

# Birds Biodiversity and Conservation Status of Keshopur Community Reserve, Gurdaspur, Punjab

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**Abstract:** *The importance of Wetlands has been increasingly recognized in recent years with the growing interest in them for supplementing human dietary requirements and for their ecological significance in terms of hydrologic, water purification, aquatic productivity, flood control and micro-climatic regulations. Wetlands provide habitats to fishes, birds and wildlife. Bird community of Keshopur wetland in District Gurdaspur, Punjab has been studied from January 2013-June 2014. Though various conservation strategies are implemented in protected areas still network of unrecognized natural wetlands are ignored. The network of such natural sites is important biodiversity corridor that facilitates the movement of migratory birds. The present study is step towards the protection of this valuable habitat, namely Keshopur Miani Community Reserve.*

**Keywords:** wetlands, birds, Conservation, Punjab.

## 1. Introduction

Wetlands are considered amongst the most productive and unique ecosystems. Wetlands are the ecotones between permanently aquatic and dry terrestrial ecosystems and are integral to a healthy environment, keeping the water table high and stable. The conjunction of water and soil is loosely defined as wetland. It includes a wide variety of habitats such as marshes, peat lands, flood plains, rivers, lakes and coastal areas. These wetlands contribute significantly to the socio-economic need of the local people in addition to providing suitable biodiversity corridors for avian migration across the globe (Balbir Chand Bala, IFS, 2008). They occupy about 6% of land area on globe. The recent millennium assessment of ecosystem puts fresh water biodiversity as the most threatened of all types of biodiversity (D. Rajasekar and Neelima Jerath, 2008). Wetlands are found to be the richest sites of biodiversity by holding major share of the existing figure (Anon, 2000). It is estimated that freshwater wetlands alone support 20% of the known range of biodiversity in India (Deepa and Ramachandra, 1999). Wetlands in India cover an area of 58.2 million hectares (Prasad *et al.*, 2002) and in Punjab; these are estimated to cover 71878.5 ha. of its total geographical area (Garg *et al.* 1998). In Wildlife Institute of India's survey reveals that wetlands are disappearing at a rate of 2% to 3% every year. Many communities depend on the freshwater ecosystems for food and livelihood source. The state of Punjab is home to three internationally important wetlands and several wetlands of state importance. The Keshopur-Miani wetland in Gurdaspur district is one such important site which has a profound impact on the economy of the rural areas surrounding it and the participation of the local community has been identified as a key factor for its conservation. This wetland has been declared as a community reserve, it being the first community reserve of the country. The fate of important birds like Sarus crane (VN) and Common crane in India is dependent on such small natural wetlands. Natural wetlands of Gurdaspur now came into limelight as the most threatened crane population is coming regularly in winters. Keshopur wetland hosts about 58 species of migratory birds and about 30,000 migratory birds that flock the area during winter migratory season. Due

to lack of conservation efforts, several wetlands in the state have either been lost or are on verge of extinction.

## 2. Study Area

Punjab is endowed with a very rich spectrum of forests, wildlife, wetlands and cultural diversity. Keshopur community reserve is a dynamic freshwater ecosystem in the district of Gurdaspur, Punjab. It is the first ever notified community reserve of India under the wildlife protection act, 1972 (amended 2002). It is located at latitude 32°05' 16.3" N and Longitude 75° 24' 24.2"E at an altitude of 245 m. with an area of around 850 acres (Fig: 1). The ecological boundaries of this ecosystem extend much beyond boundaries of the community reserve and the entire tract serves as an important habitat for many migratory birds. This area was declared as a community reserve following a Punjab government notification No. 34/13/2007/Ft-V/6133 dated 25 June 2007. Although this site is dramatically altered by human activity still continues to provide habitat for many bird and animal species. About 30,000 important migratory birds with 58 species from America, South Africa, Siberia, Russia and Pakistan along with resident species showcase their charming presence to the world at the reserve. According to wild life officials here, birds like Wigeon, Dub Chick, Black Ibis, Gadwall, Common Teal, Pintail and Northern Shoveler have flocked to the area with their numbers close to 1,000 to 1,500 each. But Grey lag Goose, Common Pochard, Spot billed Duck, White Wagtail, Yellow Wagtail, Grey Wagtail, Brahminy Shelduck or Ruddy, Imperial eagle, Spotted duck, Sarus crane's appearances are lesser than as usual. The reserve comprises freshwater marshes that cover an area of 340ha and is an important water fowl habitat and migratory bird corridor during the winter season. The entire community reserve is on two marshes owned by five village Panchayats -the major one being Miani (400 acres), Dalla (152 acres), Keshopur (136 acres) and Matwa (51 acres) as a contiguous block and Magarmudian (111 acres) as a separate patch. Currently 83% of the total area in the community reserve is under active human use in the form of fish ponds, cultivation of lotus and Trapa through long term lease mechanisms. In the above background, Keshopur wetland is taken as study area for assessment of bird diversity as well as to highlight its

conservation status in order to sensitize Government/NGO's for its valuable conservation.



**Figure 1:** Map of the study area

Source: Google map



**Figure 2:** A view of keshopur community reserve



**Plate1.** Sarus Crane (*Grus antigone*)



**Plate 2.** Brahminy ducks (*Tadorna tadorna*)

### 3. Methodology

The Primary information is collected by regular visits to the study area. The secondary sources include books, journals, electronic journals, encyclopedias, news papers, websites and research articles. Observations were made regularly at 10-15 days interval from January 2013 to June 2014 during most active period for birds. Direct count method was followed to take field data. 10-15 minutes were spent at each point to avoid repeated counting of same bird individual. Observations were carried out with the aid of binoculars and photography was done with camera having telescopic lens. Identification of birds was done using field guides (Ali and Ripley, 1987; Grimmet *et al.*, 1999; Kazmierczak, K. and Van Perlo, B. 2000). Abundance and status of recorded birds was established on frequency of occurrence during field visits. Status of species was classified into resident (R) and winter migrant (WM).

### 4. Results and Discussion

A total of 146 species of birds belonging to 38 families were recorded from Keshopur wetland (Table 1). Out of 146 recorded species, 83 species are resident breeders, 5 species are indigenous and 58 species are migratory. Highest number of birds was recorded in the month of January and lowest number was recorded in the month of June. Habitat preference has been observed in different bird species as common coot (*Fulica atra*), common poachard (*Aythya ferina*), pintail (*Anas acuta*), gadwall (*Anas strepera*), mallard (*Anas platyrhynchos*) dominates open water wetlands whereas common cranes (*Grus grus*), Sarus crane (*Grus antigone*), Woolly necked stork (*Ciconia episcopus*), Bar headed geese (*Anser indicus*) and huge variety of raptor dominates marshy lands. This sixteen months study establishes the richness of this wetland in terms of bird fauna which is excellent indicator of ecological health. The present status of its conservation revealed that Keshopur wetland like several others in the Punjab is on the verge of extinction. Out of the thousands of acres of land at one point of time it got reduced to about 300 acres. Forest officials through their sustained efforts have managed to reclaim some of this area and today the wetland has about 850 acres of land. The wetland, like many others was suffering due to the perceived clash of interest of the locals with the wetland ecosystem.

Not only have they hired labour to scare away migratory/ domestic birds, they were using diesel engines to maintain water level in fish ponds, thereby threatening endemic species of flora and fauna. The practice started when nine Panchayats owning the area leased out 220 acres to fish farmers for a meager Rs 1000 per acre per year. As rains have failed in the past some years, it has been easy for fish farmers to take over the wetland. It dries up in summers and it is easy to dig up ponds in the otherwise marshy area. Draining out of water of chhams has also caused considerable drop on the area's water table. Unfortunately,

due to reclaiming of land for farming and construction, siltation, grazing in the catchments of the wetland zones and due to weed growth, wetlands are continuously diminishing with less than 1% of the land remaining under them in the state of Punjab against a world average of 6%. This calls for urgent action and involvement of community to protect our natural heritage. Involvement of local community in the protection and management of wetland and creation of employment opportunities for them through wetland is a model which can be replicated else where as well.

**Table1.** List of birds reported at Keshopur wetland

Common Name	Zoological Name	Status
<b>Family: Accipitridae</b>		
Black Eagle	<i>Ictinaetus malayensis</i>	IB
Black Kite	<i>Milvus migrans migrans</i>	RB
Black Winged Kite	<i>Elanus caeruleus</i>	RB
Brahminy Kite	<i>Haliastur indus</i>	IB
Crested Hawk-Eagle	<i>Spizaetus cirrhatus cirrhatus</i>	RB
Eurasian Marsh Harrier	<i>Circus aeruginosus</i>	WM
Great Spotted Eagle	<i>Aquila clanga</i>	WM
Hen Harrier / Northern Harrier	<i>Circus cyaneus</i>	WM
Indian Spotted Eagle	<i>Clanga hastate</i>	RB
Indian White Backed Vulture	<i>Gyps bengalensis</i>	RB
Montagu's Harrier	<i>Circus pygargus</i>	WM
Osprey	<i>Pandion Haliaeetus</i>	RB
Pallid Harrier	<i>Circus macrourus</i>	WM
Scavenger Vulture	<i>Neophron percnopterus</i>	RB
Shikra	<i>Accipiter badius</i>	RB
<b>Family: Alaudidae</b>		
Pariash Kite/ Bush Lark	<i>Mirafra assamica</i>	RB
Crested Lark	<i>Galerida cristata</i>	RB
Indian Bush Lark	<i>Mirafra erythroptera</i>	RB
<b>Family: Alcedinidae</b>		
Common Kingfisher	<i>Alcedo atthis</i>	RB
Himalayan Pied Kingfisher	<i>Ceryle rudis</i>	WM
Lesser Pied Kingfisher	<i>Megaceryle lugubris</i>	WM
Pied Kingfisher	<i>Ceryle rudis</i>	RB
White-Breasted/ Throated Kingfisher	<i>Halcyon smyrnensis</i>	RB
<b>Family: Anatidae</b>		
Common Pochard	<i>Aythya ferina</i>	WM
Eurasian Wigeon	<i>Anas Penelope</i>	WM
Ferruginous Duck	<i>Aythya nyroca</i>	WM
Gadwall	<i>Anas strepera</i>	WM
Garganey	<i>Anasquer quedula</i>	WM
Indian Spot-billed Duck /Dabbling duck	<i>Anas poecilorhyncha</i>	RB
Lesser Whistling Duck	<i>Dendrocygna javanica</i>	RB
Mallard	<i>Anas platyrhynchos</i>	WM
Pintail	<i>Anas acuta</i>	WM
Redcrested Pochard	<i>Netta rufinna</i>	WM
Ruddy Shelduck /Brahminy Duck	<i>Tadorna ferruginea</i>	WM
Shoveler	<i>Anas clypeata</i>	WM
Tufted Duck	<i>Aythya fuligula</i>	WM
<b>Family: Apodidae</b>		
Greylag Goose	<i>Anser anser</i>	WM
Barheaded Geese/Nanjai	<i>Anser indicus</i>	WM
<b>Family: Ardeidae</b>		
Cattle Egret	<i>Bubulcus ibis</i>	RB
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>	RB

Grey Heron	<i>Ardea cinerea</i>	RB
Large Egret /Great Egret	<i>Ardea alba</i>	RB
Little Egret	<i>Egretta garzetta</i>	RB
Night Heron /Black Crown	<i>Nycticorax nycticorax</i>	RB
Pond Heron /Paddy Bird	<i>Ardeola grayii</i>	RB
Purple Heron	<i>Ardea purpurea</i>	RB
<b>Family: Bucerotidae</b>		
Common Grey Hornbill	<i>Ocyrocus birostris</i>	RB
<b>Family: Campephagidae</b>		
Bay Backed Shrike	<i>Lanius viltatus</i>	RB
Grey-backed Shrike	<i>Lanius tephronotus</i>	RB
Long Tailed Shrike	<i>Lanius schach</i>	RB
Small Minivet	<i>Pericrocotus cinnamomeus</i>	RB
<b>Family: Capitonidae</b>		
Coppersmith Barbet	<i>Megalaima haemacephala</i>	IB
Large Green Barbet	<i>Megalaima zeylanica</i>	RB
<b>Family: Caruidae</b>		
Common Crane	<i>Grus grus</i>	WM
Sarus Crane (see plate 1)	<i>Grus antigone</i>	RB
<b>Family: Charadriidae</b>		
Black-Tailed Godwit	<i>Limosa limo</i>	WM
Common Redshank	<i>Tringa tetanus</i>	WM
Common Ringed Plover	<i>Charadrius hiaticula</i>	WM
Common Sandpiper	<i>Tringa hypoleucos</i>	WM
Common Snipe	<i>Gallinago gallinago</i>	WM
Curlew (Eurasian)	<i>Numenius arquata</i>	WM
Green Sandpiper	<i>Tringa ochropus</i>	WM
Green Shank (Common)	<i>Tringa nebularia</i>	WM
Jack Snipe	<i>Gallinago minima</i>	WM
Little Ring Plover	<i>Charadrius dubius</i>	WM
Marsh Sandpiper	<i>Tringa stagnatilis</i>	WM
Northern Lapwing	<i>Vanellus vanellus</i>	WM
Red-Wattled Lapwing	<i>Vanallus indicus</i>	RB
Ruff and Reave	<i>Philomachus pugnax</i>	WM
Spotted/Dusky Redshank	<i>Tringa erythropus</i>	WM
White Tailed Lapwing	<i>Vanellus leucurus</i>	WM
<b>Family: Ciconida</b>		
Painted Stork	<i>Mycteria leucocephala</i>	RB
Woolly Necked Stork	<i>Ciconia episcopus</i>	WM
<b>Family: Columbidae</b>		
Blue Rock Pigeon/Rock Dove	<i>Columba livia</i>	RB
Indian Ring Dove	<i>Streptopelia decaocto</i>	RB
Laughing Dove	<i>Streptopelia senegalensis</i>	WM
Red Turtle Dove (Red Collared)	<i>Streptopelia tranquebarica</i>	RB
Rufous Turtule Dove (Oriental)	<i>Streptopelia orientali</i>	RB
Spotted Dove	<i>Streptopelia chinensis</i>	RB
Yellow Fotted Pigeon	<i>Treron phoenicopterus</i>	RB
<b>Family: Corvidae</b>		
House Crow	<i>Corvus splendens splendens</i>	RB

Jungle Crow	<i>Corvus macrorhynchos</i>	RB
<b>Family: Cuculidae</b>		
Koel-Cuckoo(Asian)	<i>Eudynamis scolopacea</i>	RB
Large Couca/Great Crow Pheasant	<i>Centropus sinensis</i>	RB
<b>Family: Dicruridae</b>		
Black Drongo	<i>Dicrurus adsimilis</i>	RB
<b>Family: Falconida</b>		
Laggar Falcon	<i>Falco biarmicus jugger</i>	WM
<b>Family: Hirundinidae</b>		
Red-Rumped Swallow	<i>Cecropis daurica</i>	RB
Swallow	<i>Hirundo rustica</i>	WM
<b>Family: Laridae</b>		
Black Headed Gull	<i>Larus ridibundus</i>	WM
Brown Headed Gull	<i>Larus brunnicephalus</i>	WM
Common Tern	<i>Sterna hirundo</i>	RB
Indian River Tern	<i>Sterna aurantia</i>	RB
Pallas Gull	<i>Ichthyæetus ichthyæetus</i>	WM
Whiskered Tern	<i>Chlidonias hybrida</i>	WM
<b>Family: Meropidae</b>		
Green Bee-Eater	<i>Merops orientalis</i>	RB
<b>Family: Motacillidae</b>		
Grey Wagtail	<i>Motacilla cinerea</i>	WM
Pied Wagtail /White Wagtail	<i>Motacilla alba</i>	WM
White Browed Wagtail	<i>Motacilla madaraspatensis</i>	RB
Yellow Headed /Citrine Wagtail	<i>Motacilla citreola</i>	WM
Yellow Wagtail(Western)	<i>Motacilla flava</i>	WM
<b>Family: Muscipinae</b>		
Blue Throated Fly Catcher	<i>Muscicapa rubeculoides</i>	IB
Red Breasted Fly Catcher	<i>Ficedula strophinata parya</i>	WM
<b>Family: Nectariniidae</b>		
Crimson Sunbird	<i>Aethopyga siparaja</i>	RB
<b>Family: Pachycephalinae</b>		
Black Redstart	<i>Phoenicurus ochruros</i>	WM
Brown Leaf Warbler(Common Chiffchaff)	<i>Phylloscopus collybita</i>	WM
Magpie Robin	<i>Copsychus saularis</i>	RB
Pied Bush Chat	<i>Saxicola caprata</i>	RB
Striated Marsh Warbler(Grass Bird)	<i>Megalurus palustris</i>	RB
Tailor Bird	<i>Orthotomus sutorius</i>	RB
<b>Family: Phalacrocoracidae</b>		
Dartar	<i>Anhinga rufa</i>	RB
Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	IB
Large Cormorant	<i>Phalacrocorax carbo</i>	RB
Little Cormorant	<i>Phalacrocorax niger</i>	RB
<b>Family: Phasianida</b>		
Black Partidge/Francolin	<i>Francolinus francolinus</i>	RB
Common Peafowl	<i>Pavo cristatus</i>	RB
Grey Quail	<i>Coturnix coturnix</i>	RB
Red Jungle Fowl	<i>Gallus gallus</i>	RB
<b>Family: Picidae</b>		
Golden Beaked Woodpecker	<i>Dinopium shorii</i>	RB
Lesser Golden Backed Woodpecker	<i>Dinopium bengalense</i>	RB
<b>Family: Ploceidae</b>		
Baya/Weaver Bird	<i>Ploceus philippinus</i>	RB
Black Breasted Weaver Bird	<i>Ploceus benghalensis</i>	RB
House Sparrow	<i>Passer domesticus</i>	RB
Red Munia/Avadavat	<i>Estrilda amandava</i>	RB
Streaked Weaver Bird	<i>Ploceus manyar</i>	RB
<b>Family: Podicipedidae</b>		

Great Crested Grebe	<i>Podiceps cristatus</i>	WM
Little Grebe	<i>Podiceps ruficollis</i>	RB
<b>Family: Psittacidae</b>		
Alexandrine Parakeet	<i>Psittacula eupatria</i>	RB
Rose Ringed Parakeet	<i>Psittacula krami</i>	RB
<b>Family: Pycnonotidae</b>		
Grey/Black Bulbul	<i>Hypsipetes madagascariensis</i>	RB
Red Vented Bulbul	<i>Pycnonotus cafer</i>	RB
Red Whiskered Bulbul	<i>Pycnonotus jocosus</i>	RB
<b>Family: Rallidae</b>		
Eurasian Coot	<i>Fulica atra</i>	WM
Indian Moorhen	<i>Gerllinula chloropus</i>	RB
White Breasted Waterhen	<i>Amurornis phoenicurus</i>	RB
<b>Family: Strigidae</b>		
Jungle Owlet	<i>Glaucidium radiatum</i>	RB
<b>Family: Sturnidae</b>		
Bank Myna	<i>Acridotheres ginginianus</i>	RB
Common Myna	<i>Acridotheres tristis</i>	RB
Common Starling	<i>Sturnus vulgaris</i>	WM
Pied Myna/Asian Pied Starling	<i>Gracupica contra</i>	RB
<b>Family: Tadorna</b>		
Common Shelduck (see plate 2)	<i>Tadorna tadorna</i>	WM
<b>Family: Threskiornithidae</b>		
Black Headed Ibis	<i>Threskiornis melanocephalus</i>	WM
Eurasian Spoonbill	<i>Platalea leucorodiu</i>	WM
Glossy Ibis	<i>Plegadis falcinellus</i>	WM
<b>Family: Timalinae</b>		
Jungle Babbler /Seven Sisters	<i>Turdoides striatus</i>	RB
<b>Family: Upupidae</b>		
Eurasian Hoopoe	<i>Upupa epops</i>	RB

RB= Resident breeders, WM= Winter migrant, IB=Indigenous Bird

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