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Research Article

PRESENT STATUS OF LESSER WHISTLING DUCK (*DENDROCYGNA JAVANICA*) AMONG THE TOTAL AVIAN SPECIES AT MAVOOR WETLAND, KERALA, SOUTH INDIA

Shaheer Ansari, V., *Sathick, O. and Ali Akshad, M.

Department of Zoology, Khadir Mohideen College, Adirampattinam 614 701, Tamil Nadu, India

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ABSTRACT

Avian status of Mavoor wetland at Calicut district, Kerala was studied during the period of June 2015 to March 2016. The line transect method was adopted for direct observation of birds. The observed birds by binocular and habitats were photographed by camera. Observations and counting were recorded monthly four days during morning (6 am - 10 am) and evening (4 pm - 6.30 pm). Almost 41 species of birds were observed including 22 families. Most of the birds were residential and 6 species were recorded as migrant. Local migrant of 7 species of lesser whistling ducks were observed in highest number during the month of December. Maximum number of cattle egret, purple swamp hen, Indian pond herons and little cormorant were recorded were recorded in January. Least number of birds was counted in June.

Keywords: Avian fauna, Wetland, Lesser whistling duck, Threatened.

INTRODUCTION

Wetlands cover around 5%-8% of the global land area. These are important part of the ecosystem and are among the most threatened of all environmental resources (Tiner *et al.*, 1998). Wetlands are one of the most productive ecosystems and play important role in hydrological cycle. Wetlands are the ideal habitat for types of birds such as lesser whistling duck. Birds are often common denizens of the ecosystems and they have been considered as an indicator species of inhabited areas (Grimmett and Inskipp, 2007) Cotton teal, herons and egrets. By the plenty availability of small fishes insects worms and planktons birds are attracted to the wetland .By the absence of human interfere and absence of predators they increasing their population . Bushy or grassy vegetation and aquatic plant provide escaping or natural selection. Wetland commonly used for paddy agriculture, and also high storage of water resource and balance the ecosystem (Johnsgard and Paul, 1965). But wetlands are exploited by human made activities which allow entry of sewages and non-biodegradable wastes .The aim of the study was to find out status of lesser whistling teals seasonal variation with related to other avian species which are found in Mavoor wetland.

The lesser whistling duck, *Dendrocygna javanica* or lesser whistling teal is a type of whistling duck which can breeds Indian subcontinent and south asian countries (Tikader, 1984). This species has an extremely large range, and hence does not approach the thresholds for Vulnerable under the range size criterion (IUCN Red list threatened species, 2016) they are Called whistling ducks because of they can produce a wheezy call they are also sometimes called tree ducks because they sometimes nest in tree holes.

MATERIALS AND METHODS

Study area

Mavoor, Thengilakkadavu wetland situated around 20 kms from the city of Kozhikode, Kerala. This wetland was used for different agricultural practices mainly paddy field before more than ten years. Now it is changed as wetland, which is around 1 meter depth of water with muddy soil (Rahmani *et al.*, 2002) after the construction of Oorkkadavu Kavanakkallu ragulator cum bridge on 2000 yr in Chaliyar river for avoiding water scarcity problem

*Corresponding Author: Dr. O. Sathick, Assistant Professor, P.G. and Research Department of Zoology, Khadir Mohideen College, Adirampattinam-614 701, Tamil Nadu, India, Email: osathick@yahoo.com, Mobile: +91 9865722467

neighboring people at Mavoor panchayath and supply the drinking water to the Calicut city. Now most of the wet land area is not proper for any type of agricultural practices by the plenty of water in every season. *Clarias batrachus*, *channa punctatus*, *Heteropneustes fossilis* and common carp are the major fish fauna found. The major area were enriched by algal vegetations (*Nympaea stellata* and *Salvinia molesta*), herbaceous plants (*Limnaanthem*, *Hydrilla Vallisneria*, *Cyperus*, *Scirpus validus)* and wild varieties of paddy (*Oryza sativa*, *Nymphaea stellata*). They were used by water birds to making their nest.

Algal fauna provide better habitat and feeding place for water bird and wild paddy varieties provide better hiding place to them. Small worms and insects fishes and shoots of vegetation and seeds are the major food varieties of water birds.

Mavoor Thengilakkadavu wetland includes a few acres of land area by the plenty of water. This wetland is situated around 20 km away from Calicut city. This area is submerged along the year in all season due to the construction of Kavanakkallu regulator on Chaliyar River.

The observation was mainly by line transect and direct observation with a binocular (80 x 30) and photographed by a camera (Nikon-Coolpix P610). The observation and data collection occurred 4days per month (morning 6 - 10 am, evening 4 - 6.30 pm). Observation and recording were started from the month of June 2015 to March 2016.

Lesser whistling duck was few in number in the month of June and July and increased its number. In the month of February the number of lesser whistling teal was maximum number which indicate that this wetland area provide a better habitat for growth, nesting, roosting, and reproduction, maximum temperature recorded February, 38°C. and minimum temperature was 25°C.

RESULT AND DISCUSSION

Population of lesser whistling duck, *Dendrocygna javanica* is presented in the Figure 1.

Lesser whistling Duck: Lesser whistling duck has long legs and squarish head and erect goose like posture. They have darker crown and grey coloured back and wings. Male and female has no differentiating characters in morphologically (Ormerod and Tyler, 1993). The bill is dark grey coloured, leg and feet are dark grey. They can produce a wheezy sound while flying or feeding, hence they are called whistling duck. They fly about 10 -20 groups or more flocks.

Food and feeding: They can eat aquatic vegetation, grains, larvae, worms young shoots of plants, insects, and small fishes and other aquatic invertebrates (Lakshmi, 2006). They prefer fresh water wetland by the plenty availability of food and aquatic habitat.

Migration and breeding status: In the present study, there was no eggs of lesser whistling duck in the breeding place of study area. Even though they are residential species (Figure 1) and they are moving to the nearby places of mavoor and koolimadu for their nesting and breeding.

Mavoor wetland is a fresh water wetland habitat (Menon, 2004) which provide shelter for different types of residential, migratory and local migratory birds. During our study period (June 2015 to march 2016), 41 species of birds in 22 families were recorded. Six species are migrant and seven species are local migrant. Most of the other species are residential. Maximum numbers (1292) of birds are observed in the month if February and least number (28) of birds observed in June. Lesser whistling Duck arrival was noted in the month of October and are in few in number (around 70), after the month of October the number of whistling duck species become increased in the month of November (114), December (1200) and January (1050). But in the month of January and February the number of whistling duck has slight decrease as 800 and 700 respectively. In the month of March only few (50) whistling ducks are observed. Accompanying with lesser whistling duck four other duck species also observed during study time, such species are Northern pin tail *Anas acuta*, Marbled teal *Maramaronetta anustirostis*, Cotton Teal *Nettapus coromandelianus* and Garganey *Anas querquedula.*

Marbled teal *Maramaronetta anustirostis*: *They* are domestic duck, field characters: predominantly greyish brown spotted or marbled with pale greyish buff or black above. A large brown patch from eye to nape. A small muchal crest, speculum is dull brown, not metallic. Dull white bellow, and transversely barred with brown. Sexes are alike. They are uncommon winter visitor of India, Rajasthan, and Maharastra. Breeds in Pakistan. In pairs or isolated in vegetation. They are omnivore's feeds while swimming. Their male sound is a squeaking whistle. Nesting season may June; nest is a pad of rushes and weeds, concealed in vegetation (Salim Ali, 2003).

Northern pin tail *Anas acuta*: Their local name is *Markalian* in Tamil. Size is as domestic duck. Their field characters are upper plumage and penciled grey. Head is chocolate with a white band on either side running down into the white neck and under part. They have long pointed pin like feather projecting well beyond the tail, usually sufficient diagnostic, mottled brown and buff with characteristic elongated body and tapering tail (Salim Ali, 2003). Differ from female gadwall by absence of white in the wing. Pairs or flocks, on reed fringed vegetation. They distributed in winter throughout Indian, Bangladesh, Pakisthan and Myanmer (Yosef, 1994). Habitat: common migrant duck amongst the first species to rise out of gunshot after shooting has commenced on a jheel, as if conscious of the esteem it enjoys as a sporting and table bird. They are largely vegetarian in its food preferences. Their nesting season is in the Palaearctic Region (Europe and Asia) May to July. Nest is a depression in grass in open marshy grassland, compactly lined with rushes and down feathers.

Cotton Teal *Nettapus coromandelianus*: Their size is more than a pigeon. Field characters: Are the smallest of our wild duck, white predominating in plumage. Bill short, deep at base and goose like. Male glossy blackish above with white head, neck and underparts; a prominent black collar and white wing –bar. Female paler, without either .in non-breeding plumage male resembles female except for its white wing-bar. They are distributed throughout the Indian Union, Pakistan and Bangaldesh. The may be resident or locally migratory. They are found on all inland waters, jheels, rain filled ditches, inundated paddy fields and irrigation tanks. They call by a peculiar clucking and uttered in flight. They are chiefly vegetarian but also eat insect crustaceans, nesting season is from July to September.

Garganey *Anas querquedula:* Their size is same as a domestic duck, bigger than a common teal. Their field characters include drake recognizable by its pink brown white – speckled head, with conspicuous broad white eye brows, and bluish grey on wing and shoulders (Figure 2). Duck closely resembles female teal but is paler. In flight, her very indistinct speculum as compared with the Teal's is subjective. At close range the pure white throat and the prominent superciliary stripe distinguish her flocks on grassy jheels. They are distributed throughout the indian union Bangladesh Pakistan in winter. Along with common teal and other earliest migrants are commensing to arrive January (Salim Ali, 2003). They are largely vegetarian. Nesting season is from May to June. Nest is depression in the grass in wet meadows, sometimes lined with a layer of finer grasses but always with plenty of down feathers.

Even though lesser whistling duck is a residential species of bird (Figure 3), they are moving different places as better habitat for food, breeding and reproduction.

During our studies we noted that due to high temperature (38°C) in March and variation in water level they moved nearby places for better habitat.

Lesser whistling duck is gregarious residential duck found different wetland habitat in India. In Mavoor wetland the arrival of lesser whistling teal is a fascinating thing and its wheezing sound, flying are too attractive to ornithologist. The percentage of total lesser whistling teal species was higher in number from October to March (36.8, 29.6, 75.8, 54, 60.8 and 8.9% respectively).

Present study reveals that this wetland area is better place for other species of birds than lesser whistling duck. Mavoor wetland area provide shelter for types of avian fauna such as cattle egrets (Seeddikoya *et al*., 2005), *Bubulcus ibis Linnaeus*, pond herons *Ardeola grayii Sykes*, purple herons *Ardea purpureaLinnaeus*, purple swamp hen *Porphyrio porphyrio*, bronze winged jacana *Metopidius indicus*, little cormorant *Phalacrocorax niger* and cotton pygmy goose *Nettapus coromandelianus* (Verma *et al*., 2004).

List of birds with their family, scientific name and migratory status are shown in Table 1. The major threat of water birds was enriched growth of bushy plants and polluted wet land by municipal waste. Lesser whistiling Duck only visible unpolluted site of this wetland so Mavoor wetland should be protected and conserved for better conservation of these avifauna. The shocking depletion in numbers and species diversity of wetland birds were reduced in a dramatic way (Guptha *et al*., 2009).

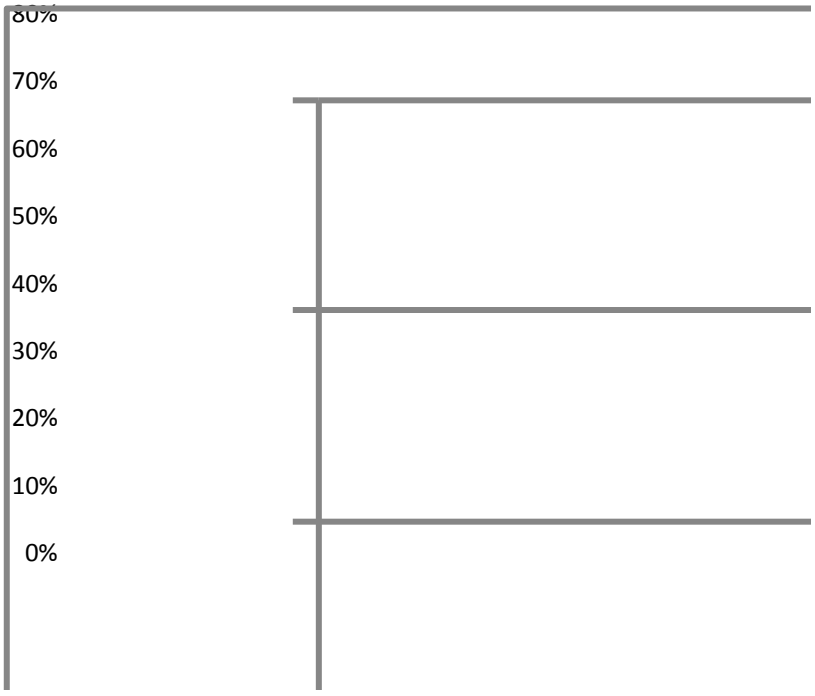

Figure 1. Graph showing population of lesser whistling duck.

Figure 2. Lesser whistling duck with Garganey in wetland.

Figure 3. Garganey at Mavoor wetland.

Figure 4. Lesser whistling ducks at Mavoor wetland.

Table 1. List of birds at Mavoor.

S.No.	Family	Common name	Scientific name	Status
1.	Anatidae	Lesser whistling Duck	*Dendrocygna javanica*	R
		Garganey	*Anas querquedulaLinnaeeus*	M
		Cotton teal	*Nettapus coromandelianus*	R
2.	Ardeidae	Purple heron	*Ardea purpureaLinnaeus*	R
		Indian pond Heron	*Ardeola grayii Sykes*	R
		Cattle egret	*Bubulcus ibis Linnaeus*	R
		Large egret	*Casmerodius albus*	R
		Little egret	*Egretta garzetta*	R
		Yellow Bittern	*Ixobrychus sinensis*	R
3.	Phalacrocoracidae	Little Cormorant	*Phalacrocorax niger*	R
4.	Ciconiidae	Asian Openbill-Stork	*Anastomus oscitans* Boddaert	LM
5.	Threskiornithidae	Oriental White Ibis	*Threskiornis elanocephalus*	LM
6.	Accipitridae	Black Kite	*Milvus migrans*	R
		Brahminy Kite	*Haliastur Indus*	R
		Shikra	*Accipiter badius*	R
7.	Pandionidae	Osprey	*Pandion haliaetus*	M
8.	Rallidae	White-breasted Waterhen	*Amaurornis phoenicurus*	R
		Common Moorhen	*Gallinula chloropus*	R
		Purple Moorhen	*Porphyrio porphyrio*	LM
		Watercock	*Gallicrex cinerea*	R
		Common Coot	*Fulica atra* Linnaeus	LM
9	Jacanidae	Pheasant-tailed Jacana	*Hydrophasianus chirurgus*	LM
		Bronze-winged Jacana	*Metopidius indicus*	R
10.	Charadriidae	Red-wattled Lapwing	*Vanellus indicus*	R
		Little Ringed Plover	*Charadrius dubius* Scopoli	M
11	Scolopacidae	Wood Sandpiper	*Tringa glareola* Linnaeus	M
		Common Sandpiper	*Actitis hypoleucos*	M
12.	Laridae	Whiskered Tern	*Chlidonias hybridus*	M
13	Alcedinidae	Small Blue Kingfisher	*Alcedo atthis*	R
		Stork-billed Kingfisher	*Halcyon capensis*	R
		White-breasted Kingfisher	*Halcyon smyrnensis*	R
14	Meropidae	Blue-tailed Bee-eater	*Merops philippinus* Linnaeus	LM
15	Coraciidae	Indian Roller	*Coracias benghalensis*	R
17	Apodidae	Asian Palm Swift	*Cypsiurus balasiensis*	R
18	Motacillidae	Grey Wagtail	*Motacilla cinerea* Tunstall	LM
19	Sturnidae	Common Myna	*Acridotheres tristis*	R
20	Dicruridae	Black Drongo	*Dicrurus macrocercus* Vieillot	R
		Greater Racket-tailed Drongo	*Dicrurus paradiseus*	R
21	Corvidae	Indian Tree Pie	*Dendrocitta vagabunda*	R
		House Crow	*Corvus splendens Vieillot*	R
22	Oriolidae	Indian golden oriole	Oriolus kundoo	M

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