

On the status of Jhabo Wetland, Badin, Sindh.

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Abstract

Jhabo wetland, which is located in Badin, was known for well-diversified bird and fish fauna dominated by species inhabiting freshwater wetland. Due to change in water regime especially because of sea intrusion during cyclone in 1999, the wetland has either dried up or dominated by seawater. A noticeable change in the bird and fish fauna in this wetland was observed indicating prevalence of marine and dry land species of birds. Similar changes in fish fauna were also noticed.

Keywords: Jhabo Wetland, "Badin, sea intrusion, fishes, birds, mammals, reptiles

Introduction

Jhabo wetland, which is located in Badin, is almost completely dry, at present. Water which fed this wetland, used to flow from Karo-Ghangro. However, Karo-Ghangro Outfall Drain discharges into tidal part from southern side of Karo-Ghangro Check Point. The Wetland has been dried because its channel was deepened and it has no more drain into this wetland. Additionally there is very little flow of water in the drain and after the cyclone of 1999; the outlets of the channel into Jhabo Wetland area were choked due to sedimentation, which caused total stoppage of water in the Jhabo Wetland. Due to seawater intrusion into the area, the salinity of the area has increased and was recorded as 28 o/oo in the end of December.

This wetland used to have brackish water and vast mudflats and had a well-diversified fish and bird fauna. Freshwater, brackish and marine fish and penaeid shrimps used to be harvested in commercial quantities from this wetland. In 1977, a 548 m long portion of the weir got damaged resulting in collapse of the fresh water separation process through the controlled system. This also affected the water storing capacity of system. The other factors like drought, reduction in flow of freshwater and cyclone of 1999 further deteriorated the situation.

Because of change in the water regime of the area, the Jhabo Wetland has lost its importance with respect to fisheries and refuge for wintering fauna. The economy of the area was totally dependent on the fisheries and marginal agriculture, which has now been seriously affected under, altered conditions of

the wetland. It was reported that Goth Ismail Chalko used to be main agriculture center of the area but because of stoppage in flow of freshwater no agriculture activity is done in the area except in the Goth Achar where small scale cropping is done. Similarly livestock rising was an important activity, which like agriculture was reduced to bare minimum.

Most of the areas are dry and only in the area where Karo-Ghangro outfall drains discharges, some fishes of mostly marine origin are found. Severe drought during 2001 and 2004 has further deteriorated the conditions of the wetland. Fishing used to be the main economic activity of Goth Ismail, Goth Chalko and Goth Bachoo, however, due to drying up the wetland; fishing activity has been practically wiped out. Species like Rohu or Dumbra (*Labeo rohita*), Black Rohu (*Labeo calbasu*), Morakhi (*Cirrihinus mrigala*), Seenghara (*Aorichthys aor*), Dangri (*Lates calcarifer*), and Catla (*Catla catla*) used to be commonly caught in the area especially in area around Goth Bachoo but these freshwater species are not found in the area.

During the present study a survey of Jhabo Wetland was carried out to determine the species composition of mammals, reptiles, birds and fishes found in the area.

Materials and Methods

Field visits were made to different locations in the Jhabo Wetland and survey of various animals found in the area was done using standard techniques (Javed and Hasan, 2004). A list of species observed during various surveys conducted in 1990's is also given in the paper. For the identification of bird Perrins and Attenborough (1987), Hasan (1994, 1996), Heninzel *et al* (1987), Roberts (1991, 1992) and Ali *et al.* (1983) were used whereas for fishes Bianchi (1985) and Munro (1955) were mainly referred to.

Results and Discussions

The survey revealed that only light reed vegetation (*Typha spp.*) exists in the areas of the wetland whereas the surrounding areas have sparse growth of *Prosopis juliflora*, *Salvadora spp.* and *Suaeda fruticosa*.

At present, most of the area of Jhabo is totally dried up, therefore, it harbours only birds that are inhabitant of arid and dry zone (Table-I). However, some birds usually inhabitant of freshwater bodies were receded from Karo-Ghangro Channel (Table-I). Dense concentration of birds was observed in the area where Karo-Ghangro Outfall Drain falls into sea (Table-I). A comparison with the bird fauna observed during surveys made in 1990 has been given in Table-I, which indicates that number of species occurring in the area has been considerably decreased. The population of species like pelican (*Pelecanus*

onocrotalus) and greater flamingo (*Phoenicopterus ruber*) has decreased considerably. No individual of lesser flamingo (*Phoeniconaias minor*) was observed during the present study. Species of ducks like common shelduck (*Tadorna tadorna*), wigeon (*Anas Penelope*), gadwall (*Anas crecca*), mallard (*Anas platyrhynchos*), northern pintail (*Anas acuta*), garganey (*Anas querquedula*), northern shoveler (*Anas clypeata*), common pochard (*Aythya ferina*), tufted duck (*Anas fuligula*) and common coot (*Fulica atrd*) were not observed during the present study whereas these species seems to be common during 1990's surveys.

Table-I. Bird fauna of Jhabo wetland

THE DRY PORTION OF JHABO	ALONG THE KARO-KHANGRO OUTFALL DRAIN	THE SEA CONNECTED SIDE OF JHABO.	FAUNA RECORDED DURING SURVEYS IN 1990's.
Yellow Wagtail (<i>Motacillaflava</i>)	Large Cormorant (<i>Phalacrocorax carbo</i>)	Large Cormorant (<i>Phalacrocorax carbo</i>)	Great white Pelican (<i>Pelecanus onocrotalus</i>)
Pied Wagtail (<i>Motacilla alba</i>)	Little Egret (<i>Egretta garzetta</i>)	Grey Heron (<i>Ardea cinerea</i>)	Dalmatian Pelican (<i>Pelecanus crispus</i>)
White Cheeked Bulbul (<i>Pycnonotus leucogenys</i>)	Pariah Kite (<i>Milvus migrans</i>)	Little Egret (<i>Egretta garzetta</i>)	Reef Heron (<i>Egretta gularis</i>)
Common Babbler (<i>Turdoides caudatus</i>)	Brahminy Kite (<i>Haliastur indus</i>)	Indian Reef Heron (<i>Egretta gularis</i>)	Grey Heron (<i>Ardea cinerea</i>)
Chiff-Chaff (<i>Phylloscopus collybitus</i>)	Lesser Black-backed Gull (<i>Larus fuscus</i>)	Flamingo (<i>Phoenicopterus ruber</i>)	White Spoonbill (<i>Platalea leucorodia</i>)
Common Myna (<i>Acridotheres tristis</i>)	Blackheaded Gull (<i>Larus ridibundus</i>)	Pariah Kite (<i>Milvus migrans</i>)	Greater Flamingo (<i>Phoenicopterus ruber</i>)
Bank Myna (<i>Acridotheres ginginianus</i>)	Indian Whiskered Tern (<i>Chlidonais hybrida</i>)	Brahminy Kite (<i>Haliastur indus</i>)	Ruddy Shelduck (<i>Tadorna fermginea</i>)
Black Drongo (<i>Dicrurus macrocercus</i>)	Caspian Tern (<i>Hydroprogne caspia</i>)	Curlew (<i>Numenius arquata</i>)	Common Shelduck (<i>Tadorna tadoma</i>)
House Crow (<i>Corvus splendens</i>)	Little Tern (<i>Sterna albifrons</i>)	Redshank (<i>Tringa totanus</i>)	Wigeon (<i>Anas Penelope</i>)
Pariah Kite (<i>Milvus migrant</i>)		Green Shank (<i>Tringa nebularia</i>)	Gadwall (<i>Anas strepera</i>)
Brahminy Kite (<i>Haliastur indus</i>)		Herring Gull (<i>Larus argentus</i>)	Common Teal (<i>Anas crecca</i>)
Tawny Eagle (<i>Aquila rapax</i>)		Blackbacked Gull (<i>Larus fuscus</i>)	Mallard (<i>Anas platyrhynchos</i>)
Indian Collared Dove (<i>Streptopelia decaocta</i>)		Blackheaded Gull (<i>Larus ridibundus</i>)	Northern Pintail (<i>Anas acuta</i>)
		Indian Whiskered Tern (<i>Chlidonais hybrida</i>)	Northern Shoveler (<i>Anas clypeata</i>)

<p>Pied Kingfisher (<i>Ceryle rudis</i>)</p> <p>Common Blue Kingfisher (<i>Alcedo attis</i>)</p> <p>White breasted Kingfisher (<i>Halcyon smymensis</i>)</p> <p>Little Green Bee-eater (<i>Merops orientalis</i>)</p> <p>Hoopoe (<i>Upupa epops</i>)</p>		<p>Caspian Tern (<i>Hydroprogne caspia</i>)</p> <p>Little Tern (<i>Sterna albifrons</i>)</p> <p>Pied Kingfisher (<i>Ceryle rudis</i>)</p> <p>Common Blue Kingfisher (<i>Alcedo attis</i>)</p> <p>whitebreasted Kingfisher (<i>Halcyon smymensis</i>)</p> <p>Little Green Bee-eater (<i>Merops orientalis</i>)</p>	<p>Common crane (<i>Grus grus</i>)</p> <p>Common Coot (<i>Fulica atra</i>)</p> <p>Avocet White (<i>Recurvirostra avosetta</i>)</p> <p>Black-tailed Godwit (<i>Limosa limosa</i>)</p> <p>Eurasian Curlew (<i>Numenius arquata</i>)</p> <p>Redshank (<i>Tringa totanus</i>)</p> <p>Little Stint (<i>Calidris minuta</i>)</p> <p>Ruff (<i>Philomachus pugnax</i>)</p> <p>Herring Gull (<i>Larus argentatus</i>)</p> <p>Great Black-headed Gull (<i>Larus fuscus</i>)</p> <p>Black-headed Gull (<i>Larus ridibundus</i>)</p> <p>Whiskered Tern (<i>Chlidonias hybrida</i>)</p> <p>Caspian Tern (<i>Hydroprogne caspia</i>)</p>
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During present study, marine fishes were collected from the seaside of Jhabo wetland whereas freshwater fishes were collected from the channel of Karo-Ghangro (Table-II). Major fish fauna in the wetland, thus, consists mainly of marine species and freshwater species are only found in drains leading to this wetland. Similar changes in the faunal composition were noticed in Nurrari (Javed and Hasan, 2004).

In the area adjacent to Jhabo wetland, porcupine (*Hystrix indica*), Asiatic jackal (*Canis aureus*), and red fox (*Vulpes vulpes pusilla*) were observed. Among small rodents, Indian gerbil (*Tatera indica*), Balochistan gerbil (*Gerbillus nanus*), house mouse (*Mus musculus*) and five striped palm squirrel (*Funambulus pennanti*) were recorded. Two species of reptiles i.e checkered keelback snake (*Xenochrophis piscatof*) and Indian flatshell turtle (*Lissemys punctata punctata*) were collected from the Jhabo Wetland during the present study.

Table-II. Fish fauna of Jhabo wetland

SEASIDE OF JHABO WETLAND	KARO-GHANGRO DRAIN
Bloch's gizzard-shad (<i>Nematalosa nasus</i>)	<i>Labeo boga</i>
Indian Oil-sardine (<i>Sardinella longiceps</i>)	<i>Mystus gulio</i>
Sindh sardine (<i>Sardinella sindensis</i>)	<i>Glossogobius giuris</i>
Spot-tail needlefish (<i>Strongylura strongylura</i>)	<i>Channa punctata</i>
Crocodile flathead (<i>Cociella crocodila</i>)	<i>Oreochromis mossambica</i>
Jarbuga terapon (<i>Terapon jarbuga</i>)	
Silver sillago (<i>Sillago sihama</i>)	
Splendid ponyfish (<i>Leiognathus splendens</i>)	
Smallspotted grunter (<i>Pomadasys commersonni</i>)	
Saddle grunt (<i>Pomadasys maculatus</i>)	
Yellowfin seabream (<i>Acanthopagrus latus</i>)	
Greenback mullet (<i>Liza subviridis</i>)	
Square-tail mullet (<i>Liza vaigiensis</i>)	

Considering that the Jhabo Wetland has been considerably altered due to stoppage of flow of freshwater and intrusion of sea water especially on account of cyclone of 1999, there is a need to take necessary steps to ensure flow of adequate freshwater in the wetland and also to ensure that intrusion of seawater is minimized. This wetland, which used to inhabit a well-diversified fauna especially, birds and fishes can thus be restored.

References

- AH, S., Ripley, S. D. and Henry, D. J. 1983. A Pictorial Guide to the Birds of Indian Sub-Continent. Oxford University Press, New Delhi.
- Bianchi, G. 1980. Field Guide to the Commercial Marine and Brackish-water Species of Pakistan. Food and Agriculture Organization of the United Nations.
- Hasan,, A. 1994. The birds of Sindh mangroves. Rec. Zool. Sur. Pakistan. 12:98-105.
- Hasan, A., 1996. Biodiversity of bird fauna in mangrove areas of Sindh, In: Proceedings of the UNESCO Workshop of Coastal Aquaculture. (Q.B. Qazmi, ed.)Marine Reference Collection and Resource Centre. University of Karachi. Pp.21-26.
- Henizel, H., Fitter, R. S. R. and Parslow, J. 1972. The Birds of Britain and Europe, (with North Africa and Middle East). William Collins Sons and Co. Ltd. London.
- Javed, H. I. and Hasan, A., 2004. Some observations on the status of birds and fishes in the Nurruri Wetland, Badin, Sindh. Rec. Zool. Surv. Pakistan 15: 16-21.
- Perrins, C. and Attenborough, D. 1987. The Birds of Britain and Europe. William Collins Sons and Co. London.
- Munro, I. S. R., 1955. Marine and Freshwater Fishes of Ceylon. Published for Department of External Affairs, Canberra.
- Roberts, T. J. 1991. The Birds of Pakistan. Vol. 1 Oxford University Press. Karachi.
- Roberts, T. J. 1992. The Birds of Pakistan. Vol. 2 Oxford University Press, Karachi