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## SEASONAL POPULATION FLUCTUATIONS IN SOME NON-PASSERIFORMES AT MARALA HEAD, PAKISTAN

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### ABSTRACT

Point count method was used to determine the relative abundance of non-passerine species at Marala wetlands (District Sialkot, Pakistan) during different calendar months between October, 2000 and September, 2001. Six species (Hoopoe, Lapwing, Spotted Owlet, Osprey, Indian Roller and Indian Nightjar) were recorded. Osprey and Spotted Owlet appearing in smaller numbers and Red Wattled Lapwing as a dominant resident. All the species were resident with some variation in population sizes during different seasons, though Osprey was a winter visitor.

**Keywords:** Hoopoe, Lapwing, Spotted Owlet, Osprey, Indian Roller, Indian Nightjar

### INTRODUCTION

Non-passeriformes (Class Aves: 4,372 extant species globally; 35 orders, 105 families, 988 genera: del Hoyo et al., 2014) includes waders, ostriches, penguins, swallows, pheasants and nightjars (Mayntz, 2019). Out of 767 bird species reported from Pakistan, 293 belong to non-passeriformes (Lepage, 2020).

Marala wetlands (Bajwat area, Punjab, Pakistan) are important wintering grounds for a host of wildlife species. For better conservation of the avian biodiversity in this area, it is imperative to understand the factors that affect them. This research was conducted to form a baseline for ornithological population studies on non-passerines inhabiting Marala wetlands.

### MATERIALS AND METHOD

Point count method was used to determine the population levels of six non-passerine species of Marala wetlands located at junction of rivers Jammu Tawi, Chanab and Manawar Tawi during different calendar months between October, 2000 and September, 2001. Birds were observed from a point from some inconspicuous point (remaining un-noticed to birds) at starting points of each of the three rivers (Kikar post, Kalyal and Rangpur Kuri). Number of each bird species was counted with naked eyes, binoculars (8 x 30 mm) and spotting scope (15 – 60 x 60 mm zoom). Number of birds were considered as an index of relative species abundance at the point.

**Table 1. Number of birds of different non-passeriformes observed at Head Marala during different calendar months (October 2000 -September 2001)**

Species (common name)	Months											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<i>Upupa epops</i> (Common Hoopoe)	5	4	3	7	8	6	6	9	7	11	5	4
<i>Vanellus indicus</i> (Red-Wattled Lapwing)	35	40	49	33	27	29	31	19	17	37	45	57
<i>Athene brama</i> (Spotted Owlet)	2	1	-	3	-	-	4	-	3	-	-	2
<i>Pandion haliaetus</i> (Osprey)	-	-	2	-	2	-	-	-	-	-	-	-
<i>Coracias benghalensis</i> (Indian Roller)	4	5	7	6	4	8	4	6	5	4	4	3
<i>Caprimulgus asiaticus</i> (Indian Nightjar)	2	4	2	3	4	5	3	2	4	3	2	4



a



b



c



d



e



f

**Figure 1. Photographs of non-passeriformes observed at Marala Head (a) *Upupa epops* (b) *Vanellus indicus* (c) *Athene brama* (d) *Pandion haliaetus* (e) *Coracias benghalensis* (f) *Caprimulgus asiaticus*. In Handbook of the Birds of the World. Retrieved from [hbw.com/ibc/1109441](http://hbw.com/ibc/1109441).**

## RESULTS AND DISCUSSION

Table 1 presents the frequencies of different non-passerine species recorded during different calendar months. Six species of non-passerines, belonging to six different families and orders, were recorded. Osprey and Spotted Owlet were recorded in minimum number, while Red Wattled Lapwing was the dominant resident non-passerine in the area.

All the species exhibited were recorded throughout the year, except Osprey which appeared during winter only (December and February). The populations of all other species showed some degree of fluctuation with slight variation between months.

Common Hoopoe was recorded in higher numbers between January and July (6-11; maximum in July) compared with that for August – December (3-5: minimum in December). The species is migratory over most of its territory (Grzimek's, 2002). BirdLife International (2019) suggested it as extant and breeding in Pakistan with a decreasing population trend. It appears that the species is resident at Head Marala though some part of its populations move southward during winter.

Red-wattled Lapwing is non-migratory with a stable population (BirdLife International, 2008). In this study, it had the highest population level (57) in September and the lowest in June (17). Its breeding season extends from April to June with a clutch size of 4 eggs (Khalil et al., 2019) which may explain the higher population in September and lowest in June.

Spotted Owlet is non-migratory with a stable population globally. Spotted owlets observed in this study, were sporadic and sparse, the highest number being (4) in April. None were observed during December, February, March, May, July and August. It is commonly found in most parts of Pakistan (BirdLife International, 2016).

Ospreys are migratory with an increasing population trend globally. We recorded two birds of this species each in December and February. The findings from this study corroborate with study by Watkins (2000) in suggesting that Ospreys are usually found in this region during winters. Data on this species is not available for the area and require constant monitoring to know the population trend.

Indian Roller is non-migratory with an increasing global population trend. On an average 4 birds were recorded in each month. Sivakumaran and Thiyagesan (2003) recorded the highest percentage of birds during February in riverine habitat and during March in Tamil Nadu (India).

Indian Nightjar is non-migratory with a stable global population (BirdLife International, 2016). The numbers observed varied between 2 and 5 (maximum in March). The species is resident in the area.

## CONCLUSION

Six species of non-passerines were observed, with minimum number of the birds observed for Osprey and Spotted Owlet and Red Wattled Lapwing the dominant resident non-passerine species. Most of the non-passerines are non-migratory in the area, except Osprey which is a winter visitor.

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