

Studies of Birds Fauna of Sambhar Salt Lake

Garima Kumari Chauma^{1,2}, Dr. Rashmi Sharma²

¹Research scholar, Samrat Prithviraj Chauhan Government College, Ajmer, India

²Associate Professor Zoology SPCGCA AJME, Ajmer-305001, India

Abstract: *The Sambhar salt lake is India's largest salt lake. This is located 80 k.m. South of Jaipur and 64 k.m. North from Ajmer. Total Length is 35.5 km and width is 5-9 Km. Research work that has been done in October 2016-October 2017. 17 families of avian fauna is available. Where Greater flamingoes were in maximum number and Egyptian vultures were in minimum number. In past few years lake is very much polluted, this polluted water is favourable for Botulism which become the reason of death of thousands of birds in November 2019. There is another reason of pollution of water that there is no recycling of waste water of lake.*

Keywords: Avian diversity, Flamingos, Sambha, Salt lake

1. Geography

Sambhar lake has 5700 k.m. drainage area. Khari, Samod, Rupangarh, Mantha and Medtha Khandela are the rivers which falls in the lake. There is fluctuation in the depth of water which is near about 60cm in arid season to 3 meters during last monsoon rains. The lake is spread 190 to 230 square k.m. and its shape is oval. The extent of lake is approximately 35.5k.m.long and 4 k.m. to 10 k.m. Broad. Temperature is between 5 degree Celsius (winters) to 48 degree Celsius (Summers).

Aravali hills surrounds the lake on all sides. The lake covers almost Nagaur and Jaipur districts and borders on the Ajmer district. The sambhar lake bowl which is made by sedimentary stone is split into a 5.1 k.m. long dam.

2. Introduction

In Rajasthan, salt lakes and melancholy are common in Thar desert namely Sambhar, Kanod, Didwana Lawan and Pachpadra Thob (Tiwari1994). The Principal river system is Luni.

Sambhar lake is Prime area for flamingos and other migratory birds which comes annually from North Asia and Siberia. Most of Rajasthan's salt made in Sambhar. In Sambhar 196,000 tones salt manufactured every year.

3. Material and Methods

Faunistic surveys were undertaken during Oct 2016-oct 2017 to collect and identify the avian fauna of the Sambhar lake. Only direct sighting in the field were recorded and birds identified with the help of Ali and Ripley (1983) and Woodcock (1983). Specific details were observed with the help of Binocular.

4. Result and Discussion

Sambhar lake being a unique saline wetland has a very little faunal background that too worked out meagerly. The lake has been exploited for salt extraction for centuries. In earlier study some attempts were made which just touched upon the biodiversity of this lake (Kumar2005).

The major biotic components are phytoplankton, zooplankton, benthic invertebrates and waterfowls. In every winter season a large number of wetland avian species are come here. The algal blooms of spirulina and variety of zooplankton fauna provide a good opportunity to these water birds to stay here without any disturbance.

In our present attempts to study the avian fauna of sambhar lake, the birds were mostly observed in open waters and different sub-habitat of the lake during morning, day, evening and at night. The birds associated with the water or wetland territory were only recorded. Some of the species though not solely depended on the wetland habitat but were taking refuge during some part of the day and locally migrating to nearby ponds and smaller wetland for feeding etc. were also recorded. Since the sambhar lake area is too large and interiors of the lake margins remains undisturbed, the birds were mostly found resting in the desolate locations for long. The frequency of their sighting, diversity at one point of time, species density and groups abundance were recorded and based on these data, their status at sambhar lake have been mentioned.

Though most of species were observed for their whole time activities, the two species of flamingoes: *Phoenicopterus ruber* (Linnaeus,1758), Greater flamingo and *Phoenicopterus minor* (Geoffroy,1798) Lesser flamingo were observed more closely due to their large population and major dependence on the wetland.

The avian diversity recorded during different seasons twice every year. A total of 43 species of wetland birds have been recorded. Only direct sightings in the field were recorded and birds identified with the help of Ali and Ripley (1983) and Woodcock (1983). Systematic account of Aves along with their status is given below in (Table1):

Table 1: Avian fauna of sambhar salt lake

Scientific name	Common name	Habitat	Status
Family:Podicipedidae	Grebes		
<i>Tachybaptus ruficollis</i> (Pallas, 1764)	Little Grebes	Ow	S, M

Volume 9 Issue 3, March 2020

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

<i>Podiceps cristatus</i> (Linnaeus, 1758)*	Great Crested Grebe	Ow	S, M
Family:Pelecanidae	Pelicans		
<i>Pelecanus onocrotalus</i> Linnaeus, 1758	Great white Pelican	Ow, Lm	S, M
Family:Phalacrocoracidae	Cormorants		
<i>Phalacrocorax niger</i> (Vieillot,1817)	Little Cormorant	Ow, Lm	A, Re
<i>Phalacrocorax carbo</i> (Linnaeus, 1758)	Great cormorant	Ow, Lm	S, Re
Family:Anhingidae	Darters		
<i>Anhinga melanogaster</i> Pennat, 1769	Darters	Ow	Vr
Family:Ardeidae	Herons and Egrets		
<i>Egretta garzetta</i> (Linnaeus, 1766)	Little Egret	Lm, H	A, Re
<i>Ardea cinerea</i> Linnaeus, 1758	Grey Heron	Lm, H	R, Re
<i>Ardea purpurea</i> Linnaeus, 1766	Purple Heron	Sw, Lm	S, M
<i>Casmerodius albus</i> (Linnaeus, 1758)*	Large Egret	Lm, Sw	A, Re
<i>Mesophoyx intermedia</i> (Wagler, 1829)*	Median Egret	Lm	S, Re
<i>Bubulcus ibis</i> (Linnaeus, 1758)	Cattle Egret	Lm, H	A, Re
<i>Ardeola grayii</i> (Sykes, 1832)	Indian Pond Heron	Lm, H	R, M
<i>Nycticorax nycticorax</i> (Linnaeus, 1758)*	Night Heron	Lm, H	Vr, M
Family:Ciconiidae	Storks		
<i>Mycteria leucocephala</i> (Pennat, 1769)	Painted Stork	H	R, M
<i>Ciconia nigra</i> (Linnaeus, 1758)	Black Stork	Lm	R, M
Scientific name	Common name	Habitat	Status
Family:Threskiornithidae	Ibises and Spoonbills		
<i>Plegadis falcinellus</i> (Linnaeus, 1788)*	Glossy Ibis	Lm	R, M
<i>Platalea leucorodia</i> Linnaeus, 1758*	Eurasian Spoonbill	Lm, H	R, M
Family:Phoenicopteridae	Flamingos		
<i>Phoenicopterus ruber</i> Linnaeus, 1758	Greater Flamingo	Sw, Lm	A, M
<i>Phoenicopterus minor</i> (Geoffroy,1798)	Lesser Flamingo	Sw, Lm	A, M
Family:Anatidae	Geese and Ducks		
<i>Anser anser</i> (Linnaeus, 1758)	Greylag Goose	Ow, Sw	Vr, M
<i>Anser indicus</i> (Latham, 1790)	Bar-headed Goose	Ow, Sw	Vr, M
<i>Tadorna ferruginea</i> (Pallas, 1764)*	Brahminy Shelduck	Ow, Sw	Vr, M
<i>Nettapus coromandelianus</i> (Gmelin, 1789)*	Cotton Teal	Ow	S, M
<i>Anas strepera</i> Linnaeus, 1758*	Gadwall	Ow	R, M
<i>Anas Penelope</i> Linnaeus, 1758*	Eurasian Wigeon	Ow	R, M
<i>Anas platyrhynchos</i> Linnaeus, 1758*	Mallard	Ow	Vr, M
<i>Anas poecilorhyncha</i> J.R. Forester, 1781	Spot-billed Duck	Ow, Lm	Vr, M
<i>Anas clypeata</i> Linnaeus, 1758	Northern shoveler	Ow	R, M
<i>Anas acuta</i> Linnaeus, 1758	Northern Pintail	Ow	S, M
<i>Anas querquedula</i> Linnaeus, 1758 *	Garganey	Ow	Vr, M
<i>Anas crecca</i> Linnaeus, 1758	Common Teal	Ow	S, M
<i>Rhodonessa rufina</i> (Pallas, 1773)	Red-crested Pochard	Ow	S, M
<i>Aythya ferina</i> (Linnaeus, 1758)	Common Pochard	Ow	S, M
<i>Aythya fuligula</i> (Linnaeus, 1758)	Tufted Pochard	Ow	R, M
Family: Accipitridae	Vultures		
Scientific name	Common name	Habitat	Status
<i>Neophron percnopterus</i>	Egyptian Vultures	Ar, Lm	R, Re
Family: Gruidae	Cranes		
<i>Grus antigone</i> (Linnaeus, 1758) *	Sarus Crane	Lm	R, Re
<i>Grus virgo</i> (Linnaeus, 1758)	Demoiselle Crane	Lm	A, M
<i>Grus grus</i> (Linnaeus, 1758) *	Common Crane	Lm	S, M
Family:Rallidae	Moorhens and Coots		
<i>Porphyrio porphyrio</i> (Linnaeus, 1758)	Purple Moorhen	Ow, Lm	S, M
<i>Fulica atra</i> Linnaeus, 1758	Common Coot	Ow	A, M
Family:Charadriidae	Plovers and Lapwings		
<i>Pluvialis apricaria</i> (Linnaeus, 1758)*	European Golden Plover	Lm	R, M
<i>Charadrius dubius</i> Scopoli, 1786	Little Ringed Plover	Lm	R, M
<i>Charadrius alexandrinus</i> Linnaeus, 1758	Kentish Plover	Lm	R, M
<i>Charadrius leschenaultia</i> Lesson, 1826*	Greater Sand Plover	Lm	R, Re
<i>Vanellus malabaricus</i> (Boddaert, 1783)*	Yellow-wattled Lapwing	Lm	R, Re
<i>Vanellus duvaucelii</i> (Lesson, 1826)	River Lapwing	Lm	R, M
<i>Vanellus indicus</i> (Boddaert, 1783)	Red-wattled Lapwing	Lm	S, Re
Family:Scolopacidae	Sandpipers, Stints, Snipes, Godwits & Curlews		
<i>Gallinago stenura</i> (Bonaparte, 1830)*	Pintail Snipe	Lm	R, M
<i>Gallinago gallinago</i> (Linnaeus, 1758)*	Common Snipe	Lm	S, M
<i>Limosa limosa</i> (Linnaeus, 1758)*	Black-tailed Godwit	Lm	R, M
<i>Numenius phaeopus</i> (Linnaeus, 1758)*	Whimbel	Lm	R, M
<i>Numenius arquata</i> (Linnaeus, 1758)*	Eurasian Curlew	Lm	S, Re

<i>Tringa tetanus</i> (Linnaeus, 1758)	Common Redshank	Lm	S, M
Scientific name	Common name	Habitat	Status
<i>Tringa stagnatilis</i> (Bechstein, 1803)*	Marsh Sandpiper	Lm	S, M
<i>Tringa nebularia</i> (Gunner, 1767)	Common Greenshank	Lm	R, M
<i>Actitis hypoleucos</i> Linnaeus, 1758	Common Sandpiper	Lm	S, M
<i>Calidris alba</i> (Pallas, 1764)*	Sanderling	Lm	Vr, M
<i>Calidris minuta</i> (Leisler, 1812)	Little Stint	Lm	S, M
<i>Calidris temminckii</i> (Leisler, 1812)	Temminck's Stint	Lm	R, M
<i>Calidris ferruginea</i> (Pontoppidan, 1813)*	Curlew Sandpiper	Lm	S, M
<i>Philomachus pugnax</i> (Linnaeus, 1758)	Ruff (& Reeve)	Lm	Vr, M
Family: Recurvirostridae	Ibisbill, Avocets and Stilts		
<i>Ibidorhyncha struthersii</i> Vigors, 1832 *	Ibisbill	Sw, Lm	LM
<i>Himantopus himantopus</i> (Linnaeus, 1758)	Black-winged Stilt	LM	A, Re
<i>Recurvirostra avosetta</i> Linnaeus, 1758	Pied Avocet	LM	S, Re
Family: Glareolidae	Pratincoles		
<i>Glareola pratincola</i> (Linnaeus, 1758)	Collared Pratincole	LM	R, M
Family: Laridae	Gulls & Terns		
<i>Larus cachinnans</i> Pallas, 1811	Yellow-legged Gull	Ow, Lm	R, M
<i>Larus brunnicephalus</i> Jerdon, 1840	Brown-headed Gull	Ow, Ar	R, M
<i>Larus ridibundus</i> Linnaeus, 1766	Black-headed Gull	Lm, Ar	R, M
<i>Sterna aurantia</i> J.E.Gray, 1831*	River Tern	Ar	S, Re
<i>Chlidonias hybridus</i> (Pallas, 1811)	Whiskered Tern	Ar	R, M

Ow= Open waters, Sw=Shallow waters, Lm=Lake margins, Ar=Aerial, H=Heronry, A=Abundant, S=Sizeable, R=Rare, Vr=Very rare, Re=Resident, M=Migrant and *=New Records.

Podicipedae eg. Grebes	Pelecanidae eg. Pelican Phalacrocoracidae eg. Cormorants Anhingidae eg. Darter	Phoenicopteridae eg. Flamingoes	Anatidae eg. Ducks & Geese
---------------------------	---	------------------------------------	-------------------------------

Figure 1: Taxonomic Status of Waterfowls of Sambhar Lake

Ardeidae eg. Heron & Egrets Ciconiidae eg. Storks Threskiornithidae eg. Ibis & Spoonbill	Accipitridae eg. Eagles & Vultures	Gruidae eg. Cranes Rallidae eg. Waterhen & Coots	Charadriidae eg. Plovers & Lapwings Scolopacidae eg. Sandpipers & Allies Recurvirostridae eg. Stilt & Avocet Glareolidae eg. Pratincoles Laridae eg. Gulls & Terns
---	---------------------------------------	---	---

Figure 2: Taxonomic Status of Shore and Upland Birds of Sambhar lake

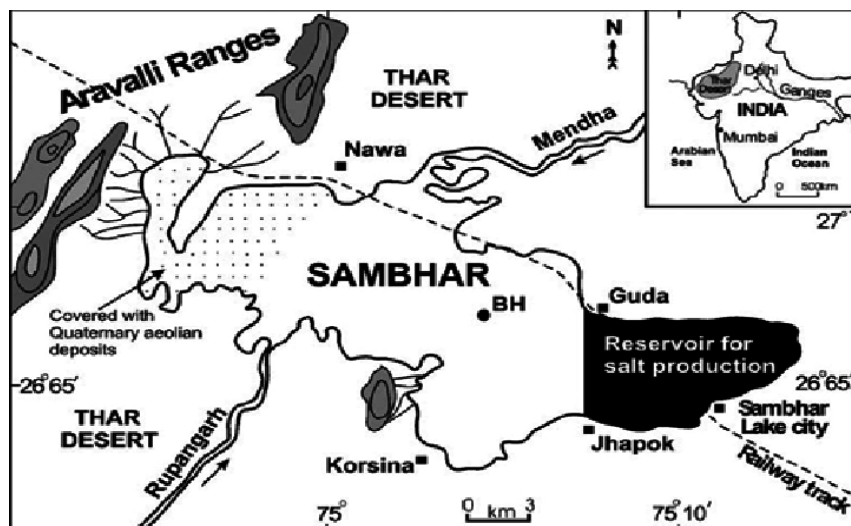


Image 1: Map of Sambhar Lake A View of Sambhar Lake Surrounded by Aravali Hills

5. Summary

Great avifaunal diversity is present in Sambhar lake. The focus of present study is to notice the avian fauna of sambhar salt lake, which included both local and migratory

birds. Every year thousands of migratory birds come here for food, shelter and reproduction.

6. Conclusions

Based on the investigation from this work, a large number of avian species were recorded in which maximum species were seen during winter season. In summer season minimum number of birds were seen because of low level of water. 17 family of birds were recorded in which Greater flamingos are maximum in number and Egyptian vultures are minimum in number.

References

- [1] Adam, R. M. 1873. Notes on the birds of Sambhar Lake and its vicinity.
- [2] Stray Feathers 1 (5): 361-404.
- [3] Ali, Salim and Ripley, S.D. 1983. Birds of India and Pakistan. Oxford university Press, Oxford. Pp. 1-733.
- [4] Director, ZSI. 2005. Fauna of Sambhar Lake (Rajasthan), wetland Ecosystem series, 6 : 1-200. (Ed & published: Director, Zool. Surv. India, Kolkata).
- [5] Kumar, Sanjeev. 1996a. New Flamingo Breeding ground at Sambhar Lake. Hornbill, No. (1):26-27.
- [6] Kumar, Sanjeev. 2005. Sambhar Lake: An overview. In: Fauna of Sambhar Lake (Rajasthan). Wetland Ecosystem series, 6 : 1-42. (Ed & published: Director, Zool. Surv. India, Kolkata).
- [7] Manakadan, R and Pittie, A. 2001. Standardised common and scientific name of the birds of the Indian Subcontinent. Buceros, 6(1): i-ix, 1-37.
- [8] Tewari, D.N. 1994. Mangroves and wetlands for conserving Environment. International Book Distributors, Dehradun. pp. 78-99.
- [9] Venkatasubramani R. and T. Meenombal. (2007); Ground water quality modeling for Pollachi Taluk of Coimbatore District. Nat. Environ. And Poll. Tec. 6(3):443-447.
- [10] Yadav, A.K. & Khan, P. (2010). Fluoride and fluorosis status in groundwater of Todaraisingh area of district Tonk (Rajasthan, India): a case study. International Journal of Chemical Environmental and Pharmaceutical Research, 1(1), 6-11.
- [11] Zehtabian, G.R. (2010). Investigation of soil physico-chemical properties in playa wetlands case study: Daryacheh-Namak Desert, 14(1), 1-14.