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Some Observations on the Status of Birds and Fishes in the Nurruri Wetland, Badin, Sindh

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Abstract

Nurruri wetland which is a Ramsar site is am important wetland and provide excellent habitat to a wide variety of birds and fishes. However, their population is dependent on the availability of freshwater which in some areas have completely been stopped. The paper describes changes in the population of migratory and resident birds observed due to changes in water regime in this important wetland of lower Sindh.

Keywords: Nurruri wetland, bird, fish fauna, scarcity of water.

Introduction

Nurruri is a coastal wetland which is located at 30 km south of Golarchi, District Badin in lower Sindh (Fig. 1). There is a large village i.e. Ahmad Rajo located on the north side of Nurruri wetland. The other important villages of the area are Goth Mehar, Bhugra, Memon Goth and Goth Amir Jamali. The reported area under water is estimated about 2,540 hectares. The lagoon was considered as an important wetland and declared a Ramsar wetland site. The Nurriri wetland is a combination of brackish coastal and inland lagoons and mudflats (www.wetlands.org).

It used to support an appreciable number of some important species particularly lesser flamingo (*Phoeniconaias minor*) and Dalmatian pelican (*Pelicanus crispus*). Surveys conducted between 1972 and 1990 revealed an average of 50,000 birds in any given year, with a highest recorded total of 114,700 birds in one season (www.wetlands.org). These birds are mainly species such as storks, snipes, crested terns, ducks and gulls. Because of severe drought in lower Sindh and cyclone in 1999 the water regime is completely changed in this lagoon. In addition, the freshwater supply to lagoon was completely stopped after the modification and deepening of Puleli/Guni outfall drain. This outfall drain which used to supply water to Nurruri wetland starts from Tando Mohammad Khan and carries drainage water into the sea. The other outfall drain Karo-Ghargro has also lost its importance due to the shortage of fresh water and sea water intrusion. Thus, the freshwater supply to the wetland through these two main sources has practically stopped. Nurruri wetland, thus, was a combination of several small pools fed by rain and drains which is now severely affected due to shortage of freshwater. Nurri lagoon is connected with Jubho, Pateji and Chobri wetlands; all are inter-connected and ultimately drain into a tidal link. (www.wetlands.org).

Prior to the stoppage of freshwater, this wetland was a refuge for migratory birds and breeding point for important resident species. Breeding of black winged stilts (*Himantopus himantopus*), little tern (*Sterna albifrons*), whiskered tern (*Chlidonais hybrida*), red wattled lapwing (*Vanellus indicus*), weaver bird (*Plucens manyar*), common mynah (*Acridotheres tristis*), bank mynah (*Acridotheres gingianus*), drongo (*Dicrurus adsimilis*), common blue kingfisher (*Alcedo atthis*), piedking fisher (*Ceryle rudis*), white breasted kingfisher (*Halcyon smyrnensis*), house crow (*Corvus splendens*) and sparrows were noted in the area in the previous studies (Ghalib *et al.*1999).

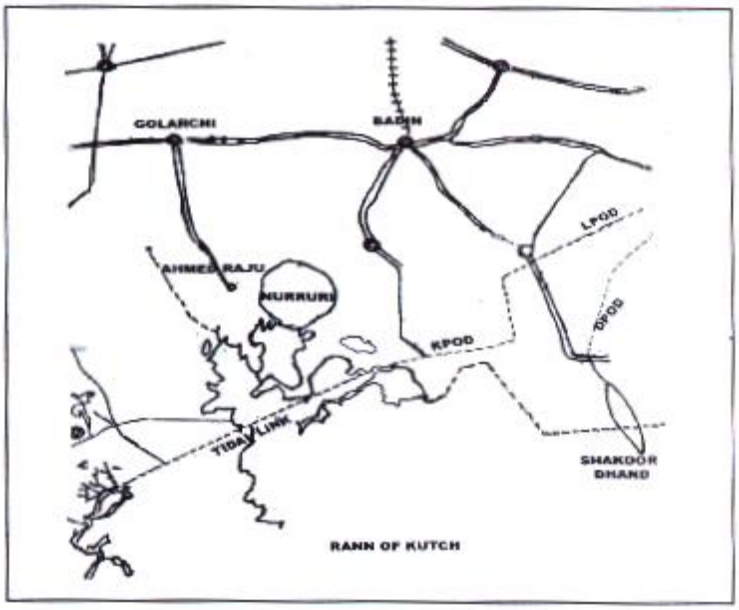

Fig. 1. Nurrari wetland

Materials and Methods

Sighting of birds were made through binoculars (8 x 40 and 7 x 35 mm) and telescope (15 x 60 x Swift Japan) and their further confirmation made following Heinzel *et al* (1977), Perrins and Attenborough (1987) and Roberts (1991, 1992). Fishes were collected by using cast net and gillnets. Also fishes caught by fishermen were also examined. Bianchi (1985) was used for identification of major species.

Results and Discussion

During the survey, several shallow pools of less than one feet depth were observed in the month of October. The salinity of these small pools was found to be less 2 o/oo. During November and again in December, these shallow pools were mostly drained out and are now dried. Most of the area of wetland is totally dried. Major vegetation includes salt bushes such as *Suaeda fruiticosa, Tamarix spp.* and *Salvadora spp.* In some areas clumps of *Typha* are also present. The appearance of salt bushes clearly indicates the scarcity of fresh water in the area.

Table-I present a list of species which were observed/recorded from Nurruri wetland during 1970's and 1990's. The Table also includes species presently found in the remaining portion of the wetlands and also in dry part of the wetland. During the present surveys it was noticed that the bird fauna which was found from Nurruri wetland in the area where Phuleli/Gunni Outfall Drain fall into the sea, is mostly inhabited by coastal birds. Table-I also enlists the birds observed in the dry area of Nurruri wetland.

The birds like painted stork and white pelican which were observed in survey done November and in December. However, the birds like common teal which was recorded in the first week of October was not found during the surveys of November or December. The birds like great crested grebe (*Podiceps nigricollis*), great white pelican (*Pelecanus oncrotalus*), Dalmatian pelican (*Pelecanus crispus*), white spoonbill (*Platalea leucordia*), greater flamingo (*Phoenicopterus rubber*), lesser flamingo (*Phoeniconaias*

minor), common shelduck (*Tadorna tadorna*), wigeon (*Anas Penelope*), gadwall (*Anas strepera*), common teal (*Anas crecca*), mallard (*Anas phtyrhynchos*), northern pintail (*Anas acuta*), common pochard (*Aythya ferina)*, tufted duck (*Anas fuligula),* and common coot (*Fulica atra*) which were in continuous recorded previously were wither not observed or found in very small number.

The complete disappearance of some birds or decline in numbers other is mainly due to scarcity of freshwater in the wetland. The deepening of Phuleli/Gunni outfall drain and severe drought in Sindh have deteriorated the water regime in this Ramsar site. Since the seawater has intruded in parts of the wetland their coastal species such as gulls and terns have appeared insubstantial numbers. The dry portion of the Nurruri were observed to be inhabited by reasonably large population of black partridges, babblers and prinias.

In October, the fish fauna of the small water pools in the Nurruri wetland was observed to be consisting of freshwater species such as *Labeo boga, Mystus gulio, Glossogobius giuris, Channa punctata* and *Oreochromis mossambica*. The fishes in the are*a* where Phuleli/Gunni Outfall Drain enters into the sea were mostly coastal fishes such as *Nematalosa nasus, Sardinella longiceps, Sardinella sindensis, Strongylura strongylura, Cociella crocodile, Terapon jarbua, Sillago sihama, Leiognathus splendens, Pomadasys commersonni*, *Pomadasys maculatum*, *Acanthopagrus latus*, *Johnieops aneus*, *Scatophagus argus*, *Liza macrolepis*, *Liza parsia*, *Liza subviridis* and *Liza vaigiensis*.

Fishermen of the Nurruri area reported that several species of freshwater fishes were abundant in the wetland when freshwater was dominating in the wetland and provided livelihood to them but with the draining of the wetland and intrusion of seawater the wetlands is now inhabited by low priced marine species.

In Nurruri wetland area, porcupine (*Hystrix indica*), Asiatic jackal (*Canis aureus*) and red fox (*Vulpes vulpes pusilla*), Indian gerbill (*Tatera indica*), house mouse (*Mus musculus*), Balochistan gerbill (*Gerbillus nanus*) and five striped palm squirrel (*Funambulus pennanti*) were observed. Two species of reptiles i.e. keelback snake (*Xenochorophis piscatgor*) and Indian flapshell turtle (*Lissemys punctata punctata*) were collected during the recent surveys.

Table-I. Bird species found in Nurruri Wetland

Species	Recorded/ Reported in 1970's-1990's	Observed in Surveys in			
		October 2003	November 2003	December 2003 In Dry/Semi Dry Areas	Dec. 2003 Near Sea Intrusion Area
White Pelican (*Pelecanus oncrotalus*)	+		+		+
Dalmatian Pelican (*Pelecanus crispus*)	+				
Great Cormorant (*Phalacrocorax carbo*)	+			+	
Little Cormorant (*Halietor niger*)	+	+	+		+
Little Egret (*Egretta garzetta*)	+	+	+		+
Cattle Egret (*Bubuleus ibis*)				+	
Intermediate Egret (*Egretta intermedia)*	+		+		
Large Egret (*Egretta alba*)	+	+	+		+
Grey Heron (*Ardea cineria*)	+	+	+	+	+
Purple Heron (*Ardea purpurea*)	+	+	+		+
Pond Heron (*Ardea grayii*)			+		
Painted Stork *(Mycteria leucocephala)*	+		+		+

White Stork (*Ciconia ciconia*)	+				
Glossy Ibis (*Plegadis falcinellus*)	+				
White Spoonbill (*Platalea leucorodia*)	+				
Greater Flamingo (*Phoenicopterus rubber*)	+				+
Lesser Flamingo (*Phoeniconaias minor*)	+				
Common Shelduck (*Tadorna tadorna*)	+				
Wigeon (*Anas Penelope*)	+				
Gadwall (*Anas strepera*)	+				
Common Teal (*Anas crecca*)	+	+			
Mallard (*Anas platyrhynchos*)	+				
Northern Pintail (*Anas acuta*)	+				
Garganey (*Anas querquedula*)	+				
Northern Shoveler (*Anas clypeata*)	+				
Common Pochard (*Aythya ferina*)	+				
Tufted Duck (*Aythya fuligula*)	+				
Black Shouldered Kite (*Elanus caeruleus)*	+			+	
Brahminy Kite (*Haliastur indus*)	+				
Black Kite (*Milvus migrans*)	+				
Marsh Harrier (*Circus aeruginosus*)	+			+	
Steppe Eagle (*Aquila rapax ripalensis*)	+				
Imperial Eagle (*Aquila heliaca*)	+				
Greater Spotted Eagle (*Aquila clanga*)	+				
Osprey (*Pandion haliaetus*)	+				
Common Crane (*Grus grus*)	+	+			
Black-winged Stilt (*Himantopus himantopus*)	+	+	+		
Avocet (*Recurvirostra avosetta*)	+				
White-tailed Lapwing (*Vanellus leucurvus*)	+				
Red wattle Lapwing (*Vanellus indicus*)	+	+	+	+	+
Little ringed Plover (*Charadrius dubius*)	+				
Kentish Plover (*Charadrius alexandrinus*)	+	+	+		+
Grey Plover (*Pluvialis squatarola*)	+				
Black-tailed Gadwit (*Limosa limosa*)	+	+	+		
Curlew (*Numenius arquata*)	+	+	+		+
Whimbrel (*Numenius phoeopus*)	+				
Ruff (*Philomachus pugnax*)	+				
Common Red Shank ((*Tringa totanus*)	+	+			+
Green Shank (*Tringa nebularia*)	+		+		+
Marsh Sandpiper (*Tringa stagnatilis*)	+				
Green Sandpiper (*Tringa ocropus*)	+	+	+		+
Common Sandpiper (*Actilis hypoleucos*)	+				
Little Stint (*Calidris minuta*)	+	+	+		+
Terek Sandpiper (*Xenus cinereus*)	+	+	+		
Herring Gull (*Larus argentatus*)	+				+
Lesser Black-backed Gull (*Larus fuscus*)	+				+
Black headed Gull (*Larus ridibundus*)	+	+			+
Whiskered Tern (*Chlidonais hybrida*)	+				
Caspian Tern (*Hydroprogne caspia*)	+	+			+
Gull billed Tern (*Gelochelidon nilotica*)	+				
Sandwich Tern (*Thalasseus sandvicensis*)	+				
Little Tern (*Sterna albifrons*)	+	+	+		+

Common Tern (*Sterna hirundo*)	+				
White breasted Kingfisher (*Halcyon smyrnensis*)	+			+	
Pied Kingfisher (*Ceryle rudis*)	+			+	
Common Blue Kingfisher (*Alcedo atthis*)	+				
Black Partridge (*Francolinus francolinus*)				+	
Indian Collared Dove (*Streptopelia decaocta*)				+	
Indian Koel (*Eudynamys scolopacea*)				+	
Crow Pheasant (*Centropus sinenus*)				+	
Little Green Bee-eater (*Merops orientalis*)				+	
Crag Martin (*Hirundo rupestris*)				+	
House Martin (*Delichon urbica*)				+	
Pied Wagtail (*Motacilla alba*)				+	
White cheeked Bulbul (*Pycnonotus leucogenys*)				+	
Common Babbler (*Turdoides caudatus*)				+	
Jungle Babbler (*Turdoides striatus*)				+	
Chiff-chaff (*Phylloscopus collybitus*)				+	
Tailor Bird (*Orthotomus sutorius*)				+	
Indian Graceful Prinia (*Prinia gracilis*)				+	
Purple Sunbird (*Nectarinia asiatica*)				+	
House Sparrow (*Passer domesticus*)				+	
Common Mynah (*Acridotheres tristis*)				+	
Black Drongo (*Dicrurus macrocercus*)				+	
House Crow (*Corvus splendens*)				+	
Total :	**64**	**19**	**19**	**27**	**20**

The major reason for drying of this wet land is due to reduction in drain water supply through Phuleli/Gunni Karo-Gangro Outfall Drain. Intrusion of seawater in the wetland because of digging and deepening of the Phuleli/Gunni Outfall Drain is another reason for change in water regime in the wetland which is now turning into a hypersaline lagoon. Changes in bird fauna clearly indicates that this freshwater wetland has now converted into a coastal lagoon. Presently those species which were common in mangroves of Sindh (Hasan, 1994, 1996) are dominating in the Nurruri wetland. In order to restore the conditions prevailing in this wetland, there is a need to take immediate actions which may include supply for freshwater through Gunni Phuleli Outfall and construction of weir to stop intrusion of seawater in the wetland. Restoration of the wetland will not only help in achieving near original biodiversity in the wetland but will also help in improving socio-economic conditions of the communities in the area which were previously dependent on wetland.

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