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Use of Avifauna to Complement Marketing Strategies for Less Visited Protected Areas in Tanzania: A Case of Saadani National Park

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Abstract

Avitourism is a growing industry throughout the world although it has not been taped by many African countries despite the fact that the continent's protected areas offer a great deal for this specialised wildlife tourism. This is because traditional marketing strategies for wildlife tourism have capitalized on the game animals alone particularly the big five. Such strategies cannot be sustained for those areas where game animals are rare. In this study, we present data on avifauna of the Saadani, a less visited park, categorising species into common and rare based on the encounter rate from the field experiment conducted in summer of 2013, designed to conform to the actual birding trip. With over 300 bird species including the popular lesser and greater flamingos, we conclude that the park is a "Birders' Paradise". Thus, we recommend tourism marketing strategies to incorporate avitourism combined with game viewing, swimming, kayaking, boating and sport fishing.

Keywords*:* avitourism, game viewing, timed species count, woodland-bushed grassland

1. Introduction

Worldwide there are about 9,000 bird species among these, more than 2,000 species are recorded in Africa (Alden et al., 1995). Tanzania is among the highest ranked countries in East Africa by hosting over 1148 bird species (Gideon et al, 2012). However, even with such high numbers, avitourism has not been well addressed in Africa (Motsumi et al., 2003) as compared to Europe and North America where birding, for many decades, has continued to attract tourists from all sort of age classes. In Africa, especially the tropical Africa, marketing strategies for tourist destinations has continued to focus on game species particularly the big five (Elephants, Lion, Leopard, Rhino and Buffalo). Although this has worked for many wildlife areas such as Serengeti where in addition to the big five, the high concentration of carnivores (lion, cheetah, leopard) and the migration of wildebeest have continued to attract visitors (Okello and Yerian, 2009). This traditional marketing strategy may not be a good one in areas void of the big five or with the lowest numbers of large mammals such as Saadani National Park in Tanzania (Chambegga et al., 2007). Saadani National Park is among the least visited areas in Tanzania, others are Mkomazi, Rubondo, Sanane, Mahale and Kitulo (MNRT, 2012). In fact, over 80% of all Tanzanian tourists visit the northern touristic circuit (Okello and Yerian, 2009). In this case, an alternative marketing strategy may be required, and avitourism could offer such options because it has been observed that most eco-tourists visiting Africa to see and photograph large mammals, many become fascinated by the continent's spectacular birds (Alden et al., 1995).

Saadani National Park is the only fully protected area in Tanzania with a mixture of terrestrial, littoral and marine resources (Baldus et al., 2007, Marttila, 2011), this complex environment is home for many life forms, and the reason why it has a potential of attracting many visitors. Saadani National Park has over 300 bird species (Baldus et al, 2007). The higher the number of species, the higher is the motivation of visitors for particular destination sites. For example, Naidoo and Adamowicz (2005) in Uganda, report that as the number of bird species increases, tourists demonstrate an increase in willingness to visit a protected area, independently of all other factors.

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Saadani National Park is located along the Indian coastline, and close to Dar es Salaam, the Tanzanian business capital. The growing human population and economies along the coastline towns with limited recreation parks offers opportunities for holiday and weekend trips to natural habitats. For example, Dar es Salaam will register the fastest growth in the number of households (8.7% of Tanzania population will be living in Dar es Salaam by 2025) in the emerging middle class ($5,000 - $20,000 per year in revenue) by 2030 (World Bank 2012, The Africa Report 2013). This has a potential of increasing or stimulating domestic tourism especially for attractions in close proximity such as Saadani National Park (SANAPA) which is about 100 km from Dar es Salaam. Dar es Salaam is also the leading tourists' entry point for Tanzania. Studies on the tourists' choice have indicated that distance could affect preference of destinations (Nicolau & Más, 2006, Nicolau 2008). Travel from one's place of usual residence to destination entails physical, temporal and monetary costs (Taylor and Knudson, 1976).

Avian diversity, which has not been intensively studied (Marttila, 2011), in combination with other attractions and uniqueness could be used in the park tourism marketing strategy. However, for proper planning of birding trips, information on the status of avian species diversity and distribution at a local scale is crucial. Moreover, it is important to understand or to know what attractions are available in tourist destinations before establishing a marketing strategy. Birding and other wildlife watching is greatly enhanced by availability of clear and accurate information on locations to be visited (Garrison et al, 2005). In this article, we provide an assessment of bird species commonness (likelihood of encounter) in the southern part of SANAPA during the dry season, the peak of touristic season in Eastern Africa parks.

2. Literature Review

2.1 Avitourism

Avitourism refers to birdwatching where birders undertake a trip of a mile or more from home for the purpose of observing birds (Conradie et al., 2013). It is a major segment of wildlife tourism and is one of the fastest growing types of environmental tourism, or ecotourism worldwide (Scott and Thigpen, 2003, Kim et al., 2010) This type of travel takes advantage of birding-related events, and many tourist destinations promote birding hotspots, trails, preserves, parks and other locations to encourage birders to travel to the area, as well as highlighting local endangered and endemic bird species (Kim et al., 2010, Nicolaides et al., 2013). Birding travel also draws attention to local avifauna and other wildlife, which can be beneficial for raising conservation issues and promoting a more sustainable culture and environmental appreciation (Conradie and van Zyl, 2013).

To promote avitourism, many less known/visited destinations that have abundant resource in their local birds need to arrange birding tours with local guides, put more birding facilities and eco-lodges. For example in recent years, India with 1000 bird species has become popular in avitourism as more facilities and services are provided for avitourist/birders (Nicolaides et al., 2013). These types of specialized tour opportunities can encourage birding travel and make the tourism industry to benefit more in many other countries.

2.2 Birders specialisation

Birders are defined as the people travelling outside their usual environment for the purpose of watching birds in their natural environment (Simango, 2011). Birders are considered different from the other wildlife watchers as they are more specialised, educated and environmentally conscious and more committed group of people. However, there exist different schools of thought regarding the birders categories/specialities. Study by Kim et al (2010) identified three categories of birders namely casual birdwatchers, intermediate birdwatchers and active/ experienced birdwatchers. On the other hand, Scott and Thigpen (2003) explored four categories of birders, casual, interested, cctive and skilled birders. However, both studies acknowledged the lack of clear cut point of the identified categories, hence referring it as recreation specialisation continuum ranging from the generalist to the specialist. Causal and interested are grouped as generalist and they are more likely to be attracted to the destinations where they could visit other places such as historical sites, small towns, shops and look at the local crafts (Scott and Thigpen, 2003).

2.3 Marketing Strategies for Sustainable Tourism

The traditional marketing strategy for wildlife tourism in most of African Countries is based on the game animals only particularly big five, hence marketing the parks hosting the said animals. Not only that, but also in tourism trade fairs more emphasis is placed on the most visited parks that are hosting the big games.

For instance, Tanzania's participation in Berlin Tourism Trade Show in March 2014, focused on showcasing Tanzania's unique tourist attractions, which include three of Africa's Natural Wonders: Kilimanjaro, Serengeti, and the Ngorongoro Crater (www.tanzaniainvest.com). The marketing strategy of basing on these natural wonders may led to increased visitation of only one part of the country and neglecting the other parts with potentials of tourist attractions. The study by John et al (2010) show that the tourism in Tanzania is concentrated in the northern circuit only and now the worry lies on likeliness of the tourism activities in those parks to degrade the nature and interfere with ecological processes. The same study has recommended the aggressive marketing for other tourism circuits and diversification of the tourism services.

2.4 Abundance of mammals in Saadani National Park

The study by Chambegga et al, (2007) show that Saadani despite of missing two of the famous African big five, yet the present ones are in low density, Elephant (0.04), Lion (0.09) and Buffalo (1.25) (Table 1) compared to other parks such as Serengeti, Tarangire and Lake Manyara, where the big five are easily spotted even with view minutes of game drive. Therefore, the low density reduces the possibility of sighting them in the Saadani National Park. Moreover, groups of the large mammals do move within the park in different seasons.

Table 1. Wildlife populations in Saadani National Park showing abundances

S/N	Common name	Density	Estimated population
1	African Civet	0.09	90
2	Black and White Colobus Monkey	0.2	199
3	Blue Monkey	1	996
4	Buffalo	1.25	1,245
5	Bushpig	0.15	149
6	Bushback	0.06	60
7	Common Waterback	2.04	2,032
8	Dikdik	0.23	229
9	Eland	0.05	50
10	Elephant	0.04	40
11	Giraffe	034	339
12	Greater Kudu	0.05	50
13	Hartebeest	2.46	2,450
14	Lion	0.09	90
15	Red Diker	0.83	827
16	Bohor Reedback	6.16	6,135
17	Roan Antelope	0.11	110
18	Sable Antelope	0.04	40
19	Spotted Hyena	0.02	20
20	Suni	0.03	30
21	Velvert Monkey	0.11	110
22	Warthog	1.49	1484
23	Wildebeest	4.21	4,193
24	Yellow Baboon	4.8	4,771
25	Zebra	1.32	1,315

Source: Adopted from Chambegga et al., (2007).

3. Methods

3.1 Study area and sites

SANAPA lies along the Tanzania coastline, about 100 km North of Dar es Salaam, and it is 50 km from Bagamoyo town. Gazetted in 2005, the park has five principal habitats; savanna-grassland mosaic, coastal lowland forest, riverine forest, mangrove forest and sea shore. It has a maximum length of 69 km from south to north (Marttila, 2007). The park has two main seasons; dry season from July to September and wet season from November to May with less rain in December to February.

The study was conducted in the southern part of the park, mostly south of Mvave River outside of Zaraninge Forest (Fig. 1). The areas covered were woodland-bushed grasslands, riverine forests, and mangrove-saltpan habitats. Major concentration was in areas between saltpan and Porokanya estuary, Kinyonga campsite and park tourism office, Kinyonga and Matipwili Village, Matipwili junction and Gama gate, park tourism office and Mvave gate. The southern region is thought to be the avian richest site of this park (Baldus et al., 2007, Marttila, 2011).



Figure 1: Saadani National Park (Source: Martilla, 2011).

3.2 Survey Methods

Survey methods used include; Timed Species Count (TSC), total counts (TC), mistneting and opportunistic observations.

3.2.1 Timed Species Counts

Timed species counts (TSCs) were carried out over a fixed period 1 h divided into shorter periods of 10 min each (Pomeroy 1992, Bennun and Howell, 2002, John and Kabigumila, 2007). The TSCs were separated by an interval of 10 min or 100 m. A species seen or heard in the first 10 min received a 'score' or 'weight' of 6, while a species first recorded in the second 10 min period scored 5 and so on. Park road and trail networks were used, concentrating on places were bird activity (e.g. foraging) was greater. The survey consisted of 26 TSCs, 13 in Mangrove-Saltpan habitat and 13 in woodland-bushed grassland. This method is recommended for woodland and bush habitats (Pomeroy and Tengecho, 1986), in additional to producing a checklist; it also provides a reasonable measure of relative abundance (Bibby et al., 2000). Most of the TSCs were carried out in the morning, though some were done in the mid of the day. During this survey we depended much on visual and very little for aural.

3.2.2 Total counts

Total count method as described by Norton-Griffiths (1978) was used to count congregatory waterbirds in the saltpans particularly the flamingos and black-winged stilts *Himantopus himantopus*. Counts were made using 8x42 Bushnell binocular while standing on the central dykes of the saltpans.

3.2.3 Mistnets

Mistnets were set along riverine habitats of Wami River at Kinyonga Campsite and Makurunge (Gama gate) Bridge (about 6 km from Kinyonga). Six nets (three at each site) were set for three consecutive days at each site. Nets (12 x 2.5 m) were opened from 0730 to 1930 hrs, and checked every 30 to 45 minutes. Birds were placed in bird bags and processed by taking biometric measurements and banded with either colour or East Africa metal ring to assess recaptures.

3.2.4 Opportunistic observations

We also carried out opportunistic observations targeting species that are very hard to observed with TSCs and do not come down to mist nets. This also included birds that were seen as far as the beach at Buyuni-Kitopeni village. This was the most northern part in this study. The survey team also recorded other common animals, especially game animals, during this survey.

3.3 Data analysis

Data for TSC were analysed for species relative abundances which is expressed in mean scores (MS), and species were then ranked for commonness (likelihood of encounter) depending in the MS values. TSC indices were used to categorize species into 'common' and 'rare'; common = MS$\geq$0.1, rare = MS<0.1. Mann-Whitney U-test (PAST software) was used to compare MS between Woodland-Bushed grassland and Mangrove-Saltpan habitats. Shannon-Wiener Index of Diversity (Krebs, 1999) was used for bird species diversities in the study habitats.

4. Results

In total, 119 species were recorded, 97 from 26 TSCs while 22 species were added from opportunistic observations and mist-netting. Although equal efforts (13 TSCs in each) were assigned in each habitat, Mangrove-Saltpan had fewer species (47 species) than Woodland-Bushed grassland (76 species) with 21 species exclusively found in Mangrove-Saltpan habitats including the greater and lesser flamingos (Table 2).

The comparison of the total MS showed a significant difference (U' = 1309, n_1 = 76, n_2 = 47, p = 0.013) between the two habitats being higher in Woodland-Bushed grassland. However, proportion wise; Woodland-Bushed grassland had many 'rare' (73%, with MS<0.1) bird species than Mangrove-Saltpan (53%, MS<0.1). Species with MS>1.00 are locally common on a site with highest probability of being seen within one hour of observation.

TABLE 2: TSC indices (species mean scores) for species recorded in the Southern part of Saadani National Park in dry season of 2013. Zero mean score indicates that a species was not recorded in that particular site. The higher the mean scores the locally abundant the species is

Species	Species Mean Scores (MS) for Woodland-Bushed grassland	Species Mean Scores (MS) for Mangrove-Saltpan
Zanzibar sombre greenbul *Andropadus importunus*	3.462	2.769
Red eyed dove *Streptopelia semitorquata*	3.231	2.385
Collared sunbird *Hedydipna collaris*	2.154	1.385
Emerald spotted wood dove *Turtur chalcospilos*	1.923	1.154
Speckled mousebird *Colius striatus*	1.538	1.846
Ring necked dove *Streptopelia capicola*	1.462	1.769
White browed coucal *Centropus superciliosus*	1.462	
Village indigobird *Vidua chalybeata*	1.462	
Common bulbul *Pycnonotus barbatus*	1.385	2.308

Red-cheeked cordonbleu *Uraeginthus bengalus*	1.231	
Rattling cisticola *Cisticola chiniana*	1.231	
Crowned hornbill *Tockus alboterminatus*	1.231	
Red fronted tinkerbird *Pogoniulus pusillus*	1.000	0.538
Pin tailed whydah *Vidua macroura*	1.000	
Tawny flanked prinia *Prinia subflava*	1.000	0.154
Bronze mannikin *Lonchura cucullata*	1.000	0.308
Yellow billed stork *Mycteria ibis*	0.923	1.462
Scarlet chested sunbird *Nectarinia senegalensis*	0.846	0.923
Hadada ibis *Bostychia hagedash*	0.846	
White crested helmet shrike *Prionops plumatus*	0.769	
Northern brownbul *Phyllastrephus strepitans*	0.769	0.769
Namaqua dove *Oena capensis*	0.769	
Little bee-eater *Merops pusillus*	0.692	2.077
Woolly necked stork *Ciconia episcopus*	0.615	1.692
Long tailed fiscal *Lanius cabanisi*	0.615	
Brown crowned tchagra *Tchagra australis*	0.615	
Tiny cisticola *Cisticola nanus*	0.538	0.385
Black crowned tchagra *Tchagra senegala*	0.538	0.077
Winding cisticola *Cisticola galactotes*	0.538	
House sparrow *Passer domesticus*	0.462	0.769
Common fiscal *Lanius collaris*	0.462	
Black backed puffback *Dryoscopus cubla*	0.462	
Zanzibar red bishop *Euplectes nigroventris*	0.462	
White fronted bee-eater *Merops bullockoides*	0.462	
Yellow throated longclaw *Macronyx croceus*	0.462	
White eared barbet *Stactolaema leucotis*	0.462	
Eastern greentinkerbird *Pogoniulus simplex*	0.462	
African golden weaver *Ploceus subaureus*	0.462	1.692
Tropical boubou *Laniarius aethiopicus*	0.417	1.385
Yellow rumped tinkerbird *Pogoniulus bilineatus*	0.385	
Black kite *Milvus migrans*	0.385	0.615
Bat hawk *Macheiramphus alcinus*	0.385	
Green backed camaroptera *Camaroptera brevicauda*	0.385	
Hamerkop *Scopus umbretta*	0.385	
Madagascar bee-eater *Merops superciliosus*	0.385	
Spot flanked barbet *Tricholaema lacrymosa*	0.385	
Uluguru violet backed sunbird *Anthreptes neglectus*	0.385	
Krestchmer's longbill *Macrosphenus krestchmeri*	0.385	
Narina trogon *Apaloderma narina*	0.385	

Sourthern cordon bleu *Uraeginthus anglolensis*	0.385	
Von der Decken's hornbill *Tockus deckeni*	0.308	
Fish eagle *Haliaeetus vocifer*	0.308	0.077
Palmnut vulture *Gypohierax angolensis*	0.308	0.077
Mosque swallow *Hirundo senegalensis*	0.308	
African pygmy kingfisher *Ispidina picta*	0.308	
Spectacled weaver *Ploceus ocularis*	0.308	
Retzs helmet shrike *Prionops retzii*	0.308	
Lesser masked weaver *Ploceus intermedius*	0.308	
Parasitic weaver *Anomalospiza imberbis*	0.308	
Cattle egret *Bubulcus ibis*	0.308	0.463
Olive sunbird *Nectarinia olivacea*	0.231	
Pupple banded sunbird *Cinnyris bifasciata*	0.231	0.385
Green Wood-hopoe *Phoeniculus purpureus*	0.231	
Gabar goshhawk *Micronisus gabar*	0.231	
Senegal plover *Vanellus lugubris*	0.231	0.385
Pied crow *Corvus albus*	0.231	
African grey hornbill *Tockus nasutus*	0.231	
Cardinal woodpecker *Dendropicos fuscescens*	0.231	
White browed robin chat *Cosssypha heuglini*	0.231	
White rumped swift *Apus caffer*	0.231	
Red billed firefinch *Lagonosticta senegala*	0.231	
Eastern paradise whydah *Vidua paradisaea*	0.154	
Village Weaver *Ploceus cucullatus*	0.154	
Plain-backed Sunbird *Anthreptes reichenowi*	0.077	
Crested flancolin *Fracolinus sephaena*	0.077	
White headed vulture *Trigonoceps occipitalis*	0.077	
Lesser flamingo *Phoeniconaias minor*		2.308
Little egret *Egretta garzetta*		2.308
Lesser striped swallow *Hirundo abyssinica*		2.077
Pied kingfisher *Ceryle rudis*		1.846
Black winged stilt *Himantopus himantopus*		1.462
Greater flamingo *Phoenicopterus ruber*		1.462
Grey heron *Ardea cinerea*		1.462
African pied wagtail *Motacilla aguimp*		1.231
Common sandpiper *Actitis hypoleucos*		1.154
Wire-tailed swallow *Hirundo smithii*		1.000
Tambourine dove *Turtur tympanistria*		1.000
Common drongo *Dicrurus adsimilis*		0.769
Saddle billed stork *Ephippiorhynchus senegalensis*		0.769

Brown breasted barbet *Lybius melanopterus*		0.538
Eurasian roller *Coracias garrulus*		0.308
Black winged red bishop *Euplectes hordeaceus*		0.231
Amethyst Sunbird *Chalcomitra amethystina*		0.231
African open billed stork *Anastomus lamelligerus*		0.154
Black headed oriole *Oriolus larvatus*		0.154
Croacking cisticola *Cisticola natalensis*		0.154
Three banded plover *Charadrius tricollaris*		0.077

Mistneting at two riverine sites, Kinyonga Campsite and Gama Bridge/Mkurunge Gate (about 6 km northeast of Kinyonga), produced 28 species. Thirty nine individuals (19 species) were mist-netted at Gama Bridge while at Kinyonga 26 individuals (13 species) were caught (Table 3).

TABLE 3: Bird species and their recapture frequencies at two riverine (Wami River) sites in Southern part of Saadani National Park, July 2013

Species	**Mkurunge gate**	**Kinyonga campsite**
Yellow breasted Apalis *Apalis flavida*		1
Olive sunbird *Nectarinia olivacea*	5	2
Zanzibar sombre greenbull *Andropadus importunus*	2	3
Red capped robin chat *Cosssypha natalensis*	5	
Vitelline masked weaver *Ploceus velatus*	3	
Eastern bearded scrub-robin *Cercotrichas quadrivirgata*	1	
Sulphur breasted bush-shrike *Malaconotus sulfureopectus*	1	
Speckled mousebird *Colius striatus*	4	
common bulbul *Pycnonotus barbatus*	2	1
Red collared widowbird *Euplectes ardens*	1	
Mouse-coloured sunbird *Cyanomitra veroxii*	2	
Purple-banded sunbird *Cimmyris bifasciata*	1	
Tawny-flanked prinia *Prinia subflava*	3	
African pygmy kingfisher *Ispidina picta*		1
Lesser honeyguide *indicator minor*		1
Red-billed quelea *quelea quelea*		3
Red-fronted tinkerbird *Pogoniulus pusillus*	1	1
Tambourine dove *Turtur tympanistria*	3	
Red-headed quelea *Quelea erythrops*		5
Fan-tailed widowbird *Euplectes axillaris*	1	
Peter's twinspot *Hypargos niveoguttatus*	1	
Marsh tchagra *Tchagra minuta*	1	
Yellow-fronted canary *Serinus mozambicus*	1	
Emerald spotted woody dove *Turtur chalcospilos*		1
Red-billed firefinch *Lagonosticta senegala*		1
Black crowned tchagra *Tchagra senegala*		1
Spot flanked barbet *Tricholaema lacrymosa*		5
Green backed camaroptera *Camaroptera brachyura*	1	
Total (Species)	**39(19)**	**26(13)**

Shannon-Wiener Index of Diversity *H´* index between two sites (*H´* = 2.517 *Versus H´* = 2.102) differed marginally $t_{(53.37)} = 2.033$, $p = 0.047$. Of the 28 species caught in mist nets, 14 species were not recorded during TSCs, they included; Eastern bearded scrub-robin, Fan-tailed widowbird, Lesser honeyguide, Marsh tchagra, Mouse-colored sunbird, Peter's twinspot, Red-billed quelea, Red-capped robin chat, Red-collored widowbird, Red-headed quelea, Sulphur-breasted bush-shrike, Vitelline masked weaver, Yellow breasted apalis and Yellow-fronted canary.

A total count at salt works on 3rd and 18th July estimated an average of 410 (400 and 420 respectively) greater and 500 (550 and 450 respectively) lesser flamingos. Black-winged stilts were also abundant (*c.*350 birds) at saltpans. Small groups of Pink backed pelicans (16-20 birds) were observed at the saltpans on 18th July 2013. Other 7 species were added during opportunistic observations; they included; Yellowbill *Ceuthmochares aereus*, Sacred ibis *Threskiornis aethiopicus*, Long-tailed cormorant *Phalacrocorax africanus*, Augur buzzard *Buteo augur*, Brown-headed parrot *Poicephalus cryptoxanthus*, Great white egret *Egretta alba*, Greater white pelican *Pelecanus onocrotalus*.

Other wildlife species recorded during this study which are likely to attract the attention of birders in the southern part of the park included: African elephant *Loxodonta Africana* (not common, will be luck to spot one), giraffe *Giraffa camelopardalis,* Monitor lizard *Varanus niloticus*, common waterbuck *Kobus ellipsiprymnus*, African rocky python *Python sebae*, lion *Panthera leo*, hippopotamus *Hippopotamus amphibious*, nile crocodile *Crocodilus niloticus*, yellow baboon *Papio cynocephalus cynocephalus*, vervet monkey *Cercopithecus aethiopicus* and warthog *Phacochoerus aethiopicus*.

5. Discussion

Using park road and walking trail networks, mistnets and opportunistic observations, this study recorded 119 bird species in the southern part of SANAPA. About 301 bird species is reported from SANAPA (Baldus *et al.,* 2007), thus, observations from this study represent over 30% of the total bird species for this park. This study, therefore, proves that the southern part of park is very important for birdlife because less than 30% of the park size were covered which also excluded Zaraninge Forest, a part of the Bagamoyo Coastal forest Important Bird Area (Baker & Baker, 2002). Moreover, southern part of the Saadani Park has also been reported to be important for game wildlife populations (Baldus *et al*., 2007, Chambegga *et al*., 2007). Thus, combining game viewing and birding would be a good selling point in marketing the park.

The Woodland-Bushed grassland has varied habitat complexity from short grasslands, wooded grassland and thickets providing hiding places for many species of birds. It is therefore not surprising that most species had lower MS in woodland-bushed grassland. Moreover, the lower MS in woodland could be subjected to the fact that the observers restricted themselves to the road networks and no efforts were done to search for the species in bushes far from the road network. The study assumes that birdwachers visiting the park will use park road networks because trespassing and off-road driving is discouraged. Species recorded by TSCs can easily be spotted in the open and semi-open areas of the park, whereas few of those mistnetted hide in riverine habitats and could not be easily encountered. Some of these species e.g. Eastern bearded scrub robin, Peter's twinspot, Marsh tchagra, Yellow breasted apalis, are often shy and difficult for a person on an ordinary visit to the park to see, keeping to thick vegetation cover. A visitor wanting to see such species is advised to search them in these habitats. It is also important to note that not all species can be recorded in short period of park visit; even some of the common species could go unnoticed as it was the case in this study. Temminck's courser *Cursorius temminckii*, for example, is known to be a common species in the opened bushed and wooded grassland in SANAPA but was not recorded.

Morttila (2011) lists the most frequent bird species that are confined to the savanna-grassland mosaic in SANAPA. In the list are the common bulbul, purple-banded sunbird, scarlet-chested sunbird, yellow throated longclaw, African pied wagtail, speckled mousebird and various doves, the most common being the ring-necked dove. The results of the current study support the above literature although the purple banded sunbird had the lowest mean scores.

Surprisingly, Zanzibar sombre greenbul is not mentioned in previous reports for SANAPA to be among the most common species contrary to the findings of this study. This could be due to the fact that, unless, observers are familiar with its call, it could be hard to spot as it keeps on cover.

Many waterbird species were recorded in saltpan and the mangrove from the Sea-salt Ltd to Kinyonga estuary. Saltpan provided foraging sites for flamingos, pelicans, stilts, herons, storks, egrets and small waders such as common sandpiper. Flamingos, for example, are attracted to this area because of the algae growth on the salt extraction pans (Marttila, 2011, Omari, 2013).

Although Lesser flamingos are quite popular in soda lakes in northern part of Tanzania, Saadani in particular the salt pan is the single most significant site to host large groups (up to 2,500 individuals is reported here) along coastline (Wildlife Division, 2010). Not many waders were encountered because many of them are migrants and were not expected to be numerous at Saadani in northern summer, and seashore was not intensively searched. Few woolly necked storks were recorded along the beach. Previous literature (Marttila, 2011) indicates that this species is more frequent at Saadani than in any other park in Tanzania. This species breed in the coastal areas but seasonal movements is reported (Hancock et al., 1992, Marttila, 2011), and there is a limited information on breeding season and sites. Additionally, the recording of Saddle billed stork was of interest, it is not known to resident within Saadani National Park.

The high avian diversity in SANAPA offers additional resources which can be capitalised when marketing the park especially to target specialised tourists. The wetland habitats with high concentrations of waterbirds especially in the presence of migrant species are likely to attract many birders. Fitzpatrick (1993), note that Momella Lakes in Arusha National Park attract varieties of global bird-watchers due to their unique birdlife whereas Nakuru National Park in Kenya has identified itself as Birdwatchers' paradise. Nakuru Park is famous for the flamingos.

6. Conclusion

The coastal, riverine, forest and plains that make up Saadani's landscape not only account for its diverse and abundant avifauna, but also provides hiding places for many of the secretive species. However, with 119 bird species (over 30% of the total birdlife in Saadani National Park) recorded in an area less than one third of the park revealed that the southern part of the park is an important site for birdlife. The park is indeed a birder's paradise. This study represents a hypothetic tourist visit plan for birding in the southern part of SANAPA during the dry season, a major touristic period for eastern Africa parks. The study gives information on the locally common bird species and those that require patient observers. Some of the species can be seen within the first hour of birding while others will require a night stay. This information is also crucial for park management as it could be used in the marketing strategy because it has been shown that the more the animal species the higher the motives for tourists to visit the natural environment. The visitors of the southern part of Saadani Park could combine birding and other services within the park such as boating along the Wami River and game viewing as many game species moves south to the Wami River during dry season.

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