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

Hong An Nguyen¹, Yong-Su Park², Jae-Chul Jung², Young-Hun Jeong¹, Hong-Shik Oh^{1,3} *

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

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*Corresponding author: Hong-Shik Oh e-mail sciedu@jejunu.ac.kr. https://orcid.org/0000-0001-6960-0221 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

¹Interdisciplinary Graduate Program in Advance Convergence Technology and Science, Jeju National University, Jeju, Korea

²Conservation Assessment Team, National Institute of Ecology, Seocheon, Korea

³Faculty of Science Education, Jeju National University, Jeju, Korea



(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	Nam Dinh	7,100	20°10'N	- First Ramsar site in Southeast Asia	1989
	National Park	Dinn		106°20′E	- Typical mangrove forest ecosystem	
2	Bau Sau Ramsar of	Dong Nai	13,759	11°28'N	- Habitat of fresh water crocodiles	1000
	Cat Tien National Park				(once thought to be extinct)	1998
				22°242N	- Largest natural freshwater lake	2011
3	Ba Be Lake	Bac Kan	500		- Many species listed in the Critically	2011
				105°362E	Endangered Species of importance	
					to global conservation	
4	Tram Chim National Park	Dong Thap	7,313	10°42′49″N	- Around one-fourth of total number	2012
		0 1	,,010	08°41′00″N	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
					- One of the two national parks	
				8°42′N	protecting not only the forests but	
6	Con Dao National Park	Ba Ria-			also aquatic resources	2013
U	Con Dao National Faik	Vung Tau	15,043		- Home to a number of rare and	
				106°38′E	precious fauna	
				10°44'-10°48'N	- A typical example of the Dong	2013
7	Lang Sen wetland Reserve	Long An	5,030	10 44 -10 46 N	ThapMoui Wetlands ecosystem	2013
				105°45'-105°48'E	- Diverse ecosystem	
_	U Minh Thuong	KienGiang	21,107	9°36'N	- One of the two extensive peat	2016
8	National Park		21,107		swamp areas	
				20°21'-20°26'N	- One of the few intact lowlands	
9	Van Long Wetland	NinhBinh	2,736		- Inland wetland areas remaining in	2019
,	Nature Reserve		*	105°47'-105° 55'E	the Red River Delta	

Cited from homepage at https://vietnamnet.vn



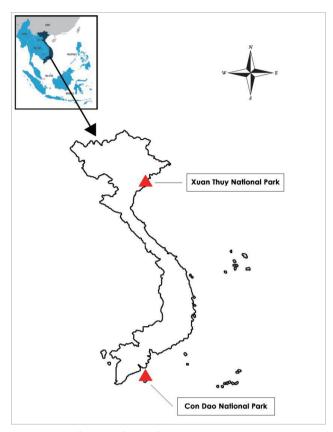


Fig. 1. Map showing the study area.

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

No: 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	Scolopacida	e 27	11.5%	Ardeidae	10	14.0%	
2	Muscicapida	ne 18	7.7%	Columbidae	e 6	8.5%	
3	Ardeidae	13	5.6%	Laridae	6	8.5%	
4	Accipitridae	12	5.1%	Accipitridae	2 4	5.6%	
5	Laridae Phylloscopio	11 dae	4.7%	Motacillida		5.6%	



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

1	Accipitriformes	Pandion haliaetus	0	О	LC	
2		Elanus caeruleus	0	O	LC	
3		Aviceda leuphotes	О		LC	
4		Clanga clanga	О		VU	
5		Butastur indicus	О		LC	
6		Circus spilonotus	О		LC	
7		Circus melanoleucos	О		LC	
8		Accipiter badius	О		LC	
9		Accipiter soloensis	О		LC	
10		Accipiter gularis	О		LC	
11		Pernis ptilorhynchus	О	O	LC	
12		Spilornis cheela		O	LC	
13		Milvus migrans	О		LC	
14		Haliaeetus leucogaster	О	O	LC	
15	Anseriformes	Anser anser	О		LC	
16		Spatula querquedula	О		LC	
17		Mareca falcata	О		NT	
18		Mareca penelope	О		LC	
19		Anas poecilorhyncha	О		LC	
20		Anas crecca	O		LC	
21		Aythya baeri	О		CR	
22	Bucerotiformes	Upupa epops	О		LC	
23	Caprimulgiformes	Caprimulgus jotaka	О		LC	
24		Hirundapus giganteus	o		LC	
25		Aerodramus fuciphagus	O	O	LC	
26		Aerodramus brevirostris	O		LC	
27		Aerodramus germani	O	O	LC	
28		Apus pacificus	O		LC	
29		Cypsiurus balasiensis	O		LC	
30	Charadriiformes	Esacus recurvirostris	O		NT	
31		Himantopus himantopus	O		LC	
32		Pluvialis squatarola	O	O	LC	
33		Pluvialis fulva	O		LC	
34		Vanellus duvaucelii	O		LC	
35		Vanellus cinereus	0		LC	
36		Charadrius alexandrinus	0	0	LC	
37		Charadrius mongolus	0	O	LC	
38		Charadrius leschenaultii	0		LC	
39		Charadrius placidus	0		LC	
40		Charadrius dubius	0		LC	



41	Rostrati	ıla benghalensis c)		LC
42	Hydropi	nasianus chirurgus c)		LC
43	Numen	us phaeopus c)	О	LC
44	Numen	us arquata c)		NT
45	Limosa	lapponica c)		NT
46	Limosa	limosa)		NT
47	Arenari	interpres c)		LC
48	Calidris	tenuirostris)		EN
49	Calidris	canutus)		NT
50	Calidris	pugnax)		LC
51	Calidris	falcinellus)		LC
52	Calidris	ferruginea			NT
53	Calidris	subminuta)		LC
54	Calidris	рудтава)		CR
55	Calidris	ruficollis)		NT
56	Calidris	alba)		LC
57	Calidris	alpina)		LC
58	Limnod	romus semipalmatus c)		NT
59	Scolopa	c rusticola c)		LC
60	Gallinaş	go gallinago c)		LC
61	Actitis h	ypoleucos)	О	LC
62	Tringa c	chropus)		LC
63	Tringa l	revipes)		NT
64	Tringa e	rythropus)		LC
65	Tringa 1	nebularia o)		LC
66	Tringa g	uttifer)		EN
67	Tringa s	tagnatilis)		LC
68	Tringa g	lareola)		LC
69	Tringa t	otanus)		LC
70	Turnix t	anki)		LC
71	Glareolo	maldivarum o)	o	LC
72	Saunder	rsilarus saundersi c)		VU
73	Chroico	cephalus ridibundus c)		LC
74	Larus ic	hthyaetus)		LC
75	Larus at	gentatus c)		LC
76	Larus fi	scus)		LC
77	Sternule	albifrons)		LC
78	Geloche	idon nilotica)		LC
79	Hydrop	ogne caspia c)		LC
80		ias leucopterus c)	0	LC
81	Anous s			О	LC
82	Onycho	orion anaethetus		О	LC



83		Sterna dougallii		О	LC	
84		Sterna sumatrana		o	LC	
85		Sterna hirundo	o		LC	
86		Thalasseus bergii	О	O	LC	
87	Ciconiiformes	Mycteria leucocephala	О		NT	
88	Columbiformes	Chalcophaps indica		0	LC	
89		Caloenas nicobarica		0	NT	
90		Ducula aenea		0	LC	
91		Ducula bicolor		0	LC	
92		Columba livia		O	LC	
93		Streptopelia orientalis	О		LC	
94		Spilopelia chinensis	О	0	LC	
95	Coraciiformes	Alcedo atthis	О	0	LC	
96		Halcyon pileata	О		LC	
97		Todiramphus chloris	o		LC	
98		Ceryle rudis	o		LC	
99		Merops viridis	o		LC	
100		Merops philippinus	o		LC	
101		Eurystomus orientalis	o		LC	
102	Cuculiformes	Centropus sinensis	О		LC	
103		Phaenicophaeus tristis	О	0	LC	
104		Clamator coromandus	o		LC	
105		Eudynamys scolopaceus	o	O	LC	
106		Cacomantis merulinus	o		LC	
107		Surniculus lugubris	o		LC	
108		Hierococcyx sparverioides	О		LC	
109		Hierococcyx nisicolor	О		LC	
110		Cuculus poliocephalus	О		LC	
111		Cuculus saturatus	О		LC	
112	Falconiformes	Falco tinnunculus	О	0	LC	
113		Falco severus	О		LC	
114		Falco peregrinus	О		LC	
115	Galliformes	Gallus gallus		0	LC	
116	Gruiformes	Lewinia striata	o		LC	
117		Amaurornis phoenicurus		O	LC	
118		Gallinula chloropus	o		LC	
119		Fulica atra	o		LC	
120		Gallicrex cinerea	o		LC	
121		Rallina eurizonoides	0		LC	
122		Zapornia pusilla	0		LC	
123	Passeriformes	Pitta nympha	0		VU	



124	Pericrocotus divaricatus	О		LC
125	Pericrocotus cinnamomeus		O	LC
126	Lalage melaschistos	O		LC
127	Oriolus chinensis	O		LC
128	Artamus fuscus	O		LC
129	Aegithina tiphia	O	O	LC
130	Aegithina lafresnayei	o		LC
131	Rhipidura albicollis	O		LC
132	Dicrurus macrocercus	O		LC
133	Dicrurus paradiseus		O	LC
134	Dicrurus annectens	O		LC
135	Dicrurus hottentottus	0		LC
136	Hypothymis azurea	O		LC
137	Terpsiphone atrocaudata	O		NT
138	Lanius tigrinus	O		LC
139	Lanius cristatus	О		LC
140	Lanius tephronotus	О		LC
141	Culicicapa ceylonensis	0		LC
142	Melanochlora sultanea	0		LC
143	Alauda gulgula	0		LC
144	Orthotomus sutorius	0	0	LC
145	Prinia rufescens	0		LC
146	Prinia flaviventris	0		LC
147	Prinia inornata	0	0	LC
148	Orthotomus atrogularis		0	LC
149	Cisticola exilis	О		LC
150	Acrocephalus bistrigiceps	О		LC
151	Acrocephalus orientalis	0		LC
152	Locustella certhiola	О		LC
153	Locustella pleskei	О		VU
154	Locustella lanceolata	О		LC
155	Riparia riparia	О		LC
156	Hirundo rustica	0	0	LC
157	Cecropis daurica	O		LC
158	Rubigula flaviventris	O		LC
159	Pycnonotus sinensis	0		LC
160	Pycnonotus aurigaster	0		LC
161	Pycnonotus flavescens	O		LC
162	Hemixos flavala	O		LC
163	Pycnonotus finlaysoni		O	LC
164	Pycnonotus goiavier		O	LC
165	Phylloscopus inornatus	0	0	LC



166	Phylloscopus proregulus	О		LC	
167	Phylloscopus schwarzi	o		LC	
168	Phylloscopus coronatus	O		LC	
169	Phylloscopus tephrocephalus	o		LC	
170	Phylloscopus valentini	O		LC	
171	Phylloscopus trochiloides	o		LC	
172	Phylloscopus tenellipes	0		LC	
173	Phylloscopus borealis	O	O	LC	
174	Phylloscopus ricketti	O		LC	
175	Phylloscopus intensior	O		LC	
176	Urosphena squameiceps	O		LC	
177	Horornis canturians	O		LC	
178	Zosterops erythropleurus	0		LC	
179	Zosterops simplex	O	O	LC	
180	Zosterops palpebrosus	O	0	LC	
181	Mixornis gularis	o	O	LC	
182	Stachyris strialata	O		LC	
183	Sturnus vulgaris	o		LC	
184	Agropsar sturninus	o		LC	
185	Gracupica nigricollis	0		LC	
186	Sturnia sinensis	O		LC	
187	Spodiopsar sericeus	O		LC	
188	Spodiopsar cineraceus	O		LC	
189	Aplonis panayensis		0	LC	
190	Acridotheres tristis	O	O	LC	
191	Acridotheres grandis	O		LC	
192	Zoothera aurea	O		LC	
193	Geokichla sibirica	O		LC	
194	Geokichla citrina	O		LC	
195	Turdus mandarinus	O	0	LC	
196	Turdus cardis	O		LC	
197	Turdus dissimilis	O		LC	
198	Turdus obscurus	O		LC	
199	Muscicapa sibirica	O		LC	
200	Muscicapa dauurica	o	O	LC	
201	Copsychus saularis	o		LC	
202	Cyornis banyumas	O		LC	
203	Niltava davidi	O		LC	
204	Cyanoptila cyanomelana	O		LC	
205	Eumyias thalassinus	O		LC	
206	Larvivora cyane	O		LC	



2	207	Luscinia svecica	o		LC
2	208	Myophonus caeruleus	О		LC
2	209	Calliope calliope	О		LC
2	210	Kittacincla malabarica		О	LC
2	211	Tarsiger cyanurus	О		LC
2	212	Ficedula zanthopygia	О	О	LC
2	213	Ficedula albicilla	О		LC
2	214	Phoenicurus auroreus	О		LC
2	215	Monticola gularis	О		LC
2	216	Monticola solitarius	О		LC
2	217	Saxicola ferreus	О		LC
2	218	Cinnyris jugularis	О		LC
2	219	Aethopyga christinae	О		LC
2	220	Lonchura striata	О	О	LC
2	221	Lonchura punctulata		О	LC
2	222	Passer montanus	О	О	LC
2	223	Motacilla cinerea	О	О	LC
2	224	Motacilla alba	О		LC
2	225	Anthus rufulus	О		LC
2	226	Anthus hodgsoni	О	О	LC
2	227	Anthus cervinus	0		LC
2	228	Emberiza aureola	О		LC
2	229	Dendronanthus indicus		0	LC
2	230	Motacilla tschutschensis	0	0	LC
2	231	Emberiza spodocephala	O		LC
2	232	Emberiza rutila	О		LC
2	233	Anas platyrhynchos		О	LC
2	234	Pachycephala cinerea		О	LC
2	Pelecaniformes	Pelecanus philippensis	О		NT
2	236	Botaurus stellaris	0		LC
2	237	Ixobrychus sinensis	0	0	LC
2	238	Ardea cinerea	О	О	LC
2	239	Ardea alba	0	0	LC
2	240	Ardea intermedia	О	О	LC
2	241	Egretta eulophotes	О		VU
2	242	Egretta garzetta	0	0	LC
2	243	Bubulcus ibis	О	О	LC
2	244	Ardeola bacchus	0	0	LC
2	245	Nycticorax nycticorax	О		LC
2	246	Ardeola speciosa		О	LC
2	247	Butorides striata	0	0	LC
2	248	Egretta sacra	О	О	LC



249		Gorsachius melanolophus	O		LC	
250		Threskiornis melanocephalus	О		NT	
251		Platalea minor	О		EN	
252	Piciformes	Jynx torquilla	О		LC	
253		Picoides canicapillus	О		LC	
254	Podicipediformes	Tachybaptus ruficollis	О		LC	
255	Strigiformes	Tyto longimembris	О		LC	
256		Tyto alba	О		LC	
257		Otus spilocephalus	О		LC	
258		Glaucidium cuculoides	0		LC	
259	Suliformes	Sula leucogaster		О	LC	

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