COMPOSITION AND DYNAMICS OF THE BIRD COMMUNITY OF TAVARAGUNDI VILLAGE, BELLARY DISTRICT, KARNATAKA

C. Basavarajappa and R.D. Kanamadi

Department of Zoology, Karntak University, Dharwad, Karnataka 580003, India

Abstract

A study on species composition and dynamics of avian fauna of Tavaragundi (Karnataka, India) was carried out for a period of four years (May 1994 - April 1998). A total of 121 species was recorded. There was a significant variation in the number of birds / species from month to month within the year whereas it did not vary from year to year. The species number increased in October and was highest between December and April /May. The number of birds were maximum between December and March and began to decrease from April onwards. The present study suggests that Tavaragundi is rich in avian fauna and species diversity.

Keywords

Tavaragundi, bird community, composition, dynamics

Introduction

The Indian subcontinent has diverse avian fauna with 1300 bird species (Grimmet *et al*., 1999). Little research has been done at community level to understand their structure and dynamics. Research at community level of birds in the Indian subcontinent is essential as large scale changes are taking place in natural habitats of birds (Khan *et al.*, 1993). There is a need to study the community structure and dynamics of birds of different areas of this country to investigate the impact of changing natural habitats. Such studies will provide information on the population dynamics of an area. The present work was undertaken to study the dynamics and species richness of avifauna of Tavaragundi.

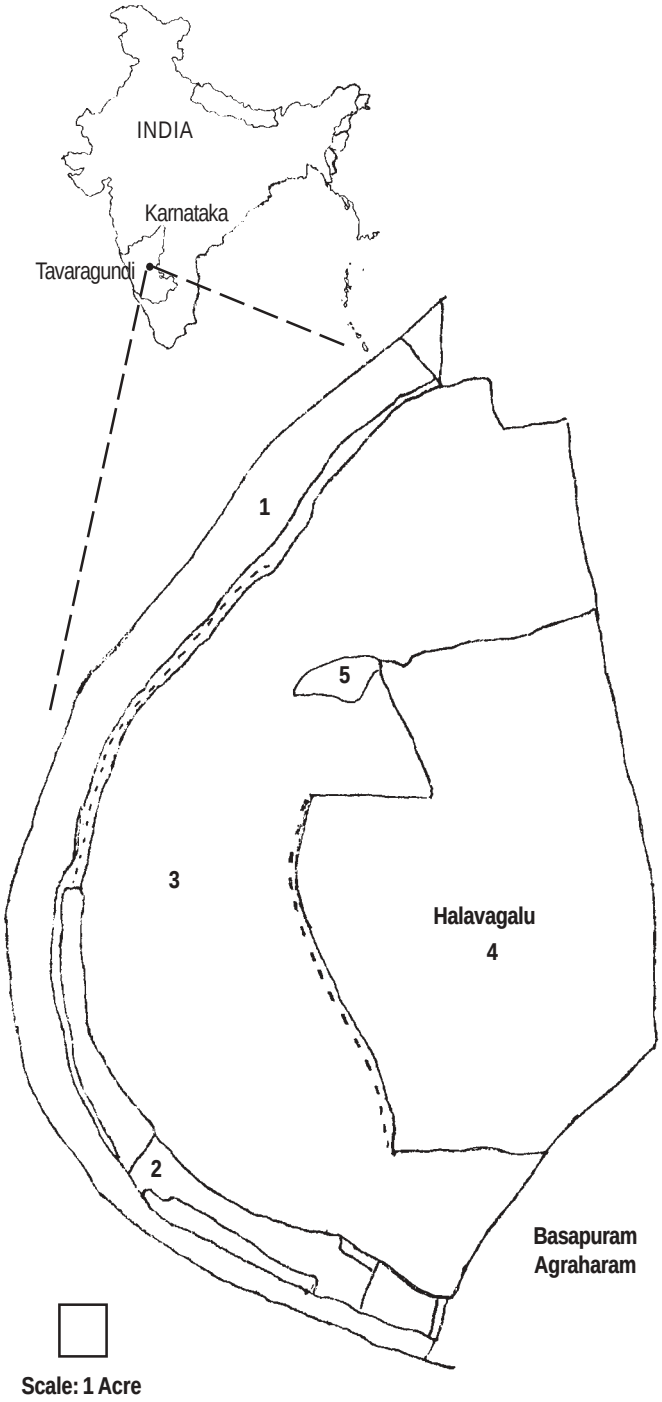
Materials and Methods

Tavaragundi ($14^0$4'N and $75^0$45'E) is located at an elevation of 528m on the bank of river Tungabhadra. An area of 480ha (Fig. 1) was chosen to study the dynamics of bird community which covered irrigated agricultural land (52.15%), rain-fed dry agricultural land (26.50%), fallowland (1.36%), meadow (4.24%), river (13.87%), village (1.08%), road (0.67%) and lift irrigation channels (0.13%). The survey was carried out by dividing the area into five plots (Fig. 1) of different habitats such as river bank having gravel and sand bed, meadow, irrigated agricultural land, non-irrigated agricultural land and village site. Each species was assigned to a frequency or abundance category (Gebauer *et al*., 1993). The categories used were: Abundant (Ab): 500 or more individuals in a single day; Uncommon (U): six - 25 individuals in a single day; Common (C): 26-499 individuals in a single day; Rare (R): one - five individuals in a single day; Accidental (Ac): recorded only once.

Floral composition: The flora consisted of *Zizyphus vulgare, Mangifera indica, Acacia arabica, A. sundra, Caesalpinia bonducella, Tamarindus indica, Pithecolobium dulce, Pongamia glabra, Delonix elata, Eugenia jambolana, Eucalyptus citriodora, Artocarpus integrifolia, Ficus glomerata, Salvodora oleoidos, Calotropis giganteca, Lantana aculeata, Euphorbia tirucalli, Phyllanthus emblica, Achyranthus aspera, Aloe vera, Aloe marmelos, Feronia elephantum, Cynodon dactylon and Vitex negundo.* These plants were distributed densely at the village site and were less dense towards irrigated fields. The road sides were covered by umbrella trees and there were practically no trees in dry agricultural lands. The meadow consisted of grass species *Allostropsis cimcina* with sporadic distribution of bushes, trees and hedgerows. During summer the grass totally dries and its growth is initiated by the onset of pre-monsoon and monsoon rains and flood fluctuations. Annual crops belonged to *Musaceae, Liliaceae, Palmaceae, Graminae, Leguminosae, Brassicaceae, Malvaceae, Rutaceae, Anacardiaceae, Cucurbitaceae, Umbelliferae, Compositae, Solanaceae and Papilionaceae.*

Census: A regular census was carried out (Bibby *et al.*, 1993) once in a month, every second week, on clear days, between 6 am to 12 noon for four years from May 1994 to April 1998. The number of individuals in flocks were estimated as accurately as

Manuscript received on 28 May 2001; Revised manuscript received on 30 March 2002; Accepted for publication on 15 April 2002



1 - river; 2 - meadow; 3 - irrigated agricultural land; 4 - dry agricultural land; 5 - village site

Fig. 1. Map of the study area - Bellary District: Harapanahalli Taluk: Tavaragundi

possible. Counting was not done in the case of House Sparrow (*Passer domesticus*), House Crow (*Corvus splendens*) and Jungle Crow (*Corvus macrorhynchos*) as they were exclusively resident. Plot-wise method was followed (Bibby *et al*., 1993) to count the birds. Counting was always done from plot number three followed by plot numbers two, one and five. The same path and direction was maintained throughout the study. Plot-wise analysis was not done as the species diversity was not uniform.

The variation in the population of birds and species was analysed by two-way analysis of variance (ANOVA) to determine 1. variation in the total number of birds and species from month to month within the year and 2. variation between the years.

Results and Discussion

Two-way analysis of variance indicated that there was significant variation in the number of birds and species from month to month within the year (the calculated F (9.8796) > tabulated F (2.14) indicates a significant variation in the number of birds and species within the year). There was no significant variation in the number of birds and species from year to year (F (0.6686) < tabulated F (2.92).

The census of birds is summarised in Table 1 and Figure 2. Month-wise survey of a total of 121 bird species belonging to 44 families is presented in Table 2. The number (minimum and maximum) of species and the total population recorded during four successive years are as follows: 1994-95:55-90 and 482-3826; 1995-96: 69-86 and 483-4038; 1996-97: 50-88 and 408-3540 and 1997-98: 53-89 and 385-3945 (Table 1). The species number was low between July / August-September (Table 1) and the lowest number was 50; species number increased in October and was maximum between December and April / May. However, it began to decrease in May. A maximum of 89 species were recorded in February and April. The population was low between May and November except in 1997 and was high between December and March. It began to decrease from April onwards. Dominant species (accounting for >5% of the total number of birds throughout the year / season at least during one year) were *Bubulcus ibis, Cursorius coromandelicus, Anser indicus, Glareola lactea, Sturnus roseus and Ploceus philippinus.*

A total of 18799 (1994-95), 21660 (1995-96), 23600 (1996-97), and 21118 (1997-98) individuals belonging to 121 species (Table 2) were counted. Of these 23 were aquatic and remaining species did not show preference to any specific habitat. However, the population was high in meadow region and agricultural fields. *Cursorius coromandelicus* preferred dry open field. *Esacus recurvirostris* were resting near river edges and also on a small island of sand with little vegetation during day time and their nocturnal activity in the open agricultural field was noticed by their voice. The arrival of *Sturnus roseus* always coincided with the fruiting season of Salvodora plants, *Tadorna ferruginea;*

first appeared in small temporary ponds in the mid fields during November and later moved to the riverside. *Phalacrocorax niger* were observed in groups. The number of *Merops philippinus* increased during the breeding season.

Avifaunal studies in the Indian subcontinent are mainly aimed to survey birds belonging to different areas. Kannan (1998) in a study for a period of two years reported 218 species of birds in Anaimalai Hills (Western Ghats). Further, he described monthly mean abundance of 37 species which did not show any common pattern of abundance in particular months of the year. Bird community structure of Aligarh District (Uttar Pradesh) consisted of 52 species (Khan *et al*., 1993). Its species density and diversity was highest in scrub forest as compared to plantation and mixed forest. In the present study for a period of four successive years at Tavaragundi as many as 121 species were recorded (Table 2). The density was maximum between December and March. The species richness was maximum from December - April and declined from May onwards. Though the density was low, the species diversity appeared to continue as few representatives may have not left the area till the end of May.

Table 1. Month-wise data showing number and population of birds from May 1994 - April 1998

Months	1994-95		1995-96		1996-97		1997-98	
	Sp	*Po*	*Sp*	*Po*	*Sp*	*Po*	*Sp*	*Po*
May	80	823	78	1167	87	4070	76	1548
June	66	618	77	706	69	754	70	1041
July	55	482	71	879	50	462	73	451
August	55	578	69	483	54	452	53	385
September	59	579	70	455	56	413	54	343
October	67	1067	75	719	76	937	78	641
November	70	858	78	872	76	3244	67	849
December	73	1144	86	3530	78	3078	77	2127
January	90	3441	86	3859	81	2790	86	3702
February	86	3788	82	3349	88	3357	89	3945
March	87	3926	80	4038	87	2662	88	3359
April	85	1495	89	1603	86	1381	81	2727

Sp - Species; Po - Population

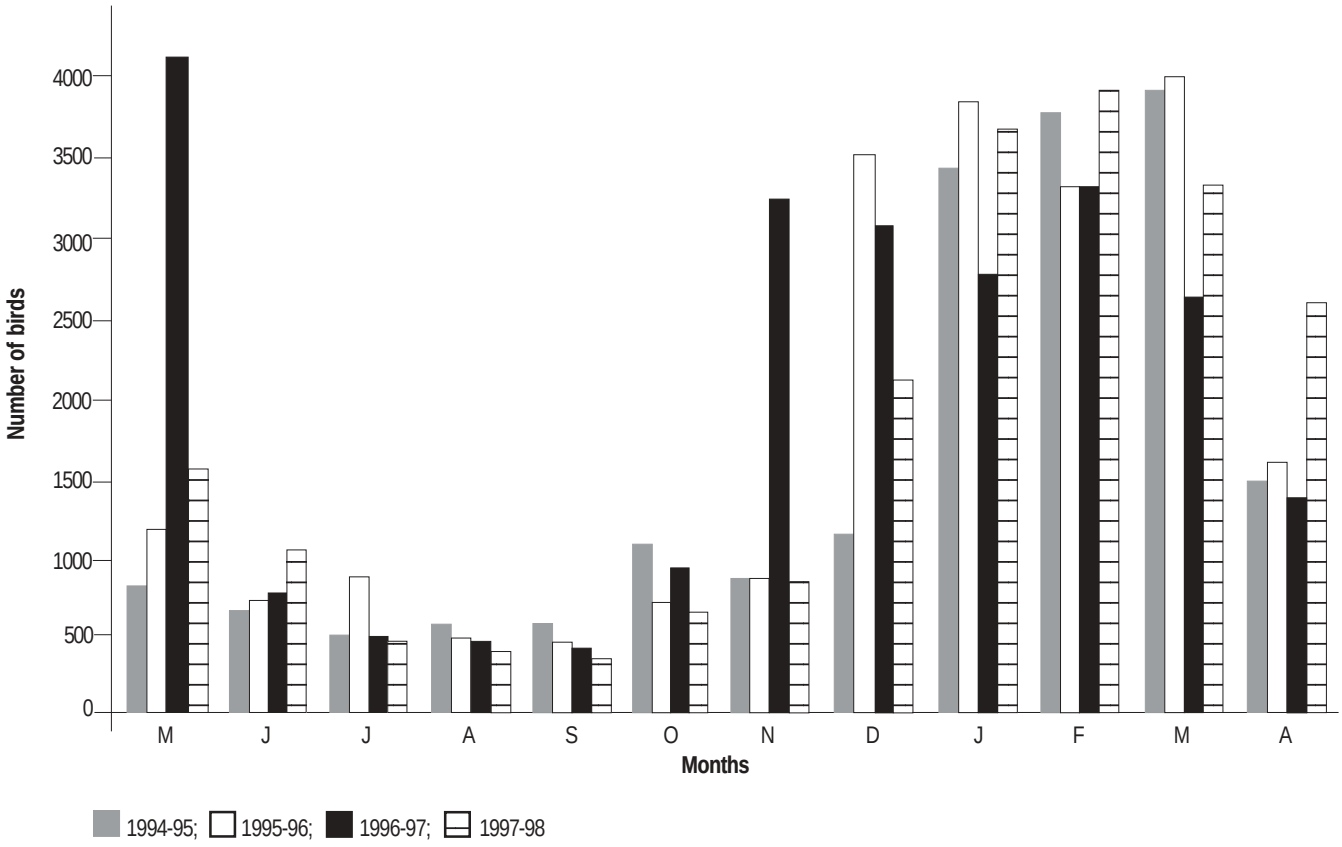


Fig. 2. Monthly bird population status fo the study area from May 1994 to April 1998

Table 2. Monthly occurrence of birds and their status

Species	Scientific name	1994-95				1995-96				1996-97				1997-98			
		My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar
Podicipedidae																	
Little Grebe	*Tachybaptus ruficollis*	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-
Phalacrocoracidae																	
Little Cormorant	*Phalacrocorax niger*	R	-	R	-	U	R	U	U	U	-	R	U	R	R	R	U
Ardeidae																	
Large Egret	*Casmerodius albus*	R	R	R	R	U	U	U	U	R	R	R	U	R	R	R	R
Little Egret	*Egretta garzetta*	R	R	R	R	U	U	U	U	R	R	R	U	R	R	R	R
Indian Pond-Heron	*Ardeola grayii*	R	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cattle Egret	*Bubulcus ibis*	R	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Grey Heron	*Ardea cinerea*	R	U	U	U	U	U	U	U	U	U	U	U	U	U	U	C
Black-crowned Night-heron	*Nycticorax nycticorax*	U	-	R	R	C	R	R	U	U	-	-	R	R	-	R	-
Ciconiidae																	
Painted Stork	*Mycteria leucocephala*	U	-	U	U	R	R	R	R	U	R	R	R	R	U	U	U
Asian Openbill -Stork	*Anastomus oscitans*	-	-	R	R	-	-	U	R	-	-	R	R	-	-	R	U
White-necked Stork	*Ciconia episcopus*	R	R	U	U	R	U	U	R	U	U	R	R	R	R	U	R
Threskiornithidae																	
Oriental White Ibis	*Threskiornis melanocephalus*	R	R	R	U	U	R	R	U	R	C	U	U	R	R	U	R
Black Ibis	*Pseudibis papillosa*	U	U	U	U	U	U	U	U	U	U	C	U	U	R	-	-
Eurasian Spoonbill	*Platalea leucorodia*	-	-	-	-	-	U	-	-	-	-	-	-	-	-	-	-
Anatidae																	
Bar-headed Goose	*Anser indicus*	-	-	C	C	-	-	C	C	-	-	C	C	-	-	C	C
Brahminy Shelduck	*Tadorna ferruginea*	R	-	-	R	R	-	U	U	-	-	U	U	-	-	U	C
Spot-billed Duck	*Anas poecilorhyncha*	U	R	C	C	U	R	U	C	C	U	U	U	U	R	U	U
Garganey	*Anas querquedula*	R	R	U	U	U	U	C	U	U	-	-	R	-	R	U	U
Accipitridae																	
Black-shouldered Kite	*Elanus caeruleus*	R	-	R	R	R	R	R	R	R	-	R	R	R	-	R	-
Black Kite	*Milvus migrans*	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Brahminy Kite	*Haliastur indus*	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Pallid Harrier	*Circus macrourus*	R	R	R	R	R	R	R	R	R	-	-	R	R	R	-	-
Short-toed Snake-eagle	*Circaetus gallicus*	-	-	-	-	R	-	R	-	R	R	R	R	-	R	-	-
Eurasian Sparrowhawk	*Accipiter nisus*	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Phasianidae																	
Grey Francolin	*Francolinus pondicerianus*	U	U	C	R	U	U	U	C	R	U	U	U	U	U	U	U
Common Quail	*Coturnix coturnix*	-	R	R	R	R	R	R	R	U	R	U	R	R	R	R	R
Indian Peafowl	*Pavo cristatus*	R	U	U	U	R	R	R	U	U	U	R	R	R	R	R	R
Rallidae																	
White-breasted Water-hen	*Amaurornis phoenicurus*	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Jacanidae																	
Bronze-winged Jacana	*Metopidius indicus*	-	-	-	-	-	R	-	R	R	-	-	-	-	-	-	-

Species	Scientific name	1994-95				1995-96				1996-97				1997-98			
		My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar
Charadriidae																	
Red-wattled Lapwing	*Vanellus indicus*	U	R	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Little Ringed Plover	*Charadrius dubius*	U	R	U	U	U	U	U	U	R	U	U	U	U	R	R	R
Scolopacidae																	
Common Redshank	*Tringa totanus*	R	R	R	R	-	R	-	-	-	R	R	R	-	-	R	R
Common Sandpiper	*Actitis hypoleucos*	R	U	U	U	U	U	U	U	R	U	U	U	R	U	U	U
Common Snipe	*Gallinago gallinago*	R	R	R	R	-	R	R	R	R	U	U	R	R	R	R	R
Wood Sandpiper	*Tringa glareola*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Black-tailed Godwit	*Limosa limosa*	R	-	-	U	U	-	-	U	R	-	-	U	U	-	-	U
Little Stint	*Calidris minuta*	U	U	U	C	U	U	U	C	R	U	U	U	U	U	C	U
Recurvirostridae																	
Black-winged Stilt	*Himantopus Himantopus*	R	U	U	U	R	R	U	U	U	-	U	U	-	R	-	U
Burhinidae																	
Great Stone-plover	*Esacus recurvirostris*	R	U	R	U	U	R	U	U	R	R	U	R	R	R	R	R
Glareolidae																	
Indian Courser	*Cursorius coromandelicus*	R	-	R	R	-	U	U	R	U	R	R	U	R	R	R	R
Small Pratincole	*Glareola lactea*	C	-	C	Ab	C	C	Ab	Ab	C	-	Ab	Ab	C	-	Ab	Ab
Laridae																	
Brownhead Gull	*Larus brunnicephalus*	R	-	U	U	-	-	U	-	R	-	-	R	-	-	R	R
River Tern	*Sterna aurantia*	U	C	R	U	R	R	R	U	U	R	U	U	R	U	R	R
Black-bellied Tern	*Sterna acuticauda*	U	-	R	R	R	R	U	U	C	U	R	R	U	-	U	R
Whiskered Tern	*Chlidonias hybridus*	R	R	R	R	R	R	R	R	R	-	-	R	-	R	R	R
Pteroclididae																	
Chestnut-bellied Sandgrouse	*Pterocles exustus*	R	U	U	U	R	U	C	R	R	-	U	U	-	-	-	U
Columbidae																	
Blue Rock Pigeon	*Columba livia*	U	U	C	U	U	R	U	-	C	U	U	U	-	-	U	U
Eurasian Collared-dove	*Streptopelia decaocto*	U	C	C	U	U	U	U	C	U	U	U	C	U	U	U	C
Spotted Dove	*Streptopelia chinensis*	R	R	R	R	R	U	R	U	R	R	U	R	R	R	R	R
Little Brown Dove	*Streptopelia senegalensis*	R	R	U	R	U	R	U	U	U	U	U	U	U	R	U	U
Psittacidae																	
Alexandrine Parakeet	*Psittacula eupatria*	U	U	U	U	U	U	U	U	C	C	R	R	U	U	U	U
Plum-headed Parakeet	*Psittacula cyanocephala*	C	U	-	-	U	-	-	-	C	U	-	-	U	-	-	-
Cuculidae																	
Pied Crested Cuckoo	*Clamator jacobinus*	R	R	R	-	R	R	R	R	R	R	R	R	R	-	R	R
Brainfever Bird	*Hierococcyx varius*	R	R	R	-	R	R	R	-	R	R	R	-	R	R	R	R
Asian Koel	*Eudynamys scolopacea*	R	R	U	U	U	R	R	U	U	R	R	R	U	U	R	R
Greater Coucal	*Centropus sinesis*	R	R	R	R	U	U	R	U	R	U	R	U	U	U	R	R
Small Green-billed Malkoha	*Phaenicophaeus viridirostris*	R	R	R	R	R	R	R	R	R	R	U	R	U	R	R	R

Species	Scientific name	1994-95				1995-96				1996-97				1997-98			
		My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar
Tytonidae																	
Barn Owl	*Tyto alba*	-	R	-	R	U	R	R	R	R	R	R	R	-	-	R	-
Strigidae																	
Spotted Owlet	*Athene brama*	R	U	R	U	R	R	R	R	R	R	R	R	R	-	R	R
Captimulgidae																	
Common Indian Nightjar	*Caprimulgus asiaticus*	-	-	-	-	-	-	R	R	R	-	R	R	R	R	R	R
Apodidae																	
Asian Palm-Swift	*Cypsiurus balasiensis*	R	R	R	R	R	R	R	R	R	R	R	R	R	R	-	-
Alcedinidae																	
Lesser Pied Kingfisher	*Ceryle rudis*	U	U	R	U	R	R	R	U	R	R	R	R	R	R	R	R
White-breasted Kingfisher	*Halcyon smyrnensis*	R	R	U	U	U	U	U	U	R	R	U	U	U	R	U	U
Small Blue Kingfisher	*Alcedo atthis*	R	-	R	R	R	R	R	R	R	-	R	R	-	-	R	R
Meropidae																	
Chestnut-headed Bee-eater	*Merpos leschenaulti*	R	R	R	R	R	R	R	R	R	-	R	R	R	R	R	R
Bule-tailed Bee-eater	*Merpos philippinus*	U	R	U	U	U	U	U	C	U	U	U	U	R	U	U	C
Small Bee-eater	*Merpos orientalis*	R	R	R	R	U	R	R	R	R	R	R	U	R	R	R	R
Coraciidae																	
Indian Roller	*Coracias benghalensis*	-	-	R	-	-	-	R	-	-	-	-	-	-	-	-	-
Upupidae																	
Common Hoopoe	*Upupa epops*	R	R	R	R	R	R	R	R	R	R	U	U	R	R	R	R
Bucerotidae																	
Indian Grey Hornbill	*Ocyceros birostris*	R	R	R	R	R	R	R	R	R	R	R	R	R	R	-	R
Picidae																	
Lesser Golden-backed Woodpecker	*Dinopium benghalense*	R	-	R	-	-	-	-	R	-	-	-	R	-	-	-	-
Pittidae																	
Indian Pitta	*Pitta brachyura*	-	-	-	-	Ac	-	-	-	-	-	-	-	-	-	-	-
Alaudidae																	
Rufous-tailed Finch-Lark	*Ammomanes phoenicurus*	R	R	U	R	R	R	R	R	U	R	U	R	R	R	R	U
Eastern Sky-Lark	*Alauda gulgula*	-	R	R	R	R	R	R	R	R	R	R	R	-	R	R	R
Ashy-crowned Finch-Lark	*Eremopoterix grisea*	U	U	U	C	U	U	U	U	U	U	U	U	U	U	U	C
Hirundinidae																	
Wire-tailed Swallow	*Hirundo smithii*	-	-	R	-	-	-	-	-	-	-	-	-	-	-	R	R
Common Swallow	*Hirundo rustica*	U	-	U	U	U	-	U	U	-	C	U	C	U	U	U	U
Red-rumped Swallow	*Hirundo daurica*	R	R	-	R	R	R	-	R	R	R	U	R	R	R	R	R
Laniidae																	
Great Grey Shrike	*Lanius excubitor*	R	R	R	R	R	R	R	R	R	R	R	R	-	R	R	R
Rufous-backed Shrike	*Lanius schach*	R	R	R	R	R	R	R	R	R	R	R	R	-	R	R	R

Species	Scientific name	1994-95				1995-96				1996-97				1997-98			
		My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar
Oriolidae																	
Eurasian Golden Oriole	*Oriolus oriolus*	-	R	-	-	R	R	-	-	-	R	R	-	-	R	-	-
Dicruridae																	
Black Drongo	*Dicrurus macrocercus*	-	U	U	U	-	-	R	U	-	R	U	U	-	U	U	U
Sturnidae																	
Common Myna	*Acridotheres tristis*	U	U	U	R	U	U	U	U	C	U	C	U	U	U	U	U
Brahminy Starling	*Sturnus pagodarum*	U	U	U	U	U	U	U	U	C	U	C	U	U	U	U	U
Rosy Starling	*Sturnus roseus*	-	-	C	C	-	-	C	C	-	-	U	U	-	-	C	C
Corvidae																	
House Crow	*Corvus splendens*	Not counted															
Jungle Crow	*Corvus macrorhynchos*	Not counted															
Campephagidae																	
Small Minivet	*Pericrocotus cinnamomeus*	-	-	-	-	-	R	R	R	R	R	R	R	R	R	R	R
Black-headed Cuckoo-Shrike	*Coracina melanoptera*	-	-	-	-	-	-	-	-	-	-	-	R	R	R	R	R
Irenidae																	
Common Iora	*Aegithina tiphia*	R	R	R	R	R	R	R	R	R	U	R	R	R	R	R	R
Pycnonotidae																	
Red-vented Bulbul	*Pycnonotus cafer*	U	U	U	U	U	U	U	U	U	U	U	U	C	U	U	-
White-browed Bulbul	*Pycnonotus luteolus*	R	R	R	R	U	R	R	R	U	U	U	U	R	R	R	R
Timaliinae																	
Common Babbler	*Turdoides caudatus*	C	U	U	C	C	C	C	C	C	C	C	C	C	C	C	C
Jungle Babbler	*Turdoides striatus*	U	U	U	U	U	U	U	U	U	U	U	C	U	U	U	U
Rufous-bellied Babbler	*Dumetia hyperythra*	U	U	U	U	U	U	U	U	R	R	R	R	R	R	R	R
Monarchinae																	
Asian Paradise-Flycatcher	*Terpsiphone paradisii*	R	R	R	R	R	R	R	R	R	R	-	-	R	R	-	R
Black-naped Monarch-Flycatcher	*Hypothymis azurea*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R
Sylviinae																	
Plain Prinia	*Prinia inornata*	R	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Ashy Prinia	*Prinia socialis*	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	R
Common Tailorbird	*Orthotomus sutorius*	R	R	R	R	R	R	R	R	R	-	R	R	R	R	R	R
Turdinae																	
Oriental Magpie-Robin	*Copsychus saularis*	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Indian Robin	*Saxicoloides fulicata*	U	-	R	R	R	R	U	U	R	R	R	R	-	R	-	-
Pied Bushchat	*Saxicola caprata*	R	R	R	U	U	U	R	U	U	R	U	U	U	U	U	U
Common Stonechat	*Saxicola torquata*	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-
Blue Rock-Thrush	*Monticola solitarius*	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Paridae																	
Great Tit	*Parus major*	-	-	-	-	-	-	-	R	R	R	R	-	R	R	R	R

Species	Scientific name	1994-95				1995-96				1996-97				1997-98			
		My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar	My-Jl	Ag-Ot	Nv-Jn	Fb-Ar
Motacillidae																	
Large Pied Wagtail	*Motacilla maderaspatensis*	U	U	U	U	U	R	R	U	U	R	R	U	-	R	R	R
Grey Wagtail	*Motacilla cinerea*	R	-	R	R	R	-	R	-	-	U	U	U	-	R	U	U
Yellow Wagtail	*Motacilla citreola*	-	R	R	R	R	-	R	-	-	U	U	U	-	R	U	U
White Wagtail	*Motacilla alba*	R	R	R	R	-	R	R	-	-	R	U	R	-	R	R	U
Purple-rumped Sunbird	*Nectarinia zeylonica*	R	R	R	U	R	R	U	C	R	U	R	R	U	R	U	U
Purple Sunbird	*Nectarinia asiatica*	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Passerinae																	
Yellow-throated Sparrow	*Petronia xanthocollis*	U	C	U	C	C	C	C	C	C	-	-	C	U	-	U	U
House Sparrow	*Passer domesticus*	Not counted															
Ploceinae																	
Baya Weaver	*Ploceus philippinus*	C	C	C	-	U	C	U	-	C	U	-	C	C	C	-	U
Streaked Weaver	*Ploceus manyar*	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Estrildidae																	
White-throated Munia	*Lonchura malabarica*	C	U	U	U	C	U	C	U	U	C	C	U	C	U	U	U
Spotted Munia	*Lonchura punctulata*	U	C	R	R	C	-	-	-	U	R	U	U	U	-	U	U
Red Munia	*Amandava amandava*	R	-	-	-	-	-	R	-	R	R	-	-	-	-	R	R
Black-headed Munia	*Lonchura malacca*	R	-	-	-	R	R	-	-	-	R	R	-	-	R	-	R
Emberizinae																	
Red-headed Bunting	*Emberiza bruniceps*	-	C	C	-	`-	-	C	U	-	-	C	C	-	-	C	C

Ab - abundant (500 and above); Ac - accidental (observed onlyonce during the study period); C - common (26-499); R - rare (1-5); U- uncommon (6-25).
Common names of birds are according to Manakadan and Pittie (2001).

The factors considered to have most influence on the distribution and number of birds are feeding conditions, as well as the structure of land surface which afforded the birds protection from predators and hostile atmospheric conditions (Tryjanowski, 1995). Highest density and species richness between December and April at Tavargundi may be due to better availability of food. The present study suggests that the area is rich in bird density and diversity.

Acknowledgements

We thank Dr. Piotr Tryjanowski, Department of Avian biology and Ecology, Adam Mickiewicz University, Fredry, Poland for his helpful suggestions. We are grateful to Prof. A.S. Kadi of Karnatak University, Dharwad and Mr. G.G. Kadadevaru, UGC FIP Fellow Karnatak University, Dharwad for their help in preparation of the manuscript. The study was supported by UGC-SAP II and COSIST programs.

References

Bibby, C.J., N.D, Burgess and D.A. Hill (1993). *Bird Census Techniques.* Academic Press Ltd. London, pp. 24-28.

Gebaur, M.B., R.Z. Dobos and D.V. Wesloh (1993). Historical review of water bird populations and annotated list of water birds associated with Burlington Bay, Lake Ontario, 1857-1990. Occasional paper number 78. *Canadian Wildlife Service*, 44 pp.

Grimmet, R., C. lnskipp and T. lnskipp (1998). *Birds of Indian Subcontinent.* Oxford University Press, New Delhi.

Kannan, R. (1998). Avifauna of the Anaimalai Hills (Western Ghats) of southern India. *Journal of the Bombay Natural History Society* 95(2): 193-244.

Khan, J., N.D. Khan and A. Ahmed (1993). Preliminary investigations of bird community structure at Aligarh, India. *Tropical Ecology* 34(2): 217-225.

Manakadan, R. and A. Pittie (2001). Standardised common and scientific names of the birds of the Indian subcontinent. *Buceros* Envis Newsletter: Avian ecology and inland wetlands 6(1): 37+ixpp. Bombay Natural History Society, Mumbai.

Tryjanowski, P. (1995). The composition and dynamics of wintering bird community in an agricultural area of western Poland. *Acta Ornithologica* 30: 153-160.