	Mountain Hawk Eagle	<i>Nisaetus nipalensis</i>	2271 - 2395	UWICER
64	Spotted Nutcracker	<i>Nucifraga caryocatactes</i>	2376, 2817	UWICER
65	Chestnut-headed Tesia	<i>Oligura castaneocoronata</i>	1742, 2089	UWICER
66	Green-backed Tit	<i>Parus monticolus</i>	1415 - 2817	UWICER
67	Yellow-cheeked Tit	<i>Parus spilonotus</i>	1778, 2354	UWICER
68	Eurasian Tree Sparrow	<i>Passer montanus</i>	2379, 2817	UWICER
69	Short-billed Minivet	<i>Pericrocotus brevirostris</i>	1758, 1778	UWICER
70	Scarlet Minivet	<i>Pericrocotus flammeus</i>	1486 - 1659	UWICER
71	Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	2142 - 2577	UWICER
72	Hodgson's Redstart	<i>Phoenicurus hodgsoni</i>	1420 - 2573	UWICER
73	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	1376 - 2244	UWICER
74	Green-crowned Warbler	<i>Phylloscopus burkii</i>	1778	UWICER
75	Large-billed Warbler	<i>Phylloscopus magnirostris</i>	1727 - 2354	UWICER
76	Chestnut-crowned Warbler	<i>Phylloscopus castaniceps</i>	1540, 2368	UWICER
77	Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	2368 - 2573	UWICER
78	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	1483 - 2573	UWICER
79	Grey-cheeked Warbler	<i>Phylloscopus poliogenys</i>	2231, 2579	UWICER
80	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	1415 - 2472	UWICER
81	Greater Yellownape	<i>Picus flavinucha</i>	2349	UWICER
82	Scaly-breasted Wren Babbler	<i>Pnoepyga albiventer</i>	2252 - 2568	UWICER
83	Pygmy Wren Babbler	<i>Pnoepyga pusilla</i>	1415 - 2376	UWICER
84	Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	2477, 2580	UWICER
85	Slender-billed Scimitar Babbler	<i>Pomatorhinus superciliaris</i>	2392	UWICER
86	Yellow-throated Fulvetta	<i>Pseudominla cinerea</i>	1540	UWICER
87	White-browed Shrike Babbler	<i>Pteruthius flaviscapis</i>	1778, 2249	UWICER
88	Black-eared Shrike Babbler	<i>Pteruthius melanotis</i>	1814, 2249	UWICER
89	Red-vented Bulbul	<i>Pycnonotus cafer</i>	1513, 2354	UWICER
90	White-throated Fantail	<i>Rhipidura albicollis</i>	1763 - 2368	UWICER
91	Plumbeous Water Redstart	<i>Rhyacornis fuliginosa</i>	1345 - 2244	UWICER
92	Whistler's Warbler	<i>Seicercus whistleri</i>	1707	UWICER
93	White-tailed Nuthatch	<i>Sitta himalayensis</i>	1666 - 2657	UWICER
94	Bar-throated Siva	<i>Siva strigula</i>	2231 - 2573	UWICER
95	Rufous-throated Wren Babbler	<i>Spelaeornis caudatus</i>	1682 - 2277	UWICER
96	Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	1673 - 2573	UWICER
97	Grey-throated Babbler	<i>Stachyris nigriceps</i>	2231	UWICER

98	Striated Yuhina	<i>Staphida castaniceps</i>	1666, 2354	UWICER
99	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	1425 - 2354	UWICER
100	Yellow-browed Tit	<i>Sylviparus modestus</i>	2142	UWICER
101	Golden Bush Robin	<i>Tarsiger chrysaeus</i>	2379 - 2674	UWICER
102	Winter Wren	<i>Troglodytes troglodytes</i>	2313	UWICER
103	Grey-winged Blackbird	<i>Turdus boulboul</i>	2503	UWICER
104	Tickell's Thrush	<i>Turdus unicolor</i>	2376	UWICER
105	Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>	2231 - 2817	UWICER
106	River Lapwing	<i>Vanellus duvaucelii</i>	1513	UWICER
107	Whiskered Yuhina	<i>Yuhina flavicollis</i>	1366 - 2577	UWICER
108	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	1415 - 1666	UWICER
109	Oriental White-Eye	<i>Zosterops palpebrosus</i>	1415 - 2104	UWICER

3.3.6. Annexure II: Annotated checklist of the bird species observed along RGS during the Winter Season.

Sl. No.	English Name	Species	Altitude(m)	Source
1	Northern Goshawk	<i>Accipiter gentilis</i>	2231 - 2376	UWICER
2	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1901, 1925	UWICER
3	Common Myna	<i>Acridotheres tristis</i>	1463 - 2594	UWICER
4	Rusty-fronted Barwing	<i>Actinodura egertoni</i>	1366 - 2142	UWICER
5	Hoary-throated Barwing	<i>Actinodura nipalensis</i>	2417, 2554	UWICER
6	Black-throated Tit	<i>Aegithalos concinnus</i>	1406 - 2571	UWICER
7	Rufous-fronted Tit	<i>Aegithalos iouschistos</i>	1613 - 2692	UWICER
8	Green-tailed Sunbird	<i>Aethopyga nipalensis</i>	1506 - 2657	UWICER
9	Rufous-winged Fulvetta	<i>Alcippe castaneiceps</i>	1379	UWICER
10	Nepal Fulvetta	<i>Alcippe nipalensis</i>	1379 - 1925	UWICER
11	Olive-backed Pipit	<i>Anthus hodgsoni</i>	1802 - 2817	UWICER
12	Hill Partridge	<i>Arborophila torqueola</i>	1366 - 2460	UWICER
13	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	1379 - 2418	UWICER
14	Dark-rumped Rosefinch	<i>Carpodacus edwardsii</i>	2395, 2446	UWICER
15	Scarlet Finch	<i>Carpodacus sipahi</i>	1406, 1463	UWICER
16	Brown-throated Treecreeper	<i>Certhia discolor</i>	1379	UWICER
17	Rusty-flanked Treecreeper	<i>Certhia nipalensis</i>	2313 - 2571	UWICER
18	Grey-sided Bush Warbler	<i>Cettia brunnifrons</i>	1463 - 2472	UWICER
19	Yellow-bellied Fantail	<i>Chelidorhynch hypoxanthus</i>	1366 - 2692	UWICER
20	Brown Parrotbill	<i>Cholornis unicolor</i>	2460, 2472	UWICER
21	Brown Dipper	<i>Cinclus pallasii</i>	1494 - 1556	UWICER
22	Speckled Wood Pigeon	<i>Columba hodgsonii</i>	2166	UWICER
23	Large-billed Crow	<i>Corvus macrorhynchos</i>	1601 - 2817	UWICER
24	Asian House Martin	<i>Delichon dasypus</i>	1540 - 2249	UWICER
25	Grey Treepie	<i>Dendrocitta formosae</i>	1345 - 2049	UWICER
26	Crimson-breasted Woodpecker	<i>Dendrocopos cathpharius</i>	1884	UWICER
27	Darjeeling Woodpecker	<i>Dendrocopos darjellensis</i>	2446	UWICER
28	Fire-breasted Flowerpecker	<i>Dicaeum ignipectus</i>	1519 - 2310	UWICER
29	Ashy Drongo	<i>Dicrurus leucophaeus</i>	1486	UWICER
30	Spotted Forktail	<i>Enicurus maculatus</i>	1406 - 2378	UWICER
31	Slaty-backed Forktail	<i>Enicurus schistaceus</i>	1758, 2378	UWICER
32	Verditer Flycatcher	<i>Eumyias thalassinus</i>	1504 - 2417	UWICER
33	Rufous-gorgeted Flycatcher	<i>Ficedula strophciata</i>	1366 - 2238	UWICER
34	White-browed Fulvetta	<i>Fulvetta vinipectus</i>	2297 - 2817	UWICER
35	White-throated Laughingthrush	<i>Garrulax albogularis</i>	1496 - 2554	UWICER
36	Chestnut-crowned Laughingthrush	<i>Garrulax erythrocephalus</i>	1379 - 2817	UWICER
37	Bhutan Laughingthrush	<i>Garrulax imbricatus</i>	2392 - 2817	UWICER
38	Striated Laughingthrush	<i>Garrulax striatus</i>	1376 - 2496	UWICER
39	Scaly Laughingthrush	<i>Garrulax subunicolor</i>	2128	UWICER
40	Eurasian Jay	<i>Garrulus glandarius</i>	2271 - 2579	UWICER
41	Asian Barred Owlet	<i>Glaucidium cuculoides</i>	1445, 1814	UWICER
42	Red-headed Trogon	<i>Harpactes erythrocephalus</i>	1366, 1379	UWICER
43	Bar-winged Flycatcher-shrike	<i>Hemipus picatus</i>	1366 - 1431	UWICER
44	Rufous Sibia	<i>Heterophasia capistrata</i>	1376 - 2577	UWICER
45	Aberrant Bush Warbler	<i>Horornis flavolivaceus</i>	2316, 2382	UWICER
46	Black Bulbul	<i>Hypsipetes leucocephalus</i>	1483 - 2310	UWICER

47	Yellow-rumped Honeyguide	<i>Indicator xanthonotus</i>	1543	UWICER
48	Mountain Bulbul	<i>Ixos mcclllandii</i>	1415 - 1595	UWICER
49	Kalij Pheasant	<i>Lophura leucomelanos melanota</i>	1496 - 2492	UWICER
50	Barred Cuckoo Dove	<i>Macropygia unchall</i>	1884	UWICER
51	Crested Kingfisher	<i>Megaceryle lugubris</i>	1390	UWICER
52	Golden-throated Barbet	<i>Megalaima franklinii</i>	1390	UWICER
53	Great Barbet	<i>Megalaima virens</i>	1345 - 1986	UWICER
54	Red-tailed Minla	<i>Minla ignotincta</i>	1379 - 2417	UWICER
55	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	1517 - 2496	UWICER
56	Grey Wagtail	<i>Motacilla cinerea</i>	1525	UWICER
57	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	1345 - 2567	UWICER
58	Large Niltava	<i>Niltava grandis</i>	1345 - 1727	UWICER
59	Small Niltava	<i>Niltava macgrigoriae</i>	1445, 1556	UWICER
60	Rufous-bellied Niltava	<i>Niltava sundara</i>	1379, 1504	UWICER
61	Mountain Hawk Eagle	<i>Nisaetus nipalensis</i>	1951	UWICER
62	Chestnut-headed Tesia	<i>Oligura castaneocoronata</i>	1390 - 2128	UWICER
63	Green-backed Tit	<i>Parus monticolus</i>	1366 - 2460	UWICER
64	Yellow-cheeked Tit	<i>Parus spilonotus</i>	2361	UWICER
65	Russet Sparrow	<i>Passer cinnamomeus</i>	2271 - 2817	UWICER
66	Eurasian Tree Sparrow	<i>Passer montanus</i>	1463, 2817	UWICER
67	Grey-chinned Minivet	<i>Pericrocotus solaris</i>	1376, 1379	UWICER
68	Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	1506 - 2724	UWICER
69	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	1345 - 2389	UWICER
70	Green-crowned Warbler	<i>Phylloscopus burkii</i>	1514	UWICER
71	Chestnut-crowned Warbler	<i>Phylloscopus castaniceps</i>	1379 - 2376	UWICER
72	Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	1379 - 2692	UWICER
73	Hume's Warbler	<i>Phylloscopus humei</i>	2313, 2361	UWICER
74	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	1379 - 2571	UWICER
75	Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	1379	UWICER
76	Buff-barred Warbler	<i>Phylloscopus pulcher</i>	1379 - 2361	UWICER
77	Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i>	1379, 2361	UWICER
78	Greenish Warbler	<i>Phylloscopus trochiloides</i>	1379 - 2376	UWICER
79	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	1366 - 2361	UWICER
80	Grey-headed Woodpecker	<i>Picus canus</i>	1951	UWICER
81	Greater Yellownape	<i>Picus flavinucha</i>	1431 - 2472	UWICER
82	Scaly-breasted Wren Babbler	<i>Pnoepyga albiventer</i>	1366 - 2417	UWICER
83	Pygmy Wren Babbler	<i>Pnoepyga pusilla</i>	1345	UWICER
84	Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	2049 - 2765	UWICER
85	Black-throated Prinia	<i>Prinia atrogularis</i>	1637	UWICER
86	Rufous-breasted Accentor	<i>Prunella strophciata</i>	2258 - 2594	UWICER
87	Long-tailed Broadbill	<i>Psarisomus dalhousiae</i>	1463	UWICER
88	White-browed Shrike Babbler	<i>Pteruthius flaviscapis</i>	1379 - 2394	UWICER
89	Green Shrike Babbler	<i>Pteruthius xanthochlorus</i>	2361 - 2535	UWICER
90	Red-vented Bulbul	<i>Pycnonotus cafer</i>	1463 - 1519	UWICER
91	Striated Bulbul	<i>Pycnonotus striatus</i>	2076, 2394	UWICER
92	Red-billed Chough	<i>Pyrrhcorax pyrrhcorax</i>	2817	UWICER
93	Golden-naped Finch	<i>Pyrrhoptectes epauletta</i>	2319 - 2472	UWICER
94	Red-headed Bullfinch	<i>Pyrrhula erythrocephala</i>	2319 - 2765	UWICER
95	White-throated Fantail	<i>Rhipidura albicollis</i>	1379	UWICER
96	Plumbeous Water Redstart	<i>Rhyacornis fuliginosa</i>	1345 - 1707	UWICER
97	White-tailed Nuthatch	<i>Sitta himalayensis</i>	1669 - 2577	UWICER

98	Blue-winged Siva	<i>Siva cyanouroptera</i>	1366, 1379	UWICER
99	Bar-throated Siva	<i>Siva strigula</i>	2142 - 2417	UWICER
100	Crested Serpent Eagle	<i>Spilornis cheela</i>	1431 - 1510	UWICER
101	Tibetan Siskin	<i>Spinus thibetanus</i>	2297 - 2418	UWICER
102	Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	2376 - 2395	UWICER
103	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	1345 - 2724	UWICER
104	Black-throated Parrotbill	<i>Suthora nipalensis</i>	2319	UWICER
105	Yellow-browed Tit	<i>Sylviparus modestus</i>	1379 - 2571	UWICER
106	Golden Bush Robin	<i>Tarsiger chrysaeus</i>	1463 - 2395	UWICER
107	Rufous-breasted Bush Robin	<i>Tarsiger hyperythrus</i>	1379 - 2394	UWICER
108	White-browed Bush Robin	<i>Tarsiger indicus</i>	2287 - 2576	UWICER
109	Himalayan Bluetail	<i>Tarsiger rufilatus</i>	1366 - 2352	UWICER
110	Winter Wren	<i>Troglodytes troglodytes</i>	2496, 2817	UWICER
111	Black-throated Thrush	<i>Turdus atrogularis</i>	2817	UWICER
112	Chestnut Thrush	<i>Turdus rubrocanus</i>	2765	UWICER
113	Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>	1884 - 2594	UWICER
114	River Lapwing	<i>Vanellus duvaucelii</i>	1506	UWICER
115	Whiskered Yuhina	<i>Yuhina flavicollis</i>	1345 - 2271	UWICER
116	Stripe-throated Yuhina	<i>Yuhina gularis</i>	1431 - 2509	UWICER
117	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	1415, 1425	UWICER
118	Plain-backed Thrush	<i>Zosterops mollissima</i>	2244 - 2509	UWICER
119	Oriental White-Eye	<i>Zosterops palpebrosus</i>	1431	UWICER

3.3.7. Annexure III: Annotated checklist of the bird species observed along RGS during the Spring Season.

Sl. No.	English Name	Species	Altitude(m)	Source
1	Black-winged Cuckooshrike	<i>Coracina melaschistos</i>	1736 - 2323	UWICER
2	Northern Goshawk	<i>Accipiter gentilis</i>	2614	UWICER
3	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1964	UWICER
4	Common Myna	<i>Acridotheres tristis</i>	1463 - 2817	UWICER
5	Rusty-fronted Barwing	<i>Actinodura egertoni</i>	1494 - 2361	UWICER
6	Black-throated Tit	<i>Aegithalos concinnus</i>	2325 - 2576	UWICER
7	Mrs Gould's Sunbird	<i>Aethopyga gouldiae</i>	1925 - 2457	UWICER
8	Green-tailed Sunbird	<i>Aethopyga nipalensis</i>	2271 - 2812	UWICER
9	Black-throated Sunbird	<i>Aethopyga saturata</i>	1366 - 1884	UWICER
10	Rufous-winged Fulvetta	<i>Alcippe castaneiceps</i>	2554 - 2674	UWICER
11	Nepal Fulvetta	<i>Alcippe nipalensis</i>	1415 - 2049	UWICER
12	Olive-backed Pipit	<i>Anthus hodgsoni</i>	2166 - 2817	UWICER
13	Rosy Pipit	<i>Anthus roseatus</i>	2252 - 2817	UWICER
14	Fork-tailed Swift	<i>Apus pacificus</i>	2259	UWICER
15	Rufous-throated Partridge	<i>Arborophila rufogularis</i>	1669 - 2496	UWICER
16	Hill Partridge	<i>Arborophila torqueola</i>	1673 - 2577	UWICER
17	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	1366 - 2496	UWICER
18	Lesser Shortwing	<i>Brachypteryx leucophris</i>	1673, 2104	UWICER
19	White-browed Shortwing	<i>Brachypteryx montana</i>	2324, 2418	UWICER
20	Russet Bush Warbler	<i>Bradypterus mandelli</i>	2220 - 2465	UWICER
21	Dark-breasted Rosefinch	<i>Carpodacus nipalensis</i>	2395	UWICER
22	Scarlet Finch	<i>Carpodacus sipahi</i>	2166	UWICER
23	Rusty-flanked Treecreeper	<i>Certhia nipalensis</i>	2382 - 2418	UWICER
24	Grey-sided Bush Warbler	<i>Cettia brunnifrons</i>	1463 - 2817	UWICER
25	Brown-flanked Bush Warbler	<i>Cettia fortipes</i>	1601 - 2744	UWICER
26	Yellow-bellied Fantail	<i>Chelidorhynch hypoxanthus</i>	1859 - 2573	UWICER
27	Orange-bellied Leafbird	<i>Chloropsis hardwickii</i>	1506, 1637	UWICER
28	Brown Parrotbill	<i>Cholornis unicolor</i>	2395	UWICER
29	Blue-fronted Robin	<i>Cinclidium frontale</i>	2319	UWICER
30	Brown Dipper	<i>Cinclus pallasii</i>	1504 - 1517	UWICER
31	Speckled Wood Pigeon	<i>Columba hodgsonii</i>	2319 - 2724	UWICER
32	Snow Pigeon	<i>Columba leuconata</i>	2724	UWICER
33	Common Pigeon	<i>Columba livia</i>	1513	UWICER
34	Large-billed Crow	<i>Corvus macrorhynchos</i>	1925 - 2817	UWICER
35	Eurasian Cuckoo	<i>Cuculus canorus</i>	1837 - 2368	UWICER
36	Indian Cuckoo	<i>Cuculus micropterus</i>	2324, 2368	UWICER
37	Himalayan Cuckoo	<i>Cuculus saturatus</i>	1483 - 2577	UWICER
38	Grey-headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	1376 - 2580	UWICER
39	Himalayan Cutia	<i>Cutia nipalensis</i>	2418	UWICER
40	Asian House Martin	<i>Delichon dasypus</i>	2259, 2277	UWICER
41	Nepal House Martin	<i>Delichon nipalense</i>	1510 - 1978	UWICER
42	Grey Treepie	<i>Dendrocitta formosae</i>	1406 - 2166	UWICER
43	Darjeeling Woodpecker	<i>Dendrocopos darjellensis</i>	2376, 2394	UWICER
44	Rufous-bellied Woodpecker	<i>Dendrocopos hyperythrus</i>	2446	UWICER
45	Fire-breasted Flowerpecker	<i>Dicaeum ignipectus</i>	1486 - 1964	UWICER
46	Hair-crested Drongo	<i>Dicrurus hottentottus</i>	1345 - 1514	UWICER

47	Ashy Drongo	<i>Dicrurus leucophaeus</i>	1420 - 2573	UWICER
48	Little Egret	<i>Egretta garzetta</i>	1513	UWICER
49	Spotted Elachura	<i>Elachura formosa</i>	1376 - 1682	UWICER
50	Little Bunting	<i>Emberiza pusilla</i>	2437	UWICER
51	Spotted Forktail	<i>Enicurus maculatus</i>	1390	UWICER
52	Slaty-backed Forktail	<i>Enicurus schistaceus</i>	1540	UWICER
53	Little Forktail	<i>Enicurus scouleri</i>	2232	UWICER
54	Verditer Flycatcher	<i>Eumyias thalassinus</i>	1390 - 2817	UWICER
55	Rufous-gorgeted Flycatcher	<i>Ficedula strophciata</i>	1837 - 2724	UWICER
56	Ultramarine Flycatcher	<i>Ficedula superciliaris</i>	1659 - 2517	UWICER
57	Slaty Blue Flycatcher	<i>Ficedula tricolor</i>	2270 - 2418	UWICER
58	White-browed Fulvetta	<i>Fulvetta vinipectus</i>	2571	UWICER
59	White-throated Laughingthrush	<i>Garrulax albogularis</i>	1496 - 2573	UWICER
60	Grey-sided Laughingthrush	<i>Garrulax caerulatus</i>	2388 - 2501	UWICER
61	Chestnut-crowned Laughingthrush	<i>Garrulax erythrocephalus</i>	1463 - 2817	UWICER
62	Bhutan Laughingthrush	<i>Garrulax imbricatus</i>	1682 - 2817	UWICER
63	Striated Laughingthrush	<i>Garrulax striatus</i>	1376 - 2388	UWICER
64	Eurasian Jay	<i>Garrulus glandarius</i>	2324, 2368	UWICER
65	Collared Owlet	<i>Glaucidium brodiei</i>	1513, 2231	UWICER
66	Asian Barred Owlet	<i>Glaucidium cuculoides</i>	1778, 1802	UWICER
67	Bearded Vulture	<i>Gypaetus barbatus</i>	2501	UWICER
68	Himalayan Vulture	<i>Gyps himalayensis</i>	2244	UWICER
69	Bar-winged Flycatcher-shrike	<i>Hemipus picatus</i>	1707	UWICER
70	Rufous Sibia	<i>Heterophasia capistrata</i>	1463 - 2765	UWICER
71	Hodgson's Hawk Cuckoo	<i>Hierococcyx fugax</i>	1506 - 2027	UWICER
72	Large Hawk Cuckoo	<i>Hierococcyx sparveriioides</i>	1595 - 2643	UWICER
73	White-throated Needletail	<i>Hirundapus caudacutus</i>	2259	UWICER
74	Black Bulbul	<i>Hypsipetes leucocephalus</i>	1366 - 1978	UWICER
75	Yellow-rumped Honeyguide	<i>Indicator xanthonotus</i>	2352	UWICER
76	Mountain Bulbul	<i>Ixos mcclllandii</i>	1425 - 1494	UWICER
77	Grey-backed Shrike	<i>Lanius tephronotus</i>	1964 - 2724	UWICER
78	Bay-backed Shrike	<i>Lanius vittatus</i>	2473	UWICER
79	Red-billed Leiothrix	<i>Leiothrix lutea</i>	2049 - 2554	UWICER
80	Kalij Pheasant	<i>Lophura leucomelanos melanota</i>	1758 - 2577	UWICER
81	Barred Cuckoo Dove	<i>Macropygia unchall</i>	1901	UWICER
82	Golden-throated Barbet	<i>Megalaima franklinii</i>	1445 - 2089	UWICER
83	Great Barbet	<i>Megalaima virens</i>	1415 - 2027	UWICER
84	Red-tailed Minla	<i>Minla ignotincta</i>	2049 - 2765	UWICER
85	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	2316 - 2460	UWICER
86	White Wagtail	<i>Motacilla alba</i>	1513	UWICER
87	Grey Wagtail	<i>Motacilla cinerea</i>	2287, 2297	UWICER
88	Dark-sided Flycatcher	<i>Muscicapa sibirica</i>	1379 - 1978	UWICER
89	Spot-winged Grosbeak	<i>Mycerobas melanozanthos</i>	2049, 2354	UWICER
90	White-tailed Robin	<i>Myiomela leucura</i>	1496 - 2579	UWICER
91	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	1345 - 2692	UWICER
92	Large Niltava	<i>Niltava grandis</i>	1507 - 2336	UWICER
93	Small Niltava	<i>Niltava macgrigoriae</i>	1420 - 1837	UWICER
94	Rufous-bellied Niltava	<i>Niltava sundara</i>	1666 - 2436	UWICER
95	Spotted Nutcracker	<i>Nucifraga caryocatactes</i>	2629	UWICER
96	Chestnut-headed Tesia	<i>Oligura castaneocoronata</i>	2277 - 2812	UWICER

97	Maroon Oriole	<i>Oriolus traillii</i>	1345 - 2297	UWICER
98	Green-backed Tit	<i>Parus monticolus</i>	1366 - 2812	UWICER
99	Yellow-cheeked Tit	<i>Parus sibilans</i>	1659	UWICER
100	Russet Sparrow	<i>Passer cinnamomeus</i>	1463 - 2817	UWICER
101	Short-billed Minivet	<i>Pericrocotus brevirostris</i>	1648 - 2568	UWICER
102	Long-tailed Minivet	<i>Pericrocotus ethologus</i>	1648 - 2448	UWICER
103	Scarlet Minivet	<i>Pericrocotus flammeus</i>	1390 - 2344	UWICER
104	Grey-chinned Minivet	<i>Pericrocotus solaris</i>	1390 - 2324	UWICER
105	Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	2008 - 2789	UWICER
106	Hodgson's Redstart	<i>Phoenicurus hodgsoni</i>	2336 - 2594	UWICER
107	White-capped Redstart	<i>Phoenicurus leucocephalus</i>	1390 - 2503	UWICER
108	Black Redstart	<i>Phoenicurus ochruros</i>	1517	UWICER
109	Tickell's Leaf Warbler	<i>Phylloscopus affinis</i>	2328 - 2579	UWICER
110	Green-crowned Warbler	<i>Phylloscopus burkii</i>	2258 - 2674	UWICER
111	Yellow-vented Warbler	<i>Phylloscopus cantator</i>	1431 - 1669	UWICER
112	Chestnut-crowned Warbler	<i>Phylloscopus castaniceps</i>	1540 - 2571	UWICER
113	Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	2554 - 2576	UWICER
114	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	2568	UWICER
115	Large-billed Leaf warbler	<i>Phylloscopus magnirostris</i>	1507 - 2493	UWICER
116	Buff-barred Warbler	<i>Phylloscopus pulcher</i>	2049 - 2576	UWICER
117	Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i>	1859 - 2765	UWICER
118	Greenish Warbler	<i>Phylloscopus trochiloides</i>	1859 - 2249	UWICER
119	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>	1345 - 2394	UWICER
120	Greater Yellownape	<i>Picus flavinucha</i>	1379 - 2417	UWICER
121	Scaly-breasted Wren babbler	<i>Pnoepyga albiventer</i>	1540 - 1859	UWICER
122	Pygmy Wren Babbler	<i>Pnoepyga pusilla</i>	1736 - 2392	UWICER
123	Streak-breasted Scimitar Babbler	<i>Pomatorhinus ruficollis</i>	2195 - 2692	UWICER
124	Black-tailed Crake	<i>Porzana bicolor</i>	2183, 2577	UWICER
125	Rufous-breasted Accentor	<i>Prunella strophiata</i>	2374 - 2473	UWICER
126	White-browed Shrike Babbler	<i>Pteruthius flaviscapis</i>	1802 - 2577	UWICER
127	Black-eared Shrike Babbler	<i>Pteruthius melanotis</i>	2366	UWICER
128	Green Shrike Babbler	<i>Pteruthius xanthochlorus</i>	2535, 2629	UWICER
129	Red-vented Bulbul	<i>Pycnonotus cafer</i>	1463, 1504	UWICER
130	Striated Bulbul	<i>Pycnonotus striatus</i>	1802 - 2395	UWICER
131	Red-billed Chough	<i>Pyrhacorax pyrrhacorax</i>	2230 - 2692	UWICER
132	Golden-naped Finch	<i>Pyrrhoptectes epauletta</i>	2577	UWICER
133	Grey-headed Bullfinch	<i>Pyrrhula erythaca</i>	2568	UWICER
134	Red-headed Bullfinch	<i>Pyrrhula erythrocephala</i>	2049 - 2535	UWICER
135	White-throated Fantail	<i>Rhipidura albicollis</i>	2183 - 2509	UWICER
136	Plumbeous Water Redstart	<i>Rhyacornis fuliginosa</i>	1345 - 2389	UWICER
137	Grey Bushchat	<i>Saxicola ferreus</i>	1925 - 2724	UWICER
138	Common Stonechat	<i>Saxicola torquatus</i>	2183	UWICER
139	Eurasian Woodcock	<i>Scolopax rusticola</i>	2183	UWICER
140	Whistler's Warbler	<i>Seicercus whistleri</i>	1673 - 2270	UWICER
141	White-spectacled Warbler	<i>Seicercus affinis</i>	1925	UWICER
142	Chestnut-bellied Nuthatch	<i>Sitta cinnamoventris</i>	1415	UWICER
143	White-tailed Nuthatch	<i>Sitta himalayensis</i>	1576 - 2577	UWICER
144	Blue-winged Siva	<i>Siva cyanouroptera</i>	1778	UWICER
145	Bar-throated Siva	<i>Siva strigula</i>	2394, 2503	UWICER
146	Crested Serpent Eagle	<i>Spilornis cheela</i>	1925	UWICER
147	Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	1494 - 2577	UWICER
148	Spotted Dove	<i>Stigmatopelia chinensis</i>	1366, 1376	UWICER

149	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	1379 -2765	UWICER
150	Yellow-browed Tit	<i>Sylviparus modestus</i>	2573	UWICER
151	Golden Bush Robin	<i>Tarsiger chrysaeus</i>	2472, 2692	UWICER
152	Grey-bellied Tesia	<i>Tesia cyaniventer</i>	1901 - 2571	UWICER
153	Slaty-bellied Tesia	<i>Tesia olivea</i>	1659 - 1964	UWICER
154	Grey-winged Blackbird	<i>Turdus boulboul</i>	2166 - 2577	UWICER
155	Common Hoopoe	<i>Upupa epops</i>	2230 - 2817	UWICER
156	Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>	1601 - 2765	UWICER
157	River Lapwing	<i>Vanellus duvaucelii</i>	1504	UWICER
158	Whiskered Yuhina	<i>Yuhina flavicollis</i>	1431 - 2568	UWICER
159	Stripe-throated Yuhina	<i>Yuhina gularis</i>	2812	UWICER
160	Black-chinned Yuhina	<i>Yuhina nigrimenta</i>	1669, 1727	UWICER
161	Oriental White-Eye	<i>Zosterops palpebrosus</i>	1366 - 1601	UWICER

3.3.8. Annexure IV: Checklist of bird species along different stretches of the RGS bird watching route.

Sl. No.	Rimchu - Kabena	Kabena - Panikon	Panikon - Damji	Damji - Zamey Zam	Zamey Zam - Gasa Dzong
1	Ashy Drongo	Ashy Drongo	Aberrant Bush Warbler	Aberrant Bush Warbler	Ashy Drongo
2	Ashy-throated Warbler	Ashy-throated Warbler	Ashy Drongo	Ashy Drongo	Ashy-throated Warbler
3	Asian Barred Owlet	Asian Barred Owlet	Ashy-throated Warbler	Ashy-throated Warbler	Bar-throated Siva
4	Asian House Martin	Barred Cuckoo Dove	Asian House Martin	Asian House Martin	Bay Woodpecker
5	Bar-winged Flycatcher-shrike	Bar-throated Siva	Bar-throated Siva	Bar-throated Siva	Bhutan Laughingthrush
6	Bay Woodpecker	Bay Woodpecker	Bay Woodpecker	Bay Woodpecker	Black Bulbul
7	Bhutan Laughingthrush	Bhutan Laughingthrush	Bhutan Laughingthrush	Bay-backed Shrike	Black-faced Laughingthrush
8	Black Bulbul	Black Bulbul	Black Bulbul	Bearded Vulture	Black-tailed Crake
9	Black Redstart	Black Eagle	Black-eared Shrike Babbler	Bhutan Laughingthrush	Black-throated Thrush
10	Black-chinned Yuhina	Black-eared Shrike Babbler	Black-throated Tit	Black Bulbul	Black-throated Tit
11	Black-throated Prinia	Black-tailed Crake	Black-winged Cuckooshrike	Black Eagle	Blue Whistling Thrush
12	Black-throated Sunbird	Black-throated Sunbird	Blue Whistling Thrush	Black-eared Shrike Babbler	Blue-fronted Redstart
13	Black-throated Tit	Black-throated Tit	Blue-fronted Redstart	Black-throated Parrotbill	Blyth's Leaf Warbler
14	Black-winged Cuckooshrike	Black-winged Cuckooshrike	Blyth's Leaf Warbler	Black-throated Sunbird	Brown-flanked Bush Warbler
15	Blue Whistling Thrush	Blue Whistling Thrush	Brown-flanked Bush Warbler	Black-throated Tit	Buff-barred Warbler
16	Blue-fronted Redstart	Blue-fronted Redstart	Buff-barred Warbler	Black-winged Cuckooshrike	Chestnut Thrush
17	Blue-winged Siva	Blyth's Leaf Warbler	Chestnut-bellied Rock Thrush	Blue Whistling Thrush	Chestnut-bellied Rock Thrush
18	Blyth's Leaf Warbler	Brown-flanked Bush Warbler	Chestnut-crowned Laughingthrush	Blue-fronted Redstart	Chestnut-crowned Laughingthrush
19	Brown Dipper	Buff-barred Warbler	Chestnut-crowned Warbler	Blue-fronted Robin	Chestnut-crowned Warbler
20	Brown Dipper	Chestnut-crowned Laughingthrush	Collared Owlet	Blyth's Leaf Warbler	Chestnut-headed Tesia
21	Brown-flanked Bush Warbler	Chestnut-crowned Warbler	Common Hoopoe	Brown Parrotbill	Common Hoopoe
22	Brown-throated Treecreeper	Chestnut-headed Tesia	Common Kestrel	Brown-flanked Bush Warbler	Common Kestrel
23	Buff-barred Warbler	Common Kestrel	Common Myna	Buff-barred Warbler	Common Myna
24	Chestnut-bellied Nuthatch	Common Myna	Darjeeling Woodpecker	Chestnut-bellied Rock Thrush	Eurasian Jay
25	Chestnut-bellied Rock	Common Stonechat	Eurasian Cuckoo	Chestnut-crowned	Eurasian Tree Sparrow

	Thrush			Laughingthrush	
26	Chestnut-crowned Laughingthrush	Crested Serpent Eagle	Eurasian Jay	Chestnut-crowned Warbler	Golden Bush Robin
27	Chestnut-crowned Warbler	Crimson-breasted Woodpecker	Fire-breasted Flowerpecker	Chestnut-headed Tesia	Golden-naped Finch
28	Chestnut-headed Tesia	Dark-sided Flycatcher	Golden Bush Robin	Common Hoopoe	Green Shrike Babbler
29	Collared Owlet	Eurasian Cuckoo	Golden Eagle	Common Kestrel	Green-backed Tit
30	Common Kestrel	Eurasian Sparrowhawk	Great Barbet	Darjeeling Woodpecker	Green-crowned Warbler
31	Common Myna	Eurasian Woodcock	Greater Yellownape	Dark-breasted Rosefinch	Green-tailed Sunbird
32	Common Pigeon	Fire-breasted Flowerpecker	Green Shrike Babbler	Dark-rumped Rosefinch	Grey Bushchat
33	Crested Kingfisher	Golden-throated Barbet	Green-backed Tit	Eurasian Cuckoo	Grey Treepie
34	Crested Serpent Eagle	Great Barbet	Green-crowned Warbler	Eurasian Jay	Grey Wagtail
35	Crimson-breasted Woodpecker	Greater Yellownape	Greenish Warbler	Fork-tailed Swift	Grey-backed Shrike
36	Dark-sided Flycatcher	Green-backed Tit	Green-tailed Sunbird	Golden Bush Robin	Grey-bellied Tesia
37	Eurasian Tree Sparrow	Greenish Warbler	Grey Bushchat	Golden-naped Finch	Grey-cheeked Warbler
38	Fire-breasted Flowerpecker	Green-tailed Sunbird	Grey-backed Shrike	Great Barbet	Grey-headed Bullfinch
39	Golden Bush Robin	Grey Bushchat	Grey-bellied Tesia	Greater Yellownape	Grey-headed Canary Flycatcher
40	Golden-throated Barbet	Grey Treepie	Grey-cheeked Warbler	Green Shrike Babbler	Grey-sided Bush Warbler
41	Great Barbet	Grey-backed Shrike	Grey-hooded Warbler	Green-backed Tit	Grey-winged Blackbird
42	Greater Yellownape	Grey-bellied Tesia	Grey-sided Bush Warbler	Green-crowned Warbler	Hill Partridge
43	Green-backed Tit	Grey-chinned Minivet	Grey-sided Laughingthrush	Greenish Warbler	Himalayan Cuckoo
44	Green-crowned Warbler	Grey-headed Canary Flycatcher	Grey-throated Babbler	Green-tailed Sunbird	Hoary-throated Barwing
45	Greenish Warbler	Grey-headed Woodpecker	Grey-winged Blackbird	Grey Bushchat	Hodgson's Redstart
46	Green-tailed Sunbird	Grey-hooded Warbler	Hen Harrier	Grey-bellied Tesia	Kalij Pheasant
47	Grey Treepie	Grey-winged Blackbird	Hill Partridge	Grey-chinned Minivet	Large Hawk Cuckoo
48	Grey Wagtail	Himalayan Bluetail	Himalayan Bluetail	Grey-headed Canary Flycatcher	Large-billed Crow
49	Grey-backed Shrike	Hoary-throated Barwing	Hodgson's Redstart	Grey-hooded Warbler	Large-billed Leaf Warbler
50	Grey-chinned Minivet	Hodgson's Hawk Cuckoo	Hume's Warbler	Grey-sided Bush Warbler	Lemon-rumped Warbler
51	Grey-headed Canary Flycatcher	Kalij Pheasant	Kalij Pheasant	Grey-sided Laughingthrush	Little Bunting
52	Grey-hooded Warbler	Large Hawk Cuckoo	Large Hawk Cuckoo	Grey-winged Blackbird	Long-tailed Minivet
53	Grey-sided Bush Warbler	Large Niltava	Large-billed Crow	Hill Partridge	Maroon Oriole
54	Hair-crested Drongo	Large-billed Crow	Lemon-rumped Warbler	Himalayan Bluetail	Nepal Fulvetta
55	Hill Partridge	Large-billed Leaf Warbler	Long-legged Buzzard	Himalayan Cuckoo	Northern Goshawk
56	Himalayan Bluetail	Lesser Shortwing	Maroon Oriole	Himalayan Cutia	Olive-backed Pipit

57	Himalayan Cuckoo	Long-tailed Minivet	Mountain Hawk Eagle	Himalayan Vulture	Oriental Turtle Dove
58	Himalayan Cutia	Maroon Oriole	Mrs Gould's Sunbird	Hoary-throated Barwing	Pygmy Wren Babbler
59	Hodgson's Hawk Cuckoo	Mountain Bulbul	Nepal House Martin	Hodgson's Redstart	Red-billed Chough
60	Hodgson's Redstart	Mountain Hawk Eagle	Northern Goshawk	Hume's Warbler	Red-billed Leiothrix
61	Kalij Pheasant	Mrs Gould's Sunbird	Olive-backed Pipit	Indian Cuckoo	Red-headed Bullfinch
62	Large Hawk Cuckoo	Nepal Fulvetta	Oriental Hobby	Kalij Pheasant	Red-tailed Minla
63	Large Niltava	Nepal House Martin	Oriental Turtle Dove	Large Hawk Cuckoo	Rosy Pipit
64	Large-billed Crow	Olive-backed Pipit	Plumbeous Water Redstart	Large Niltava	Rufous Sibia
65	Large-billed Leaf Warbler	Oriental Turtle Dove	Pygmy Wren Babbler	Large-billed Crow	Rufous-breasted Accentor
66	Lemon-rumped Warbler	Oriental White-Eye	Red-billed Chough	Large-billed Leaf Warbler	Rufous-breasted Bush Robin
67	Lesser Shortwing	Pygmy Wren Babbler	Red-billed Leiothrix	Lemon-rumped Warbler	Rufous-capped Babbler
68	Little Egret	Red-billed Leiothrix	Red-headed Bullfinch	Little Forktail	Rufous-fronted Tit
69	Little Forktail	Red-headed Bullfinch	Red-tailed Minla	Long-tailed Minivet	Rufous-gorgeted Flycatcher
70	Long-tailed Broadbill	Red-tailed Minla	Rufous Sibia	Maroon Oriole	Rufous-throated Partridge
71	Long-tailed Minivet	Rufous Sibia	Rufous-bellied Niltava	Mountain Hawk Eagle	Rufous-winged Fulvetta
72	Maroon Oriole	Rufous-bellied Niltava	Rufous-breasted Accentor	Mrs Gould's Sunbird	Russet Bush Warbler
73	Mountain Bulbul	Rufous-fronted Tit	Rufous-capped Babbler	Olive-backed Pipit	Russet Sparrow
74	Mrs Gould's Sunbird	Rufous-gorgeted Flycatcher	Rufous-fronted Tit	Oriental Turtle Dove	Rusty-flanked Treecreeper
75	Nepal Fulvetta	Rufous-throated Partridge	Rufous-gorgeted Flycatcher	Plain-backed Thrush	Scaly-breasted Wren Babbler
76	Nepal House Martin	Russet Sparrow	Rufous-throated Partridge	Plumbeous Water Redstart	Short-billed Minivet
77	Olive-backed Pipit	Rusty-fronted Barwing	Rufous-winged Fulvetta	Pygmy Blue Flycatcher	Snow Pigeon
78	Orange-bellied Leafbird	Scaly Laughingthrush	Russet Bush Warbler	Pygmy Wren Babbler	Speckled Wood Pigeon
79	Oriental Turtle Dove	Scaly-breasted Wren Babbler	Russet Sparrow	Red-billed Chough	Spotted Nutcracker
80	Oriental White-Eye	Scarlet Finch	Rusty-flanked Treecreeper	Red-billed Leiothrix	Streak-breasted Scimitar Babbler
81	Plumbeous Water Redstart	Scarlet Minivet	Rusty-fronted Barwing	Red-headed Bullfinch	Striated Laughingthrush
82	Pygmy Wren Babbler	Short-billed Minivet	Scaly-breasted Wren Babbler	Red-tailed Minla	Stripe-throated Yuhina
83	Red-headed Trogon	Slaty-bellied Tesia	Scarlet Minivet	Red-vented Bulbul	Tibetan Siskin
84	Red-tailed Minla	Small Niltava	Slaty Blue Flycatcher	Rufous Sibia	Tickell's Leaf Warbler
85	Red-vented Bulbul	Speckled Wood Pigeon	Slender-billed Scimitar Babbler	Rufous-bellied Niltava	Ultramarine Flycatcher
86	River Lapwing	Spotted Forktail	Spotted Nutcracker	Rufous-bellied Woodpecker	Verditer Flycatcher
87	Rufous Sibia	Spot-winged Grosbeak	Streak-breasted Scimitar Babbler	Rufous-breasted Accentor	Whiskered Yuhina
88	Rufous-bellied Niltava	Streak-breasted Scimitar Babbler	Striated Bulbul	Rufous-breasted Bush Robin	White-browed Bush Robin
89	Rufous-breasted Bush	Striated Bulbul	Striated Laughingthrush	Rufous-capped Babbler	White-browed Fulvetta

	Robin				
90	Rufous-capped Babbler	Striated Laughingthrush	Stripe-throated Yuhina	Rufous-fronted Tit	White-browed Shrike Babbler
91	Rufous-chinned Laughingthrush	Stripe-throated Yuhina	Tickell's Thrush	Rufous-gorgeted Flycatcher	White-gorgeted Flycatcher
92	Rufous-fronted Tit	Ultramarine Flycatcher	Verditer Flycatcher	Rufous-throated Partridge	White-tailed Nuthatch
93	Rufous-gorgeted Flycatcher	Verditer Flycatcher	Whiskered Yuhina	Rufous-throated Wren Babbler	White-tailed Robin
94	Rufous-throated Partridge	Whiskered Yuhina	Whistler's Warbler	Rufous-winged Fulvetta	White-throated Laughingthrush
95	Rufous-throated Wren Babbler	Whistler's Warbler	White-browed Fulvetta	Russet Sparrow	Winter Wren
96	Rufous-winged Fulvetta	White-browed Shrike Babbler	White-browed Shrike Babbler	Rusty-flanked Treecreeper	Yellow-bellied Fantail
97	Russet Sparrow	White-crested Laughingthrush	White-capped Redstart	Scaly-breasted Wren Babbler	Yellow-billed Blue Magpie
98	Rusty-flanked Treecreeper	White-spectacled Warbler	White-tailed Nuthatch	Scarlet Minivet	Yellow-browed Tit
99	Rusty-fronted Barwing	White-tailed Nuthatch	White-tailed Robin	Short-billed Minivet	
100	Scaly-breasted Wren Babbler	White-tailed Robin	White-throated Fantail	Slaty Blue Flycatcher	
101	Scarlet Finch	White-throated Fantail	White-throated Laughingthrush	Slaty-backed Forktail	
102	Scarlet Minivet	White-throated Laughingthrush	Yellow-bellied Fantail	Speckled Wood Pigeon	
103	Short-billed Minivet	Yellow-bellied Fantail	Yellow-billed Blue Magpie	Spotted Forktail	
104	Slaty-backed Forktail	Yellow-billed Blue Magpie	Yellow-browed Tit	Spot-winged Grosbeak	
105	Slaty-bellied Tesia	Yellow-browed Tit	Yellow-cheeked Tit	Streak-breasted Scimitar Babbler	
106	Small Niltava	Yellow-vented Warbler	Yellow-rumped Honeyguide	Striated Bulbul	
107	Spotted Dove			Striated Laughingthrush	
108	Spotted Elachura			Striated Yuhina	
109	Spotted Forktail			Stripe-throated Yuhina	
110	Striated Laughingthrush			Tibetan Siskin	
111	Striated Yuhina			Tickell's Leaf Warbler	
112	Stripe-throated Yuhina			Ultramarine Flycatcher	
113	Ultramarine Flycatcher			Verditer Flycatcher	
114	Verditer Flycatcher			Whiskered Yuhina	
115	Whiskered Yuhina			White-browed Bush Robin	
116	Whistler's Warbler			White-browed Fulvetta	
117	White Wagtail			White-browed Shortwing	

118	White-browed Shrike Babbler		White-browed Shrike Babbler
119	White-capped Redstart		White-capped Redstart
120	White-crested Laughingthrush		White-gorgeted Flycatcher
121	White-gorgeted Flycatcher		White-tailed Nuthatch
122	White-tailed Nuthatch		White-tailed Robin
123	White-tailed Robin		White-throated Fantail
124	White-throated Fantail		White-throated Laughingthrush
125	White-throated Laughingthrush		White-throated Needletail
126	Yellow-bellied Fantail		Winter Wren
127	Yellow-billed Blue Magpie		Yellow-bellied Fantail
128	Yellow-browed Tit		Yellow-billed Blue Magpie
129	Yellow-cheeked Tit		Yellow-browed Tit
130	Yellow-rumped Honeyguide		Yellow-cheeked Tit
131	Yellow-throated Fulvetta		Yellow-vented Warbler
132	Yellow-vented Warbler		

4. Species of Birding Interest (SBI)

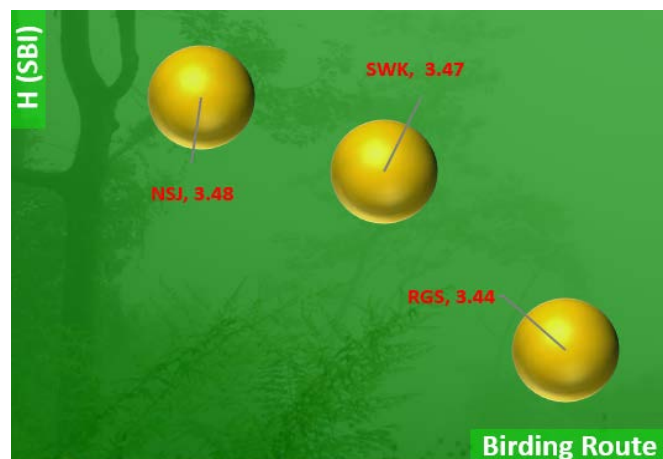


Figure 19: The plot shows the Shannon-Wiener Diversity Index (H) of the three bird watching routes generated on species of birding interest (SBI)

The qualitative analysis in species of birding interest (SBI), the Narphu – Samdrup Jongkhar had the highest Shannon Index ($H = 3.48$), followed by Shechamthang – Waklaytar ($H = 3.47$) and Rimchu – Gasa ($H = 3.44$) (Figure 19). From this result, it was inferred, the bird watching route from Narphu to Samdrup Jongkhar have highest number of bird species listed in the categories of the IUCN Redlist, Bhutan Schedule, restricted range and near to endemic species.

5. Recommendation

As of today, Bhutan has all the necessary ingredients to pursue high end bird watching activity. In order to practice sustainable *orniconomic* activities in Bhutan, the Tourism Council of Bhutan and any other agencies involved in such an economic venture, the following recommendations are put forth for necessary interventions: -

1. **Standard living space:** An *amicable and a standard living space* must be provided to the bird watching clients from around the world. For the bird watching clients, they have multiple choice for a living space. They can choose to stay overnight in hotels and motels, homestays and camps in the wild. It is recommended that TCBS encourage commoners to create or convert existing houses or homes to homestays in all the nearby road settlements.
2. **Best bird watching season:** The good weather conditions in fall and spring provides ease and comfort to bird watchers, compared to the harsh weathers of winter and summer-monsoon. In the autumn and spring, with crisp weather, bird watchers can also enjoy scenic beauties of Bhutan's landscapes. The data from these 3 season surveys, clearly indicated the *fall and spring are best for bird watching* compared to the winter. However, it does not mean birds are totally absent in the winter and summer-monsoon. In the winter, bird watching can be

good below mid-elevations (<2500m) in the broadleaf forests. Therefore, it is recommended to *promote all season bird watching*. Bird watching in winter and summer-monsoon can be catered to adventurous bird watchers. Leech therapy and bird watching in Bhutan!

3. ***Best bird watching habitat:*** During this current survey, four major habitats (subtropical broadleaf forests, subtropical dry chirpine and riverine forests, warm broadleaf forests and cool broadleaf forests) were explored for birdlife. From our survey data, it is deduced, the warm broadleaf forest habitat supports highest species richness and diversity. Thus, it is proposed to *initiate bird watching in warm broadleaf forests* to in vigor bird watching moral of the clients within a short time period.
4. ***Access for bird watching:*** Access opportunities for bird watching has been immensely enhanced by a road network comprising primary highways, secondary feeder roads, farm roads and trekking trails passing through or leading to various habitats harboring rich birdlife. In highly developed and disturbed areas birding trails must be constructed. Along the roads and trails, at vantage or viewpoints, standard vistas may be installed for bird watchers to rest, watch birds, snack and rehydrate.
5. ***Best bird watching route:*** In our analysis, Shannon Diversity Index (H) indicated, the Shechamthang – Waklaytar is the best bird watching route. From our species of birding interest (SBI), the Narphu – Samdrup Jongkhar is the best bird watching route.
6. ***Threats to bird watching sustainability:*** Threats to sustainable bird watching are multifold, thus multi-stakeholder engagement is vital to ensure sustenance of bird watching in the country. Birdlife is threatened by poaching activities: - ensnarement, catapult, latex adhesives; habitat degradation and destruction from over-grazing, forest fire, landslides, leaf mold/litter or surface forest soil collection, developmental activities (installment of infrastructures, road widening, etc.,). Besides the Department of Forests and Park Services, it may be necessary that the TCBS and tour companies (more so bird watching agents) also function as para-forestry personnel to curve bird poaching activities, and raise awareness of the importance of birdlife. The Department of Roads or any agencies involved in developmental activities strictly observe and enforce recommendations of the environmental impact assessment (EIA) documents and detailed project report (DRP). Further, a review of the road right of way (30m from center of the road on the both sides) or buffer is felt urgent and necessary to maintain our road ways continue to remain or provide important birding

watching stretches. It is proposed, the road right of way be maintained as a bird watching buffer (100m on each side of the road). Within this buffer, natural resources extraction of any kind must be prohibited, however access for resources beyond this buffer can be facilitated with roads or trails. It is also recommended that new roads (primary or secondary, and farm roads be aligned 300m away from the water course or big rivers/streams to disallow attenuation of bird songs by the sounds of the gushing river noise, and this will enable to provide adequate habitat for birds to occur than the narrower stripe of habitat.

7. *Habitat enrichment and supplemental feeding*: During the monsoon, water resource is abundant, but it starts to dwindle by the end of winter into spring and summer. In southern Bhutan (<1000m), water resources become very poor in the months of April and May. In the dry and water deficient areas, along bird watching stretches, given all other resources, it is suggested to create small water holes for drink and bath. Small feeding stations be installed and small quantities of supplemental feed (cereals and seeds) and be provisioned. In order to further enrich the habitat along the bird watching stretches, a day called **Planting for Birds** can be declared. On the Planting for Birds day, bird lovers in general and people involved in nature tourism can volunteer to plant local plant species good for birds (shelter and food).

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