



Survey of some wild birds and their feeding habits in three types at Assiut governorate, Egypt

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Abstract

The habitat is important for living organisms in terms of food and shelter that it provides. To understand the impact of anthropogenic pressure on the feeding habits of the birds, one-year survey was conducted in three old areas at Assiut governorate (Assiut city, El-Fath and Manfalot districts), Egypt during 2018. A total of 23 species of birds belonging to 22 genera spread over 17 families and 9 orders. Passeriformes is the largest order of birds with 12 spp. Followed by Columbiformes (2 species), Coraciformes (2 species) and Falconiformes (2 species). While Charadriiformes (one specie), Strigiformes, Ciconiiformes, Upupiformes and Gruiformes (one spp., each) were recorded during the study period. The dominant feeding habits was Insectivorous (10 species), followed by Carnivore (5 species), Omnivore (5 species) and Granivore (2 species). The low representation of Piscivorous (one species). Moreover, the study revealed that of the total (18 species) was recorded as resident birds and (5 species) were recorded as migratory birds. The present study would provide for baseline information on the state of environment of the Assiut governorate, Egypt and help in future development plan for the region.

Keywords: survey, birds, feeding habits, resident, migratory.

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1. Introduction

Agricultural ornithology aims at obtaining scientific information on birds in relation to agriculture and using this information for their management. And it's special importance in predominantly agricultural countries like Egypt. For all bird species, their feeding habits have been declared as positive and negative. The positive feeding habits when they feed on carrion, insects, rodent, reptiles, mollusca and other invertebrates. On another hand, the negative feeding habit appears when they attack and consume human foods, although some foods are favored over others and individuals crows may have individual preferences (Hothem *et al.*, 1988). In addition, there some graminivores bird species, having adapted to the agricultural habitats and increased in numbers, are conflicting with our goals of agricultural production by inflicting economic losses to crops, fruits and stored grains. High population of birds can devastate the traditional farmers life within a short period. There are some birds that are omnivorous (*i.e.*, chickens, crows, starlings, sparrows and other birds). From economic point of view, crows and sparrows can be categorized as useful and harmful birds (El-Danasory, 2006; Srivastava, 1977). Some crops of such as maize, sunflower, peanuts, wheat and sorghum have been observed to attack with crows and sparrows (Bonnah, 2007; Hassan, 2018). The bird management involves both the conservation of useful species and control of pests. They are divided in five different categories based on their feeding guilds as described by Anany (1993) and Ali

(1996). These categories are Carnivores: the species that feed on small animals, rodent, reptiles, warms and young of birds. Granivorous: The species that feed on seeds as well as grass. Insectivorous: exclusively depending on insects. Omnivorous: species eating insects and small animals as well as fruits and seeds. Piscivorous: feeding exclusively on fishes. Their density and abundance in three different study areas are analyzed to understand.

2. Materials and methods

The present study was carried out under the field conditions in old areas at three locations (Assiut city, El-Fath and Manfalot districts) at Assiut governorate, which occupies the Upper Egypt, about 375 Km South of Cairo (Assiut governorate boarded by Minia in the North, in the South by Sohag, in the East by Red Sea, and in the West by New Valley governorate) (Figure 1). These study areas were visited monthly from January 2018 to December 2018. Two feddans inside the chosen cultivated Location. Numbers of the different bird species were counted in each location by using the method of Redinger and Libay (1979). The identification and counts of bird species were achieved by using field glass (binoculars). This work has been accomplished twice daily, the first at sunrise and second at sunset during one hour for three days monthly. Bird classification were carried out by (Sibley and Monoroe, 1990) under review by the checklist committee of the American

ornithologists union (A. O. U.) were followed in bird classification. As mentioned earlier depending on the feeding habits, birds were categorized in

to five different habits: Carnivorous, Graminivorous, Insectivorous, Omnivorous, and Piscivorous depending on the description given by Ali (1996).

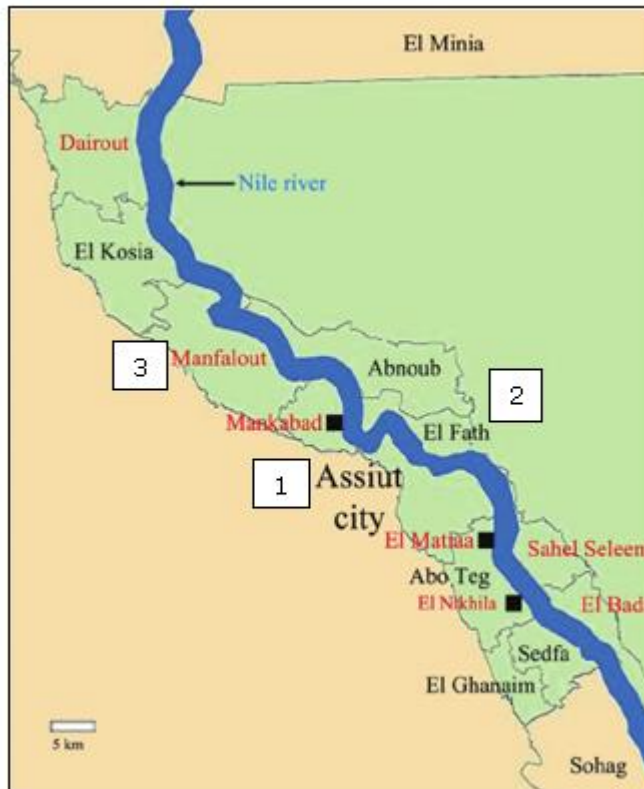


Figure (1): Map of study areas (Assiut city, El-Fath and Manfalot districts) at Assiut governorate, Egypt.

3. Results and Discussion

Survey of some wild birds were carried out in old areas with three different locations at Assiut governorate (Assiut city, El-Fath and Manfalot districts), Egypt during January 2018 to December 2018 were done and counted. Data of the

relative abundance of different bird species are tabulated in Tables (1 and 2) and Figure (2). The present study revealed the presence of 23 species of birds belonging to 22 genera spread over 17 families and 9 orders was recorded during the study period. Passeriformes is the largest order of birds in the areas

studied with 12 spp. Followed by Columbiformes (2 species), Coraciformes (2 species) and Falconiformes (2 species). Charadriiformes (one specie), Strigiformes, Ciconiformes, Upuiformes and Gruiformes (one specie, each) were surveyed in the areas studied. Metwally *et al.* (2009) recorded 27 bird species belonging to 9 orders and 21 families from different habitat in old land at Assiut governorate, Egypt. With respect to the relative abundance of birds and their food habits, the results revealed that the highest species richness and abundance was recorded of Insectivorous at Assiut city, El-Fath and Manfalot districts with abundance (43.48, 30.43 and 26.09 %), followed by Omnivore (21.74, 13.04 and 13.04%) and Carnivore (21.74, 8.70 and 8.70%) for Assiut city, El-Fath district and Manfalot district,

respectively. Moderate richness and abundance were recorded of Granivore (8.70, 8.70 and 8.70%). The lowest abundance was recorded of Piscivorous (4.35%) with only one species of Piscivore in Assiut city. While it is absent at El-Fath and Manfalot districts during study period (Table 1 and Figure 2). Wiens and Johnston (1977) reported that the Granivorous birds show an array of behavioural, morphological and life-history adaptations to exploit open and unpredictable habitats, together with morphological and physiological adaptations for eating seeds. Nakamura (1999) reported that crows were the most harmful bird in Japan, they are omnivorous, eating almost anything, and they readily adapt food habits to changing seasons and available food supply.

Table (1): Species richness, diversity indices and relative abundance of the birds according to feeding habits at Assiut governorate, Egypt during 2018.

| Feeding guilds | Assiut city | Abundance (%) | El-Fath | Abundance (%) | Manfalot | Abundance (%) |
|----------------|-------------|---------------|---------|---------------|----------|---------------|
| Carnivores | 5 | 21.74 | 2 | 8.70 | 2 | 8.70 |
| Graminivores | 2 | 8.7 | 2 | 8.70 | 2 | 8.70 |
| Insectivores | 10 | 43.48 | 7 | 30.43 | 6 | 26.09 |
| Omnivorous | 5 | 21.74 | 3 | 13.04 | 3 | 13.04 |
| Piscivorous | 1 | 4.35 | 0 | 0.00 | 0 | 0.00 |

Jagruti *et al.* (2015) revealed that of the total 79 bird species was reported during the study period; the dominant feeding guild was Omnivores (30 species), followed by Carnivore (23 species), Insectivore (5 species) and Graminivore (6 species) and Frugivore (2 species). The low representation of Insectivores, Frugivores and Nectivores could be due

to high industrial development in the region accompanied by low density of fruiting trees. Data in Table (2) shows the Insectivorous habits include 10 species were Desert wheatear *Oenanthe deserti deserti* was recorded only at Assiut city, Fantailed warbler *Cisticola juncidis cisticola*, Hoopoe *Upupa epops major*, Little green bee *Merops orientalis*

clepatra, , Swallow *Hirundo rustica savigni* and were residential bird species. However, only 5 migratory bird species Black headed wagtail *Motacilla flava feldeggi* was recorded only at Assiut city and absent from El-Fath and Manfalot districts, Bule- throat *Luscinia svecica svecica* was recorded only at Assiut city

and El-Fath district, while it is absent in Manfalot district, Chiffchaff *Phylloscopus collybita collybita*, Sand martin *Riparia riparia shelleyi* was recorded in only at Assiut city and White wagtail *Motacilla alba alba* were recorded only in autumn and winter seasons during study period.

Table (2): Systematic list of birds and their feeding habits of Assiut city, El-Fath and Manfalot districts at Assiut governorate, Egypt during 2018.

| Common name | Order | Family | Scientific name | Feeding guilds |
|----------------------|-----------------|--------------|---|----------------|
| Black winged kite | Falconiformes | Falconidae | <i>Elanus caeruleus caeruleus</i> | C+ |
| Barn owl | Strigiformes | Strigidae | <i>Tyto alba alba</i> | C+ |
| Cattle Egret | Ciconiformes | Ardeidae | <i>Bubulcus ibis ibis</i> | C+ |
| Kestrel | Falconiformes | Falconidae | <i>Falco tinnunculus tinnunculus</i> | C+ |
| Spur winged plover | Charadriiformes | Charadriidae | <i>Hoplopterus spinosus</i> | C+ |
| Palm dove | Columbiformes | Columbidae | <i>Streptopelia senegalensis egyptica</i> | G+ |
| Rock pigeon | Columbiformes | Columbidae | <i>Columba livia schimari</i> | G+ |
| Black headed wagtail | Passeriformes | Motacillidae | <i>Motacilla flava feldeggi</i> | I* |
| Blue throat | Passeriformes | Muscicapidae | <i>Luscinia svecica svecica</i> | I* |
| Chiffchaff | Passeriformes | Sylviidae | <i>Phylloscopus collybita collybita</i> | I* |
| Desert wheatear | Passeriformes | Muscicapidae | <i>Oenanthe deserti deserti</i> | I+ |
| Fantailed warbler | Passeriformes | Muscicapidae | <i>Cisticola juncidis cisticola</i> | I+ |
| Hoopoe | Upupiformes | Upupidae | <i>Upupa epops major</i> | I+ |
| Little green bee | Coraciformes | Miropidae | <i>Merops orientalis clepatra</i> | I+ |
| Sand martin | Passeriformes | Hirundidae | <i>Riparia riparia shelleyi</i> | I* |
| Swallow | Passeriformes | Hirundidae | <i>Hirundo rustica savigni</i> | I+ |
| White wagtail | Passeriformes | Motacillidae | <i>Motacilla alba alba</i> | I* |
| Common bulbul | Passeriformes | Pycnonotidae | <i>Pycnonotus barbatus arsinoe</i> | O+ |
| Crested lark | Passeriformes | Alaudidae | <i>Galerida cristata maculata</i> | O+ |
| Hooded crow | Passeriformes | Corvidae | <i>Corvus corone sardonius</i> | O+ |
| House sparrow | Passeriformes | Passeridae | <i>Passer domesticus niloticus</i> | O+ |
| Moorhen | Gruiformes | Rallidae | <i>Gallinula chloropus chloropus</i> | O+ |
| Pied Kingfisher | Coraciformes | Cerylidae | <i>Ceryle rudis rudis</i> | P+ |

C= Carnivorous, G= Graminivores, I= insectivorous, O= Omnivorous, P= Piscivorous, + = Resident birds, * = Migratory birds.

The highest number of Insectivorous bird species may be due to higher density of insects, large areas cultivation of field

and dispersal the bees at Assiut governorate, Egypt. Omnivorous are represented by, Common bulbul

Pycnonotus barbatus arsinoe, Hooded crow *Corvus corone sardonius*, Crested lark *Galerida cristata maculata*, House sparrow *Passer domesticus niloticus* were residential species of birds in three location and Moorhen *Gallinula chloropus chloropus* as resident water bird species and it was recorded only at Assiut city. Carnivorous species were Black winged kite *Elanus caeruleus*

caeruleus, Barn owl *Tyto alba alba* were recorded only at Assiut city, Cattle Egret *Bubulcus ibis ibis*, Kestrel *Falco tinnunculus tinnunculus* and Spur winged plover *Hoplopterus spinosus* was recorded only at Assiut city. Carnivorous guilds that mainly supply aquatic food like fish, molluscs, small mammals, eggs birds, Young birds, warms and amphibians.

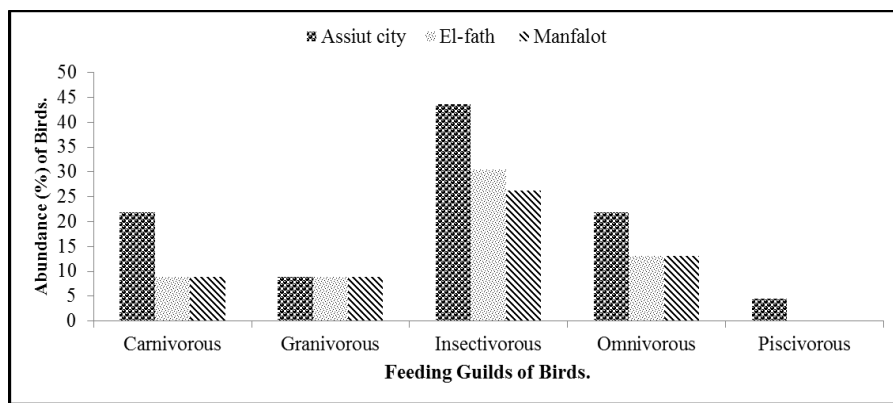


Figure (2): Species richness, diversity indices and relative abundance of the birds according to feeding guilds at Assiut governorate, Egypt during 2018.

Granivorous guilds include only two species of birds. Palm dove *Streptopelia senegalensis egyptica* and Rock pigeon *Columba livia schimari* were surveyed at all locations study. However, their abundance was low as compared to insectivorous birds. Finally, Piscivorous included only Pied Kingfisher *Ceryle rudis rudis* was recorded in El-Ebrahimia canal at Assiut city. Thakur *et al.*, (2010) revealed that the presence of 85 species of birds belonging to 66 genera spread over 30 families and 12 orders. the total, 45 species showed seasonal-local

movements, 17 were summer visitors, 8 showed summer influx, 7 were winter visitors, 5 were residents and 3 showed winter influx. It was further recorded that of the total 85 species, 47 were common, 26 very common, 10 uncommon and 2 were rare. Moreover, it was analysed that maximum number of species (42 species) were insectivorous, followed by Frugivorous (13 species), Omnivorous (11species), Graminivorous (9 species), scavengers and aquatic animal eaters (4 species each), and vegetable matter eaters and Carnivorous (one species each).

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