

## Identification Birds Species in Dinder National Park

Tahani Ali Hassan\*

Department of wildlife sciences, College of Natural Resources and Environmental Studies,

University of Bahri, Sudan

### \*Corresponding author

Tahani Ali Hassan, Department of wildlife sciences, College of Natural Resources and Environmental Studies, University of Bahri, Sudan. Email: tahanihassanm@gmail.com

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### Abstract

This study was conducted in Dinder National Park from February to April 2017 adjacent to the Ethiopian border at a distance of 550 km south east of Khartoum. The aim of this study was to identify the bird species around Galegu station in Dinder National Park. Direct observation method was used to identify the bird in Mayas (Meadows) around Galagu station. A total of 112 species belonging to 17 orders have been identified. 27 species were in the order Passeriformes belonging to 12 families. Ring-necked dove (*Streptopelia capicola*), African pied wagtail (*Motecilla aguimp*), African namaqua dove (*Oena capensis*), African firefinch (*Legonostista rubricate*), Rupell's ling-tailed starling (*Lamprotornis johnstoni*), Little bee-eater (*Merops pusillus*) and Tufted guinea fowl (*Acryllium vulturinum*), were abundant.

**Keywords:** Meadows, Galegu Station, Dinder National Park

### Introduction

Given its diverse topography and climate, Sudan is blessed with a rich and abundant biodiversity [1]. About 10% (938 species) of the world birds were recorded in the Sudan which represents 10% of the world birds; of these 33.2% (218 species) are migrants [2].

Geographically, Sudan lies in the center of migration routes between three continents and Dinder national park lies on the route of migration of palaeartic migrants wintering in Africa south of the Sahara [1]. According to Niclaus (1987) over 250 species of birds have been identified in Dinder National Park (DNP) many of them are migrants [2].

Biodiversity in Sudan has been declining at a rapid rate due primarily to habitat degradation, especially in natural forests [3]. The vegetation cover in DNP is considered representative of changes to natural forests in Sudan in recent decades where past anthropogenic activities have created uniform vegetation [3].

Dinder national park loses most of the available water source during dry season, Galegu river and several Mayas (Meadows) become almost dry which influences the diversity and density of birds species in the park. Compared with the other African countries there are scarce studies and few published researches on bird in Dinder national park, Sudan. Species richness and diversity studies of the bird communities in DNP are urgently required. The goal of this study was to identify the bird species around Galegu station in Dinder National Park.

### The Study Area

This study was conducted in the Dinder National Park (DNP), which is located in the Sennar State between latitudes 11 to 130 N and longitudes 34 to 360 E, adjacent to the Ethiopian border at a distance of 550 km south east of Khartoum. It is drained by two seasonal rivers, Dinder and Rahad, and the area covers 10,290 km<sup>2</sup>.

The climatic conditions of park in general, can be summarized as cool and dry in winter and wet and warm in summer. The wet season starts in May and ends in November, during which the area receives an annual rain fall ranging 600 to 1000 mm, increasing southwards and peaking in August. The temperature range from as low as 200 C at the begging of the dry season in December to as high as 420 C in March and April, towards the end of the dry season. Rahad and Dinder Rivers start flooding in July, reaching their peak in September. The annual mean relative humidity varies between 35% and 45% but higher value of 79% was recorded during the peak of the rains in August [1]. The dry season extends from December to April, with maximum temperature of 380 C in April, the winter is cool with mean average temperature of 300C [1].

### Materials and methods

The data collection materials were: Field guide, Data sheet, Pen, Pencil for data record, Binocular for identified of the distance birds around Galagu station. The survey covered the entire study area which including Galagu station and eight Mayas.

1. Abd Alghani Maya which is lie North of Galagu station, about 1.5 Km.
2. Ras Amir Maya which is lie North –east of Galagu station, about 14 Km.

3. Ein Alshams Maya which is lie North-west of Galagu station, about 8 Km.
4. Musa Maya which is lie West of Galagu station, about 14 Km.
5. Gerarisa Maya which is lie South- east of Galagu station, about 8 Km.
6. Berkat Altemsah Maya which is lie South of Galagu station, about 1 Km.
7. Bit Alwhash Maya which is lie West of Galagu station.
8. Dabkar which is lie West of Galagu station about 6 Km from Galagu station.

Direct observation method was used to identify the bird in Mayas around Galagu station; the first survey was conducted from sunrise to 12:00 pm and the second survey from 15:00 pm to sunset when birds are most active. Each point was visited twice from February – April 2017.

## Results

(Table1): Birds species identified around Galagu station and surrounding Mayas in Dinder National Park from February – April 2017.

Orders	Family	Species common name	Scientific name			
Struthioformes	Struthionidae	Common Ostrich	Struthio camelus			
Pelicaniformes	Pelicanidae	Great white pelican	Pelicanus onocrotalus			
		Pink backed pelican	Pelicanus usrufescens			
	Anhingidae	Long-tailed Cormorant	Phalacrocorax africanus			
	Podicipedidae	Little Grebe	Tachybaptus ruficollis			
Ciconiiformes	Ciconiidae	Marabou stork	Leptoptilos cromeniifrus			
		Yellow billed stork	Mystaria ibis			
		wooly necked stork	Ciconiae piscopus			
		Saddle billed stork	Ephippiorhynchus senegalensis			
		African open bill	Anastomus lamelligrus			
		Black stork	Anastomus lamelligrus			
		White Stork	Ciconia ciconia			
		Abdim Stork	Ciconia abdimii			
		Scopidae	Hammerkop	Scopus subretta		
		Ardeidae	Grey heron	Ardea cinerea		
			Squacco heron	Ardeola alaroides		
			Black headed heron	Ardeamenocephala		
	Purple heron	Ardea purpurea				
	Black-crowned night Heron	Nycticorax nycticorax				
	Great egret	Egretta alba				
	Cattle egret	Bubulcus ibis				
	yellow billed egret	Mesophoyx intermedia				
	Little Egret	Egretta garzetta				
	Threskiornithidae	Sacred ibis	Threskiornis aethiopicus			
		Glossy ibis	Plegadis falcinellus			
		Hadada Ibis	Hagedash hagedash			
		African spoon bill	Platelea alba			
Anseriformes	Anatidae	Garganey	Anas querquedula			
		Spur winged goose	Plectropterus gambensis			
		White faced whistling duck	Dendrocygna navidua			
		Northorn Shoveler	Anas cyaea			
		Pygmy goose				
Falconiformes	Accipitridae	Black kite	Milvus forficatus			
		African fish eagle	Haliaeetus vocifer			
		African marsh harrier	Circus ranivorus			
		Hooded vulture	Necrocypus monachus			
		Lizzard buzzard	Kaupifalco monachus			

		Grass hopper Buzzard	Bustastur rufipennis		1
		White-backed vulture	Gypes africanus		
Falconiformes	Falconidae	Long crested eagle	Lophaetus occipitalis		
		Lesser kestrel	Falco naumanni		
		Comon kestrel	Falco tinnunculus		
Galliformes	Numididae	Helmted guinea fowl	Numida meleagris		
	Phasianidae	Clapperton's Francolin	Francolinus clapper Toni		
Charadriiformes	Scolopacidae	Common sand piper	Tringa hypoleucos		
		Wood Sandpiper	Tringa ochropus		
		Green Sandpiper	Tringa ocropus		
		Little stint	Calidris nuta		
		Ruff	Philomachu spugnax		
		Marsh sand piper	Tringa stagnatilis		
		Spotted thicknee(dikop)	Burihnus capensis		
		Senegal thicknee	Burihnus senegalensis	2	
Lauphing dove	Streptopeleasensgalensis				
	Reurvirostridae	Black winged stilt	Himanto pushimantopus	62	44
		Common ringed plover	Charadrishiaticula		
	Charadriidae	Spur winged plover	Vannelus spinosus		3
		Black-headed Plover	Vannelus spinosus		10
		Little ringed Plover			1
		African jacana	Actophilomis Africana		43
					3
		billiedSandgrouse			1
Pterocolidiformes	Pterocolidae	Namaqua dove	Oenaca pensis		50
Columbiformes	Columbidae	African moorning dove	streptopeleaceiceps	67	80
		Lauphing dove	Streptopeleasensgalensis	53	120
		Emerald wood dove	turturchalcospilos		1
Psittaciformes	Psittacidae	Rose- ringed parkeet	Psittaculakrameri	4	4
		Blue naped mouse bird	Urocoliusmacrourus	8	7
Colliformes	Colliidae	Senegal coucal	Centropussenegalensis	2	2
Cuculiformes	Centropodidae	Long -tailed night jar	Caprimulgusclimacurus		1
Caprimuligiformes	Caprimuligidae	African palm swift	Cypsiurusparvus		35
Apodiformes	Apodidae	Little swift	Apusaffinis	9	50
		Pied kingfisher	Cerylerudis	7	9
		Malackite Kingfisher	Alcidocristata		1
		Gaint Kingfisher	Megaceryle maxima		1
Coraciiformes	Alcedinidae	Little bee eater	Merospussilus	17	33
	Meropidae	Yellow throated bee eater	Merposbulocki		
		Red-throated Bee eater	Meropsnubicoides		2
		Northern carmine bee eater	Coraciasabyssinica	14	400
	Coraciidae	Abyssinian Roller	Coraciasabyssinica	7	43
	Upupidae	African hoopoe	Upupa Africana	2	6
	Bucerotidae	African pied horn bill	Campetheranubica	1	
		Red billed hornbill	Tocuserthorynchus	1	1
		Northern- ground Horn bill	Bucorvusabyssinicus		1
Piciformes	Picidae	Nubian wood picker	Campetheranubica	1	

Passeriformes					1
	Corvidae	pied crow	Corvus albus	9	28
	Laniidae	Lesser Grey shrike	Lanius minor	2	2
	Sturnidae	Long-tailed Starling	Lamprotornis caudatus	9	66
		Ruppell's Starling	Lamprotornis purpuropterus		17
		Greater blue-eared starling	Lamprotornis chalybaeus	12	37
	Malaconotidae	Black-headed Gonolek	Laniarius erythrogaster		6
	Muscicapidae	Snowy-crowned robin chat	Cossyphalaniveicapilla		
	Pycnonotidae	Black Bulbul	Pycnonotus barbatus	57	55
					1
	Estrilidae	Black-rumped Waxbill	Estrilda troglodytes		
		Crimson -rumped Waxbill	Estrildarhodopyga		
		Red-cheeked cordon bleu	Uraeginthus bengatus	9	65
		African Silver bill	Lonchuracantans	13	110
		Cut-throated Finch	Amandina fasciata		50
		Little billed fire finch	Lagonosticasenegala	25	35
		Village Ingigobird	Vidua chalybeata		2
	Fringilidae	Yellow-fronted Canary	Serinus mozambicus	7	4
		Yellow Wagtail	Motacilla flava	6	12
	Motacillidae	African pied Wagtail	Motacilla alba	5	18
	Nectariniidae	Beautiful Sunbird	Nectarinia pulchella	5	2
	Ploceidae	Village Weaver (spotted-backed)	Ploceusteniopterus		
		Northern masked Weaver	Ploceusbadius	5	5
		Cinnamon Weaver	Ploceuscucullatus		35
		Red-billed quelea	Quelea quelea		
	Sylviidae	Buff-billed Warbler	Phyllolais pulchella		
	Passeridae	House sparrow	Passer domesticus		

A total of 112 species belonging to 17 orders (Struthioformes, Piciformes, Apodiformes, Caprimulgiformes, Cuculiformes, Psittaciformes, Columbiformes, Pterocolidiformes, Charadriiformes, Anseriformes, Ciconiiformes, Pelicaniformes, Falconiformes, Passeriformes, Coraciiformes, Colliformes, Galliformes) was recorded during the survey period. Of these, 27 species were in the order Passeriformes belonging to 12 families (Passeridae, Sylviidae, Ploceidae, Nectariniidae, Motacillidae, Fringilidae, Estrilidae, Corvidae, Laniidae, Sturnidae, Malaconotidae, Muscicapidae and Pycnonotidae). Among the Passeriformes species belonging to 12 families were recorded, of which Ploceidae (weavers, whydahs and sparrows), Sturnidae (starlings and oxpeckers), Estrildidae (waxbills), Laniidae (shrikes), Motacillidae (wagtails) were most frequently observed.

Seven species: Ring-necked dove (*Streptopelia capicola*), African pied wagtail (*Motacilla aguimp*), African namaqua dove (*Oena capensis*), African firefinch (*Legonostista rubricata*), Ruppell's long-tailed starling (*Lamprotornis johnstoni*), Little bee-eater (*Merops pusillus*) and Tufted guinea fowl (*Acryllium vulturinum*), were abundant (Table 1).

## Discussion

The total number of dry season birds species found in study area around some Mayas and in the Galagu station were 112 birds in

the (2017), Mossulini (2009) identified 107 species, Rasha (2006) was identified 63 species of the birds [4,5]. The park is rich with various type of vegetation, Dom palm *Hyaena thebeica* being the most conspicuous. Kook *Acacia sieberiana*, Sidir, *Ziziphus abyssinica*, Sidir Z. Spina –Christi are common too. Certain type of grasses are also present such as *Sorghum* (Adar) and *Bracharia* these mixing between grass and trees mostly attract various birds species, including weavers which favor trees stands. Some birds showed in good abundance most of them related to families: Estrildidae (African silverbill), Cuculidae (Senegal coucal), Apodidae (African palm swift), Malaconotidae (Black head gonolek), Columbidae (African namaqua dove), Ploceidae (White billed buffalo weaver) and Falconidae (Common kestrel). Brown (1982) found that appearance of the trees and bushes in the vegetation led to rise of birds' number per unit area and he stated that forest stand structure is important for birds because it can directly influences the availability and quality of breeding and foraging habitat [6].

## Conclusion

In this study it was concluded that a total of 112 species belonging to 17 orders, 27 species were in the order Passeriformes belonging to 12 families (Passeridae, Sylviidae, Ploceidae, Nectariniidae, Motacillidae, Fringilidae, Estrilidae, Corvidae, Laniidae, Sturnidae, Malaconotidae, Muscicapidae and Pycnonotidae). Among the Passeriformes species belonging to 12 families were recorded,

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The park have many factors that affect the number, abundance and distribution of birds species, these factors including: availability of water, food resources, vegetation types, suitable nesting sites and nesting materials and other habitat component. The various environmental change which take the place in different seasons affect the quality and quantity of food and water which turn reflecting on birds communities. Illegal activities made by local people resident within or in the park edge such as honey collecting set of fire for different purpose and browsing of domestic animals which have been negative effect on birds species this study was conducted in short time, many more species could be identified if the time could be extended in future researches in DNP is rich by birds.

### Recommendations

The following recommendations are to be considered:

1. Preserve natural habitat vegetation for nesting birds in particular and wildlife in general by stopping cutting of trees.
2. Conduct scientific research in the area on effect of fire of the biodiversity, but with more emphasis on avifauna.

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