



Avian Fauna of Con Dao and Xuan Thuy Ramsar Sites in Vietnam

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ABSTRACT

Xuan Thuy and Con Dao are natural Ramsar sites in Vietnam with different ecosystems, geography and topography. Avian fauna in these two Ramsar sites were recorded over a 2-year period from 2018 to 2019. A total of 234 bird species belonging to 57 families and 16 orders were confirmed in Xuan Thuy, while only 71 species involving 32 families and 12 orders were found in Con Dao. In total, 25 endangered species have been found in these two national parks based on the IUCN Red List. The Spoon-billed Sandpiper and Baer's Pochard are the most endangered species ranked as Critically Endangered, whereas Nicobar pigeon, which is endemic to Con Dao, is the only endangered bird species here. This study provides the list of bird species of international importance identified in these two wetlands.

Keywords: Bird species, Con Dao, Endangered species, Ramsar site, Xuan Thuy

Introduction

Wetlands are submerged or wet areas, where the living environment is determined by water content (Niering, 1985). Approximately 6% of the earth's total surface area is wetland, and about 2% of living organisms survive in this habitat. Because the wetland formation is determined by the terrestrial and aquatic ecosystems, the ecological and environmental characteristics of the intermediate stage connecting land and water exhibit high species diversity (Keddy, 2010). Wetlands have accumulated large amounts of sediments over the years, creating conditions for the growth of large aquatic plants, followed by arthropods, amphibians and reptiles.

Fertile environments provide habitats for many species, including animals and plants, especially birds. Currently, many biologists consider wetland birds as an indicator of ecosystem or wetland quality. The bird diversity reflects the

importance of wetlands. They supply essential resources such as food, water, home for bird survival and reproduction (Weller, 1999). Ecologists compared wetland to a "biological supermarket" due to its big food chain, diverse ecology and unique habitat (Sandilyan *et al.*, 2009). Wetlands provide humans with food, freshwater and materials as well as contribute to climate change and flood control (Ramsar, 2014a).

The Ramsar Convention was conducted with the goal of sustainable wetland development and conservation (Ramsar, 2014b). More than 2,400 wetlands of international importance have been recognized worldwide. The importance of these Ramsar sites is significant nationally and worldwide (Ramsar, 2014c). Experts have recognized the importance of wetlands for mankind. However, many studies reported evidence of lost wetlands worldwide (Ramsar, 2014b).


Vietnam, with a rich biodiversity, became a member of the Ramsar Convention in 1989 (Van Thang, 2019). Van Long wetland was added as an internationally important wetland in 2019, bringing the total number of Ramsar sites in Vietnam to nine (Son *et al.*, 2020). Vietnamese wetlands play a key role in ecosystem (Thanh & Yabar, 2015). In addition to the ecological significance, wetlands contribute to the development of tourism, agriculture and aquaculture

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(Vietnam Environment Protection Agency, 2005). However, the area of Ramsar sites in Vietnam is decreasing due to forest loss, agricultural development, modernization and industrialization (Davidson, 2016). This has led to the disappearance of many wildlife species including birds, some of which are on the verge of extinction (Davidson, 2016; Pilgrim *et al.*, 2009). Hence, this study investigated the number of birds in Xuan Thuy and Con Dao, two ecologically important Ramsar sites in Vietnam, in different geographical locations. The results of this study provide an overview and insight into the bird status at these sites for local authorities and policy-makers involved in biodiversity conservation.

Materials and Methods

Study sites

Xuan Thuy National Park

Xuan Thuy Wetland Nature Reserve was listed as the first Ramsar site in Vietnam and Southeast Asia in 1989 (Vietnam Environment Protection Agency, 2005). It is located in Nam Dinh province in the north of Vietnam at a latitude of 20°10'N and a longitude of 106°20'E (Ramsar, 1992). The total area of this Ramsar site is 12,000 ha (Vietnam Environment Protection Agency, 2005). Xuan Thuy Ramsar site

is topographically diverse with delta and estuary islands, coastal mangroves, mudflats and marshes. Xuan Thuy National Park is critically important for water birds and migration birds (Ramsar, 1992). Besides, it is a highly productive wetland containing diverse flora and fauna (Nhuan *et al.*, 2009).

Con Dao National Park

Con Dao National Park situated at latitude 8°42'N and longitude 106°38'E represents the sixth Ramsar site of Vietnam identified in 2013. It is located on the Con Dao archipelago of Ba Ria – Vung Tau province (Ramsar, 2013). This is the first and only maritime Ramsar site of Vietnam until now. The total area of Con Dao National Park is nearly 20,000 ha, including both terrestrial forest and marine ecosystems. Con Dao National Park has special and unique characteristics as it protects the natural area containing diverse fauna and flora (Tung, 2020). Numerous endemic species thrive in Con Dao National Park comprising a diverse ecosystem including mangroves, seagrass, tidal rock bands, tidal sandy flats and coral reefs (Vietnam Environment Protection Agency, 2005). The nine Ramsar sites in Vietnam recognized worldwide are listed in Table 1 and the locations of two study sites are shown in Fig. 1.

Table 1. Nine renowned Ramsar sites in Vietnam

no	Wetland name	Province	Area (ha)	Location	Characteristics	Recognized Year
1	Xuan Thuy National Park	Nam Dinh	7,100	20°10'N 106°20'E	- First Ramsar site in Southeast Asia - Typical mangrove forest ecosystem	1989
2	Bau Sau Ramsar of Cat Tien National Park	Dong Nai	13,759	11°28'N 22°24'N	- Habitat of fresh water crocodiles (once thought to be extinct) - Largest natural freshwater lake	1998
3	Ba Be Lake	Bac Kan	500	105°36'2E	- Many species listed in the Critically Endangered Species of importance to global conservation	2011
4	Tram Chim National Park	Dong Thap	7,313	10°42'49"N 08°41'00"N	- Around one-fourth of total number of birds in Vietnam inhabit here	2012
5	Cape Ca Mau National Park	Ca Mau	41,862	104°47'32"E	- National mangrove forest ecosystem	2012
6	Con Dao National Park	Ba Ria-Vung Tau	15,043	8°42'N 106°38'E	- One of the two national parks protecting not only the forests but also aquatic resources - Home to a number of rare and precious fauna	2013
7	Lang Sen wetland Reserve	Long An	5,030	10°44'-10°48'N 105°45'-105°48'E	- A typical example of the Dong Thap Moui Wetlands ecosystem - Diverse ecosystem	2013
8	U Minh Thuong National Park	KienGiang	21,107	9°36'N 20°21'-20°26'N	- One of the two extensive peat swamp areas - One of the few intact lowlands	2016
9	Van Long Wetland Nature Reserve	NinhBinh	2,736	105°47'-105° 55'E	- Inland wetland areas remaining in the Red River Delta	2019

Cited from homepage at <https://vietnamnet.vn>

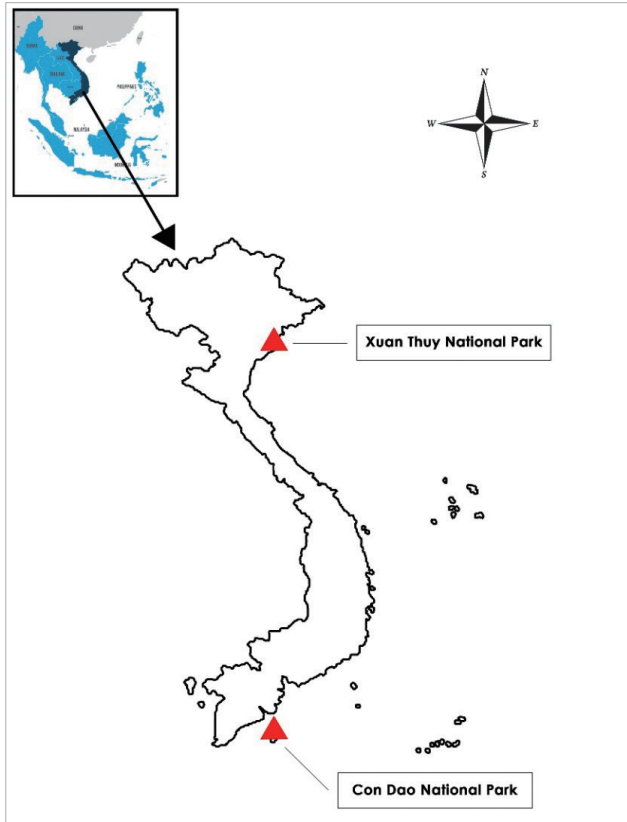


Fig. 1. Map showing the study area.

Method

In 2018 and 2019, the two study sites were surveyed comprehensively to confirm the presence of avian fauna species. The surveys were conducted on sunny days. Most of the investigations were performed at dawn and dusk, which are the peak activity times of avian fauna species. The survey frequency is increased during the bird breeding season (May to August).

Bird counting, which is the most traditional method, was used for this study. Birds were detected by naked eyes, and then carefully observed under binoculars. All the information about the appearance of bird species was noted

carefully. Observers who worked at the same time recorded independently and obtained photographs for classification. In addition, telescopes were set in high towers at hotspots of study sites to detect the species at high elevations, where the birds are difficult to observe from the ground.

Further, bird voice, a unique characteristic of avian fauna, was used to detect the bird species. Bird songs or calls were downloaded and opened selectively during survey to attract birds or receive replies from the same species. The unknown bird voices could be recorded along the routes. Following the survey, the records were analyzed and compared with identified records to confirm the name of that species. This method is recommended for species which are difficult to observe directly.

The relative diversity of each family was calculated by the equation:

$$RD = \frac{N}{N_0} \times 100$$

RD: Relative diversity

N: number of species in a family

N₀: total species detected in one study site

Results

A total of 71 species belonging to 32 families and 12 orders were observed at Con Dao National Park, whereas 234 species in 57 families and 16 orders were confirmed at Xuan Thuy Ramsar site. In total, 25 species are included in the IUCN Red list. Among them, 14 and 5 species are identified as Near Threatened and Vulnerable birds, respectively. In Con Dao, Nicobar pigeon *Caloenas nicobarica* is the only species included in the IUCN list as Near Threatened. Three species considered Endangered include Great Knot *Calidris tenuirostris*, Spotted Greenshank *Tringa guttifer* and Black-faced Spoonbill *Platalea minor*. The two Critically Endangered species include Baer's Pochard *Aythya baeri* and Spoon-billed Sandpiper *Calidris pygmaea*. Bird species recorded in Con Dao and Xuan Thuy Ramsar sites and their IUCN Red List Categories are listed in Supplementary Table S1.

Table 2. The relative diversity index of avian families in Xuan Thuy and Con Dao Ramsar sites

Number	Xuan Thuy National Park			Con Dao National Park		
	Family	Number of species	Relative diversity	Family	Number of species	Relative diversity
1	Scolopacidae	27	11.5%	Ardeidae	10	14.0%
2	Muscicapidae	18	7.7%	Columbidae	6	8.5%
3	Ardeidae	13	5.6%	Laridae	6	8.5%
4	Accipitridae	12	5.1%	Accipitridae	4	5.6%
5	Laridae	11	4.7%	Motacillidae	4	5.6%
	Phylloscopidae					

Discussion

Wetland is an important ecosystem to investigate bird habitat, behavior, status and reproduction (Rajpar & Zakaria, 2010). This study provides data of bird species recorded at Xuan Thuy and Con Dao Ramsar sites in Vietnam. The ecological richness based on factors such as flora, prey species, topography or climate can be determined by the abundance of bird species (Aynalem & Bekele, 2009; Girma *et al.*, 2017). With 71 and 234 bird species recorded in Con Dao and Xuan Thuy National Park respectively, the value and importance of attracting birds at these two Ramsar sites has been established. Further, 32 and 57 bird families found in these two wetlands, respectively, showed biodiversity encompassing various types of bird species reported above such as migration birds, water birds, mountain birds and open habitat birds. Birds are considered as indicators of ecosystem (Weller, 1999). Hence, the importance of these Ramsar sites was confirmed by the large number of bird species identified. In Xuan Thuy Ramsar site, the Scolopacidae family was predominant with 27 members, followed by Muscicapidae (18 species), Ardeidae (13 species), Accipitridae (12 species), and Laridae and Phylloscopidae (11 species each). In contrast, Ardeidae is the dominant species in Con Dao Ramsar site with 10 species, followed by Columbidae and Laridae (6 species each), and Accipitridae and Motacillidae (4 species each). The Scolopacidae and Ardeidae families showed a high diversity of avian species in Xuan Thuy and Con Dao, respectively (Table 2).

In this study, the difference between the 2 Ramsar sites was also emphasized. The number of bird species in Xuan Thuy Ramsar site was more than 3-fold compared with those at Con Dao, which supports fewer bird species due to its unique characteristics. As mentioned above, Con Dao is the only maritime Ramsar site of Vietnam and the distance from Con Dao National Park to the nearest mainland is 82 km (Kruskop, 2011). Due to the geographical difference, the ecosystem of Con Dao was separated from inland, leading to the differences in the number of species. Besides, the long distance from inland to Con Dao Ramsar site is a challenge to many non-migrant bird species. However, it may be suitable for long-distance migrating birds, and seabirds. Nicobar pigeon, which is the only species in Con Dao National Park appearing in the IUCN Red list, is an endemic species in this Ramsar site, and undetectable elsewhere in Vietnam.

Xuan Thuy National Park, which is a home for 234 species, demonstrates the value of an important bird area. In addition to the geographical difference, the number of bird species in Xuan Thuy is clearly greater than in Con Dao, which suggests a more diverse ecosystem in Xuan Thuy.

This wetland of international importance has been created by diverse terrestrial topography to attract bird species. In contrast, Con Dao is formed mostly by coral reefs and other marine ecosystems. Further, this study reported 24 endangered birds in Xuan Thuy Ramsar site. Among them, Spoon-billed Sandpiper and Baer's Pochard are ranked as Critically Endangered in IUCN Red list. The number of individual species has decreased to the point of extinction, primarily due to habitat loss following contamination and human economic activity (Nguyen *et al.*, 2007).

This study highlights the biodiversity and the importance of bird species at 2 Ramsar sites in Vietnam including Xuan Thuy and Con Dao National Park. Additional scientific investigations and studies are needed to update the individual species and their numbers. The findings enable local authorities and managers in developing appropriate strategies to protect bird species and Ramsar sites.

Author Contributions

NHA carried out the field study and wrote the manuscript. PYS and JJC revised and edited the manuscript. YHJ contributed the field study and data. HSO participated in the study design. The authors read and approved the final manuscript.

Conflict of Interest

The authors declare that they have no competing interests.

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References

- Aynalem, S., and Bekele, A. (2009). Species composition, relative abundance and habitat association of the bird fauna of the montane forest of Zegie Peninsula and nearby islands, Lake Tana, Ethiopia. *Ethiopian Journal of Science*, 32, 45–56. doi:10.4314/sinet.v32i1.68731
- Davidson, P. (2016). *Birds of Vietnam, Cambodia and Laos*. London: Bloomsbury Publishing.
- Girma, Z., Mengesha, G., and Asfaw, T. (2017). Diversity, relative abundance and distribution of Avian Fauna in and around Wondo Genet forest, South-central Ethiopia. *Research Journal of Forestry*, 11, 1–12. doi:10.3923/rjf.2017.1.12

- Keddy, P.A. (2010). *Wetland ecology: principles and conservation*. Cambridge: Cambridge University Press.
- Kruskop, S.V. (2011). New data on the bat fauna of Con Dao Islands (Ba Ria–Vung Tau Province, Vietnam). *Russian Journal of Theriology*, 10, 37–46.
- Nguyen C., Truong V.L., Le D.T., and Le T.T. (2007). *Vietnam Red Data Book*. Hanoi: Natural Science and Technology publisher. Retrieved Jun 23, 2021 from <https://tailieumienphi.vn>
- Nhuan, M., Ngoc, N., Huong, N., Hue, N., Tue, N., and Ngoc, P. (2009). Assessment of Vietnam coastal wetland vulnerability for sustainable use (Case study in Xuanthuy Ramsar Site, Vietnam). *Journal of Wetlands Ecology*, 2, 1–16. doi:10.3126/jowe.v2i1.1850
- Niering, W. (1985). *Wetlands*. New York: Knopf.
- Pilgrim, J.D., Bijlmakers, P., De Bruyn, T., Doppagne, S., Mahood, S.P., and Tordoff, A.W. (2009). Updates to the distribution and status of birds in Vietnam. *Forktail*, 25, 130–136.
- Rajpar M.N., and Zakaria, M. (2010). Density and diversity of Water Birds and Terrestrial Birds at Paya Indah wetland reserve, Selangor Peninsular Malaysia. *Journal of Biological Science*, 10, 658–666. doi:10.3923/jbs.2010.658.666
- Ramsar. (1992). *Xuan Thuy Natural Wetland Reserve*. Retrieve Jun 23, 2021 from <https://rsis.ramsar.org/ris/409>.
- Ramsar. (2013). *Con Dao National park*. Retrieved Jun 23, 2021 from <https://rsis.ramsar.org/ris/2203>.
- Ramsar. (2014a). *The importance of wetlands*. Retrieve Jun 23, 2021 from <https://www.ramsar.org/about/theimportance-of-wetlands>.
- Ramsar. (2014b). *The convention on wetlands and its mission*. Retrieve Jun 23, 2021 from <https://www.ramsar.org/about/the-convention-on-wetlands-and-its-mission>.
- Ramsar. (2014c). *Wetlands of international importance (Ramsar sites)*. Retrieve Jun 23, 2021 from <https://www.ramsar.org/about/wetlands-of-international-importance-ramsar-sites>.
- Sandilyan, S., Thiyagesan, K., and Nagarajan, R. (2009). Wetlands—the biological supermarkets. *Eco News*, 15, 6–8.
- Son, N.L.H., Dung, N.T., Van, N.T., and Hau, T.D. (2020). *New records and updated checklist of the birds of Van Long wetland nature reserve*. Paper presented at The 4th National Scientific Conference on Biology Research and Teaching in Vietnam, VinhPhuc, Vietnam. doi:10.15625/vap.2020.00039
- Thanh, H.T., and Yabar, H. (2015). Climate change challenges for sustainable coastal wetland management in Xuan Thuy Ramsar Site, Vietnam. *British Journal of Environment & Climate Change*, 5, 214–230. doi:10.9734/BJECC/2015/17168
- Tung, T.T. (2020). GHI NHẬN MỚI VÀ CẬP NHẬT THÀ NH PHẦN LOÀI LƯỖNG CỤ, BÒ SÁT TẠI VƯỜN QUỐC GIA CÔN ĐẢO, TỈNH BÀ RIA-VŨNG TÀ U. *TNU Journal of Science and Technology*, 225, 72–78.
- Van Thang, H. (2019). Managing wetlands in Vietnam: Current practices and future challenges. In *Tropical Wetlands–Innovation in Mapping and Management* (pp. 52–55). Boca Raton: CRC Press. doi:10.1201/9780429264467-9
- Vietnam Environment Protection Agency. (2005). *Overview of wetlands status in Vietnam following 15 years of Ramsar convention implementation* (p. 72). Hanoi: Vietnam Environment Protection Agency.
- Weller, M.W. (1999). *Wetland birds: habitat resources and conservation implications*. Cambridge: Cambridge University Press.

Supplementary Table S1. List of bird species recorded in Con Dao and Xuan Thuy Ramsar site.

1	Accipitriformes	<i>Pandion haliaetus</i>	o	o	LC
2		<i>Elanus caeruleus</i>	o	o	LC
3		<i>Aviceda leuphotes</i>	o		LC
4		<i>Clanga clanga</i>	o		VU
5		<i>Butastur indicus</i>	o		LC
6		<i>Circus spilonotus</i>	o		LC
7		<i>Circus melanoleucos</i>	o		LC
8		<i>Accipiter badius</i>	o		LC
9		<i>Accipiter soloensis</i>	o		LC
10		<i>Accipiter gularis</i>	o		LC
11		<i>Pernis ptilorhynchus</i>	o	o	LC
12		<i>Spilornis cheela</i>		o	LC
13		<i>Milvus migrans</i>	o		LC
14		<i>Haliaeetus leucogaster</i>	o	o	LC
15	Anseriformes	<i>Anser anser</i>	o		LC
16		<i>Spatula querquedula</i>	o		LC
17		<i>Mareca falcata</i>	o		NT
18		<i>Mareca penelope</i>	o		LC
19		<i>Anas poecilorhyncha</i>	o		LC
20		<i>Anas crecca</i>	o		LC
21		<i>Aythya baeri</i>	o		CR
22	Bucerotiformes	<i>Upupa epops</i>	o		LC
23	Caprimulgiformes	<i>Caprimulgus jotaka</i>	o		LC
24		<i>Hirundapus giganteus</i>	o		LC
25		<i>Aerodramus fuciphagus</i>	o	o	LC
26		<i>Aerodramus brevirostris</i>	o		LC
27		<i>Aerodramus germani</i>	o	o	LC
28		<i>Apus pacificus</i>	o		LC
29		<i>Cypsiurus balasiensis</i>	o		LC
30	Charadriiformes	<i>Esacus recurvirostris</i>	o		NT
31		<i>Himantopus himantopus</i>	o		LC
32		<i>Pluvialis squatarola</i>	o	o	LC
33		<i>Pluvialis fulva</i>	o		LC
34		<i>Vanellus duvaucelii</i>	o		LC
35		<i>Vanellus cinereus</i>	o		LC
36		<i>Charadrius alexandrinus</i>	o	o	LC
37		<i>Charadrius mongolus</i>	o	o	LC
38		<i>Charadrius leschenaultii</i>	o		LC
39		<i>Charadrius placidus</i>	o		LC
40		<i>Charadrius dubius</i>	o		LC

41	<i>Rostratula benghalensis</i>	o		LC
42	<i>Hydrophasianus chirurgus</i>	o		LC
43	<i>Numenius phaeopus</i>	o	o	LC
44	<i>Numenius arquata</i>	o		NT
45	<i>Limosa lapponica</i>	o		NT
46	<i>Limosa limosa</i>	o		NT
47	<i>Arenaria interpres</i>	o		LC
48	<i>Calidris tenuirostris</i>	o		EN
49	<i>Calidris canutus</i>	o		NT
50	<i>Calidris pugnax</i>	o		LC
51	<i>Calidris falcinellus</i>	o		LC
52	<i>Calidris ferruginea</i>			NT
53	<i>Calidris subminuta</i>	o		LC
54	<i>Calidris pygmaea</i>	o		CR
55	<i>Calidris ruficollis</i>	o		NT
56	<i>Calidris alba</i>	o		LC
57	<i>Calidris alpina</i>	o		LC
58	<i>Limnodromus semipalmatus</i>	o		NT
59	<i>Scolopax rusticola</i>	o		LC
60	<i>Gallinago gallinago</i>	o		LC
61	<i>Actitis hypoleucos</i>	o	o	LC
62	<i>Tringa ochropus</i>	o		LC
63	<i>Tringa brevipes</i>	o		NT
64	<i>Tringa erythropus</i>	o		LC
65	<i>Tringa nebularia</i>	o		LC
66	<i>Tringa guttifer</i>	o		EN
67	<i>Tringa stagnatilis</i>	o		LC
68	<i>Tringa glareola</i>	o		LC
69	<i>Tringa totanus</i>	o		LC
70	<i>Turnix tanki</i>	o		LC
71	<i>Glareola maldivarum</i>	o	o	LC
72	<i>Saundersilarus saundersi</i>	o		VU
73	<i>Chroicocephalus ridibundus</i>	o		LC
74	<i>Larus ichthyaetus</i>	o		LC
75	<i>Larus argentatus</i>	o		LC
76	<i>Larus fuscus</i>	o		LC
77	<i>Sternula albifrons</i>	o		LC
78	<i>Gelochelidon nilotica</i>	o		LC
79	<i>Hydroprogne caspia</i>	o		LC
80	<i>Chlidonias leucopterus</i>	o	o	LC
81	<i>Anous stolidus</i>		o	LC
82	<i>Onychoprion anaethetus</i>		o	LC

83		<i>Sterna dougallii</i>		o	LC
84		<i>Sterna sumatrana</i>		o	LC
85		<i>Sterna hirundo</i>	o		LC
86		<i>Thalasseus bergii</i>	o	o	LC
87	Ciconiiformes	<i>Mycteria leucocephala</i>	o		NT
88	Columbiformes	<i>Chalcophaps indica</i>		o	LC
89		<i>Caloenas nicobarica</i>		o	NT
90		<i>Ducula aenea</i>		o	LC
91		<i>Ducula bicolor</i>		o	LC
92		<i>Columba livia</i>		o	LC
93		<i>Streptopelia orientalis</i>	o		LC
94		<i>Spilopelia chinensis</i>	o	o	LC
95	Coraciiformes	<i>Alcedo atthis</i>	o	o	LC
96		<i>Halcyon pileata</i>	o		LC
97		<i>Todiramphus chloris</i>	o		LC
98		<i>Ceryle rudis</i>	o		LC
99		<i>Merops viridis</i>	o		LC
100		<i>Merops philippinus</i>	o		LC
101		<i>Eurystomus orientalis</i>	o		LC
102	Cuculiformes	<i>Centropus sinensis</i>	o		LC
103		<i>Phaenicophaeus tristis</i>	o	o	LC
104		<i>Clamator coromandus</i>	o		LC
105		<i>Eudynamys scolopaceus</i>	o	o	LC
106		<i>Cacomantis merulinus</i>	o		LC
107		<i>Surniculus lugubris</i>	o		LC
108		<i>Hierococcyx sparverioides</i>	o		LC
109		<i>Hierococcyx nasicolor</i>	o		LC
110		<i>Cuculus poliocephalus</i>	o		LC
111		<i>Cuculus saturatus</i>	o		LC
112	Falconiformes	<i>Falco tinnunculus</i>	o	o	LC
113		<i>Falco severus</i>	o		LC
114		<i>Falco peregrinus</i>	o		LC
115	Galliformes	<i>Gallus gallus</i>		o	LC
116	Gruiformes	<i>Lewinia striata</i>	o		LC
117		<i>Amaurornis phoenicurus</i>		o	LC
118		<i>Gallinula chloropus</i>	o		LC
119		<i>Fulica atra</i>	o		LC
120		<i>Gallicrex cinerea</i>	o		LC
121		<i>Rallina eurizonoides</i>	o		LC
122		<i>Zapornia pusilla</i>	o		LC
123	Passeriformes	<i>Pitta nympha</i>	o		VU

124	<i>Pericrocotus divaricatus</i>	o		LC
125	<i>Pericrocotus cinnamomeus</i>		o	LC
126	<i>Lalage melaschistos</i>	o		LC
127	<i>Oriolus chinensis</i>	o		LC
128	<i>Artamus fuscus</i>	o		LC
129	<i>Aegithina tiphia</i>	o	o	LC
130	<i>Aegithina lafresnayei</i>	o		LC
131	<i>Rhipidura albicollis</i>	o		LC
132	<i>Dicrurus macrocercus</i>	o		LC
133	<i>Dicrurus paradiseus</i>		o	LC
134	<i>Dicrurus annectens</i>	o		LC
135	<i>Dicrurus hottentottus</i>	o		LC
136	<i>Hypothymis azurea</i>	o		LC
137	<i>Terpsiphone atrocaudata</i>	o		NT
138	<i>Lanius tigrinus</i>	o		LC
139	<i>Lanius cristatus</i>	o		LC
140	<i>Lanius tephronotus</i>	o		LC
141	<i>Culicicapa ceylonensis</i>	o		LC
142	<i>Melanochlora sultanea</i>	o		LC
143	<i>Alauda gulgula</i>	o		LC
144	<i>Orthotomus sutorius</i>	o	o	LC
145	<i>Prinia rufescens</i>	o		LC
146	<i>Prinia flaviventris</i>	o		LC
147	<i>Prinia inornata</i>	o	o	LC
148	<i>Orthotomus atrogularis</i>		o	LC
149	<i>Cisticola exilis</i>	o		LC
150	<i>Acrocephalus bistrigiceps</i>	o		LC
151	<i>Acrocephalus orientalis</i>	o		LC
152	<i>Locustella certhiola</i>	o		LC
153	<i>Locustella pleskei</i>	o		VU
154	<i>Locustella lanceolata</i>	o		LC
155	<i>Riparia riparia</i>	o		LC
156	<i>Hirundo rustica</i>	o	o	LC
157	<i>Cecropis daurica</i>	o		LC
158	<i>Rubigula flaviventris</i>	o		LC
159	<i>Pycnonotus sinensis</i>	o		LC
160	<i>Pycnonotus aurigaster</i>	o		LC
161	<i>Pycnonotus flavescens</i>	o		LC
162	<i>Hemixos flavala</i>	o		LC
163	<i>Pycnonotus finlaysoni</i>		o	LC
164	<i>Pycnonotus goiavier</i>		o	LC
165	<i>Phylloscopus inornatus</i>	o	o	LC

166	<i>Phylloscopus proregulus</i>	o		LC
167	<i>Phylloscopus schwarzi</i>	o		LC
168	<i>Phylloscopus coronatus</i>	o		LC
169	<i>Phylloscopus tephrocephalus</i>	o		LC
170	<i>Phylloscopus valentini</i>	o		LC
171	<i>Phylloscopus trochiloides</i>	o		LC
172	<i>Phylloscopus tenellipes</i>	o		LC
173	<i>Phylloscopus borealis</i>	o	o	LC
174	<i>Phylloscopus ricketti</i>	o		LC
175	<i>Phylloscopus intensior</i>	o		LC
176	<i>Urosphena squameiceps</i>	o		LC
177	<i>Horornis canturians</i>	o		LC
178	<i>Zosterops erythropleurus</i>	o		LC
179	<i>Zosterops simplex</i>	o	o	LC
180	<i>Zosterops palpebrosus</i>	o	o	LC
181	<i>Mixornis gularis</i>	o	o	LC
182	<i>Stachyris strialata</i>	o		LC
183	<i>Sturnus vulgaris</i>	o		LC
184	<i>Agropsar sturninus</i>	o		LC
185	<i>Gracupica nigricollis</i>	o		LC
186	<i>Sturnia sinensis</i>	o		LC
187	<i>Spodiopsar sericeus</i>	o		LC
188	<i>Spodiopsar cineraceus</i>	o		LC
189	<i>Aplonis panayensis</i>		o	LC
190	<i>Acridotheres tristis</i>	o	o	LC
191	<i>Acridotheres grandis</i>	o		LC
192	<i>Zoothera aurea</i>	o		LC
193	<i>Geokichla sibirica</i>	o		LC
194	<i>Geokichla citrina</i>	o		LC
195	<i>Turdus mandarinus</i>	o	o	LC
196	<i>Turdus cardis</i>	o		LC
197	<i>Turdus dissimilis</i>	o		LC
198	<i>Turdus obscurus</i>	o		LC
199	<i>Muscicapa sibirica</i>	o		LC
200	<i>Muscicapa dauurica</i>	o	o	LC
201	<i>Copsychus saularis</i>	o		LC
202	<i>Cyornis banyumas</i>	o		LC
203	<i>Niltava davidi</i>	o		LC
204	<i>Cyanoptila cyanomelana</i>	o		LC
205	<i>Eumyias thalassinus</i>	o		LC
206	<i>Larvivora cyane</i>	o		LC

207		<i>Luscinia svecica</i>	o		LC
208		<i>Myophonus caeruleus</i>	o		LC
209		<i>Calliope calliope</i>	o		LC
210		<i>Kittacincla malabarica</i>		o	LC
211		<i>Tarsiger cyanurus</i>	o		LC
212		<i>Ficedula zanthopygia</i>	o	o	LC
213		<i>Ficedula albicilla</i>	o		LC
214		<i>Phoenicurus auroreus</i>	o		LC
215		<i>Monticola gularis</i>	o		LC
216		<i>Monticola solitarius</i>	o		LC
217		<i>Saxicola ferreus</i>	o		LC
218		<i>Cinnyris jugularis</i>	o		LC
219		<i>Aethopyga christinae</i>	o		LC
220		<i>Lonchura striata</i>	o	o	LC
221		<i>Lonchura punctulata</i>		o	LC
222		<i>Passer montanus</i>	o	o	LC
223		<i>Motacilla cinerea</i>	o	o	LC
224		<i>Motacilla alba</i>	o		LC
225		<i>Anthus rufulus</i>	o		LC
226		<i>Anthus hodgsoni</i>	o	o	LC
227		<i>Anthus cervinus</i>	o		LC
228		<i>Emberiza aureola</i>	o		LC
229		<i>Dendronanthus indicus</i>		o	LC
230		<i>Motacilla tschutschensis</i>	o	o	LC
231		<i>Emberiza spodocephala</i>	o		LC
232		<i>Emberiza rutila</i>	o		LC
233		<i>Anas platyrhynchos</i>		o	LC
234		<i>Pachycephala cinerea</i>		o	LC
235	Pelecaniformes	<i>Pelecanus philippensis</i>	o		NT
236		<i>Botaurus stellaris</i>	o		LC
237		<i>Ixobrychus sinensis</i>	o	o	LC
238		<i>Ardea cinerea</i>	o	o	LC
239		<i>Ardea alba</i>	o	o	LC
240		<i>Ardea intermedia</i>	o	o	LC
241		<i>Egretta eulophotes</i>	o		VU
242		<i>Egretta garzetta</i>	o	o	LC
243		<i>Bubulcus ibis</i>	o	o	LC
244		<i>Ardeola bacchus</i>	o	o	LC
245		<i>Nycticorax nycticorax</i>	o		LC
246		<i>Ardeola speciosa</i>		o	LC
247		<i>Butorides striata</i>	o	o	LC
248		<i>Egretta sacra</i>	o	o	LC

249		<i>Gorsachius melanolophus</i>	o	LC
250		<i>Threskiornis melanocephalus</i>	o	NT
251		<i>Platalea minor</i>	o	EN
252	Piciformes	<i>Jynx torquilla</i>	o	LC
253		<i>Picoides canicapillus</i>	o	LC
254	Podicipediformes	<i>Tachybaptus ruficollis</i>	o	LC
255	Strigiformes	<i>Tyto longimembris</i>	o	LC
256		<i>Tyto alba</i>	o	LC
257		<i>Otus spilocephalus</i>	o	LC
258		<i>Glaucidium cuculoides</i>	o	LC
259	Suliformes	<i>Sula leucogaster</i>	o	LC

IUCN category: LC – Least Concern; NT – Near Threatened; VU – Vulnerable; EN – Endangered; CR – Critically Endangered.