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CHECK LIST OF AVIFAUNA IN BETWEEN KUTRALAM AND NARASINGAMPATTAI RAILWAY TRACK, TAMILNADU, INDIA

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ABSRACT

The knowledge about the common birds in the rural parts of India is lacking till date. Data about the avian diversity from the remote pockets will strengthen the ornithological information of our country. To fulfill the lacuna and also to initiate this kind of work the present study was conducted in between Kutralam and Narasingam Pattai railway track. During the study period 23 bird species were recorded. And they are coming under 7 orders and 12 families. Higher numbers of birds were recorded in March (195) followed by October (99), January (86), February (75), December (63) and November (47). All the birds recorded in the study area were categorized into 5 ecological groups based on their food and feeding; they were insectivores (56.52%), carnivores (17.39%), omnivores (13.04%), granivores (8.69%) and frugivores (4.34%).

Keywords: Ecological groups, insectivores, family, order.

INTRODUCTION

Birds are one of the best and in some case the only best to monitor the short and long term environmental changes. For instance, herons and egrets recognize as an important biological indicators of environmental changes in inland wetlands from the time immemorial (www). For example, Aristotle in 340 BC described how the behavior of cranes could be used to forecast the weather. Furthermore fisherman from the 17th century has used flocks of seabirds as an indicator of fish abundance in coastal wetlands. Due to this in recent days more attention has been given to conservation, monitoring and ecological studies of birds in different areas/habitats (Newton, 1995).

Asian continent, especially the Indian subcontinent supports diverse avifauna (1300 species *i.e*. 13% of the worlds birds) and which includes 141 endemic species (Grimmett *et al.,* 1999). Highly varied climatic conditions, unique habitats, long stretch of inland, forest and coastal areas attracts and supports a unique group of avian species round the year (Grimmett *et al*., 1999). Especially the long coastal area of India (7500 km) supports a

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commendable number of resident and migratory waterbirds of global importance (Sandilyan, 2009; Sandilyan *et al*., 2010). On the other hand dominant trend of bird-count exercised in India has been focused on endangered birds, wetland birds, heronries and birds found in protected habitats such as national parks, sanctuaries and IBA (Important bird area), (Urfi, 2005). Obviously complete details of common birds and the utilization pattern in several rural areas and even some coastal habitats such as mangroves of India are scanty till date (Sandilyan, 2009; Sandilyan *et al*., 2010). Interestingly in recent days there is an increasing awareness about the birds in the remote pockets of India. Noticeably the availability of checklist of birds in those areas is highly helpful to get the complete picture about the birds in India for future studies and to assess the status of the species *i.e.* IUCN. Already ample attempts are made in some remote areas such as coastal wetlands (Sampath and Krishnamurthy, 1993; Oswin, 1999; Terdalkar *et al*., 2005; Sandilyan *et al*., 2008a) inland wetlands (Sahu and Rout, 2005; Sandilyan *et a*l., 2008b), university campuses and institutes (Jayapal, 1995; Praveen and Joseph, 2006), an atomic power station (Hussain *et al*., 2011). On that way the current study is the first attempt to explore the distribution of avifauna around the railway tracks in the delta area.

The Objectives of the present study are

1. To make a checklist of the birds found in this area.

2. To record the richness of order and family of birds available in the study area

3. To classify different ecological group of birds found in this area

4. To assess the population fluctuation across the months and

5. To provide general information of this area and its bird diversity for future studies, and make a simple atlas for birds in this area.

MATERIALS & METHODS

The study was carried out from October 2007–March 2008, in between Kutralam and Narasingampattai Railway track side. Data was collected at every weekend (Saturday and Sunday) of the above-mentioned months. The birds were recorded during the morning (0730 to 1100 h) and afternoon (1500 to1730 h) by direct field observation.

The birds were observed either by binocular (7′ × 50″) or by naked eyes depending upon the distance. Birds count were made by walking on the margin of the railway track.

For identifying birds, field guides (Ali, 2002 ; Grimmett *et al*., 1999) were used.

STUDY AREA

The present study was carried out in between Kuttralam and Narasingan Pettai Railway track side (11^{0}06 N 76^{0}59 E) which covers a distance of 5 Kilometers. The vast stretch of agriculture lands is being a boon to bird diversity. Moreover the entire stretch supports good diversity of trees. The predominant tree species were Neem, Coconut, and Tamarind; these trees are used by the birds for nesting, resting and roosting. Most of the birds recorded in the study area are coming under 5 ecological groups (Granivores, Insectivores, Carnivores, Frugivores, and Omnivores). Naturally the agricultural land fulfills all requirements of the bird's throughout the year.

OBSERVATION

During the study period a total number of 565 terrestrial birds were recorded. They were belonging to 23 Species, coming under 7 orders and 12 families (Table 1). During the study period, higher number of birds were recorded in March (195), followed by October (99), January (86), February (75) December (63) and November (47) Table 2.

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Table 1. List of bird species recorded in the study area during the study period.

S. No.	Common name	Species name	Order	Family
1	Spotted Dove	*Streptopelia chinensis*	Columbiformes	Columbidae
2	Eurasian Collar Dove	*Streptopelia decaocto*	Columbiformes	Columbidae
3	Black-Shoulder Kite	*Elanus caeruleus*	Falconiformes	Accipitridaf
4	Brahminy Kite	*Haliastur Indus*	Falconiformes	Accipitridaf
5	Black Kite or Pariahkite	*Milvus migrans*	Falconiformes	Accipitridaf
6	Osprey	*Pandion haliaetus*	Falconiformes	Accipitridaf
7	Roseringed Parakeet	*Psittacula karmeri*	Psittaciformes	Psititacidae
8	Brain-fever bird	*Hierococcyx varius*	Cuculiformes	Cuculidae
9	Indian Cuckoo	*Cuculus canorus*	Cuculiformes	Cuculidae
10	Asian Koel	*Eudynamys scolopacea*	Cuculiformes	Cuculidae
11	Chestnut-headed Bee eater	*Merops leschenaulti*	Coraciformes	Meropidae
12	Small Bee eater	*Merops orientalis*	Coraciformes	Meropidae
13	Indian Roller	*Coracias benghalensis*	Coraciformes	Coraciidae
14	Wire-Tailed Swallow	*Hirundo smithii*	Passeriformes	Hirundinidae
15	Black Drongo	*Dicrurus macrocercus*	Passeriformes	Corvidae
16	Ashy Wood Swallow	*Attamus fuscus*	Passeriformes	Corvidae
17	Common Myna	*Acridotheres tristis*	Passeriformes	Sturnidae
18	House Crow	*Corvus splendens*	Passeriformes	Corvidae
19	Jungle Crow	*Corvus macrorhynchos*	Passeriformes	Corvidae
20	Red-Vented Bulbul	*Pycnonotus cafer*	Passeriformes	Pycnonotidae
21	Forest Wagtail	*Dendronanthus indicus*	Passeriformes	Passeridae
22	Common Swallow	*Hirundo rustica*	Passeriformes	Hirundinidae
23	Hoopoe	*Upupa epops*	Upupiformes	Upupidae

Table 2. Month-wise variation of avifauna during the study period.

S. No.	Bird Name	Year 2006			Year 2007			Total
		Oct	Nov	Dec	Jan	Feb	Mar	
1	Spotted Dove	5	4	5	9	14	6	**43**
2	Eurasian Collar Dove	6	2	1	3	6	4	**22**
3	Ashywood Swallow	0	0	0	2	2	1	**5**
4	Black – Shoulder Kite	0	0	2	0	1	1	**4**
5	Brahminy Kite	6	7	12	14	13	10	**62**
6	Black Kite	7	2	1	13	4	6	**33**
7	Osprey	0	1	0	0	0	1	**2**
8	Roseringed Parakeet	6	3	7	13	12	35	**76**
9	Brain Fever Bird	2	1	0	0	0	1	**4**
10	Indian Cuckoo	1	1	0	0	0	1	**3**
11	Asian Koel	1	0	1	0	0	1	**3**
12	Chestnut-headed Bee Eater	6	6	4	2	2	14	**34**
13	Small Bee Eater	8	0	0	2	2	4	**16**
14	Indian Roller	6	10	0	2	0	2	**20**
15	Wire-Tailed Swallow	0	1	1	0	1	26	**29**
16	Black Drongo	5	4	3	6	4	17	**39**
17	Common Myna	8	4	6	3	6	19	**46**
18	House Crow	12	1	3	6	2	12	**36**
19	Jungle Crow	14	0	6	6	3	15	**44**
20	Red-Vented bulbul	5	0	3	3	0	6	**17**
21	Forest Wagtail	0	0	0	1	2	3	**6**
22	Common Swallow	0	0	8	0	0	8	**16**
23	Hoopoe	1	0	0	1	1	2	**5**
	Total	**99**	**47**	**63**	**86**	**75**	**195**	**565**

Rose ringed Parakeet was the most abundant bird (76) followed by Brahminy Kite (63), Common Myna (46), Jungle Crow (44) Spotted dove (43), Black Drongo (39), House Crow (36), Chestnut-headed Bee Eater (34), Black Kite (33), Wire tailed Swallow (29), Eurasian Collar Dove (22), Indian Roller (20), Red Vented Bulbul (17), Common Swallow and Small Bee Eater (16), Forest Wagtail (6), Ashy Wooded Swallow and Hoopoe (5), Black Shouldered Kite and Brain fever Bird (4), Indian Cuckoo and Asian Koel (3) and Osprey (2) were recorded during the six month study period.

Among the 7 orders of birds recorded in the study area, the Passeriformes was highest (39.13%) followed by Falconiformes (17.39%), Cucliformes and Corasiformes (13%), Columbiformes (8.69%) and Psittaciformes and Upupiformes (4.34%) (Figure 1).

Among the 12 families of birds identified in the study area the Accipitridae and Corvidae were highest (18%) followed by Cuculidae (13%),Meropidae, Columbidae and Hirundinidae (9%) and the remaining forms Coracidae, Sturnidae, Pycnonotidae, Upupidae, Passeridae and Psititiacidae were (4%) (Figure 2).
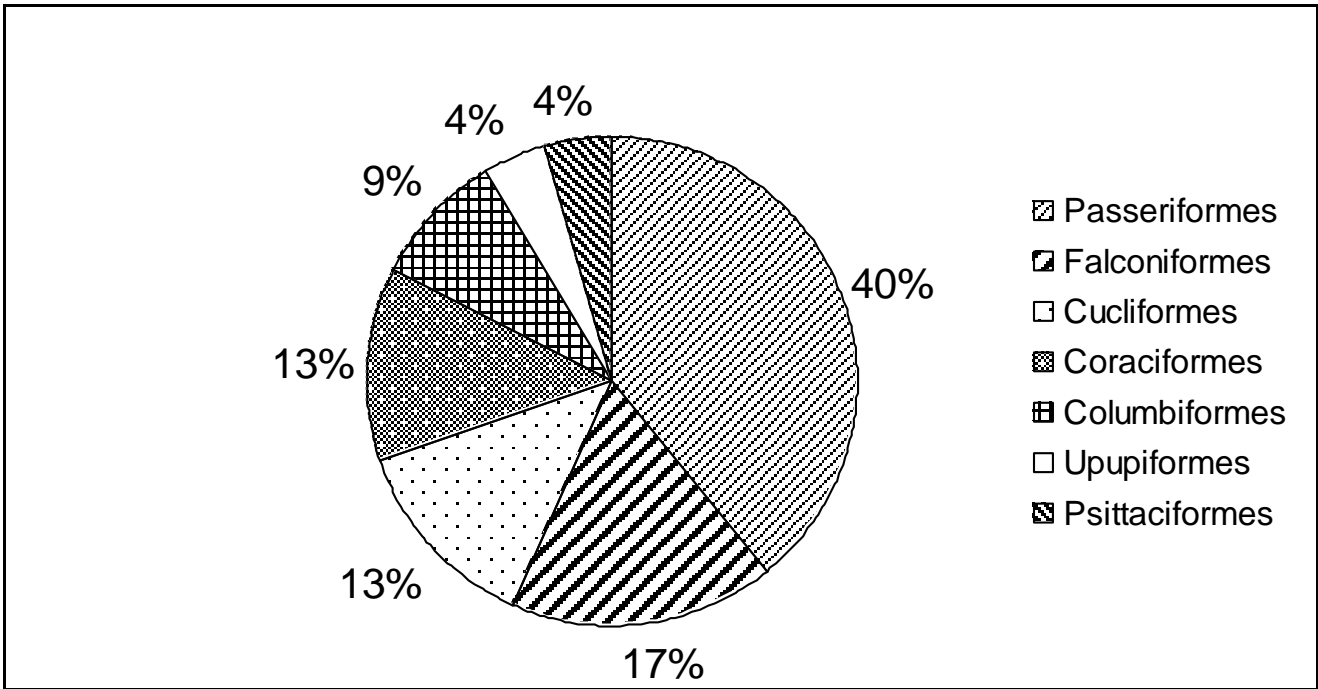
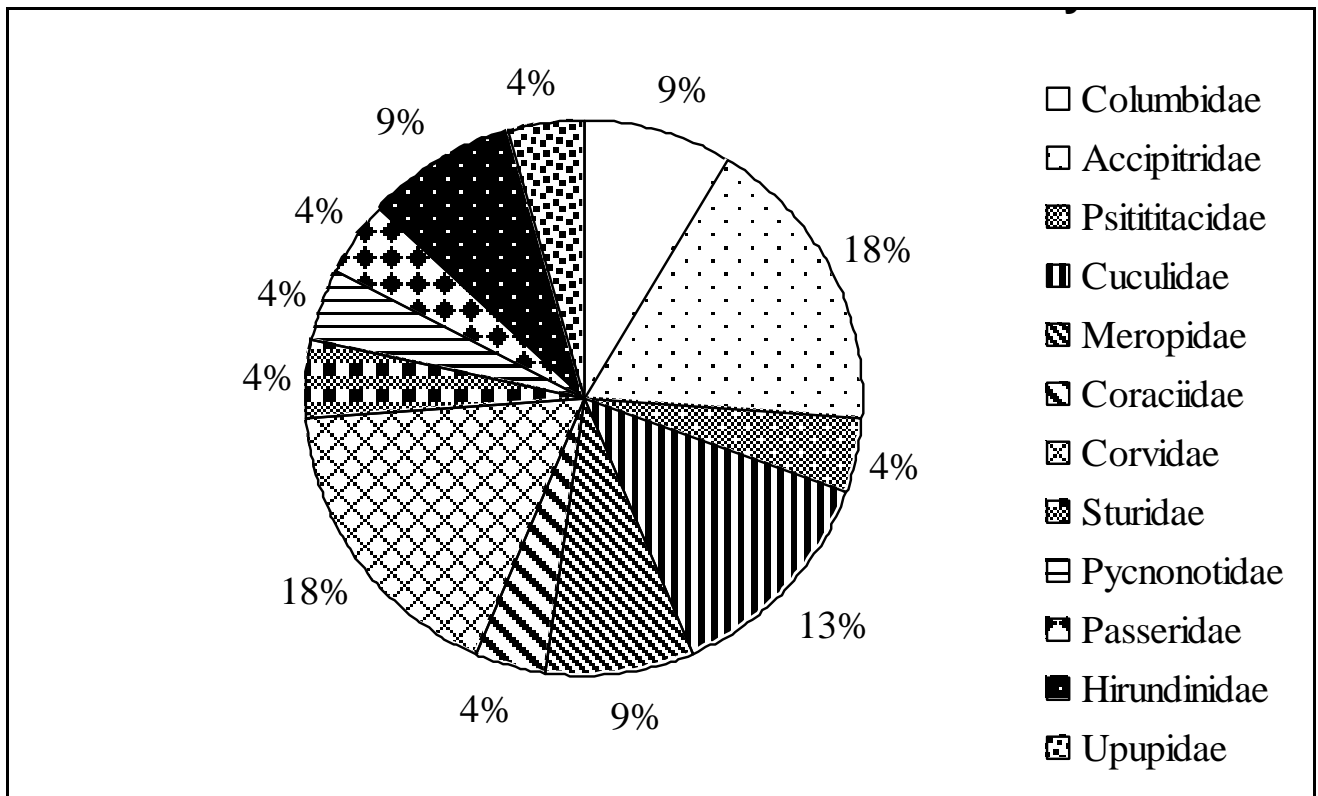**Figure 1.** Order wise composition of birds recorded in the study area.

Figure 2. Family wise composition of birds recorded in the study area.

The birds recorded in the study area were categorized into 5 ecological groups based on their food and feeding habits; they were Insectivores (56.52%), Carnivores, (17.39%) Omnivores (13.04%), Granivores (8.69%) and Frugivores (4.34%) (Table 3).

Table 3. Ecological classification of the recorded birds in the study area based on their food and feeding.

S.No	Species Name	Ecological group
1.	Spotted Dove	Granivores
2.	Eurasian Collar Dove	Granivores
3.	Ashywood Swallow	Insectivores
4.	Black – Shoulder Kite	Carnivores
5.	Brahminy Kite	Carnivores
6.	Black Kite	Carnivores
7.	Osprey	Carnivores
8.	Roseringed Parakeet	Frugivores
9.	Brain Fever Bird	Insectivores
10.	Indian Cuckoo	Insectivores
11.	Asian Koel	Insectivores
12.	Chestnut-headed Bee Eater	Insectivores
13.	Small Bee Eater	Insectivores
14.	Indian Roller	Insectivores
15.	Wire-Tailed Swallow	Insectivores
16.	Black Drongo	Insectivores
17.	Common Myna	Omnivores
18.	House Crow	Omnivores
19.	Jungle Crow	Omnivores
20.	Red-Vented bulbul	Insectivores
21.	Forest Wagtail	Insectivores
22.	Common Swallow	Insectivores
23.	Hoopoe	Insectivores

DISCUSSION

Birds are a familiar feature of our environment and everyone notices them with great joy. The bird - watching is such a popular pastime world over. Due to their varied lifestyles, conspicuousness, diurnal habits and interesting plumage and calls, it attracts human tours them from the time immemorial. Birds are also regarded as good subjects for exploring a number of questions of ecological and conservation significance (Urfi, 2003). Recent research is focused on the impact of climate change on birds and how the birds are responding for the ongoing climate change pandemonium (e.g. Yom-Tov *et al*., 2006; Van Buskirk *et al*., 2010; Gardner *et al*., 2011)

Indian ornithological dossiers are up to the mark when not comparable to western nations. It is the high time to find the distribution of bird species and subspecies in all the areas of the Indian subcontinent. Ornithologists and bird watchers in India agree that the contemporary knowledge about the status of common birds in the subcontinent is highly needed (Madson, 2003 Sandilyan, 2011).

Recent indisputable studies stated that there is a general decline in the number of common birds like a vulture, black kite, species of doves, drongo, roller and parakeets (Madson, 2003). On the other hand, mass decline of water and terrestrial birds from important habitats such as coastal were also reported (e.g. Sandilyan 2010; Sandilyan *et al*., 2010). But here in the current study we have recorded 565 birds belonging to 23 species within 5 km indicates the habitat quality.

There was a fluctuation in birds number of different months during the study time. This may be due to the influence of the season as well as the agriculture practice of this area. Apart from that several reports confirmed that seasonal variation, local migration pattern, reproductive behaviour, latitude and the regional and global microclimatic

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events and erratic climate might also influence the birds number in any habitat (e.g. Pittock, 2003, Romano *et al*., 2005). However a detail long time study in this aspect is required to know the exact factors which influence the fluctuation in the study area.

The species composition of a specific area or a community is interlinked to the available resources of the area, which includes physical structure of the habitat, food availability and biotic interactions (Terdalkar *et al*., 2005). The results indicate that the current study area fulfills all the requirements for the recorded avifauna.

According to Salim Ali (1972 and 2003), birds are the friends of the farmer and not the foes, because they destroy the insects that plague his crops. Birds constitute an important component of agro ecosystems and the role of birds in the agro ecosystem is gaining more and more attention. As depredators of insects, birds stand supreme among the vertebrate. In our study area intensive agriculture is in practice. Here more number of insectivore birds (13, vide table 3) that is 56.52% of the birds recorded was insectivore. The insectivore birds play an economically significant role in paddy fields by the way of controlling the insects that destroy the products in all the stages especially during pest outbreaks the birds are the only natural and eco-friendly saviour of the crop (Sandilyan, 2013). In this context a detailed study is required that how the insectivorous birds help the farmers of this area, and the degree of pest control ability of birds should be studied in the future bio control research.

A few granivore and omnivorous bird species have been able to harvest energy and reproduce very efficiently in agriculture habitats, leading their large population buildups (Dhindsa and Saini, 1994). Among the recorded birds in the study area, the omnivore and granivore were 13.04%. The role of the two ecological groups should be investigated based on the above-mentioned aspect.

Apart from the above, few species of carnivore were also recorded in the study area. From the above information a detailed study is required to know the role of carnivore's birds in the agro ecosystem and the importance should bring to the limelight in the future agro bird related studies.

Conclusion

A total number 23 species recorded in the study period indicate the avian significance of this area. Moreover 56.52% of the birds are insectivore in the area. Fortunately agriculture lands are abounding in this area and naturally the birds are the good bio-controller. The conservation of these birds in this area is a must in diversity, conservation and agriculture point of view. Further detailed long term studies are necessary to know about the breeding biology and habitat preference of birds in this area.

CONFLICT OF INTEREST STATEMENT

We declare that we have no conflict of interest.

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