



An Assessment of The Diversity of Avifauna at Ranjit Sagar Dam in Kathua, Jammu and Kashmir, India

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Article History	Abstract
Received: 06 June 2023 Revised: 05 Sept 2023 Accepted: 25 Nov 2023	<p>A study was carried out for an interval of six months (April–September, 2022) to assess the avifauna diversity at Ranjit Sagar Dam. The dam, also known as Thein Dam, is located at distance of 30 km from Kathua City and geographical it lies between 32°-26' N and 75°-43'. This dam is constructed over the Ravi River and is surrounded by lush green hills, which act as a key driver of local economies, giving its importance to agriculture, recreation, and fishing. Along with being an aesthetic entity, it provides social, economic, and environmental remunerations. Consequently, ornithologists from all over India gathered here for watching the lovely creatures and also to study their behavioral ecology. During the study, the data collection was done through the point count method with eight fixed points in different habitat types. A field binocular (10x50 magnification) was used for visual surveys. Surveys revealed the presence of 93 bird species placed taxonomically under 22 families. Around 37 water bird species are supported by Ranjit Sagar Dam, belonging to 9 families, of which 17 are migratory and 20 are residential bird species. So as to uphold the avifaunal diversity that is crucial in maintaining ecosystems, conservation strategies coupled with the development of potential water resources like Ranjit Sagar Dam are of the utmost importance.</p>
CC License CC-BY-NC-SA 4.0	Keywords: Avifauna, Diversity, Ranjit Sagar Dam, Kathua, Jammu

1. Introduction

Ranjit Sagar Lake is surrounded by lush green hills and urban area of Shahpur Kandi town. It's situated in the Shivalik Range at geographical co-ordinates 32.26 North East and 75.44 East West in between the states J&K, Punjab and Himachal Pradesh. The climate of the area is sub-tropical having monsoons with warm summer and cool winters. (Paunikar and Sharma, 2022). The main source of water here is river Ravi. Mostly the climate of the area is dry constituting monsoon showers with annual rainfall of about 875.6 mm. This study was conducted during wet spell.

The area consists of north tropical dry deciduous forest with main trees such as Acacia nilotica (Kikar), Sheesham, Mango, Khair, Simbal, shrubs such as Garna, Vilayti Mehandi, Gandhala, Basuti, Panwar etc.

About 90% area is under deep water and the rest is either shallow or marshy land. Few small islands are also found where water level is low. The flora of the area is dominated by the aquatic conditions and is having different types of seasonal plants, grasses, shrubs.

About 22 migratory birds were spotted in Lake Region with common species such as Red Jungle fowl, large Indian Parakeet, Indian Cuckoo, Bank Myna, Wood Shrike, Yellow eyed babbler, crested bunting. Few vulnerable and near threatened species also occur here such as Sarus Crane, Eurasian Curlew, White necked Stork, Lesser adjutant, Ibis, Painted Stork, Black necked Stork. Two uncommon species White browed Wagtail and Bar headed Goose were also be seen here. Ranjit Sagar Dam supports a significant amount of avifaunal diversity that is unexplored till now. The present study was undertaken to exploit variety of bird species that are supported by this wetland.

Mallard, Black necked stork, Eurasian curlew etc. The study revealed 8 uncommon species at the sites such as Endangered vultures, Sarus crane, Black bittern, White ibis, Lesser adjutant, White and Grey waihtail.

The present data clearly indicate that the feathered bipeds are fond of this reservoir. As the Ranjit Sagar Dam is situated in the Kandi Belt of Jammu and Kashmir where people face water scarcity, development of such potential resources of water is the need of the hour. The reservoir supports a wide variety of flora and upholds the vast avifaunal diversity that is incomparable element in maintaining ecosystem. It's an important birding site which may be promoted by conducting regular feathered bi-ped's census and organizing proper workshops for the student and researchers' fraternity. Anthropogenic activities like poaching, overgrazing, tree cutting must be monitored and regulated appropriately so as to conserve avifauna in and around Ranjit Sagar Dam. The detailed checklist of the aquatic and terrestrial birds found at the Ranjit Sagar Dam with their resident and IUCN status is shown in (Tab. 1)

Table 1: List of birds observed at Ranjit Sagar Dam

Water Birds Species						
S.N O	COMMON NAME	ZOOLOGICAL NAME	LOCAL NAME	FAMILY	R/ M	IUCN STATU S
01	Grey leg Goose	Anseranser	Raaj Hans	Anatidae	M	LC
02	Comb Duck	Sarkidiornis melanotos	Nakta	Anatidae	R	LC
03	Cotton Pygmy Goose	Nettapuscoromendelianus	Girja	Anatidae	R	LC
04	Mallard	Anas platyrhynchos	Nilsar	Anatidae	M	LC
05	Spot-billed duck	<i>Anas poecilorhyncha</i>	Gugral	Anatidae	R	LC
06	Northern shoveller	<i>Anas clypeata</i>	Ghirah	Anatidae	M	LC
07	Bar-headed goose	<i>Anser indicus</i>	Hans	Anatidae	M	LC
08	Cotton teal	<i>Anas crecca</i>	Kerra	Anatidae	M	LC
09	Common Pochard	<i>Aythya ferina</i>	Burarnar	Anatidae	M	LC
10	Common Kingfisher	<i>Alcedo atthis</i>	Chhota Kilkila	Alcedinidae	R	LC
11	Pied Kingfisher	<i>Cerylerudis</i>	Kilkila	Alcedinidae	R	LC
12	Sarus Crane	<i>Grus antigone</i>	Sarus	Gruidae	R	NT
13	Common snipe	<i>Gallinagogallinago</i>	Chaha	Scolopacidae	M	LC
14	Eurasian curlew	<i>Numenius arquata</i>	Bada gulinda	Scolopacidae	M	NT
15	Wood Sandpiper	<i>Tringaglareola</i>	Titvari	Scolopacidae	M	LC
16	Common Sandpiper	<i>Actitis hypoleucos</i>		Scolopacidae	M	LC
17	Common Greenshank	<i>Tringanebularia</i>	Timtima	Scolopacidae	M	LC

18	Little Stint	<i>Calidris minuta</i>	Chhota panlowwa	Scolopacidae	M	LC
19	Little Egret	<i>Egretta garzetta</i>	Karchiabagla	Ardeidae	R	LC
20	Great Egret	<i>Casmerodius albus</i>	Bada bagla	Ardeidae	R	LC
21	Intermediate Egret	<i>Mesophoyx intermedia</i>	Karchiabagla	Ardeidae	R	LC
22	Cattle Egret	<i>Bubulcus ibis</i>	Surkhiabagla	Ardeidae	R	LC
23	Grey Heron	<i>Ardea cinerea</i>	Nari	Ardeidae	M	LC
24	Purple Heron	<i>Ardea purpurea</i>	Lal anjan	Ardeidae	R	LC
25	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Kokrai	Ardeidae	R	LC
26	Greater Flamingo	<i>Phoenicopterus ruber</i>	Raaj Hans	Phoenicopteridae	M	LC
27	Black Ibis	<i>Pseudibis papillosa</i>	Kala Baza	Threskiornithidae	R	LC
28	White ibis	<i>Threskiornis melanocephalus</i>	Didhar	Threskiornithidae	R	NT
29	Spoonbill	<i>Platalea leucorodia</i>	Chamachbaza	Threskiornithidae	R	LC
30	Painted Stork	<i>Mycteria leucocephala</i>	Janghil/Dokh	Ciconiidae	R	NT
31	White-necked Stork	<i>Ciconia episcopus</i>	Laglag	Ciconiidae	R	V
32	Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	Loha sarang	Ciconiidae	R	NT
33	Lesser adjutant	<i>Leptoptilos javanicus</i>	Chota garud	Ciconiidae	R	V
34	White Wagtail	<i>Motacilla alba</i>		Passeridae	M	NA
35	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Khanjan	Passeridae	R	NA
36	Citrine wagtail	<i>Motacilla citreola</i>	Pani-ka-pilkya	Passeridae	M	LC
37	Grey Wagtail	<i>Motacilla cinerea</i>		Passeridae	M	LC
Terrestrial Birds Species						
38	Brown-capped pygmy Woodpecker	<i>Dendrocopos nanus</i>	Katphora	Picidae	R	LC

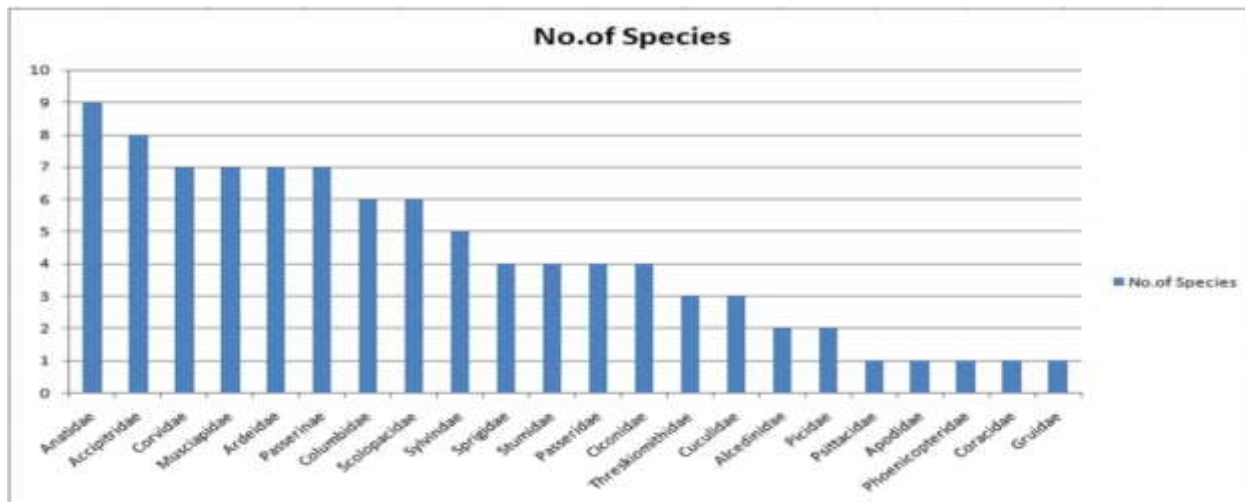
39	Lesser Golden-backed Woodpecker	<i>Dinopium benghalense</i>	Kathfudwa	Picidae	R	LC
40	Indian Roller	<i>Coracias benghalensis</i>	Neelkanth	Coraciidae	R	LC
41	Pied Cuckoo	<i>Clamator jacobinus</i>	Kala Papiya	Cuculidae	R	LC
42	Common Hawk Cuckoo	<i>Hierococcyx varius</i>	Papiya	Cuculidae	R	LC
43	Asian Koel	<i>Eudynamis scolopacea</i>	Koel	Cuculidae	R	LC
44	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Tota	Psittacidae	R	LC
45	House Sparrow	<i>Apus affinis</i>	Ababeel	Apodidae	R	LC
46	Rock Eagle-Owl	<i>Bubo (bubo) bengalensis</i>		Strigidae	R	LC
47	Spotted Owlet	<i>Athene brama</i>	Chughad	Strigidae	R	LC
48	Jungle Owlet	<i>Glaucidium radiatum</i>	Jangli Choghad	Strigidae	R	LC
49	Brown hawk owl	<i>Ninox scutulata</i>	Chughadbasra	Strigidae	R	LC
50	Rock Pigeon	<i>Columba livia</i>	Kabutar	Columbidae	R	LC
51	Laughing dove	<i>Streptopelia senegalensis</i>	Chhota fakta	Columbidae	R	LC
52	Red collared dove	<i>Streptopelia tranquebarica</i>	Lali pohu	Columbidae	R	LC
53	Spotted dove	<i>Streptopelia chinensis</i>	Chitrokafakhta	Columbidae	R	LC
54	Eurasian collared dove	<i>Streptopelia decacincta</i>	Panduk	Columbidae	R	LC
55	Yellow-footed Green-Pigeon	<i>Treron phoenicoptera</i>	Harilal	Columbidae	R	LC
56	Black-shouldered kite	<i>Elanus caeruleus</i>	Kapassi	Accipitridae	R	LC
57	Black Kite	<i>Milvus migrans</i>	Cheel	Accipitridae	R	LC
58	Brahminy Kite	<i>Haliastur indus</i>	Brahmani cheel	Accipitridae	R	LC

59	Egyptian Vulture	<i>Neophron percnopterus</i>	Gobar giddh	Accipitridae	R	LC
60	Crested Serpent Eagle	<i>Spilornis cheela</i>	Dogra cheel	Accipitridae	R	LC
61	Eurasian Marsh Harrier	<i>Circus aeruginosus</i>	Safed Sira	Accipitridae	M	LC
62	Shikra	<i>Accipiter badius</i>	Chipka	Accipitridae	R	LC
63	Common Kestrel	<i>Falco tinnunculus</i>	Karontia	Accipitridae	M	LC
64	Black-headed Oriole	<i>Oriolus xanthornus</i>		Corvidae	R	LC
65	House Crow	<i>Corvus splendens</i>	Kowwa	Corvidae	R	LC
66	Jungle Crow	<i>Corvus macrorhynchos</i>	Kala kowwa	Corvidae	R	LC
67	Small minivet	<i>Pericrocotus cinnamomeus</i>	Saheli	Corvidae	R	LC
68	White-browed fantail	<i>Rhipidura aureola</i>		Corvidae	R	LC
69	Black drongo	<i>Dicrurus macrocerus</i>	Bhujanga	Corvidae	R	LC
70	Common Iora	<i>Aegithina tiphia</i>	Shaubeegi	Corvidae	R	LC
71	Blue Rock Thrush	<i>Monticola olitariae</i>	Pala tiriv	Musciapidae	M	LC
72	Tickell's Blue Flycatcher	<i>Cyornis tickelliae</i>	Adharanga	Musciapidae	R	LC
73	Blue throat	<i>Luscinia svecica</i>	Nil kanthi	Musciapidae	M	LC
74	Oriental Magpie-Robin	<i>Copsychus saularis</i>	Dhaiyar	Musciapidae	R	LC
75	Indian Robin	<i>Saxicoloides fulicata</i>	Kalchuri	Musciapidae	R	LC
76	Black Redstart	<i>Phoenicurus ochruros</i>	Thirthira	Musciapidae	M	LC
77	Indian Chat	<i>Cercomela fusca</i>	Dauma	Musciapidae	R	LC
78	Brahminy Starling	<i>Sturnus pagodarum</i>	Brahmini myna	Sturnidae	R	LC
79	Asian Pied Starling	<i>Sturnus contra</i>	Ablak myna	Sturnidae	R	LC

80	Common Myna	<i>Acridotheres tristis</i>	Desi myna	Sturnidae	R	NA
81	Bank myna	<i>Acridotheres ginginianus</i>	Ganga myna	Sturnidae	R	LC
82	Common Tailorbird	<i>Orthotomussutorius</i>	Darzee	Sylviidae	R	LC
83	Yellow-eyed Babbler	<i>Chrysommasinense</i>	Gulab-chasm	Sylviidae	R	LC
84	Common Babbler	<i>Turdoidescaudatus</i>	Genga/dumri	Sylviidae	R	LC
85	Jungle Babbler	<i>Turdoides striatus</i>	Sat bhaina	Sylviidae	R	LC
86	Large Grey Babbler	<i>Turdoidesmalcolmi</i>	Sat bhaina	Sylviidae	R	LC
87	House Sparrow	<i>Passer domesticus</i>	Gauriya	Passerinae	R	LC
88	Chestnut-shouldered Petronia	<i>Petronia xanthocollis</i>	Janglichiria	Passerinae	R	LC
89	Paddyfield Pipit	<i>Anthusrufulus</i>	Charchari	Passerinae	R	LC
90	Indian Silver bill	<i>Lonchuramalabarica</i>	Pidda	Passerinae	R	LC
91	Spotted Munia	<i>Lonchurapunctulata</i>	Seenabaz	Passerinae	R	LC
92	Black headed munia	<i>Lonchuramalacca</i>	Pora munia	Passerinae	R	LC
93	Baya Weaver	<i>Ploceusphilippinus</i>	Baya/son chiri	Passerinae	R	LC

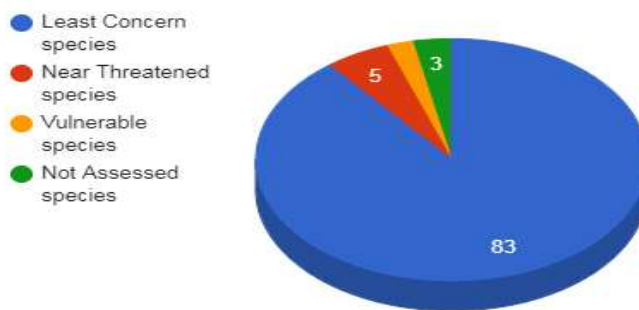
(R-Residential, M-Migratory, NA-Not Assessed,LC-Least Concern, NT-Near Threatened, V-Vulnerable)

The checklist clearly depicts that maximum number of avifaunal species belong to the family Anatidae whereas family Gruidae consist least number of species (**Graph 1**). Among the all-observable species around 90% are the least concern species which can be found in abundant number, 5% of the species are of near threatened status as per IUCN list whereas 3% species observed belong to the vulnerable category, around 2% of the species were unable to assess during the study (**Graph 2**).



Graph1: No. of species belonging to different families

IUCN Status of the Birds Reported



Graph 2: IUCN Status of the Birds reported

The diversity index calculated as per Shannon-Weiner equation is 2.9 where we found 22 existent families with species evenness value of 0.93 (**Tab. 2**). Approximately 60% of the birds found at the sites were aquatic among which 76% are migratory depicting the significance of the reservoir to maintain the diversity and sustenance of the avifaunal species.

Table 2: Species Richness, Evenness, and Diversity Index of different bird’s species

Total No of Species recorded (Richness)	93
Shannon Weiner Index	2.9
No. of families	22
Average population size	4.23
Species Evenness	0.938

4. Conclusion

This study is only a preliminary effort to exploit the incredible avifauna in the area. The main purpose of the study was to acknowledge ourselves with the bird’s species at Ranjit Sagar Dam and find out ways to improve its diversity that is vital element for ecological sustenance. Aquatic ecosystems support a wide range of organisms including microorganisms, invertebrates, insects, plants and fish etc. Aquatic biodiversity is a major concern for maintaining ecological balance that in turn is essential for humans to sustain their co-existence. Moreover, it also offers a place for spiritual renewal as well as valuable opportunities to enjoy and learn about the natural world. Birds exhibit ecological, aesthetic and economic values. Further elaborative studies on behavioral aspects, breeding and feeding patterns coupled with routine monitoring are necessitated to maintain and conserve avian diversity at Ranjit Sagar Dam. We have noticed a continuous reduction in the levels of the most of the water bodies in J&K in such a scenario Ranjit Sagar Dam is serving as a paradise for the birds.

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