

AVIFAUNAL DIVERSITY OF LUNGH LAKE WILDLIFE SANCTUARY SINDH, PAKISTAN

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Abstract

The Lungh Lake sanctuary is known for its avian diversity and full blossoming. In the present study, it was noted that wetlands consist of a number of avian fauna varieties. We detected various bird species, yet 53 types of birds were distinguished during field work; these birds had a location with 10 families; for example, Ardeidae, Rallidae, Charadriidae, Alcedinidae, Sturnidae, Muscicapidae, Columbidae, Cuculidae, Anatidae, Recurvirostridae and Passeridae were recorded. High numbers of families were noted in Anatidae, and fewer species were Charadriidae and Sturnidae. It was noted that a large number of families were migratory, and some were residents. These species, for the most part, depend upon water, in addition to the families Passeridae and Columbidae. Among the birds kept in this study, some were insectivores or grainivores; however, most of the overwhelming birds were piscivores.

Keywords: Wetland Birds, Diversity, Abundance, Feedings, Strip-Transect Method, Families Sindh.

INTRODUCTION

The Lungh Lake sanctuary (68° 21' E, 27° 56' N) is a significant wetland. It is to be settled in the district of Qambar Shadkot. This wetland is the best site for avian diversity and has a good atmosphere of migratory birds. It attracts each year; northern Sindh considers it to be the best wetland in the region (Ali, Salim 1996). The territory of the Lungh lake is divided into three categories: open water with Typha and Juncus on the border, marshy sites covered by Tamarix, and adjacent rice area with major Juncus species. This wetland provides shelter for avian diversity, which depends on wetlands, which are mostly cultivated daily and seasonally. A high degree of bird diversity was found in wetlands.

According to the Zoological Survey by Mehrban Ali Brohi (2017), wetland ecosystems are of strange economic value due to public necessity and dependence. The vital habitats for migrating water birds along the Central Asian Flyway are explained for each of these areas, and an increase in avian diversity is sustained (Wetlands International 2007). There are 10 families and 53 species of birds. Throughout the winter, many water birds, such as Graylag goose, Mallard, Pochard, Eurasian coot, and Gadwall, pass through the wetlands of Lungh Lake for feeding. Information on the avifauna is also needed for future research on the avian diversity of wildlife sanctuaries. Among the 70,000 wetlands of birds, Lungh Lake is also the best place to provide each and every necessary thing for birds. Research on the avifauna of the Lungh Lake Sanctuary should be conducted with detailed awareness of resident and migratory species. It is well known that bird diversity in Lungh Lake changes seasonally.

MATERIALS AND METHODS

The Lungh Lake sanctuary is mostly veganite and marshy. The standard yearly rainfall is 70 mm, the maximum temperature is 39.0°C, and height variety from 50 to 115 metres on top of sea level at Lungh. Lungh Lake was separated into three sites: Site I, Site II, and Site III. This wetland was visited once a week for 4 weeks. Avifauna diversity was also assessed. Strip transects and point counts were the two transect methods used for bird counting. A couple of telescope (Olympus 8-16 X 40, DPS I) was also used to monitor bird diversity at the research site. Sonobe and Usui (1993) and Birds of Pakistan (Grimmett et al., 2009) were cited for the classification of water birds. The residents and migratory birds were divided into groups.

RESULTS AND DISCUSSION

Throughout research time, there were total of 53 bird species belonging to 10` families, Ardeidae, Rallidae, Charadriidae, Sturnidae, Muscicapidae, Columbidae, Cuculidae, Anatidae, Recurvirostridae and Passeridae, were recognized in the study part (Table 1). recognition of birds species, such as Anatidae family have loose-feathers water birds of medium-large size, most with thin body and extended collar, beak is usually elongated, lined, and pointed hind-limbs to average to stretched, inferior tibiae naked; one-sided web amid external and core, They mostly present in watery areas all over the world, founding for grilled animals, little mammals (milk producing animals) and yet immature flying birds. This family was the most common species 16.98%.

The Rallidae family is huge, found throughout the world. This family of small- medium birds found at land and semiamphibious birds. This family was also present in Lungh-Lake at 11.32%, while the Charadriidae family included little birds to large medium sized birds, having tiny, lengthy collar and usually pointed fore-limbs. However, the most lapwing species have more rounded wings. The beak is lined and small, its thumbs are smaller in size. This family was present at the lake in 5.66% of the samples.

The Sturnidae family comprises mostly singing birds consisting of starlings and mynahs, which are very aggressive birds found in different wetlands. They have a slightly curved beak, extended, sharp fore-limbs and great hind-limbs. Starlings are normally dim colored; few has moon like structure. This family also occurs 5.66% of the time in the lake. The muscicapidae are songbirds, which are small passerine birds. They have plane, wide beak, short and rounded wings and short legs. These are mainly small arboreal insectivorous birds. Among the Muscicapidae, 13.21% were the most common species in Lungh Lake. In the Columbidae family, has stout-bodied birds with small collar and tiny slender like beak. This family mostly eat plants but scientifically recognised as seed-feeders. This family is also found in Lungh Lake 9.43%. The Cuculidae family are generally in meddle-sized, slim birds. They mostly live on plants. They are worldwide distributed. Many of these species are humid. Few are visitor birds. They are insectivore birds. Few are parasites, and these families have an equal number of species and 9.43%. The Anatidae family has wide and extended common body. The fore-limbs are tiny and needle like and having physically powerful muscles that generate quick strikes during flight. The hind-limbs are naturally tiny, physically powerful, and put faraway to back of the body and have a rubbery think with a scaly texture. Collective with their body form, this type can cause some species to gauche on ground, but they are extra possible to walk than other sea water and fresh water birds. Their feet are webbed. The Ardeidae family had the next highest number of species, at 13.21%. The Recurvirostridae family includes extended, slim hind-limbs, collar, and beak.

Beak is bent and swept. These birds prefer in feeding from salty water or saline wetlands. Beak of stilts is in a straight line. The first thumbs are webbed. They have common complementary region of black and white with some species having scrap of fawn or brown on the head region. There is no sexual dimorphism. Among the total number of Recurvirostridae species, 7.55% were also species. In the Passeridae family are generally tiny birds with short and influential beak.

The different species of passeridae is be delicate. Sparrows are actually alike to previous grain eater birds, such as Darwin finches, but have a functional less dorsal external chief plume and a spare bone in the tongue. Passeridae family is also present in 7.55% of the Lungh Lake samples. These families were classified on the basis of their feeding and perfect territory. Total of 50% of the birds documentation in the present study were residents, 35% were winter migrants, 5% were summer migrants, and Muscicapidae and Ardeidae were the next highest number of species, with 13.21%. Present study, birds were categorised into 6 groups on the basis of their feeding. The total collections of bird species, ninety-nine were Insectivorous, twenty-seven were piscivorous, twenty-six were omnivorous, twenty-one were frugivorous, twenty were grainivorous, seventeen were carnivorous and eight were nectarivorous birds. The percentages of Aves present in Site I and Site II in research sites. During the research period are shown in Fig. 3. Site I is represented 66.21% of the avian fauna, Site II is represented 33.79%, and Site III was represented by 33.79%. The birds favourite Site I. Number of avian fauna was mainly captured during the January, February and March months, and the number of species

was lower in the May, June and July months from research sites. A high quantity of specimens is recorded mostly in the month of January, and a low number is evidence in July.

Monthly collection of bird difference and the relative great quantity of these species in the research sites are noted in Table 1, and a checklist of 53 avian fauna cited in the current study is available in Table 2. Present study demonstrated that the ecological character of the lake allowed avian fauna to live whole year.

Table 1: Names of families, scientific names, common names, diet and status

Family	Common name	Scientific name	Status	Diet
Ardeidae,	Purple heron	<i>Ardea purpurea</i>	M	P
	Grey heron	<i>Ardea cinerea</i>	R/M	P
	Little green heron	<i>Ardeola striatus</i>	R/M	P
	Pond heron	<i>Ardeola grayii</i>	M	P
	Cattle egret	<i>Bubulcus ibis</i>	M	P
	Median egret	<i>Egretta intermedia</i>	R	P
	Little egret	<i>Egretta garzetta</i>	R	P
Rallidae	White breasted waterhen	<i>Amaurornis phoenicurus</i>	M	P
	Purple moorhen	<i>Porphyrio porphyrio</i>	M	P
	Water rail	<i>Rallusa quaticus</i>	M	P
	Baillon's crake	<i>Porzana pusilla</i>	M	P
	Common moorhen	<i>Gallinula chloropus</i>	R	P
	Grey-headed Swamphen	<i>Porphyrio poliocephalus</i>	R	P
Charadriidae	Red wattled lapwing	<i>Vanellus indicus</i>	R	P
	Common sandpiper	<i>Tringa hypoleucos</i> –	R	P
	Little ringed plover	<i>Charadrius dubius</i>	R	P
Sturnidae	common myna	<i>Acridotheres tristis</i>	R	I
	Jungle crow	<i>Corvus macrorhynchos</i>	R	O
	Tree pie	<i>Dedrocitta vagabunda</i>	R	I
Muscicapidae	Magpie-robin	<i>Copsychus saularis</i>	M	I
	Pied bushchat	<i>Saxicola caprata</i>	M	I
	Common stonechat	<i>Saxicola torquata</i>	R/m	P
	Plumbeous water redstart	<i>Rhyacornis fuliginosa</i>	M	P
	White-tailed rubythroat	<i>Lucinia pectoralis</i>	R	I
	Red Throated	<i>Flycatcher Ficedula parva</i>	R	G
Columbidae	Rufous tailed Scrub Robin	<i>Cercotrichas galactotes</i>	R	G
	Eurasian collared dove	<i>Strepto peliadecaocta</i>	M	G
	Oriental turtle dove	<i>Strepto peliaorientalis</i>	M	G
	Blue rock pigeon	<i>Columba livia</i>	R	G
	Spotted dove	<i>Streptopelia chinensis.</i>	R	G
Cuculidae	Yellow Footed Green Pigeon	<i>Treron phoenicoptera</i>	R	G
	Koel	<i>Eudynamys scolopacea</i>	R	G
	Crow-pheasant	<i>Centropus sinensis</i>	R	O
	Eurasian cuckoo	<i>Cuculus canorus</i>	M	G
	Himalayan cuckoo	<i>Cuculus saturatus</i>	M	I
Anatidae	Lesser cuckoo	<i>Cuculus poliocephalus</i>	M	I
	Tree duck	<i>Dendrocygna javanica</i>	M	P
	Common teal	<i>Anas crecca</i>	M	P
	Cotton teal	<i>Nettapus coromandelianus</i>	M	P

	White-faced whistling duck Fulvous whistling duck Canada goose Black swan Eurasian Wigeon Ferruginous duck	<i>Dendrocygna viduata</i> <i>Dendrocygna bicolor</i> <i>Branta canadensis</i> <i>Cygnus atratus</i> <i>Mareca Penelope</i> <i>Aythya nyroca</i>	M M R R R M	P P P P P P
Recurvirostridae	Black winged stilt Pied Stilt Black-necked Stilt White-backed Stilt	<i>Himantopus himantopus</i> <i>Himantopus leucocephalus</i> <i>Himantopus mexicanus</i> <i>Himantopus melanurus</i>	R R M M	P P P P
Passeridae	Chestnut Shuoldered Petronia Spanish Sparrow Black Redstart House Sparrow	<i>Petronia xanthocollis</i> <i>Passer hispaniolensis</i> <i>Phoenicurus phoenicurus</i> <i>Passer domesticus</i>	M M M R	I I I I

M, Migratory. R, Resident. R/M Rare migratory P, Piscivores. I, Insectivores. O, Omnivores. G, Granivores

Table 1: Number of species and their occurrences

Sr.No.	Family	No of species	Percent occurrence
1	Ardeidae,	07	13.21
2	Rallidae	06	11.32
3	Charadriidae	03	5.66
4	Sturnidae	03	5.66
5	Muscicapidae	07	13.21
6	Columbidae	05	9.43
7	Cuculidae	05	9.43
8	Anatidae	09	16.98
9	Recurvirostridae	04	7.55
10	Passeridae	04	7.55

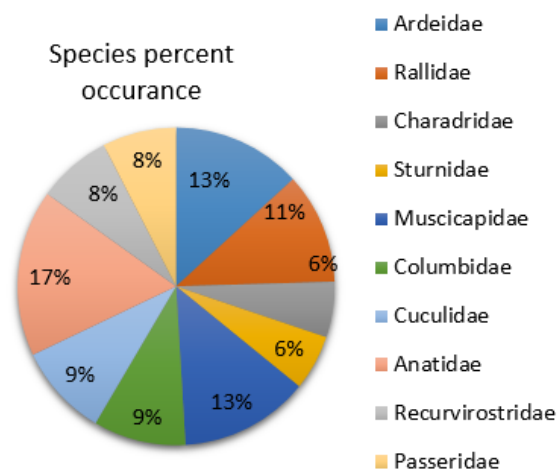
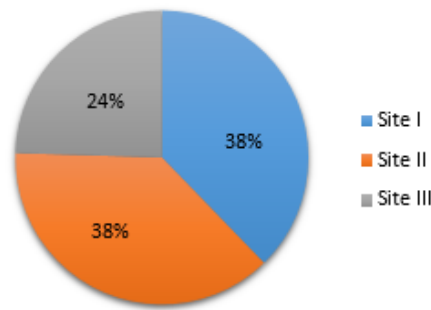


Table 2: Monthly fluctuations avifauna diversity

Months	Site I	Site II	Site III
Sep	02	01	00
Oct	01	01	01
Nov	03	02	02
Dec	05	04	03
Jan	02	04	04
Feb	02	02	01
Mar	01	01	01
Apr	01	01	00
May	01	00	01
June	01	01	00
July	00	01	00
Aug	01	02	00

Monthly Variations of sites



CONCLUSION

The Lugh Lake birds were collected monthly. A number of birds were observed from March to September in the lake. Species of avian fauna were classified at the taxonomic level and separated according to their migratory status, residence and preferred diet. When migratory birds depart from an area, resident species are busy during nesting activities

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