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Checklist

Seasonal abundance, species richness and diversity of birds at Maidi Lake, Nepal

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Abstract

Bird surveys were conducted across all four seasons from November 2022 to October 2024 at Maidi Lake, part of Nepal's Lake Cluster of Pokhara Valley Ramsar site. A total of 51 seasonal abundance surveys (10–19 per season) recorded maximum, minimum, average counts, and frequency of occurrence for each species. Additional data were added from eBird postings and the Asian Waterbird Census. In total, 195 bird species were documented. These findings support conservation planning and establish a baseline for future monitoring, as outlined in the Ramsar Maidi Lake Management Plan. The study also provides data to support recreational birdwatching.

Keywords: Bird diversity; Bird seasonal abundance; Lake Cluster of Pokhara Valley; Ramsar site; Wetland conservation

1 | Introduction

The global importance of wetlands, particularly for waterfowl habitats, was formally recognized with the adoption of the Ramsar Convention in 1971 (Ramsar Convention 1971). Nepal became a signatory in 1987 underscoring its commitment to wetland conservation. Among Nepal's designated Ramsar sites is the Lake Cluster of Pokhara Valley (LCPV), including Maidi Lake (Gauli et al. 2016). Nepal's National Ramsar Strategy and Action Plan emphasizes site-specific management plans ecosystem health monitoring (MoFE 2018). Thagunna et al. (2023) highlighted the biophysical and social importance of wetlands in Nepal and associated conservation challenges. Several studies have evaluated the implementation of the Action Plan for the LCPV (Manandhar & Kunwar 2018; Shrestha et al. 2020; Tripathee 2018).

Birds, being relatively more visible components of biodiversity, are suitable for long-term monitoring as recommended in the Action Plan. Avian species richness has been documented in several LCPV lakes including, Phewa (Gautam & Kafle 2008; Giri & Chalise 2008; Khatri et al. 2019), Rupa (Kafle et al. 2008; Subedi 2006), Khaste (Dhakal et al. 2020), and Begnas (Basaula et al. 2023). These studies stressed the diversity of bird communities rather than species abundance. Smaller lakes, like Maidi, have received little attention. The only previous bird study at Maidi Lake documented the first sighting of the Chinese pond-heron (*Ardeola bacchus*) in the Pokhara Valley and included a bird list without specific dates or numbers (Poudel & Baral 2023). Maidi Lake has a management plan under the Maidi Lake Conservation Committee, including a focus on ecological conservation and ecotourism (MoFE 2018).

This study, along with a companion bird-habitat association project (Magar et al. 2025), aimed to establish a baseline for conservation planning and for monitoring change by documenting the seasonal abundance of birds in the Maidi Lake wetlands and the adjacent forested fringe and agriculture area. A secondary objective was to compile known bird records for ecotourists and residents interested in birdwatching.

2 | Materials and methods

2.1 | Study area

Maidi Lake is one of the smaller lakes within the LCPV Ramsar site and lies between Begnas Lake and Dipang Lake (Fig. 1). It has a 1.6 km^2 watershed and sits at 670 m elevation (Gauli et al. 2016). Between 2019 and 2021, a "rehabilitation project" addressed issues such as overgrowth and drying of the lake (Joshi 2020). Before this

the lake had minimal open water, with most of its surface covered by dense vegetation. The project involved constructing a dam and a berm along with selected vegetation removal expanding the open water from less than 1 hectare in 2019 to a lake area of 27 hectares (about 30-40% open water) by 2022. Following these changes, Maidi Lake was designated as a bird "hotspot" (Sullivan et al. 2009) resulting in an increase in bird observation records on eBird.

Maidi Lake is surrounded by forests and agricultural land. Sal (*Shorea robusta*) dominates the west, while Chilaune (*Schima wallichii*) and Katus (*Castanopsis indica*) are prevalent in the east. Agricultural lands, primarily paddyfields, border the north and south. Various wetland species like *Phragmites karka, Trapa natans, Cyperus exaltantus, Leersia hexandra* create a mosaic macrophyte structure which is found to support diverse group of birds (Magar et al. 2025). Though Lake Basin Management Plan by MoFE (2018) and Pathak et al. (2020) provide the general overview of the wetland flora in LCPV, the publications specific on flora of Maidi River are lacking.

Timilsina et al. (2019) listed nine species of native fish species from Maidi Lake. Some non-native species, including *Ctenopharyngodon idella*, *Hypophthalmichthys nobilis and H. molitrix,* have been stocked to support a commercial fishery in the lake. No information published specifically at Maidi Lake was found for other fauna.

Local people use Maidi lake for commercial fishing, fodder collection, and recreational activities. Surrounding agricultural fields support mainly paddy cultivation and livestock grazing. A trail around the lake serves both as walking, biking, and birdwatching trail for visitors as well as the road access to villages upstream. Aligned with the management plan, the local conservation committee seeks to sustainably manage the lake's resources.

2.2 | Data collection

Bird names and their taxonomic order follow Clements (2024).

The trail that encircles Maidi Lake was used as a survey route. All species seen or heard were recorded in the lake and in surrounding fields and forests within about 50 m of the lake edge, and care was taken to avoid duplication. To document bird abundance, Seasonal Abundance Surveys (SAS) based on area searches (Dieni & Jones 2002; Gregory et al. 2004) were conducted, typically from first light to 10:30 AM. From November 2022 to May 2023, surveys were conducted weekly, and from June 2023 to October 2024, they were conducted approximately twice monthly. A total of 51 SAS was completed, distributed across seasons as follows:

Spring (March–May): 19 surveys

Summer (June–August): 11 surveys

Autumn (September–November): 10 surveys

Winter (December–February): 11 surveys

In addition to SAS, additional surveys were conducted which either covered only a portion of the survey route, occurred outside peak activity periods, or targeting specific species. These surveys (termed "incidental") helped document species not recorded during SAS and were used to update maximum counts when they exceeded seasonal abundance data. Incidental surveys included our own surveys and eBird records (Sullivan et al. 2009) from January 2022 (first Maidi Lake entry) to October 2024. Additionally, data from the Asian Waterbird Census (AWC), part of the international Waterbird Census (Wetlands International), were incorporated. Maidi Lake has been included in these annual surveys each January or February from 2007 through 2024 (M. Cotton, Tiger Mountain Pokhara Lodge, pers comm, 2025).

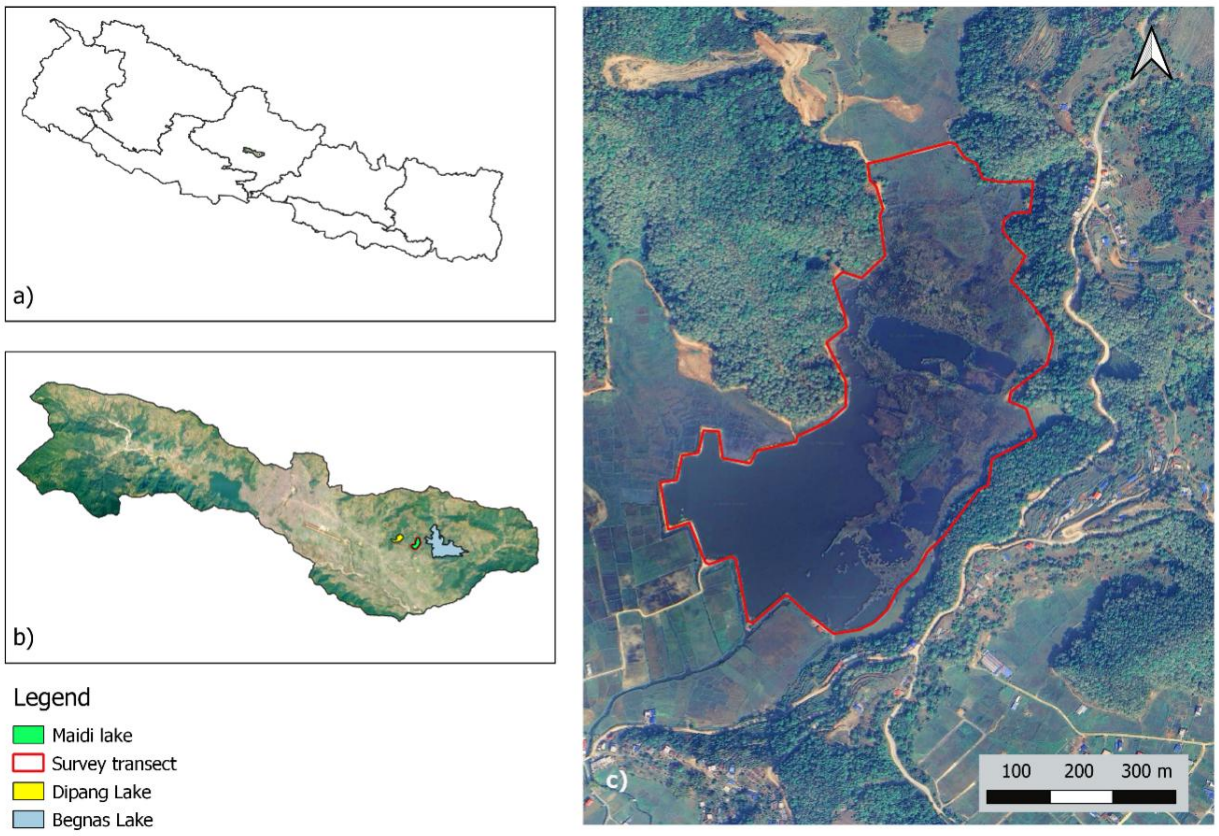

Figure 1. Location of Maidi Lake and delineation of the transect from which observations were made.

2.4 | Data analysis

Encounter rates (% of surveys on which a species was observed) were calculated for each species in each season from SAS. Additionally, the range and mean numbers of individuals per season were documented. These average counts for each species were used to calculate the diversity indices Shannon's H' (Shannon 1948) and Simson's D (Simpson 1949).

The total number of species reported at Maidi Lake was a compilation from 96 surveys (51 SAS, 27 incidental surveys from eBird postings, and 18 AWC surveys).

3 | Results

3.1 | Seasonal abundance and diversity

The seasonal abundance of 177 species recorded during SAS at Maidi Lake is summarized in Annex 1. A total of 61 species was encountered on at least 30% of the surveys, and 53 species were recorded in every season suggesting they were year around residents. The others were absent in at least one season. The highest average counts were for waterfowl, particularly whistling ducks (Annex 1). Other species with peak counts of 20 or more individuals included rock pigeon *(Columba livia)*, spotted dove (*Spilopelia chinensis*), grey-headed lapwing (*Vanellus cinereus*), great cormorant (*Phalacrocorax carbo*), eastern cattle-egret (*Bubulcus coromanda*), medium egret (*Ardea intermedia*), black kite (*Milvus migrans*), long-tailed minivet(*Pericrocotus ethologus*), barn swallow (*Hirundo rustica*), common myna (*Acridotheres tristis*), hair-crested drongo (*Dicrurus hottentottus*) and grey treepie (*Dendrocitta formosae*) (Annex 1).

All species recorded on SAS in or near the Maidi Lake wetland, were considered "wetland associated" (WA) (Bhandari 2009), but only a subset was classified as "Waterbirds" (WB) (Wetland International 2018). These two categories were used to compare richness and diversity among seasons at Maidi Lake (Table 1). Both groups exhibited high species richness in spring and summer, but spring had the lowest diversity indices (by both Shannon and Simpson measures).

Seasonal diversity patterns varied between the two groups of birds are shown in the Table 1.

For WA, Shannon diversity was highest in winter and summer (equal values). For WB, Shannon diversity was highest in winter. For WA, Simpson indices showed similar seasonal patterns (winter and summer were the most diverse) to Shannon. For WB, winter and autumn had the highest diversity based on Simpson's index.

3.2 | Species richness

A total of 19 species were added to those recorded on SAS from incidental surveys. The total from all surveys was 195 species from 51 families recorded at Maidi Lake. As shown below, the families with highest species richness in the wetland were waterfowl (Anatidae, 12 species), rails (Railladae, 7 species), shorebirds (Sholopacidae, 8 species), and bitterns, herons, and egrets (Ardeidae, 12 species). In the adjacent forest fringe, cuckoos (Cuculidae, 10 species), warblers (Phylloscopidae, 12 species) and flycatchers (Muscicapidae, 16 species) contributed the most species. Eagles and hawks (Accipitridae) added 12 species, but most were observed flying over Maidi Lake. The annotated list of species that follows includes 2 species that are designated as critically endangered (CR), 4 endangered (EN), 7 vulnerable (VU) and 6 near threatened (NT) according to the National Red List for Birds of Nepal (Inskipp et al. 2016). Seasonal abundance information exists and is summarized in Annex 1, but the table isn't cited again and again in each species account to avoid repetition. Unattributed observations come from SAS or incidental surveys conducted by the authors.

Family: Anatidae

Lesser whistling duck *Dendrocygna javanica*

This species was recorded in spring, summer, and autumn during SAS, with peak counts of 75–111 and seasonal averages of 30–50. A pair with likely fledged young was seen on Oct. 30, 2024. The only winter records are 1 bird on Jan. 10, 2024, and 3 on Jan. 12, 2007 (both AWC).

Bar-headed goose *Anser indicus* (NT)

A single bird was seen on April 27, 2024 (A. Pariyar, eBird).

Common shelduck *Tadorna tadorna*

One was seen on July 6 and 15, 2023.

Cotton pygmy goose *Nettapus coromandelianus* (VU)

Four were seen on January 12, 2009 (AWC), and a single was seen on July 26, 2024.

Garganey *Spatula querquedula* (VU)

Five birds were seen on May 15, 2023 (K. Bhusal, eBird), and a single was recorded on the same date in 2024.

Gadwall *Marica strepera*

All observations were in January; one on Jan. 13, 2010, two on January 15, 2011 (both AWC), and two on January 10, 2024.

Eurasian wigeon *Marica penelope*

Two were seen on January 13, 2010 (AWC).

Mallard *Anas platyrhynchos*

The species was seen in all seasons, but only 1-2 were spotted in summer. Numbers peaked in winter, with up to 32 individuals. From 2007-2012, it was seen annually in January on the AWC, with counts from 6 (2012) to 206 (2010). After 2012, it was absent until 2022, when 8 birds were recorded. A pair with fledged young was observed on November 13, 2022.

Green-winged teal Anas crecca

Teals were most common in autumn and winter, with only single birds in spring and none in summer. Most counts were under 10, but 34–49 were recorded from Nov 30, 2023, to Jan 10, 2024. They appeared in all AWC from 2007–2012 (13–60 birds) but were absent from 2013–2021, except for 9 in 2015.

Table 1. Seasonal species richness and diversity for birds at Maidi Lake [a]

Season	Species richness		Simpson index		Shannon index	
	WA[b]	WB[c]	WA	WB	WA	WB
Autumn	102	21	0.9671	0.8546	4.0689	2.4136
Spring	128	31	0.9433	0.8190	3.9102	2.2828
Summer	112	24	0.9673	0.8462	4.1135	2.3326
Winter	99	20	0.9545	0.8850	3.7527	2.4783

[a] Based on observations from seasonal abundance surveys; [b] Wetland Associated (WA) included all species seen on seasonal abundance surveys; [c] Waterbirds (WB) included the following families recorded at Maidi: Anatidae, Podicipedidae, Rallidae, Charadriidae, Rostratulidae, Jacanidae, Scolopacidae, Ciconidae, Phalacrocoracidae, Ardeidae (Wetland International 2018).

Common pochard *Aythya ferina* (VU)

A single bird was seen on December 31, 2022.

Ferruginous duck *Aythya nyroca* (NT)

This species was recorded twice on AWC; 3 on February 12, 2007, and 2 on January 12, 2009.

Tufted duck *Aythya fuligula*

Four were seen January15, 2008 (AWC).

Family: Phasianidae

Kalij pheasant *Lophura leucomelanos*

One or 2 birds were observed in the forest at the edge of the lake on 4 surveys between March and November 2023.

Black francolin *Francolinus francolinus*

Four were seen on May 22, 2023.

Family: Podicipedidae

Little grebe *Tachybaptus ruficollis*

Prior to lake expansion, 5 were recorded on January 15, 2008, and singles were seen on January 12, 2009, and January 14, 2016 (AWC). Afterward, the only record was of a single on December 31, 2022.

Great crested grebe *Podiceps cristatus*

Two were seen on February 12, 2007.

Family: Columbidae

Rock pigeon *Columba livia*

Although these feral pigeons are resident in nearby communities, they were only seen at Maidi Lake on 7 of 51 complete surveys. Single flocks (never more than one per observation period) ranged from 2 to 67 individuals.

Common wood pigeon *Columba palumbus*

Two were seen on January 25, 2023 (Y. Shrestha, eBird).

Oriental turtle-dove *Streptopelia orientalis*

One or two individuals were seen once or twice in each season.

Spotted dove *Spilopelia chinensis*

Groups averaging 3-5 birds were seen on a majority of surveys except in winter when there were only two observations, but both were of relatively large groups (21 and 12).

Barred cuckoo-dove *Macropygia unchall* (VU)

One was seen on June 29, 2023 (K. Dahal, eBird).

Family: Cuculidae

Greater coucal *Centropus sinensis*

The species was recorded in all seasons, usually by hearing its call but occasionally it was observed. The frequency of occurrence on surveys was highest in summer.

Green-billed malkoha *Phaenicophaeus tristis*

Malkoha was only seen twice on SAS, once in spring and once in summer. One additional spring sighting occurred during an incidental survey on May 27, 2024 (E. Carr, eBird).

Chestnut-winged cuckoo *Clamator coromandus*

This species was recorded only during incidental observations; a single bird on May 22 and 27, 2023 (M. Ghimire, eBird).

Asian koel *Eudynamys scolopaceus*

One or two birds were recorded on almost half the surveys in spring, often by hearing their call. They were documented on 5 of 12 summer surveys but were not seen in autumn or winter. Maximum count was 4 birds on an incidental survey June 10, 2023 (D. Timilsina, eBird).

Gray-bellied cuckoo *Cacomantis passerinus*

The only two observations were single birds in spring; May 13, 2023, on a SAS (K. Bhusal, eBird) and May 22, 2023, during incidental observations (M. Ghimire, eBird).

Large hawk-cuckoo *Hierococcyx sparverioides*

There were two sightings, one on April 29, and one on July 20, 2024.

Common hawk-cuckoo *Hierococcyx varius*

One or two individuals were recorded on 9 of 19 surveys in spring and 4 of 12 in summer. None were observed in other seasons.

Lesser cuckoo *Cuculus poliocephalus*

On June 20, 2024, a single bird was identified during an incidental survey.

Indian cuckoo *Cuculus micropterus*

Single birds were recorded on 6 of 19 surveys in the spring, and 2 birds were seen on July 2, 2023, at the beginning of summer but none were recorded thereafter.

Common cuckoo *Cuculus canorus*

One or two individuals were recorded on 6 of 19 spring surveys, and single birds were detected on 2 surveys in summer.

Family: Apodidae

Himalayan swiftlet *Aerodramus brevirostris*

A group of 16 was seen overhead on December 31, 2022.

House swift *Apus nipalensis*

This species was seen skimming over the surface of the lake occasionally in spring and summer, with peak counts of 4 and 6, respectively.

Family: Rallidae

Eurasian moorhen *Gallinula chloropus*

Moorhens were seen twice on SAS (2 in spring on May 23, 2023, and 5 in summer on July 14, 2024). One additional summer record was 1 bird on an incidental survey on June 20, 2024 (M. Ghimire, eBird). A pair was visiting a probable nest site on June 20, 2024.

Eurasian coot *Fulica atra*

Coots were seen twice; once in spring (1 on May 22, 2023, AS), and once in summer (1 on June 20, 2024, A. Joshi, eBird).

Gray-headed swamphen *Porphyrio poliocephalus*

This species was not seen in summer but was documented in the other seasons. The frequency of detection (9 of 19 surveys) and maximum number counted (6) was highest in spring, but average counts were similar (3-4 birds) among seasons.

Watercock *Gallicrex cinerea* (NT)

The species was seen most frequently in spring (5 of 19 surveys, earliest May 13, 2023) and summer (5 of 12 surveys) with six individuals as maximum count. It was seen once in early autumn (2 birds, September 9, 2023).

White-breasted waterhen *Amaurornis phoenicurus*

Waterhens were seen on a majority of surveys in spring, summer, and autumn, but only 5 of 11 surveys in winter. Peak counts were 12 birds in spring and summer, but maxima were only 5 and 6 in winter and autumn, respectively. A nest with young was observed on May 20, 2023.A person trying to take away a chick from nest was spotted and was stopped by birding group on same date.

Ruddy-breasted crake *Zapornia fusca*

A single bird was reported on August 31, 2023 (U. Pinninti, eBird).

Ballion's crake *Zapornia pusilla* (VU)

Up to 2 birds were seen regularly between April 28 and May 27, 2023 (the latest record, M. Ghimire, eBird).

Family: Charadriidae

Gray-headed lapwing *Vanellus cinereus*

This lapwing was seen most in autumn (8 of 10 surveys, maximum 19 birds) and winter (6 of 11 surveys, maximum 22 birds). In spring it was only seen on 3 of 19 surveys, all in April with a maximum of 12 birds. There were no records in summer.

Red-wattled lapwing *Vanellus indicus*

This species was recorded in all seasons, but it was seen most frequently in spring (14 of 19 surveys) when the highest count (15) and average (6.3) also were observed.

Family: Rostratulidae

Greater painted snipe *Rostratula benghalensis*

Up to 3 individuals were seen on 4 of 19 surveys in spring and 2 of 12 in summer. The species was not recorded on SAS in autumn or winter, and it was not recorded on AWC.

Family: Jacanidae

Bronze-winged jacana *Metopidius indicus*

One was reported on May 13, 2023 (S. Sen, eBird).

Family: Scolopacidae

Jack snipe *Lymnocryptes minimus*

This snipe was not observed after the lake rehabilitation project got underway in 2019. Prior to the expansion of the open water area, which replaced former extensive shallow wet grasslands, 1 to 6 birds were seen on 5 of 10 AWCs between 2010 and 2019.

Solitary snipe *Gallinago solitaria*

Like Jack snipe, the records of this species occurred before lake rehabilitation; 1 in 2010 and 3 in 2014 (AWC).

Pin-tailed snipe *Gallinago stenura*

The species was seen once on SAS (1 bird, May 13, 2023, K. Bhusal, eBird) and twice on AWCs (5 in 2012 and 1 in 2015).

Common snipe *Gallinago gallinago*

On SAS, single birds were seen once in winter (January 29, 2023) and twice in spring (April 28, 2023, and May 22, 2023, the latter by G. Shrestha, eBird). However, prior to lake rehabilitation, Common snipe was reported on 8 of 10 surveys from 2009 to 2018, with a maximum of 50 birds in 2009 and 16 and 15 birds in 2010 and 2011, respectively. Thereafter, numbers ranged from 1 to 5 on the other surveys (AWC).

Common sandpiper *Actitis hypoleucos*

Single Common Sandpipers were seen on one SAS survey in spring and two SAS in autumn. The species was recorded on two AWCs (1 bird in 2009 and 2 in 2016).

Green sandpiper *Tringa ochropus*

One or two were seen on 5 of 11 SAS surveys in winter. They were reported on 6 of 19 SAS in spring, with a maximum of 16 birds on April 13, 2023. The species was not recorded in summer on SAS. One or two birds were seen on 3 of 10 SAS in autumn.

Common redshank *Tringa totanus*

The species was recorded on one SAS in summer (June 11, 2023, A. Sunar, eBird), but there were two additional sightings of single birds during incidental surveys on July 2 and 15, 2023.

Family: Ciconiidae

Black stork *Ciconia nigra*

It was most frequently recorded in winter on SAS, with a maximum of 17 birds on February 7, 2023, and a higher count of 21 birds on an incidental survey on February 8, 2024 (Y. Shrestha, eBird). Most counts in winter (including incidental observations) were of 1 to 4 birds. In spring, 1 or 2 birds were seen on 4 SAS in March 2023, but there were no sightings after March 25 until late autumn (2 birds on November 17, 2022, and 2 on November 30, 2023). This species was recorded on 5 AWCs, all between 2010 and 2018, with maximum counts of 41 in 2012 and 22 in 2013.

Asian woolly-necked stork *Ciconia episcopus* (NT)

This stork was most frequently encountered in winter, with the highest counts in February (9-12 birds on 3 SAS from February 7-19, 2023). In spring, up to 7 birds were seen on 10 of 19 SAS, but no birds were seen after April 22 in 2023 or April 27 in 2024 until late December (December 31, 2022). On mid-January AWCs, the species was seen nearly every year from 2007 to 2014, with counts ranging from 1 to 14, but it was not seen again until 2024 on these surveys.

Family: Phalacrocoracidae

Little cormorant *Microcarbo niger*

In spring, 1-6 birds were seen on 10 of 19 SAS. In summer, 1 or 2 individuals were seen on 4 of 12 surveys. It was not recorded later than July 20, 2024, except for a single record of 3 birds on November 30, 2023. A pair was on an occupied nest in the egret/heron colony on June 20, 2024, where it was still present on July 27, 2024. Little Cormorant was not recorded on AWCs.

Great cormorant *Phalacrocorax carbo* (NT)

This species was seen on every SAS in winter, but larger numbers were flocks flying overhead, and numbers sitting in open water or perched on stakes in the lake were usually less than 10 birds. An overhead flock of 81 was seen on March 5, 2023, and a single bird on April 9, 2023, were the only spring records. The earliest autumn sightings were in mid-November (11 and 14 in 2022 and 2023, respectively). On AWC, Great Cormorant was only seen twice, in 2022 and 2024.

Family: Ardeidae

Great bittern *Botaurus stellaris* (EN)

There are two records: 1 bird on an SAS on May 20, 2023, and a report from AWC on January 9, 2021.

Black bittern *Ixobrychus flavicollis* (EN)

This species was seen twice, on June 11-12, 2023 (Poudel & Baral 2023; G. Chhetri, ebird), and on June 20, 2024.

Cinnamon bittern *Ixobrychus cinnamomeus*

Seen on a majority of SAS in spring and summer, maximum numbers were 5 and 8, respectively, but 10 birds were recorded on May 22, 2023, during an incidental survey (M. Ghimire, eBird). The species occurred on half of the SAS in autumn, with a maximum of 8 birds. Although there was a single winter record on SAS (1 bird on January 29, 2023), 1 or 2 birds were recorded during AWCs in 2011, 2013, 2022, and 2023.

Yellow bittern *Ixobrychus sinensis*

Up to 2 birds were seen occasionally in all seasons except winter, when there were no records on SAS or AWC.

Black-crowned night heron *Nycticorax nycticorax*

This species was recorded once on SAS, 1 bird on May 20, 2023, and 2 were seen on an incidental survey two days later on May 22, 2023 (M. Ghimire, eBird).

Little egret *Egretta garzetta*

This egret was observed on every SAS. Numbers were highest in spring and summer, with maxima of 31 and 33 birds, respectively. At least a few pairs nested in the egret/heron colony. Birds were seen carrying nesting materials on April 20, 2023, and individuals were seen on occupied nests from May 22, 2023, and from June 20 through July 27, 2024. The lowest average and lowest maximum numbers were seen in autumn. The species was recorded on nearly every AWC, with a maximum of 25 in 2007, but fewer than 10 in most other years (AWC).

Indian pond-heron *Ardeola grayii*

Pond herons were seen on nearly every SAS, with higher counts (up to 80) in summer when they nested. Birds were seen carrying nest material and attending nests on May 22, 2023, and May 15, 2024, and birds were on occupied nests from June 20 through at least July 27, 2024, when many fledged young were observed. Usually, 1-4 birds were seen on the majority of AWC.

Chinese pond-heron *Ardeola bacchus*

A single bird remained from May 20 to June 11, 2023 (Poudel & Baral, 2023).

Eastern cattle-egret *Ardea coromanda*

Cattle egrets were seen on nearly every SAS, with the highest numbers recorded in spring. All SASs were conducted during the morning activity period for most species, but the peak attendance for cattle egrets at a roosting/breeding colony on the lake was in the evening when maximum counts were 475 on March 17, 2023, 425 on July 2, 2023, and 320 on June 26, 2023. Birds were carrying nesting material by April 20, 2023, and by May 15, 2024, birds were seen on occupied nests. Some birds were still at nests at least as late as July 27, 2024. The species was recorded on all AWC, usually 15-42 individuals per count.

Great egret *Ardea alba*

All three reports were in November. One was seen on an SAS on November 30, 2023, two birds on November 1, 2023 (N. Namwong, eBird), and a single bird occurred on November 30, 2023 (D. Bhusal, eBird). The species was not recorded on AWCs.

Medium egret *Ardea intermedia*

This egret was seen on most of the SASs in all seasons. The highest numbers were in spring when up to 37 were recorded. At least five were seen roosting in the egret/heron colony on April 20, 2023, and two were seen on nests on May 22, 2023. The species was seen on all but one AWC, the maximum being 13 in 2018, but most counts were 2-5 individuals.

Grey heron *Ardea cinerea*

Although this species was recorded in each season, most of the sightings were between November 1, 2023, and March 25, 2023, with single records on April 20, 2023, and June 10, 2023. Usually, singles occurred, but occasionally two were seen. The only AWC that recorded grey heron was in 2023 (1 bird).

Family: Pandionidae

Osprey *Pandion haliaetus*

Single ospreys were seen in every season, but 2 birds were seen once on April 27, 2024 (A. Pariyar, eBird).

Family: Accipitridae

Egyptian vulture *Neophron percnopterus* (VU)

Up to 3 birds were observed soaring overhead occasionally in each season.

Oriental honey-buzzard *Pernis ptilorhynchus*

A single bird was seen on April 28, 2023.

Red-headed vulture *Sarcogyps calvus* (EN)

The species was seen only in winter; once on November 21, 2022, during an SAS (D. Bhusal) and once on January 3, 2022 (M. Ghimire and A. Joshi, eBird).

Cinereous vulture *Aegypius monachus* (EN)

There were 4 sightings on SAS, 1 in winter and 3 in spring. An additional sighting was during an incidental survey on August 31, 2024 (A. Pokhrel and H. Dahal, eBird). All were singles except for 2 birds in August.

White-rumped vulture *Gyps bengalensis* (CR)

All sightings were of singles—one survey in winter and three in spring. An additional sighting was on January 2, 2022 (A. Joshi, eBird).

Himalayan griffon *Gyps himalayensis*

One to 3 birds were seen occasionally on SAS in winter and spring.

Crested serpent-eagle *Spilornis cheela*

Single birds were seen on SAS in winter, summer, and autumn, but the species was seen a little more often in spring when up to 2 were recorded.

Mountain hawk-eagle *Nisaetus nipalensis*

One bird was seen on December 31, 2022 (A. Poudel and M. Ghimire, eBird).

Booted eagle *Hieraaetus pennatus*

The species was recorded occasionally in all seasons on SAS. All sightings were of single birds except for 2 birds observed on November 30, 2023.

Steppe eagle *Aquila nipalensis* (VU)

Single birds were seen on 3 of 11 SAS and twice on incidental surveys in winter. One was seen on March 14, 2023, the only spring record.

Bonelli's eagle *Aquila fasciata*

Singles were seen on January 25, 2023, and July 20, 2024.

Hen harrier *Circus cyaneus*

Lone birds were seen on November 30, 2023, and October 30, 2024.

Shikra *Accipiter badius*

The species was seen most commonly in spring (7 of 13 surveys), and the only other observations (February 26, 2023, and June 8, 2024) were just outside the spring period (March to May). Most observations were of singles, but 2 were seen on May 20, 2023, and

3 were seen on June 8, 2024 (A. Pariyar, eBird). A pair was seen in courtship on May 20, 2023.

Besra *Accipiter virgatus*

Single birds were seen on June 29, 2023 (K. Dahal, eBird), and November 30, 2023. The latter bird was carrying a freshly killed White-breasted Kingfisher.

Black kite *Milvus migrans*

Seen on the majority of SAS in every season except autumn when Black Kites were less frequently recorded. Maximum was 13 on December 31, 2022, but most counts were of 1-3 birds.

Himalayan buzzard *Buteo refectus*

Single birds were recorded on three SAS (November 2, 2023, January 27, 2023, and February 19, 2023) and one incidental observation (February 8, 2024, Y. Shrestha, eBird).

Family: Strigidae

Brown fish-owl *Ketupa zeylonensis* (VU)

Individuals were seen on May 21, 2023, and June 8 and 12, 2023. Two birds were reported on August 21, 2023 (U. Pinnitti, eBird).

Collared owlet *Glaucidium brodiei*

A single bird was seen on May 23 and 24, 2023.

Family: Upupidae

Eurasian hoopoe *Upupa epops*

Lone birds were seen on September 9 and 15, 2023, and April 9, 2024.

Family: Alcedinidae

Common kingfisher *Alcedo atthis*

Seen in every season, this kingfisher occurred on the majority of surveys except in winter when it was seen slightly less frequently. Most of the observations were of single birds, but 2 were seen on some of the SAS in spring. Two counts in autumn were of 3 birds (October 21, 2023) and 4 birds (incidental survey, November 1, 2023, N. Namwong, eBird).

White-throated kingfisher *Halcyon smyrnensis*

This kingfisher was seen on nearly every SAS, with maximum counts of 9-15 birds and an average of approximately 6 in each season. An occupied nest was observed on May 20, 2023.

Family: Megalaimidae

Coppersmith barbet *Psilopogon haemacephalus*

Singles were seen on May 13 and 20, 2023.

Great barbet *Psilopogon virens*

Most records were based on hearing the call. The frequency of detection was much higher in spring than in other seasons, probably due to more protracted calling. The maximum counts were 4 birds in both spring and summer, but most detections were of single birds.

Blue-throated barbet *Psilopogon asiaticus*

Although this species was detected in every season, it was seen and heard most frequently in spring when up to 3 were recorded on a survey. This barbet was detected on half the autumn surveys but was recorded less frequently in summer and winter.

Family: Picidae

Fulvous-breasted woodpecker *Dendrocopos macei*

This species was not recorded in winter or summer, but it was seen once in spring (April 20, 2023) and twice in autumn (latest, September 15, 2023).

Greater flameback *Chrysocolaptes guttacristatus*

Three birds were seen on September 9, 2023, and 1 was still there on September 15.

Rufous woodpecker *Micropternus brachyurus*

Singles were seen in spring on June 1, 2023, and June 20, 2024, and one was seen on November 11, 2023.

Lesser yellownape *Picus chlorolophus*

This was the most common woodpecker, being recorded at least occasionally in every season. However, it was seen more frequently in summer and autumn when 1 or 2 were seen on 30% to 40% of the SAS.

Gray-headed woodpecker *Picus canus*

On the SAS, there were 2 winter records (singles on December 1 and 31, 2022) and 1 summer record (2 birds on July 14, 2024). Additionally, there were spring records (1 bird on May 27, 2023, M. Ghimire, eBird, and June 12 and 24, 2024) and one autumn record (November 1, 2023, N. Namwong, eBird) on incidental surveys.

Greater yellownape *Chrysophlegma flavinucha*

Singles were recorded once in each season except spring on SAS, and one additional autumn report was on November 1, 2023 (N. Namwong, eBird).

Family: Falconidae

Collared falconet *Microhierax caerulescens* (NT)

Three birds were seen on SAS on September 9 and 15, 2023.

Eurasian kestrel *Falco tinnunculus*

There were 2 sightings: singles on April 22, 2023 (A. Sunar, eBird) and August 31, 2024 (A. Pokharal and K. Dahal, eBird).

Family: Psittaculidae

Rose-ringed parakeet *Psittacula krameri*

Low numbers (usually 5 or fewer) were recorded occasionally in all seasons. Maximum numbers were seen in winter, with a peak of 13 birds and an average of about 6.

Family: Eurylaimidae

Long-tailed broadbill *Psarisomus dalhousiae*

There was a single winter record (February 7, 2023), but the species was seen more often in spring and summer between May 15 and July 20 (both 2024). Up to 4 birds were observed on June 12 and 20 (2024). Occupied nests were recorded on June 1, 2023, and on May 15 and June 20, 2024.

Family: Campephagidae

Long-tailed minivet *Pericrocotus ethologus*

Observations were infrequent in spring (1 or 2 birds on 4 SAS) and summer (once on SAS and twice on incidental surveys, July 20 and August 31, 2024).

Scarlet minivet *Pericrocotus speciosus*

This species was observed most frequently in spring (6 of 19 SAS) and summer (3 of 12 SAS). It was also seen once in autumn. Most counts were of 2-5 birds. Birds were seen engaged in nest building on May 15, 2024.

Large cuckooshrike *Coracina macei*

Up to 2 birds were seen on 10 of 19 spring SAS, but the species was seen less frequently in summer and autumn. It was not recorded in winter. The maximum count was 5 birds on August 24, 2024, possibly a pair with fledged young.

Black-winged cuckooshrike *Lalage melaschistos*

Single birds were seen on three SAS in spring on dates ranging from April 28 to May 22 (all 2023, M. Ghimire and K. Bhusal, eBird). One was reported in summer on July 14, 2024.

Family: Oriolidae

Indian golden oriole *Oriolus kundoo*

One or 2 birds were seen on 3 SAS in each season except winter when the species was not recorded. A high count of 3 birds was reported on April 9, 2023, during an incidental survey (K. Bhusal, eBird).

Black-hooded oriole *Oriolus xanthornus*

The only record was a single bird in winter on January 4, 2024.

Maroon oriole *Oriolus traillii*

This species was seen in all four seasons but was most frequently recorded in spring. High counts were 5 birds in spring and summer, 4 in autumn, but only 1 in winter.

Family: Rhipiduridae

White-throated fantail *Rhipidura albicollis*

One or 2 birds were seen twice on SAS in late autumn (November 17 and 22, 2022, D. Bhusal, eBird) and twice in early winter (January 1 and 31, 2022).

Family: Dicruridae

Black drongo *Dicrurus macrocercus*

Seen in all seasons, this drongo was encountered least frequently in winter. In the other seasons, it was seen on at least 60% of the SAS, and seasonal maximum counts were 6 or 7 birds. A pair was seen at an occupied nest on May 15, 2024.

Ashy drongo *Dicrurus leucophaeus*

Although this species was recorded in every season, it was seen on 25% or fewer of the SAS. The maximum count was 7 birds in spring (March 5, 2023).

Bronzed drongo *Dicrurus aeneus*

Recorded on at least half the SAS in spring and summer, the species was seen less frequently in autumn and winter. The maximum count was 8 birds in autumn (November 30, 2023). A pair was seen building a nest on March 21, 2023.

Lesser racket-tailed drongo *Dicrurus remifer*

One bird was seen on November 17, 2022 (D. Bhusal, eBird), and two were recorded on December 31, 2022.

Hair-crested drongo *Dicrurus hottentottus*

Most SAS in spring recorded this species, and they were seen on 67% and 50% of the SAS in summer and autumn, respectively. There was only one winter sighting, 1 bird on February 12, 2023. Maximum numbers on SAS were 22 birds on June 1, 2023 (K. Dahal, eBird), and 18 on October 21, 2023. Occupied nests were recorded on May 20, 2023, and May 15, 2024, but the nesting season must have been protracted, as a pair was seen carrying nest material on July 20, 2024.

Family: Laniidae

Long-tailed shrike *Lanius schach*

This species was seen on half or more of the SAS in all seasons except spring when it was only seen occasionally. High counts were 2 or 3 birds on individual surveys.

Gray-backed shrike *Lanius tephronotus*

Autumn and winter were the seasons when this species occurred on the highest percentage of SAS. It was seen less frequently in spring and was not recorded in summer. The maximum counts were of 4 and 3 birds (in spring and autumn, respectively).

Family: Corvidae

Red-billed blue-magpie *Urocissa erythroryncha*

This species was seen on 3 SAS in every season except autumn when it was not recorded. Usually, 1-3 birds were observed, but an unusually high count of 8 was recorded on July 14, 2024.

Common green-magpie *Cissa chinensis*

This magpie was seen occasionally on SAS in every season. Up to 2 birds were seen on SAS in winter and spring, but counts of up to 6 birds occurred in summer and autumn.

Rufous treepie *Dendrocitta vagabunda*

One to 3 birds were seen on 3 summer SAS, and 2 were seen on 1 survey in autumn. The species was not recorded in winter or spring.

Gray treepie *Dendrocitta formosae*

This species was recorded on nearly every SAS in all seasons. High counts in winter, spring, and summer ranged from 17-25 birds, and the average per SAS was 7 or 8 birds in these seasons. Higher numbers were seen in autumn, possibly because groups included fledglings, with a high count of 60 birds on October 21, 2023, and the average for autumn was about 18 birds.

House crow *Corvus splendens*

These crows were seen occasionally in spring and summer, with a high count of 12 birds on May 13, 2023 (K. Bhusal, eBird). However, the species was seen on only one SAS each in autumn and winter.

Large-billed crow *Corvus macrorhynchos*

Recorded in all seasons, this species was seen more frequently in winter and spring than in summer and autumn. Maximum counts were 4 and 6 in winter and spring but only 2 or 3 birds in the other seasons.

Family: Stenostiridae

Yellow-bellied fairy-fantail *Chelidorhynx hypoxantha*

This species was seen on 3 SAS in winter (1-2 birds), and the only other record was of 4 birds in spring (April 27, 2024; A. Pariyer, eBird).

Gray-headed canary-flycatcher *Culicicapa ceylonensis*

The frequency of encounter was highest in autumn and winter (30% and 36% of SAS, respectively). It was occasionally recorded in spring but only once in summer. Many sightings were of single birds, but a maximum count of 8 was recorded on January 25, 2023.

Family: Paridae

Cinereous tit *Parus cinereus*

Although reported in all seasons, the encounter rate was highest in summer (over 30% of the surveys) when the maximum count of 5 birds also occurred.

Himalayan black-lored tit *Machlolophus xanthogenys*

The only records were of 2 birds each on November 17, 2022, and April 22, 2023.

Family: Cisticolidae

Common tailorbird *Orthotomus sutorius*

This species was recorded on SAS in all seasons (an average of 2-3 birds per survey where they were present), but the encounter rate was highest in spring (68% of surveys). The maximum count was 7 (in summer) and may have included juveniles. A pair was seen at an occupied nest on July 20, 2024.

Zitting cisticola *Cisticola juncidis*

Cisticolas were recorded on a majority of SAS in spring, summer, and autumn, and nearly half the surveys in winter. Up to 8 birds were seen on a survey in autumn, but most surveys recorded 1-3 birds.

Family: Acrocephalidae

Blyth's reed warbler *Acrocephalus dumetorum*

There was one record, a single bird on November 13, 2022.

Family: Hirundinidae

Grey-throated martin *Riparia chinensis*

The species was not seen frequently but was recorded at least once on SAS in each season. Peak counts were 18 birds on an incidental survey on January 27, 2023, and 16 individuals twice in September 2023.

Barn swallow *Hirundo rustica*

Barn swallow was seen on approximately half of the SAS in each season. The highest count was 40 birds on an incidental survey (June 26, 2023), and 20 and 25 were high counts on SAS in winter and spring.

Red-rumped swallow *Cecropis daurica*

Almost all the records were in spring and fall, with a single observation in late summer (August 24, 2024). A maximum of 17 was reported (April 24, 2023, A. Sunar, eBird), but most counts were of 6 birds or fewer.

Family: Pycnonotidae

Ashy bulbul *Hemixos flavala*

One to 3 birds were seen on 4 SAS in spring, and there were single reports on SAS in winter and summer. Additionally, a second summer record (July 2, 2023) was the maximum count (9 birds).

Red-vented bulbul *Pycnonotus cafer*

Seen in all seasons, this bulbul was detected most frequently on SAS in summer and autumn. The maximum count was 10 birds on a spring survey and 6-8 in other seasons.

Himalayan bulbul *Pycnonotus leucogenys*

This species was seen on 30%-40% of the SAS in winter, spring, and summer, but more frequently (60%) in autumn. Maxima in various seasons ranged from 6 to 12 birds.

Family: Phylloscopidae

Ashy-throated warbler *Phylloscopus maculipennis*

One was seen on January 25, 2023.

Buff-barred warbler *Phylloscopus pulcher*

Two were seen on December 31, 2022.

Hume's warbler *Phylloscopus humei*

This species was seen on one SAS in winter, spring, and autumn but was not recorded in summer. A second winter record was 1 bird on an incidental survey on January 25, 2023 (Y. Shestha, eBird).

Lemon-rumped warbler *Phylloscopus chloronotus*

Three were seen on December 31, 2022.

Tickell's leaf warbler *Phylloscopus affinis*

Two were recorded on December 1, 2022.

Dusky warbler *Phylloscopus fuscatus*

This warbler was not seen in summer but was observed in the other seasons. All observations were of 1 or 2 birds.

Smoky warbler *Phylloscopus fuligiventer*

Single birds were seen on November 13, 2022, and January 25, 2023.

Common chiffchaff *Phylloscopus collybita*

Two were reported on August 21, 2023 (U. Pinninti, eBird).

Whistler's warbler *Phylloscopus whistleri*

This warbler was seen on one SAS in winter (4 birds on January 25, 2023), and 1 bird was seen on an incidental survey on June 12, 2024.

Greenish warbler *Phylloscopus trochiloides*

There were 2 winter sightings on SAS of 4 and 6 birds. In spring, up to 3 birds were seen on 4 SAS, and 6 were recorded on an incidental survey on May 22, 2023 (M. Ghimire, eBird).

Large-billed leaf warbler *Phylloscopus magnirostris*

One was identified on October 1, 2023.

Gray-hooded warbler *Phylloscopus xanthoschistos*

These were recorded occasionally in all seasons. Most counts were of 1-4 birds, but 10 were seen on January 4, 2024.

Family: Scotocercidae

Gray-bellied tesia *Tesia cyaniventer*

One was seen on January 5, 2024.

Gray-sided bush warbler *Cettia brunnifrons*

Single birds were seen on 4 SAS, 2 each in autumn and winter. All sightings occurred between November 17 (D. Bhusal, eBird) and December 1, 2022, except for one seen on January 4, 2024.

Aberrant bush warbler *Horornis flavolivaceus*

The species was seen twice: on April 9, 2024, and August 31, 2024.

Family: Zosteropidae

Whiskered yuhina *Yuhina flavicollis*

Four birds were seen on October 20, 2024.

Indian white-eye *Zosterops palpebrosus*

White-eyes were seen on 1-3 SAS in all seasons except winter. Maximum seasonal counts were 3-6 birds.

Family: Timaliidae

Streak-breasted scimitar-babbler *Pomatorhinus ruficollis*

Singles were recorded on September 9 and 15, 2023.

White-browed scimitar-babbler *Pomatorhinus schisticeps*

The species was seen occasionally on SAS in all seasons, but it was slightly more frequent in autumn. Maximum counts were 5 and 6 in winter and autumn, respectively, but no more than 2 were seen on surveys in spring and summer.

Rusty-cheeked scimitar-babbler *Erythrogenys erythrogenys*

Lone birds were recorded on SAS in spring (May 20, 2023) and summer (August 24, 2024). On incidental surveys, 2 birds were reported in spring (May 27, 2023, M. Ghimire, eBird). One autumn record was a single recorded on October 30, 2024.

Family: Pellorneidae

Puff-throated babbler *Pellorneum ruficeps*

Seen most frequently in spring, this species was also reported once each in summer and autumn on SAS, and once on an incidental survey (October 30, 2024). All records were of 1 or 2 individuals.

Family: Leiothrichidae

Red-billed leiothrix *Leiothrix lutea*

One was recorded on December 31, 2022.

Lesser necklaced laughingthrush *Garrulax monileger* (VU)

This species was seen on 2 SAS in each season except summer. Maximum counts were 8 or 9 birds in winter and spring but only 3 in autumn.

White-crested laughingthrush *Garrulax leucolophus*

Recorded in all seasons, the frequency on SAS was highest in autumn and spring. The maximum and average counts were highest in winter when it may have been easier to see birds due to fewer leaves on trees and shrubs.

Family: Sittidae

Velvet-fronted nuthatch *Sitta frontalis*

This nuthatch was recorded on 20%-30% of the SAS in winter, spring, and summer. It was not seen on autumn SAS, but the species was seen on an incidental survey on October 30, 2024. Most observations were of 1-2 birds, but 3 were seen on June 29, 2023 (K. Dahal, eBird).

Family: Sturnidae

Chestnut-tailed starling *Sturnia malabarica*

Two were reported on May 22, 2023 (M. Ghimire, eBird).

Common myna *Acridotheres tristis*

Common myna was seen on SAS in every season. Most observations were of 1-4 birds (occasionally 6-11), but a large flock (26 birds) on December 31, 2022, was an exception.

Jungle myna *Acridotheres fuscus*

This species was recorded more frequently in summer and autumn than in other seasons. Although there was a maximum count of 12 birds on November 21, 2022, most observations were of 4-7 individuals.

Family: Turdidae

Orange-headed thrush *Geokichla citrina*

One bird was seen on June 1, 2023.

Family: Muscicapidae

Oriental magpie-robin *Copsychus saularis*

One to 4 birds were seen on a few SAS in each season.

Large niltava *Niltava grandis*

A lone bird was recorded on February 19, 2023.

Small niltava *Niltava macgrigoriae*

This species was seen once in winter (December 1, 2022, D. Bhusal, eBird) and twice in spring (April 13 and 20, 2023).

Rufous-bellied niltava *Niltava sundara*

The only report was of 1 bird on November 17, 2022 (D. Bhusal, eBird).

Blue-throated flycatcher *Cyornis rubeculoides*

Three were recorded on May 15, 2024, and a single was reported on an incidental survey on August 31, 2023 (U. Pinninti, eBird).

Blue whistling-thrush *Myophonus caeruleus*

One or 2 birds were seen on single SAS in spring, summer, and autumn.

Spotted forktail *Enicurus maculatus*

On January 25, 2023, a single bird was seen.

Black-backed forktail *Enicurus immaculatus*

One bird was seen on July 20 and 26, 2024.

White-tailed robin *Myiomela leucura*

A single was observed on May 22, 2023 (G. Shrestha, eBird).

Rufous-gorgeted flycatcher *Ficedula strophiata*

This species was recorded on 4 occasions, 3 on SAS and once on an incidental survey. All the observations were of 1 or 2 birds, and they occurred between November 30, 2023, and January 27, 2023.

Rusty-tailed flycatcher *Ficedula ruficauda*

One was seen on November 30, 2023.

Taiga flycatcher *Ficedula albicilla*

This flycatcher was seen on 20%-27% of the SAS in each season except summer when it was not recorded. Most observations were of single birds.

Plumbeous redstart *Phoenicurus fuliginosus*

Four birds were seen on December 31, 2022.

Siberian stonechat *Saxicola maurus*

Stonechats were seen on nearly every SAS in autumn and winter. They were also seen on most of the spring surveys conducted in March and April, but they seemed to have mostly departed for summer by May (only 2 spring sightings after April, May 15, 2024, and May 20, 2023). Maximum total counts on SAS were 7-9 in spring and winter. An exceptional count was 18 birds, which may have included juveniles, on October 21, 2023.

Pied bushchat *Saxicola caprata*

Up to 3 birds were recorded occasionally in every season on SAS.

Grey bushchat *Saxicola ferreus*

One was seen on December 31, 2022.

Family: Nectariniidae

Crimson sunbird *Aethopyga siparaja*

Although there was a single winter observation on January 25, 2023, most sightings occurred between April 13 and September 15, 2023. In May and September, up to 4 birds were observed, but the majority were of 1 or 2 birds.

Family: Estrildidae

Scaly-breasted munia *Lonchura punctulata*

All the SAS autumn records were between November 13, 2023, and November 21, 2023 (D. Bhusal, eBird). There was one additional autumn record of 3 birds on an incidental survey on September 9, 2023 (A. Pariyar, eBird). The two summer SAS with this munia were in June (3 birds on June 11, 2023) and August (one on August 31, 2023). The species was not seen in winter or spring.

White-rumped munia *Lonchura striata*

This species was recorded in all seasons but was most frequently seen in spring, and none were seen between June 8, 2024 (the lone summer record), and September 9, 2023 (A. Pariyar, eBird). The peak daily count was 8 birds in autumn but 2-5 in other seasons. A pair was seen in courtship on May 15, 2024.

Family: Passeridae

House sparrow *Passer domesticus*

The species was not recorded in autumn but was seen on a few surveys in the other seasons. An observation of 8 birds on January 25, 2023, was a particularly high number as most counts were of 4 or fewer birds.

Eurasian tree sparrow *Passer montanus*

Six birds were recorded on May 13, 2023 (K. Bhusal, eBird), and 1 was seen on August 24, 2024.

Family: Motacillidae

Grey wagtail *Motacilla cinerea*

Although the species occurred in 3 seasons (not summer), it was primarily there in winter. The autumn records were in late autumn (November 17, 2022, and November 23, 2024, D. Bhusal, eBird), and the two spring records were in April (April 6 and 22, 2023). The maximum count on surveys was 2 birds.

White-browed wagtail *Motacilla maderaspatensis*

This was the most common wagtail, and was seen on the majority of SAS in all seasons except summer when there were only 3 observations (2 in June and 1 in late summer on August 31, 2023, U. Pinninti, eBird). Maximum counts on the route ranged from 4-7 in different seasons. A pair was seen feeding young on May 20, 2023.

White wagtail *Motacilla alba*

There were no summer records, and this species was seen only twice in spring (April 4, 2024, and May 20, 2023). Most of the autumn sightings were not until mid-November, so they were present mainly from late autumn through the winter (latest sighting February 12, 2023).

Paddyfield pipit *Anthus rufulus*

Although there was at least one record in every season, the species was most frequently seen in spring and autumn. The only summer record on SAS was in late summer (August 22, 2023), but there was one report from an incidental survey of 2 birds on June 26, 2023. The maximum total count on an SAS was 7 birds (in spring).

Long-billed pipit *Anthus similis*

One was identified on June 26, 2023, during an incidental survey.

Rosy pipit *Anthus roseatus*

Single birds were seen on SAS on January 25, 2023, and March 21, 2023. An additional record of 3 birds was documented during an incidental survey on January 25, 2023 (in the afternoon after the SAS that day, Y. Shrestha, eBird).

Olive-backed pipit *Anthus hodgsoni*

This pipit was recorded on SAS in winter (February 1, 2023), spring (all records from March 14-25), and autumn (both in mid-November). The peak counts were 6 in spring and 5 in autumn.

Family: Emberizidae

Yellow-breasted bunting *Emberiza aureola* (CR)

Two birds were seen resting on bamboos at dike on December 31, 2022.

Table 2. Comparison of species richness and diversity of birds at Maidi Lake with other Ramsar sites in Nepal for which there is comparable data.

Taxa included	Lake/wetland	Season	No. of species	Shannon index	Reference
Wetland associated [a]	Ghodaghodi	Multiple[b]	160		(Kafle 2005)
	Koshi	Multiple	172		(Baral et al. 2013)
	Maidi	Multiple	177		This study
	Jagdishpur	Winter	295		(Bhusal et al. 2020)
	Rara	Winter	104	3.36	(Shrestha et al. 2022)
	Phewa	Winter	148	3.83	(Khatri et al. 2019)
	Khaste	Winter	108		(Dhakal et al. 2020)
	Maidi	Winter	112	4.06	This study
Water-birds [c]	Ghodaghodi	Multiple	47		(Kafle 2005)
	Jagdishpur	Multiple	56		(Bhusal et al. 2020)
	Phewa	Multiple	39		(Gautam & Kafle 2008)
	Khaste	Multiple	26		(Dhakal et al. 2020)
	Maidi	Multiple	39		This study
	Ghodaghodi	Winter	31		(Nepal & Thapa 2022)
	Jagdishpur	Winter	43	2.10	(Nepal & Thapa 2022)
	Beeshazari	Winter	20	2.91	(Adhikari et al. 2018)
	Beeshazari	Winter	22	2.05	(Nepal & Thapa 2022)
	Koshi Tappu	Winter	57	3.05	(Nepal & Thapa 2022)
	Rara	Winter	21		(Shrestha et al. 2022)
	Begnas	Winter	25	2.30	(Basaula et al. 2023)
	Phewa	Winter	39		(Giri & Chalise 2008)
	Phewa	Winter	32		(Khatri et al. 2019)
	Rupa	Winter	17		(Subedi 2006)
	Maidi	Winter	20	2.48	This study

[a] Wetland-associated included all species associated with the wetland; [b] Multiple seasons combined, not strictly winter; [c]Waterbirds included the following families recorded at Maidi: Anatidae, Podicipedidae, Rallidae, Charadriidae, Rostratulidae, Jacanidae, Scolopacidae, Ciconidae, Phalacrocoracidae, Ardeidae (Wetland International 2018)

4 | Discussion

This study at Maidi Lake appears to be the first wetland study in Nepal to describe the seasonal status of each bird in detail. Most of the other studies focused primarily on the composition of bird communities, often summarizing at the order and/or family scale instead of the species level. These studies contributed to understanding the distribution of various species and sometimes their relative abundance. Comparison of Maidi Lake data with other Ramsar sites in Nepal was possible for species richness and diversity but not for seasonal abundance (Table 2). Other studies varied in species coverage, some including all species that were "wetland-associated" (Bhandari 1998; Baral 2009) and some only "waterbirds" (Wetland International 2018). None included compilations of all records (from eBird and Asian Waterbird Census) like our study. Therefore, we used only data from the SAS for comparisons of species richness and diversity. Some of the surveys of Ramsar sites covered multiple seasons, but most were in winter (Table 2).

4.1 | Wetland-associated species

Understandably, many studies at Ramsar sites focused on waterbirds, but a few provided data for all wetland-associated species. This group varied seasonally at Maidi Lake, as it almost certainly did at other wetlands, therefore only general comparisons of our year around data could be made with studies that covered parts of multiple seasons. For example, at Koshi Tappu 172 species were recorded and Ghodaghadi has 160 compared to 177 at Maidi on SAS (Table 2). The Tarai wetland sites would have had higher species richness with similar survey intensity and seasonal coverage as Maidi.

Winter comparisons of species richness of wetland-associated species were more comparable. Jagdishpur on the Tarai had the highest number of any Nepal Ramsar site (Table 2). Rara at high elevation had slightly fewer than small lakes in the LCPV (Khaste and Maidi). Phewa had the highest number of species in winter in the LCPV (Table 2). Comparison of Shannon diversity indices for wetland-associated species in winter were available for Rara and Khaste, both with lower indices than Maidi (Table 2).

4.2 | Waterbirds

Among sites with surveys of waterbirds that occurred in multiple seasons, Jagdispur and Ghodaghadi on the Tarai were the richest. In the LCPV Phewa and Maidi were similar and slightly higher than Khaste (Table 2).

In winter, Koshi had the highest number of waterbird species, and Jagdishpur was also relatively rich (Table 2). In the LCPV Phewa had the most species of waterbirds in winter. Maidi had a few less than Bagnes and a few more species than Rupa (Table 2). Shannon diversity indices varied from a low (2.05) at Beeshazari (the most recent of two estimates) to a high at Koshi (3.05), and Maidi (2.48) was about in the middle (Table 2). The only comparison with the Simpson Index at Maidi (0.89, Table 1) was for Beeshazari (0.96) (Nepal & Thapa, 2022)

The year around seasonal abundance data for Maidi Lake are unusual for wetland bird studies in Nepal, but these are the type of data than can be used as baseline to begin monitoring change at the species level.

5 | Conclusions

Data from this study at Maidi Lake address several recommendations from the Ramsar site plan. They provide an accurate description of the waterbirds and wetland-associated species as a baseline for both conservation planning and future monitoring of change. The data also provide the basis for recreational bird watchers to know which species to expect in different seasons. We recommend that similar studies be done at other LCPV Ramsar sites.

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Author Contributions

A.K.P. and G.V.B. conceptualized the research. All authors conducted fieldwork. A.K.P. and G.V.B prepared the manuscript and all authors finalized it.

Conflicts of interest

The authors declare no conflict of interest.

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Annex 1. Seasonal abundance of birds at Maidi Lake (bold indicates species encountered on at least 30% of surveys in one or more seasons).

Species	Winter (11 surveys)				Spring (19 surveys)				Summer (12 surveys)				Autumn (10 surveys)			
	Obs[A]	Range[B]	Avg[C]	ER[D]	Obs	Range	Avg	ER	Obs	Range	Avg	ER	Obs	Range	Avg	ER
Lesser whistling-duck				0	11	18-111	51.	58	12	7-75	30.6	100	6	12-76	45.5	60
Bar-headed goose				0	1	1-1	1	5.3		-		0		-		0
Common pochard	1	1-1	1	9.1		-		0		-		0		-		0
Garganey				0	2	1-6	3.5	11		-		0		-		0
Gadwall	1	2-2	2	9.1		-		0		-		0		-		0
Mallard	11	4-32	11.6	100	16	2-9	4.4	84	3	1-2	1.3	25	5	3-11	7.6	50
Green-winged teal	6	4-49	26.7	54.	2	1-1	1	11		-		0	4	1-34	11	40
Cotton pygmy goose				0		-		0	1	1-1	1	8.3		-		0
Kalij pheasant				0		-		0	1	1-1	1	8.3	2	1-2	1.5	20
Black francolin				0	1	4-4	4	5.3		-		0		-		0
Little grebe	1	1-1	1	9.1		-		0		-		0		-		0
Rock pigeon	1	67-67	67	9.1	2	1-2	1.5	11	3	1-21	8	25	1	1-1	1	10
Oriental turtle-dove	1	1-1	1	9.1	2	1-1	1	11	2	2-2	2	17	1	2-2	2	10
Spotted dove	2	12-21	16.5	18.2	12	1-6	2.3	63	8	1-7	3	67	8	1-12	5.1	80
Barred cuckoo dove				0		-		0	1	1-1	1	8.3		-		0
Greater coucal	2	1-1	1	18.	3	1-2	1.3	16	7	1-2	1.1	58	5	1-3	1.5	50
Green-billed malkoha				0	1	1-1	1	5.3	1	1-1	1	8.3		-		0
Asian koel				0	9	1-2	1.2	47	5	1-2	1.8	42		-		0
Grey-bellied cuckoo				0	1	1-1	1	5.3		-		0		-		0
Large hawk-cuckoo				0		-		0	1	1-1	1	8.3		-		0
Common hawk-cuckoo				0	9	1-2	1.1	47	4	1-2	1.3	33		-		0
Indian cuckoo				0	6	1-1	1	32	1	2-2	2	8.3		-		0
Common cuckoo				0	6	1-2	1.2	32	2	1-1	1	17		-		0
Himalayan swiftlet	1	16-16	16	9.1		-		0		-		0		-		0
House swift				0	4	1-4	1.8	21	3	2-6	4.3	25		-		0
Eurasian moorhen				0	1	2-2	2	5.3	1	5-5	5	8.3		-		0
Eurasian coot	1	2-2	2	9.1		-		0		-		0		-		0
Gray-headed wamphen	4	1-5	2.8	36.	9	1-6	3.1	47		-		0	3	4-4	4	30
Watercock				0	5	1-2	1.8	26	5	2-3	2.2	42	1	2-2	2	10
White-breasted waterhen	5	1-5	2.6	45.5	14	1-12	4.3	74	9	1-12	5.3	75	9	1-6	3.1	90
Baillon's crake				0	4	1-2	1.8	21		-		0		-		0
Grey-headed lapwing	6	1-22	7.3	54.5	3	1-12	4.7	16		-		0	8	1-19	10.4	80
Red-wattled lapwing	5	1-4	2.4	45.5	14	2-15	6.3	74	5	1-9	3.4	42	3	1-2	1.3	30
Greater painted snipe				0	4	2-3	2.5	21	2	1-3	2	17		-		0
Pin-tailed snipe				0	1	1-1	1	5.3		-		0		-		0
Common snipe	1	1-1	1	9.1	2	1-1	1	11		-		0		-		0
Common sandpiper				0	2	1-1	1	11		-		0	1	1-1	1	10
Green sandpiper	5	1-2	1.4	45.5	6	1-16	3.7	32		-		0	3	1-2	1.3	30
Common redshank				0		-		0	1	3-3	3	8.3		-		0
Black stork	6	1-18	5.2	54.5	4	1-1	1	21		-		0	2	2-2	2	20
Asian woolly-necked stork	10	1-12	5	90.9	10	1-7	4.6	53		-		0		-		0
Little cormorant				0	10	1-6	2.7	53	4	1-2	1.3	33	1	3-3	3	10
Great cormorant	11	1-71	16.6	100	2	1-81	41	11		-		0	5	1-8	4.2	50
Great bittern				0	1	1-1	1	5.3		-		0		-		0
Black bittern				0		-		0	2	1-1	1	17		-		0
Cinnamon bittern	1	1-1	1	9.1	12	1-5	2.9	63	10	1-8	3.1	83	5	1-8	4.6	50
Yellow bittern				0	4	1-2	1.5	21	3	1-2	1.7	25	2	2-2	2	20
Black-crowned night heron				0	1	1-1	1	5.3		-		0		-		0
Little egret	11	2-17	9.8	100	19	1-31	12.8	100	12	2-33	11.5	100	10	1-12	4.2	100
Indian pond heron	11	1-9	3.1	100	19	1-45	6.6	100	9	2-80	33.7	75	8	1-30	7.6	80
Chinese pond heron				0	3	1-1	1	16	1	1-1	1	8.3		-		0
Eastern cattle egret	10	7-35	21.8	90.9	19	8-250	90.6	100	11	10-100	43.9	92	10	2-46	24.4	100
Great egret				0		-		0		-		0	1	1-1	1	10
Medium egret	10	2-15	6.2	90.9	17	1-37	10.5	90	9	1-15	7.2	75	9	1-12	5.8	90
Grey heron	8	1-2	1.3	72.7	6	1-2	1.2	32	1	1-1	1	8.3	2	1-2	1.5	20
Osprey	4	1-1	1	36.4	6	1-2	1.2	32	3	1-1	1	25	4	1-1	1	40
Egyptian vulture	3	1-3	2	27.3	2	1-1	1	11	2	2-2	2	17	1	3-3	3	10
Oriental honey buzzard				0	1	1-1	1	5.3		-		0		-		0
Red-headed vulture				0		-		0		-		0	1	1-1	1	10
Cinereous vulture	1	1-1	1	9.1	3	1-1	1	16		-		0		-		0
White rumped vulture	1	1-1	1	9.1	3	1-1	1	16		-		0		-		0
Himalayan griffon	2	1-2	1.5	18.2	4	1-3	1.5	21		-		0		-		0
Crested serpent eagle	1	1-1	1	9.1	3	1-2	1.3	16	1	1-1	1	8.3	1	1-1	1	10
Mountain hawk-eagle	1	1-1	1	9.1		-		0		-		0		-		0
Booted eagle	2	1-1	1	18.2	3	1-1	1	16	1	1-1	1	8.3	1	2-2	2	10
Steppe eagle	3	1-1	1	27.3	1	1-1	1	5.3		-		0		-		0
Bonelli's eagle	1	1-1	1	9.1		-		0	1	1-1	1	8.3		-		0

Hen harrier		-		0		-		0		-		0	1	1-1	1	10
Shikra	1	1-1	1	9.1	7	1-2	1.1	37	1	3-3	3	8.3		-		0
Besra		-		0		-		0	1	1-1	1	8.3	1	1-1	1	10
Black kite	8	1-28	6.8	72.7	11	1-4	1.9	58	9	1-3	2	75	4	1-6	3	40
Himalayan buzzard	2	1-1	1	18.2		-		0		-		0	1	1-1	1	10
Brown fish-owl		-		0	1	1-1	1	5.3	1	1-1	1	8.3		-		0
Collared owlet		-		0	1	1-1	1	5.3		-		0		-		0
Eurasian hoopoe		-		0	1	1-1	1	5.3	1	1-1	1	8.3	2	1-1	1	20
Common kingfisher	4	1-1	1	36.4	15	1-2	1.3	79	7	1-1	1	58	6	1-3	1.7	60
White-throated kingfisher	10	4-10	6.2	90.9	19	2-12	5.9	100	11	2-15	5.5	92	10	4-9	6.1	100
Coppersmith barbet		-		0	2	1-1	1	11		-		0		-		0
Great barbet	1	1-1	1	9.1	13	1-4	1.7	68	3	2-4	2.7	25	2	1-1	1	20
Blue-throated barbet	1	1-1	1	9.1	13	1-3	1.5	68	4	1-3	2	33	5	1-1	1	50
Fulvous-breasted woodpecker		-		0	1	1-1	1	5.3	2	1-2	1.5	17	2	1-1	1	20
Greater flameback		-		0		-		0		-		0	2	1-2	1.5	20
Rufous woodpecker		-		0		-		0	1	1-1	1	8.3	1	1-1	1	10
Lesser yellownape	1	1-1	1	9.1	1	1-1	1	5.3	4	1-2	1.5	33	4	1-2	1.5	40
Grey-headed woodpecker	2	1-1	1	18.2		-		0	1	2-2	2	8.3		-		0
Greater yellownape	1	1-1	1	9.1		-		0	1	1-1	1	8.3	1	1-1	1	10
Collared falconet		-		0		-		0		-		0	1	3-3	3	10
Eurasian kestrel		-		0	1	1-1	1	5.3		-		0	1	1-1	1	10
Rose-ringed parakeet	3	1-13	6.3	27.3	2	1-2	1.5	11	1	4-4	4	8.3	2	2-4	3	20
Long-tailed broadbill	1	1-1	1	9.1	1	2-2	2	5.3	2	1-2	1.5	17		-		0
Long-tailed minivet	1	30-30	30	9.1	4	1-2	1.8	21	1	1-1	1	8.3		-		0
Scarlet minivet		-		0	6	1-4	2	32	3	2-5	3	25	1	2-2	2	10
Large cuckooshrike		-		0	10	1-2	1.4	53	3	1-5	2.7	25	3	1-2	1.7	30
Black-winged cuckooshrike		-		0	3	1-1	1	16	1	1-1	1	8.3		-		0
Indian golden oriole		-		0	3	1-2	1.3	16	3	1-2	1.3	25	3	1-1	1	30
Black-hooded oriole	1	1-1	1	9.1		-		0		-		0		-		0
Maroon oriole	2	1-1	1	18.2	12	1-5	1.8	63	5	1-5	2	42	4	1-4	2	40
White-throated fantail	2	1-2	1.5	18.2		-		0		-		0	2	1-1	1	20
Black drongo	3	1-6	2.7	27.3	12	1-6	3.3	63	6	1-4	2.7	50	6	1-7	3.2	60
Ashy drongo	2	2-4	3	18.2	4	2-7	4	21	3	1-2	1.7	25	1	2-2	2	10
Bronzed drongo	2	1-4	2.5	18.2	10	1-4	1.9	53	6	1-3	1.7	50	2	3-8	5.5	20
Lesser racket-tailed drongo	1	1-1	1	9.1		-		0		-		0	1	2-2	2	10
Hair-crested drongo	1	1-1	1	9.1	16	1-7	2.6	84	8	1-22	6.4	67	5	2-18	6.4	50
Long-tailed shrike	7	1-3	1.4	63.6	3	1-2	1.3	16	6	1-3	1.7	50	5	1-2	1.8	50
Gray-backed shrike	5	1-1	1	45.5	3	1-4	2	16		-		0	3	1-3	1.7	30
Red-billed blue-magpie	3	1-3	1.7	27.3	3	1-3	2	16	3	2-8	4.3	25		-		0
Common green-magpie	3	1-2	1.3	27.3	3	1-2	1.7	16	3	1-6	3.3	25	3	4-6	4.7	30
Rufous treepie		-		0		-		0	3	1-3	2	25	1	2-2	2	10
Grey treepie	10	2-17	7.1	90.9	18	1-25	6.9	95	9	2-22	8.2	75	10	4-60	17.6	100
House crow	1	2-2	2	9.1	4	2-12	5	21	4	1-4	2.5	33	1	1-1	1	10
Large billed crow	5	1-4	1.8	45.5	5	1-6	3	26	2	2-3	2.5	17	2	1-2	1.5	20
Yellow-bellied fairy-fantail	3	1-2	1.3	27.3	1	4-4	4	5.3		-		0		-		0
Gray-headed canary-flycatcher	4	1-8	2.8	36.4	3	1-3	2	16	1	1-1	1	8.3	3	1-5	2.3	30
Cinereous tit	2	1-1	1	18.2	4	1-2	1.5	21	4	1-5	2.3	33	1	1-1	1	10
Himalayan black-lored tit		-		0	1	2-2	2	5.3		-		0	1	2-2	2	10
Common tailorbird	3	1-5	3	27.3	13	1-3	1.8	68	6	3-7	2.3	50	4	2-4	2.3	40
Zitting cisticola	5	1-2	1.4	45.5	11	1-7	2.1	58	9	1-5	3.5	75	8	1-8	3.3	80
Blyth's reed warbler		-		0		-		0		-		0	1	1-1	1	10
Grey-throated martin	1	4-4	4	9.1	4	1-5	3	21	1	4-4	4	8.3	2	16-16	16	20
Barn swallow	5	2-20	12	45.5	11	1-25	9.9	58	6	1-10	4.5	50	5	3-15	9.2	50
Red rumped swallow		-		0	4	1-17	6.8	21	2	2-3	2.5	17	2	1-1	1	20
Ashy bulbul	1	8-8	8	9.1	4	1-3	2	21	1	4-4	4	8.3		-		0
Red-vented bulbul	4	2-6	3.8	36.4	4	1-10	4.3	21	6	1-8	3.8	50	6	2-6	2.8	60
Himalayan bulbul	3	1-8	3.3	27.3	8	1-6	2.3	42	5	2-12	5.8	42	6	2-10	4.5	60
Ashy-throated warbler	1	1-1	1	9.1		-		0		-		0		-		0
Buff-barred warbler	1	2-2	2	9.1		-		0		-		0		-		0
Hume's warbler	1	1-1	1	9.1	1	2-2	2	5.3		-		0	1	1-1	1	10
Lemon-rumped warbler	1	3-3	3	9.1		-		0		-		0		-		0
Tickell's leaf warbler	1	1-1	1	9.1		-		0		-		0		-		0
Dusky warbler	3	1-1	1	27.3	7	1-2	1.3	37		-		0	2	1-1	1	20
Smoky warbler	1	1-1	1	9.1		-		0		-		0	1	1-1	1	10
Whistler's warbler	1	4-4	4	9.1		-		0		-		0		-		0
Greenish warbler	2	4-6	5	18.2	4	1-3	2	21		-		0		-		0
Large-billed leaf warbler		-		0		-		0		-		0	1	1-1	1	10
Grey-hooded warbler	3	4-10	6.3	27.3	5	1-3	1.8	26	2	4-6	5	17	1	3-3	3	10
Gray-bellied tesia	1	4-4	4	9.1		-		0		-		0		-		0
Gray-sided bush warbler	2	1-1	1	18.2		-		0		-		0	2	1-1	1	20
Aberrent bush warbler		-		0	1	1-1	1	5.3	1	1-1	1	8.3		-		0
Indian white-eye		-		0	3	2-6	3.3	16	1	3-3	3	8.3	2	6-6	6	20

Streak-breasted scimitar-babbler		-		0		-		0		-		0	2	1-1	1	20
White-browed scimitar-babbler	3	1-5	2.3	27.3	2	1-2	1.5	11	3	1-2	1.3	25	5	2-6	3.2	50
Rusty-cheeked scimitar-babbler		-		0	1	1-1	1	5.3	1	1-1	1	8.3		-		0
Puff-throated babbler		-		0	4	1-2	1.3	21	1	1-1	1	8.3	1	2-2	2	10
Red-billed leiothrix	1	1-1	1	9.1		-		0		-		0		-		0
Lesser necklaced laughingthrush	2	4-9	6.5	18.2	2	2-8	5	11		-		0	2	1-3	2	20
White-crested laughingthrush	3	5-11	8	27.3	10	1-10	4.5	53	3	3-4	3.7	25	7	1-8	4.6	70
Velvet-fronted nuthatch	3	1-1	1	27.3	5	1-2	1.6	26	4	1-3	1.5	33		-		0
Common myna	2	4-26	15	18.2	4	1-7	3	21	5	1-4	2.6	42	1	3-3	3	10
Jungle myna	2	4-7	5.5	18.2	1	5-5	5	5.3	5	1-4	2.6	42	5	4-12	6	50
Orange-headed thrush		-		0		-		0	1	1-1	1	8.3		-		0
Oriental magpie-robin	2	1-1	1	18.2	1	2-2	2	5.3	3	1-3	1.7	25	3	1-4	2	30
Blue-throated blue flycatcher		-		0	1	3-3	3	5.3		-		0		-		0
Large niltava	1	1-1	1	9.1		-		0		-		0		-		0
Small niltava	1	1-1	1	9.1	2	1-2	1.5	11		-		0		-		0
Blue whistling-thrush		-		0	1	1-1	1	5.3	1	2-2	2	8.3	1	2-2	2	10
Spotted forktail	1	1-1	1	9.1		-		0		-		0		-		0
Black-backed forktail		-		0		-		0	2	1-1	1	17		-		0
White-tailed robin		-		0	1	1-1	1	5.3		-		0		-		0
Rufous-gorgeted flycatcher	2	1-2	1.5	18.2		-		0		-		0		-		0
Rusty-tailed flycatcher	0	-		0		-		0		-		0	1	1-1	1	10
Taiga flycatcher	3	1-1	1	27.3	5	1-1	1	26		-		0	2	1-2	1.5	20
Siberian stonechat	10	4-9	5.4	90.9	11	2-7	3.5	58		-		0	9	3-18	5.8	90
Pied bushchat	3	1-2	1.3	27.3	5	1-3	2	26	2	1-2	1.5	17	2	3-3	3	20
Gray bushchat	1	1-1	1	9.1		-		0		-		0		-		0
Crimson sunbird	1	1-1	1	9.1	4	1-4	1.8	21	6	1-2	1.7	50	2	1-4	2.5	20
Scaly-breasted munia		-		0		-		0	2	3-3	3	17	4	1-2	1.7	40
White-rumped munia	1	4-4	4	9.1	9	1-5	2.2	47	1	2-2	2	8.3	3	2-8	4	30
House sparrow	1	8-8	8	9.1	3	1-2	1.7	16	2	1-4	2.5	17		-		0
Eurasian tree sparrow		-		0	1	6-6	6	5.3	1	1-1	1	8.3		-		0
Gray wagtail	4	1-2	1.3	36.4	2	1-1	1	11		-		0	2	1-2	1.5	20
White-browed wagtail	8	1-4	1.8	72.7	14	1-7	3.6	74	2	2-5	3.5	17	6	1-4	2.3	60
White wagtail	4	1-3	1.8	36.4	2	1-1	1	11		-		0	5	1-6	2.2	50
Paddyfield pipit	2	1-4	2.5	18.2	12	1-7	2.3	63	1	1-1	1	8.3	7	1-4	1.7	70
Rosy pipit	1	1-1	1	9.1	1	1-1	1	5.3		-		0		-		0
Olive-backed pipit	1	1-1	1	9.1	3	2-6	3.3	16		-		0	1	1-1	1	10
Yellow-breasted bunting		-		0		-		0		-		0	1	2-2	2	10
Total species				112				129				103				106

[A] Obs Number of surveys where a species was seen

[B] Range (Minimum- Maximum) number of individuals seen on surveys

[C] Average number of individuals seen on surveys

[D] Encounter Rate: % of surveys on which a species was seen