Poultry, Fisheries & Wildlife Sciences

Hussien, Poult Fish Wildl Sci 2015, 3:1
http://dx.doi.org/10.4172/2375-446X.1000128

Research Article Open Access

Birds of Dinder National Park from 2008-2011

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Abstract

The study was conducted in Dinder National park. The meadows (Mayas) of Dinder National park (DNP) were studied during the dry season on 27/4-7/5/ 2008, /2009,8/3 - 18/3/2010 and 26/2-16/3/2011. The following seven mayas were studies and they are as follow: Ras Amer, Abdelgani, Gerarisa, Bet Elwahsh Simaya, Mayat Musa, Ein elshams and Abied. The park was traversed by car along the roads between meadows ecosystem and the Dehra riverbeds and Mayas region were patrolled on foot. The place where the birds used to feed and their habitat were also considered. Observations were made in early morning (6.30-10.00) and afternoon (16.00-18.00). Each maya's visit took ten days for complete observation. The study showed that there is a wide variation in the total number of individual birds and the variation also existed in number of species(richness). It is impossible to predict the reason behind the distribution of the birds and the species richness as well except the water availability and the climate conditions

Keywords: Ecosystem; Species; National Park; Habitat degradation; Poaching

Introduction

The avian fauna of Sudan includes 931 species of birds of which reported 127 species are common in Sennar, Gedarif and Blue Nile states [1].

The park is located approximately at between latitude 12° 42′ N and longitude 34° 48′ N was established in 1935 following the London convention for the conservation of African flora and fauna. The park is complete ecological unit but characteristically some of its wildlife migrates during the rainy season where their movement is not impeded by the tall grass and thick clay and they drift back to the mentioned park in the dry season [2].

The park has three following major ecosystems:Firstly, the woodland is largest in extent and characterized by *Acacia seyal*(taleh), *Balanites aegyptiaca* (heglig) and *Combretum species* (habeel). The soil is characterized as a heavy cracking clay and it has tall coarse grasses including *Sorghum species* (Adar) and the Riverine ecosystem contains mainly doum palm ie; *Hyphaenae* the baica, *Acacia siberiana* (kook), *Ziziphus abyssinica*, *Ziziphus spinachristi* (Sidir) and *Momosa pigra* (shagrat Elfas). The dominant grasses are *Sorghumand bracharia* (Umasabie). The third ecosystem is the Mayas that constitute an important foraging ground for wildlife during the severe part of the dry season (March-June). Mayas are green meadows that hold water and provide green fodder throughout the dry season [3].

Only patchy information is available on the avian fauna of the Dinder national park, which is the closest northern national park to most urbanized centers in northern Sudan. The study of the area has become basic necessity [2].

The aims of the study focus mainly on the identification of the birds fauna, changes and quantification of these changes.

Dinder National Park is the most important terrestrial protected area in the northern states of Sudan. Located on the Ethiopian border, straddling Blue Nile and Gadarif and Sennar states. It is approximately 10,000 km² in size. The most important features of the park are a series of permanent and seasonal wetlands known locally as *Mayas* which are linked to streams running of the Ethiopian highlands to the east.

The habitat and wildlife of Dinder National Park can currently be described as badly degraded and under serious threat from a number of ongoing problems including encroachment, habitat degradation and poaching.

Until the 1960s, the area surrounding park was relatively uninhabited. Since then, however migration and irrational land use have resulted in development around the park, to an extent that around forty villages now exist along its boundaries.

Large-scale mechanized agriculture activities in the north and west has not only pushed traditional agricultural communities to the edge of the park, but by taking over most of the land previously used for grazing, has also led pastoralists to invade the park in large numbers. Livestock compete with wildlife for fodder and water and transmit diseases such as render pest and anthrax, while burning degrades the grassed woodland habitat. Poaching is also a major problem, as is the felling of trees for fire wood by trespassers and fires set in the course of honey extraction from the bee-hive.

Methodology

The study was conducted in Dinder National park. The meadows (Mayas) of Dinder National park (DNP) were studied during the dry season on 27/4-7/5/2008, /2009,8/3-18/3/2010 and 26/2-16/3/2011. The following seven mayas were studies and they are as follow: Ras Amer, Abdelgani, Gerarisa, Bet Elwahsh Simaya, Mayat Musa, Ein elshams and Abied. The park was traversed by car along the roads between meadows ecosystem and the Dehra riverbeds and Mayas region were patrolled on foot. The place where the birds used to feed and their habitat were also considered. Observations were made in early morning (6.30-10.00) and afternoon (16.00-18.00). Each maya's visit took ten days for complete observation. Basic count (Direct count) is used as it is a good way to estimate population size, detect changes in population size or species

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Received December 19, 2014; **Accepted** April 01, 2015; **Published** April 30, 2015

Citation: Hussien MEAE (2015) Birds of Dinder National Park from 2008-2011. Poult Fish Wildl Sci 3: 128. doi:10.4172/2375-446X.1000128

diversity and also helpful in determining the cause of the changes in the environment. The data pertaining to habitat of the birds is collected as well. Basic bird counts can be completed fairly easily and is less inexpensive compared to other techniques and they provide general information about the status of a bird population.

Assessment of the same site twice on the same day is not better because these assessments are not "independent". That is, the same birds may still be present at the same locations [4]. It is better to set up other counting sites than to re-measure the same transect again. The species are identified by using binocular and telescope and compared with plates of three different field guides of birds.

Result

It can be seen from Figure 1, that the year 2011 registered high number of individuals and with slight fluctuation from the year 2008 and there is remarkable variation with year 2008, which recorded small number of individuals. No reason known about the factors effecting the distribution of birds in the park but may be the amount of rainfall play significant role here (Figure 2).

Discussion and Conclusion

There were changes in the bird fauna in the Park which were probably associated to climatic changes and subsequent changes in the habitat [2]. As is to be expected in and an arid country like the Sudan where water is the main factor in controlling the bird population [5] (Figure 3).

Some species like Spur-winged goose, Great white Pelican and Marabou Stork showed marked increase in number in the year 2008 and 2009. It is mainly attributed to the heavy rains. The lowest number of birds registered in the 2010 is due to the decrease amount of rainfall, also the number of species was increased because the birds tend to aggregate at water sources in the park. There are some species thought to be disappeard, recorded like Emerald wood dove (*Turtur chalcopilos*), wattled Starling (*Creatophora cinerea*),White headed Babbler (Turdios leucocephala) and Green-backed Comaroptera (*comaroptera prachyura*) and Swainson's Sparrow(*Passer swainsonii*) (Appendix 1).

In general the study showed that there was decrease in number of birds that visited the park and this may be for the reason that many meadows (maya's) were dry for the last two years such as maya Musa and Aein ashams and Simaya. Inspite of maya musa and Ein ashams were full of water in 2008-2009 but they were completely dry in 2010 in addition to Simaya in 2011. The exact reason for the variation of maya's capacity to store water annually is not known. The relationship between the amount of water and the number of birds, besides the relationship between the amount of water and it's level at the Meadows are very complicated.

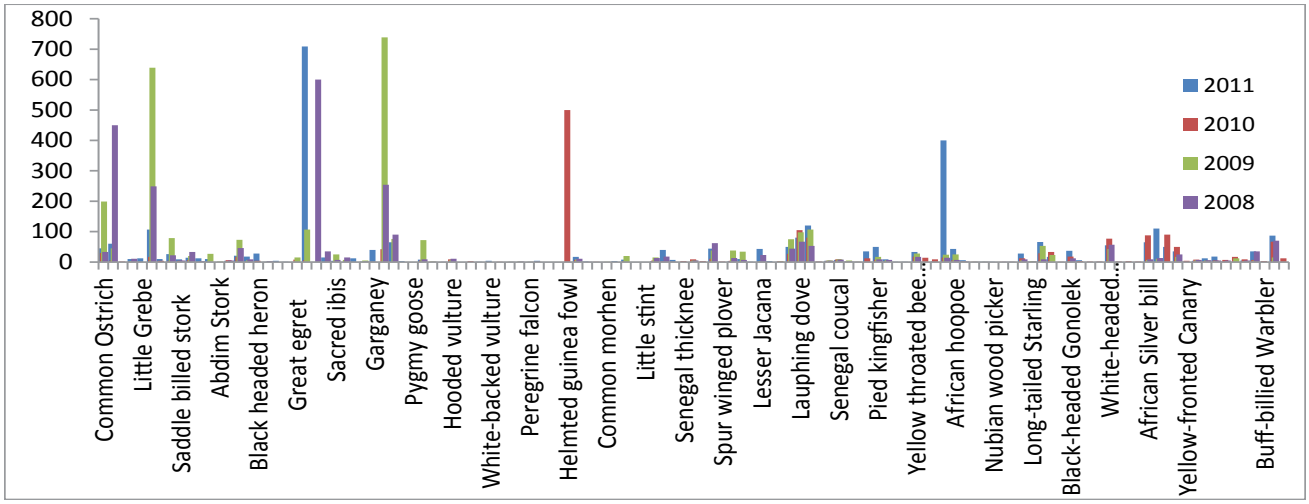

Figure 1: Number of individuals in Dinder National Park 2008-2011

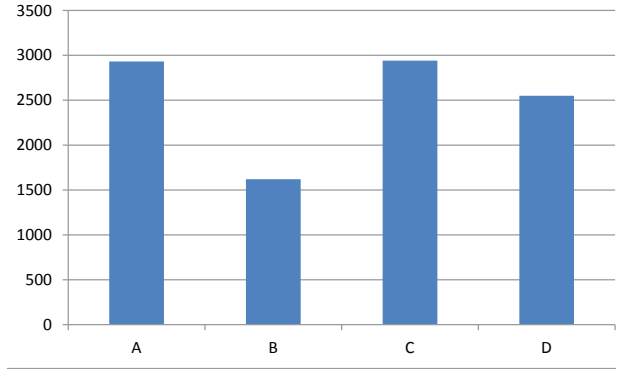

Figure 2: Total number of individuals in the park

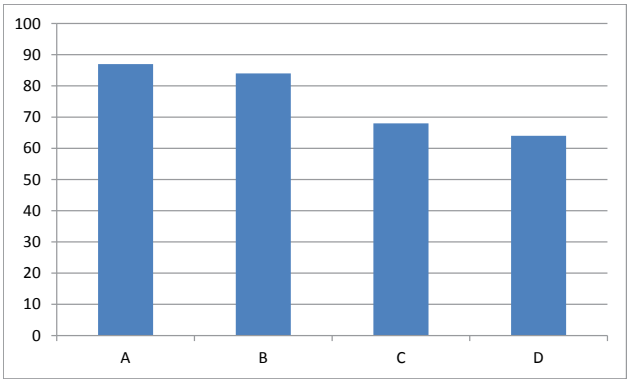

Figure 3: Number of species in the park.

No	Orders	Family	Common name	Scientific name	2008	2009	2010	2011
1.	Struthioformes	Struthionidae	Common Ostrich	Struthiocamelus	33	199	30	45
2.	Pelicaniformes	Pelicanidae	Great white pelican	pelicanusonocrotalus	450	45	5	60
3.			Pink backed pelican	pelicanusrufescense			2	
4.		Anhingidae	Long-tailed Cormorant	Phalacrocoraxafricanus	11	3		10
5.		Podicipedidae	Little Grebe	Tachybaptusruficollis				12
6.	Ciconiiformes	Ciconiidae	Marabou stork	Leptoptiloscromenifrus	249	639	17	107
7.			Yellow billed stork	Mysteria ibis			4	10
8.			wooly necked stork	ciconiaepiscopus	22	79	4	26
9.			Saddle billed stork	Ephippioryhnchussenegalensis	5	2	4	9
10.			African open bill	Anastomuslamelligrus	33	20	6	14
11.			Black stork	Anastomuslamelligrus	3			12
12.			White Stork	Ciconiaciconiaciconia		27		10
13.			Abdim Stork	Ciconiaabdimii		2		
14.		Scopidae	Hammerkop	scopusubretta	5	2	6	4
15.		Ardeidae	Grey heron	Ardeacinerea	46	73	17	21
16.			Squacco heron	Ardeolaralloides	9	6	2	18
17.			Black headed heron	Ardeamenocephala			4	28
18.			Purple heron	Ardeapurpurea	3	1		1
19.			Black-crowned night Heron	Nycticoraxnycticorax				4
20.			Goliath Heron	Ardea goliath				1
21.			Great egret	Egretta alba		15	8	
22.			Cattlle egret	Bubulcus ibis		107	6	709
23.			yellow billed egret	Mesophoyxintermedia	600			
24.			Little Egret	Egrettagrazetta	35			15
25.		Threskiornithidae	Sacred ibis	Threskiornisaethiopicus	7	25		4
26.			Glossy ibis	Plegadisfalcinellus	15	7		
27.			Hadada Ibis	Hagedashhagedash				12
28.			African spoon bill	Platelea alba	2	5		2
29.	Anseriformes	Anatidae	Garganey	Anasquerquedula			1	40
30.			Spur winged goose	Plectropterusgambensis	254	739	42	
31.			White faced whistling duck	Dendrocygnaviduata	90	76		65
32.			NorthornShoveler	Anascypeata				3
33.			Pygmy goose					
34.	Falconiformes	Accipitridae	Black kite	Milvusmigrans	9	72	5	8
35.			African fish eagle	Haliaeetusvocifor	1	2	1	
36.			African marsh harrier	Circus ranivorus	1			
37.			Hooded vulture	Necrocytresmonachus	11	7	9	
38.			Booted Vulture					
39.			Lizzard buzzard	Kaupifalcomonogramicus			3	
40.			Grass hopper Buzzard	Bustasturrufipennis				1
41.			White-backed vulture	Gypesafricanus				4
42.		Falconidae	Long crested eagle	Lophaetusoccipitalis			1	
43.			Lanner falcon	Falco biamicus		1		
44.			Barbary falcon	Falco pelegrinoides		2		
45.			Peregrine falcon	Falco peregrinus		1		
46.			Lesser kestrel	Falco naumanni			1	4
47.			Comon kestrel					
48.			Saker Falcon					
49.	Galliformes	Numididae	Helmted guinea fowl	Numidameleagris	**	**	500	**
50.		Phasianidae	Clapperton's Francolin	Francolinus clapper Toni	11	9	7	17
51.	Gruiformess	Otididae	Kori bustard	Ardeotiskori	1		1	2
52.			Arabian Bustard	Ardeotisarab		1		
53.		Rallidae	Common morhen	Gallinulachloropus				3
54.	Charadriiformes	Scolopacidae	Common sand piper	Tringahypoleucos		20	3	8

55.			Wood Sandpiper	Tringaochropus				
56.			Green Sandpiper	Tringaocropus				
57.			Little stint	Calidrisminuta	13	15	5	3
58.			Ruff	Philomachuspugnax	18		2	40
59.			Marsh sand piper	Tringastagnatilis			1	7
60.			Spotted thicknee(dikop)	Burihnuscapensis			3	
61.			Senegal thicknee	Burihnussenegalensis	5	5	9	
62.		Burhinidae	Stone curlew (Euracianthickn ee)	Hurihnusoedicinemus	2		3	
63.		Reurvirostridae	Black winged stilt	Himantopushimantopus	62	38	11	44
64.			Common ringed plover	Charadrishiaticula			2	
65.		Charadriidae	Spur winged plover	Vannelusspinosus	13	38	4	3
66.			Black-headed Plover	Vannelusspinosus	7	34		10
67.			Little ringed Plover					1
68.			African jacana	Actophilomis Africana	23	3		43
69.			Lesser Jacana	Microparracapensis				3
70.			Chestnut billied Sandgrouse	Ptercolesexstus		2	3	1
71.	Pterocolidiformes	Pterocolidae	Namaqua dove	Oenacapensis	44	75	27	50
72.	Columbiformes	Columbidae	African moorning dove	streptopeleadecipeins	67	98	105	80
73.			Lauphing dove	Streptopeleasensgalensis	53	107	80	120
74.			Emerald wood dove	turturChalcospilos			2	1
75.	Psittaciformes	Psittacidae	Rose- ringed parkeet	Psittaculakrameri	4	5	4	4
76.			Blue naped mouse bird	Urocoliusmacrourus	8	9	9	7
77.	Colliformes	Colliidae	Senegal coucal	Centropussenegalensis	2	5	2	2
78.	Cuculiformes	Centropodidae	Long tailed night jar	Caprrimulgusclimacurus		1	1	1
79.	Caprimuligiformes	Caprimuligidae	African palm swift	Cypsiurusparvus			12	35
80.	Apodiformes	Apodidae	Little swift	Apusaffinis	9	17	8	50
81.			Pied kingfisher	Cerylerudis	7	6	3	9
82.			Malackite Kingfisher	Alcidocristata				1
83.			Gaint Kingfisher	Megaceryle maxima				1
84.	Coraciiformes	Alcedinidae	Little bee eater	Meropspussilus	17	28	18	33
85.		Meropidae	Yellow throated bee eater	merposbulocki			14	
86.			Red-throated Bee eater	Meropsnubicoides			9	2
87.			Northern carmine bee eater	coraciasabyssinica	14	24	15	400
88.		Coraciidae	Abyssinian Roller	coraciasabyssinica	7	25	6	43
89.		Upupidae	African hoopoe	Upupa Africana	2	1	2	6
90.		Bucerotidae	African pied horn bill	Campetheranubica	1	1	1	
91.			Red billed hornbill	Tocuserthrorynchus	1	1		1
92.			Northern- ground Horn bill	Bucorvusabyssinicus				1
93.	Piciformes	Picidae	Nubian wood picker	Campetheranubica	1		1	
94.	Passeriformes	Dicruridae	Fork-tailed drongo	Dicrurusadsimilis			1	1
95.		Corvidae	pied crow	Corvusalvus	9	6	12	28
96.		Laniidae	Lesser Grey skrike	Lanius minor	2	3	1	2
97.		Sturnidae	Long-tailed Starling	Lamprotorniscaudatus	9	53	29	66
98.			Ruppell's Starling	Lamprotornispurpurpopterus		23	33	17
99.			Wattled Starling	Creatophoracinerea			1	
100.			Greater blue-eared starling	Lamprotornischalybaeus	12	3	18	37
101.		Malaconotidae	Black-headed Gonolek	Laniariuserythrogaster			3	6
102.		Muscicapidae	Snowy-crowned robin chat	Cossyphalaniveicapilla			2	
103.		Cistocolidae	Green-backed comaroptera	Camaroptera brachyuran			2	1
104.		Pycnonotidae	Black Bulbul	Pycnonotusbarbatus	57	43	77	55
105.		Timaliidae	White-headed Babbler (Crestchmar's)	Turdoidesleucocephala			2	1
106.		Estrilidae	Black-rumped Waxbill	Estrilda troglodytes			3	
107.			Crimson -rumped Waxbill	Estrildarhodopyga			2	
108.			Red-cheecked cordon bleu	Uraeginthusbengatus	9	7	88	65
109.			African Silver bill	Lonchuracantans	13	11	5oo	110
110.			Cut-thraoted Finch	Amandinafasciata			90	50

111.			Little billied fire finch	Lagonosticasenegala	25	17	50	35
112.			Village Ingigobird	Vidua chalybeate			4	2
113.		Fringilidae	Yellow-fronted Canary	Serinusmozambicus	7	6	8	4
114.			Yellow Wagtail	Motacillaflava	6	5	3	12
115.		Motacillidae	African pied Wagtail	Motacilla alba	5	3	5	18
116.		Nectariniidae	Beautiful Sunbird	Nectariniapulchella	5		7	2
117.		Ploceidae	Village Weaver (spotted-backed)	Ploceustaeniopterus		12	17	
118.			Northern masked Weaver	Ploceusbadius	5	2	9	5
119.			Cinnamon Weaver	Ploceuscucullatus	35	5	7	35
120.			Red-billed quelea	Queleaquelea		2	13	
121.		Sylvidae	Buff-billied Warbler	Phyllolaispulchella			3	1
122.		Passeridae	House sparrow	Passer domisticus	70	15	67	87
123.			Swainson's sparrow	Passer swainsonii			12	

Table 1: Birds of Dinder National Park 2008, 2009, 2010, 2011.

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Citation: Hussien MEAE (2015) Birds of Dinder National Park from 2008-2011. Poult Fish Wildl Sci 3: 128. doi:10.4172/2375-446X.1000128