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Cover: Stripe-necked Mongoose *Urva vitticollis* in poster colours, adapted from photograph by Ashni Dhawale, by Pooja Ramdas Patil.



INTRODUCTION

Bird diversity is high among vertebrates due to their wide distribution. They are biodiversity indicators (Canterbury et al. 2000; Piersma & Lindström 2004) and documentation of their diversity, distribution, and taxonomy in India has been widely done (Ali & Ripley 1987; Kazmierczak 2006; Grimmett et al. 2011; Deomurari et al. 2023). India's share is 12.5% of the global avifaunal richness (Grimmett et al. 2011; Praveen & Jayapal 2023). As there are continuous landscape changes due to economic development in new areas (Jha et al. 2000; Purvis & Hector 2000), regional-level monitoring of birds is essential (Gadgil 1996). Avifaunal studies help to understand the long-term changes in the landscape and the vegetative structures (Rika & Santosa 2007; Rashiba et al. 2022) which aids in conservation planning (Paul & Cooper 2005). Baseline data from any site is essential for any long-term conservation efforts (Peterson et al. 2000; Llanos et al. 2011).

Avifaunal wetland studies in Tamil Nadu had been done in many wetlands like Pallikaranai (Raj et al. 2010), Karaivetti (Gokula 2010), Vaduvor (Gokula & Raj 2011), and Karangad (Byju et al. 2023). In Madurai the avifaunal studies are scanty and literature search revealed few older studies (Nichols 1944a,b, 1945). Recent studies done on diversity and distribution were restricted to urban landscapes (Sathasivam 2015; Rajagopal et al. 2022) or thorn forest landscapes (Roopha et al. 2022). Wetlands worldwide are on the decline and India is no exception due to human interventions (Pringent et al. 2012; Sievers et al. 2018). The wetland diversity of Madurai is less documented, except for a few scanty works mentioned from the urban areas, no detailed long-term studies have been made on the diversity of birds in the wetland areas of Madurai. In this background, the current study highlights the status, composition, feeding guilds, and diversity of birds of Samanatham tank, one of the important wetlands of Madurai, Tamil Nadu.

MATERIALS AND METHODS

Study Area

Samanatham tank 9.866674°N, 78.14719°E is located in Thiruparankundram block in the Madurai District of Tamil Nadu, India. The tank and its surrounding areas have various types of vegetation, including shrubs, trees, and aquatic plants. The main habitat types observed in the tank include: 1. Open water habitat (WL = Wetland), 2. Agricultural land (AL), 3. Trees (Tr)

bordering the wetland, 4. Grassland (GL) on the wetland area, and 5. Scrub habitat (OS = Open scrub type). Some of the common trees found in the area include Neem *Azadirachta indica*, Mango *Mangifera indica*, Banyan *Ficus benghalensis*, *Acacia nilotica*, and Tamarind *Tamarindus indica*. The tank and its surrounding areas also have invasive species like *Prosopis juliflora*. The surrounding area also supports a variety of flowering plants, including Jasmine, Hibiscus, Lotus, and many others. In addition, the tank is home to a variety of aquatic plants, such as water lilies, Water Hyacinth, and Cattails. The area supports a variety of animals including reptiles like snakes & turtles, amphibians like frogs & toads, and fishes like catfish, tilapia, & carp. Overall, the flora and fauna in and around Samanatham tank are an important aspect of the ecosystem of the region and contribute to its rich biodiversity.

Madurai, located in the southern part of India, has a tropical climate with hot and humid summers and mild winters. The temperature ranges from 20°C to around 38°C. The average annual rainfall is 800 mm. The highest amounts of rainfall are during October and November.

Bird survey method

In the Samanatham tank, bird monitoring was continued for seven years (2015–2022) to maintain the baseline data. The period of observation was carried out every month from August 2015 to March 2019 and from August 2020 to January 2022. The birds were observed during the peak hours of their activity from 0600–1000 h and 1600–1800 h. Later, bird surveys were conducted using block count and direct visual count methods (Howes & Bakewell 1989; Bibby et al. 2000). In this method, six scanning points were identified (Figure 1) and birds in the blocks were observed using field binoculars (10 x 52 Olympus; Celestron outland 10 x 42) and recorded with a camera (Nikon D750, Canon 100–400 mm f/5.6 lens). We began counting five minutes after the arrival at each scanning points for the waterbirds to acclimate to the human presence. The identification of birds was done using the following field guides (Ali 2002; Grimmett et al. 2011). The common name, scientific name, IUCN Red List status, and migratory status are followed using (Praveen & Jayapal 2023). The feeding guild data for each species were collected from the existing literature (Ali & Ripley 1987; Byju et al. 2023). The data recorded were later analyzed for relative abundance based on the frequency of sightings, as per MacKinnon & Phillips (1993): common (C) sighted from seven to nine times; un-common (UC) sighted from three to six times; rare (R) sighted once or twice. The relative diversity (RDi) of

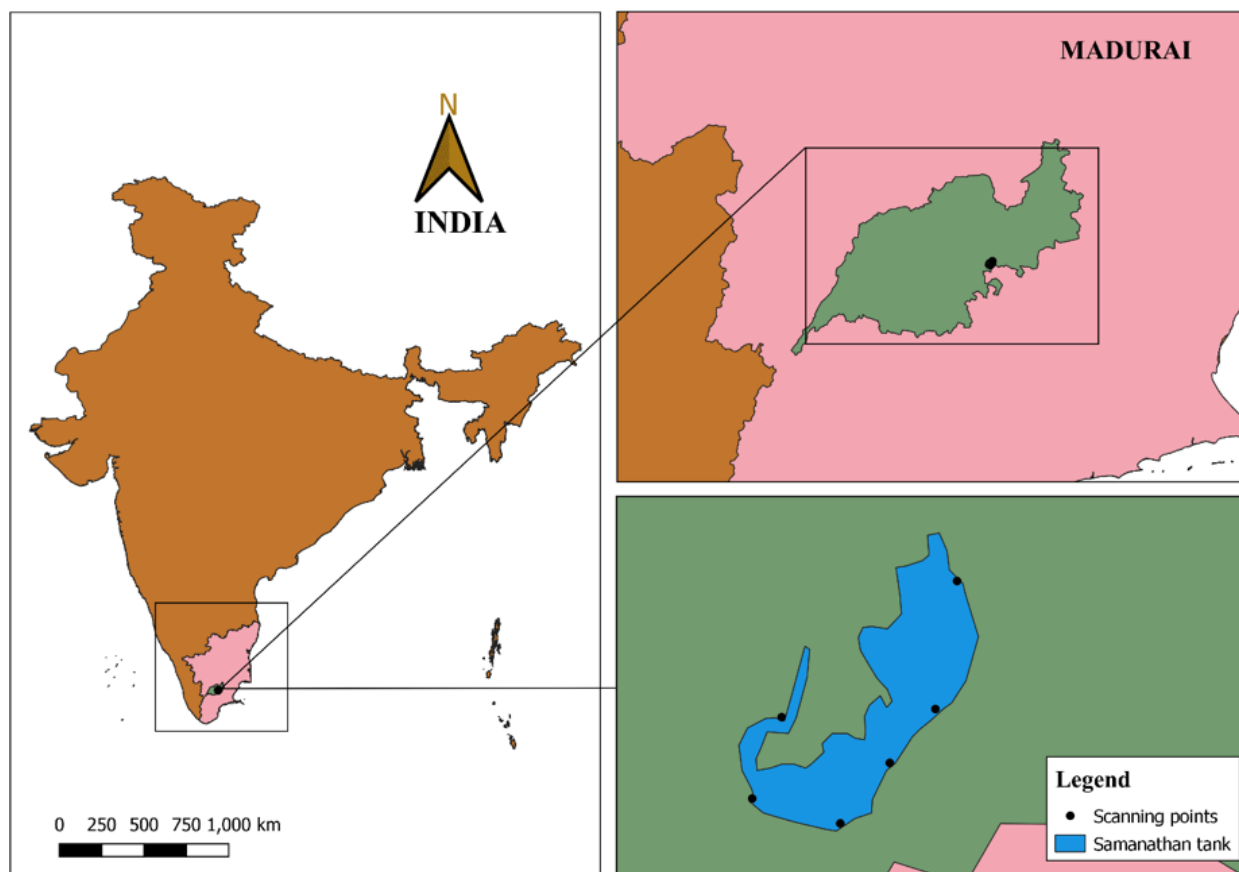


Figure 1. Map of the Samanatham tank, Madurai.

families was calculated using the following the formula by La Torre-Cuadros et al. (2007).

$$RDi = \frac{\text{Number of bird species in a family}}{\text{Total number of species}}$$

RESULTS AND DISCUSSION

A total of 150 species of birds belonging to 52 families under 17 orders were recorded from the Samanatham tank (Table 1; Images 1–18). The order Passeriformes dominated the study area with a maximum number of species, i.e., 53 species (35%), and with the lowest Strigiformes, Bucerotiformes, Falconiformes, Psittaciformes, sharing one species (0.66%) each (Figure 2). Similarly, family-wise Scolopacidae, Anatidae, and Accipitridae with relative abundance (RDi) of 7.33 % (11 species each), followed by Ardeidae (nine species) comprised the maximum number of birds species (Table 2).

As per the IUCN Red List (IUCN 2021), the wetland

supports, eight globally 'Near Threatened' (NT) species -Oriental Darter *Anhinga melanogaster*, Painted Stork *Mycteria leucocephala*, Black-headed Ibis *Threskiornis melanocephalus*, Spot-billed Pelican *Pelecanus philippensis*, Black-tailed Godwit *Limosa limosa*, Bar-tailed Godwit *Limosa lapponica*, River Tern *Sterna aurantia*, & Osprey *Pandion haliaetus*; two 'Vulnerable' (Vu) species – Indian Spotted Eagle *Clanga hastata* & Great Spotted Eagle *Clanga clanga*; and the remaining 140 species are under 'Least Concern' (LC).

An analysis of the feeding guilds of these birds revealed that 38% (57 species) were insectivorous, 33% (49 species) were carnivorous, 14% (21 species) were omnivorous, 7% (11 species) were granivorous, 5% (eight species each) were frugivorous, and 3% (four species) were nectarivorous (Figure 3). Further analysis of relative abundance based on the frequency of observation indicated that 56 % (84 species) were C (common), 28.6 % (43 species) were UC (uncommon), and 15.4 % (23 species) were Ra (rare). The analysis of data on residential status revealed that out of 150 species, 37 (25%) were winter visitors (WV) and one

Table 1. Checklist of bird species in Samanatham tank, Madurai, Tamil Nadu, India.

	Order/Family/Common name	Scientific name	IUCN Red List status	Habitat	Resident status	Relative abundance	Feeding habits
Anseriformes: Anatidae							
1	Knob-billed Duck	<i>Sarkidiornis melanotos</i>	LC	WL/AL	R/NB	UC	O
2	Common Teal	<i>Anas crecca</i>	LC	WL	WV	UC	O
3	Bar-headed Goose	<i>Anser indicus</i>	LC	WL	WV	UC	O
4	Eurasian Wigeon	<i>Mareca penelope</i>	LC	WL	WV	UC	O
5	Fulvous Whistling Duck	<i>Dendrocygna bicolor</i>	LC	WL	LM	C	O
6	Garganey	<i>Spatula querquedula</i>	LC	WL	WV	UC	O
7	Northern Shoveler	<i>Spatula clypeata</i>	LC	WL	WV	UC	O
8	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	LC	WL	R	C	O
9	Lesser Whistling Duck	<i>Dendrocygna javanica</i>	LC	WL	R/NB	C	O
10	Northern Pintail	<i>Anas acuta</i>	LC	WL	WV	Ra	O
11	Ruddy Shelduck	<i>Tadorna ferruginea</i>	LC	WL	WV	Ra	O
Phoenicopteriformes: Phoenicopteridae							
12	Greater Flamingo	<i>Phoenicopus roseus</i>	LC	WL	LM	Ra	I
Podicipedidae							
13	Little Grebe	<i>Tachybaptus ruficollis</i>	LC	WL	R	C	C
Columbiformes: Columbidae							
14	Rock Pigeon	<i>Columba livia</i>	LC	AL/OS/GL	R	C	G
15	Spotted Dove	<i>Spilopelia chinensis</i>	LC	AL/OS/GL	R	C	G
16	Eurasian collared Dove	<i>Streptopelia decaocto</i>	LC	AL/OS/GL	R	C	G
17	Laughing Dove	<i>Spilopelia senegalensis</i>	LC	AL/OS/GL	R	C	G
Caprimulgiformes: Apodidae							
18	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	LC	Tr	R	C	I
19	Alpine Swift	<i>Apus melba</i>	LC	Tr	R	UC	I
Cuculiformes: Cuculidae							
20	Asian Koel	<i>Eudynamis scolopaceus</i>	LC	OS	R	C	O
21	Common Hawk-Cuckoo	<i>Hierococcyx varius</i>	LC	OS	R	Ra	O
22	Greater Coucal	<i>Centropus sinensis</i>	LC	OS	R	C	C
23	Blue faced Malkoha	<i>Phaenicophaeus viridirostris</i>	LC	OS	R	C	I
24	Pied Crested Cuckoo	<i>Clamator jacobinus</i>	LC	OS	R/NB	C	I
Gruiformes: Rallidae							
25	Baillon's Crake	<i>Zapornia pusilla</i>	LC	WL	R	UC	C
26	Eurasian Coot	<i>Fulica atra</i>	LC	WL	R	C	C
27	Eurasian Moorhen	<i>Gallinula chloropus</i>	LC	WL	R	C	C
28	Gray-headed Swamphen	<i>Porphyrio poliocephalus</i>	LC	WL	R	C	C
29	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	LC	IWB	R	C	C
Galliformes: Phasianidae							
30	Grey Francolin	<i>Ortygornis pondicerianus</i>	LC	GL/OS	R	C	G
31	Indian Peafowl	<i>Pavo cristatus</i>	LC	AL/OS	R	C	O
Pelecaniformes: Ciconiidae							
32	Asian Openbill Stork	<i>Anastomus oscitans</i>	LC	WL	R	C	C
33	Painted Stork	<i>Mycteria leucocephala</i>	NT	WL	R	C	C
34	Asian Woolly-necked Stork	<i>Ciconia episcopus</i>	LC	WL	WV	Ra	C
Pelecanidae							
35	Spot-billed Pelican	<i>Pelecanus philippensis</i>	NT	WL	R	C	C

	Order/Family/Common name	Scientific name	IUCN Red List status	Habitat	Resident status	Relative abundance	Feeding habits
	Ardeidae						
36	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	LC	WL	R	C	C
37	Cattle Egret	<i>Bubulcus ibis</i>	LC	WL	R	C	C
38	Purple Heron	<i>Ardea purpurea</i>	LC	WL	R	C	C
39	Grey Heron	<i>Ardea cinerea</i>	LC	WL	R	C	C
40	Indian Pond-Heron	<i>Ardeola grayii</i>	LC	WL	R	C	C
41	Intermediate Egret	<i>Ardea intermedia</i>	LC	WL	R	C	C
42	Great Egret	<i>Ardea alba</i>	LC	WL	R	C	C
43	Little Egret	<i>Egretta garzetta</i>	LC	WL	R	C	C
44	Striated Heron	<i>Butorides striata</i>	LC	WL	R	C	C
	Threskiornithidae						
45	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	NT	WL	R	C	C
46	Eurasian Spoonbill	<i>Platalea leucorodia</i>	LC	WL	R	C	C
47	Glossy Ibis	<i>Plegadis falcinellus</i>	LC	WL	R	C	C
48	Red-naped Ibis	<i>Pseudibis papillosa</i>	LC	WL/AL	R	UC	C
	Phalacrocoracidae						
49	Great Cormorant	<i>Phalacrocorax carbo</i>	LC	WL	R	UC	C
50	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	LC	WL	R	C	C
51	Little Cormorant	<i>Microcarbo niger</i>	LC	WL	R	C	C
	Anhingidae						
52	Oriental Darter	<i>Anhinga melanogaster</i>	NT	WL	R	UC	C
	Charadriiformes: Recurvirostridae						
53	Black Winged Stilt	<i>Himantopus himantopus</i>	LC	WL	R	C	I
	Charadriidae						
54	Kentish Plover	<i>Charadrius alexandrinus</i>	LC	WL	LM	UC	I
55	Little Ringed Plover	<i>Charadrius dubius</i>	LC	WL	WV	UC	I
56	Red-wattled Lapwing	<i>Vanellus indicus</i>	LC	WL	R	C	O
57	Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>	LC	WL/AL	R	Ra	O
	Jacaniidae						
58	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	LC	WL	R	C	I
	Scolopacidae						
59	Black-tailed Godwit	<i>Limosa limosa</i>	NT	WL	WV	UC	I
60	Bar-tailed Godwit	<i>Limosa lapponica</i>	NT	WL	WV	UC	I
61	Ruff	<i>Calidris pugnax</i>	LC	WL	WV	UC	O
62	Temminck's Stint	<i>Calidris temminckii</i>	LC	WL	WV	UC	I
63	Little Stint	<i>Calidris minuta</i>	LC	WL	WV	UC	I
64	Common Sandpiper	<i>Actitis hypoleucos</i>	LC	WL	WV	UC	I
65	Green Sandpiper	<i>Tringa ochropus</i>	LC	WL	WV	UC	I
66	Marsh Sandpiper	<i>Tringa stagnatilis</i>	LC	WL	WV	UC	I
67	Wood Sandpiper	<i>Tringa glareola</i>	LC	WL	WV	UC	I
68	Pin-tailed Snipe	<i>Gallinago stenura</i>	LC	WL	WV	UC	I
69	Common Greenshank	<i>Tringa nebularia</i>	LC	WL	WV	UC	I
70	Small Pratincole	<i>Glareola lactea</i>	LC	WL	WV	UC	I
	Laridae						
71	Gull-billed Tern	<i>Gelochelidon nilotica</i>	LC	WL	WV	Ra	C
72	Whiskered Tern	<i>Chlidonias hybrida</i>	LC	WL	WV	Ra	C

	Order/Family/Common name	Scientific name	IUCN Red List status	Habitat	Resident status	Relative abundance	Feeding habits
73	River Tern	<i>Sterna aurantia</i>	NT	WL	WV	Ra	C
Accipitriformes: Pandionidae							
74	Osprey	<i>Pandion haliaetus</i>	NT	WL/Tr	WV	Ra	C
Accipitridae							
75	Booted Eagle	<i>Hieraaetus pennatus</i>	LC	Tr	WV	UC	C
76	Black Kite	<i>Milvus migrans</i>	LC	Tr	R	C	C
77	Black-winged Kite	<i>Elanus caeruleus</i>	LC	Tr	R	C	C
78	Greater Spotted Eagle	<i>Clanga clanga</i>	VU	Tr	WV	UC	C
79	Indian Spotted Eagle	<i>Clanga hastata</i>	VU	Tr	WV	UC	C
80	Shikra	<i>Accipiter badius</i>	LC	Tr	R	C	C
81	Short-toed Snake Eagle	<i>Circaetus gallicus</i>	LC	Tr	LM	Ra	C
82	Eurasian Marsh- Harrier	<i>Circus aeruginosus</i>	LC	Tr	WV	Ra	C
83	White-eyed Buzzard	<i>Butastur teesa</i>	LC	GL	R	Ra	C
84	Oriental Honey-Buzzard	<i>Pernis ptilorhynchus</i>	LC	Tr	LM	UC	C
85	Common Buzzard	<i>Buteo buteo</i>	LC	Tr	WV	Ra	C
Strigiformes: Strigidae							
86	Spotted Owlet	<i>Athene brama</i>	LC	OS	R	C	C
Bucerotiformes: Upupidae							
87	Common Hoopoe	<i>Upupa epops</i>	LC	OS/GL	R	C	I
Piciformes: Picidae							
88	Black-rumped Flameback	<i>Dinopium benghalense</i>	LC	Tr	R	C	I
Megalaimidae							
89	Coppersmith Barbet	<i>Psilopogon haemacephalus</i>	LC	Tr	R	C	F
Coraciiformes: Meropidae							
90	Blue-tailed Bee-eater	<i>Merops philippinus</i>	LC	OS	R	C	I
91	Green Bee-eater	<i>Merops orientalis</i>	LC	OS	R	UC	I
Coraciidae							
92	Indian Roller	<i>Coracias benghalensis</i>	LC	OS/GL	R	C	I
Alcedinidae							
93	Pied Kingfisher	<i>Ceryle rudis</i>	LC	WL/OS	R	C	C
94	Common Kingfisher	<i>Alcedo atthis</i>	LC	WL/OS	R	C	C
95	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	LC	WL/OS	R	C	C
Falconiformes: Falconidae							
96	Red-necked Falcon	<i>Falco chicquera</i>	LC	OS/GL	WV	Ra	C
Psittaciformes: Psittacidae							
97	Rose-ringed Parakeet	<i>Psittacula krameri</i>	LC	Tr	R	C	F
Passeriformes: Oriolidae							
98	Indian Golden Oriole	<i>Oriolus kundoo</i>	LC	Tr	R	C	O
Pittidae							
99	Indian Pitta	<i>Pitta brachyura</i>	LC	OS/GL	WV	Ra	I
Artamidae							
100	Ashy Woodswallow	<i>Artamus fuscus</i>	LC	OS	R	C	I
Dicruridae							
101	Black Drongo	<i>Dicrurus macrocercus</i>	LC	OS	R	C	I
102	Ashy Drongo	<i>Dicrurus leucophaeus</i>	LC	OS	R	UC	I

	Order/Family/Common name	Scientific name	IUCN Red List status	Habitat	Resident status	Relative abundance	Feeding habits
	Laniidae						
103	Brown Shrike	<i>Lanius cristatus</i>	LC	OS	WV	UC	I
104	Long-tailed Shrike	<i>Lanius schach</i>	LC	OS	R	C	C
	Vangidae						
105	Common Woodshrike	<i>Tephrodornis pondicerianus</i>	LC	OS	R	Ra	I
	Corvidae						
106	House Crow	<i>Corvus splendens</i>	LC	OS/Tr	R	C	O
107	Rufous Treepie	<i>Dendrocitta vagabunda</i>	LC	OS	R	C	O
108	Large-billed Crow	<i>Corvus macrorhynchos</i>	LC	OS/Tr	R	C	O
	Monarchidae						
109	Indian Paradise-Flycatcher	<i>Terpsiphone paradisi</i>	LC	OS/GL	R/NB	UC	I
	Nectariniidae						
110	Loten's Sunbird	<i>Cinnyris lotenius</i>	LC	OS	R	UC	N
111	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	LC	OS	R	C	N
112	Purple Sunbird	<i>Cinnyris asiaticus</i>	LC	OS	R	C	N
	Ploceidae						
113	Baya Weaver	<i>Ploceus philippinus</i>	LC	OS	R	C	G
114	Streaked Weaver	<i>Ploceus manyar</i>	LC	OS	R	C	G
	Estrildidae						
115	Tricolored Munia	<i>Lonchura malacca</i>	LC	OS	R	C	G
116	Indian Silverbill	<i>Euodice malabarica</i>	LC	OS	R	C	G
117	Scaly-breasted Munia	<i>Lonchura punctulata</i>	LC	OS	R	C	G
	Passeridae						
118	House Sparrow	<i>Passer domesticus</i>	LC	AL/GL	R	C	G
	Motacillidae						
119	Citrine Wagtail	<i>Motacilla citreola</i>	LC	GL	WV	UC	I
120	Paddyfield Pipit	<i>Anthus rufulus</i>	LC	GL/AL	R	C	I
121	Grey Wagtail	<i>Motacilla cinerea</i>	LC	GL	R/NB	UC	I
122	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	LC	WL	R	C	I
123	Western Yellow Wagtail	<i>Motacilla flava</i>	LC	OS	WV	Ra	I
	Alaudidae						
124	Ashy-crowned Sparrow-Lark	<i>Eremopterix griseus</i>	LC	AL/OS/GL	R	C	I
125	Jerdon's Bushlark	<i>Mirafraga affinis</i>	LC	AL/OS/GL	R	C	I
126	Oriental Skylark	<i>Alauda gulgula</i>	LC	AL/OS/GL	R	C	I
	Cisticolidae						
127	Common Tailorbird	<i>Orthotomus sutorius</i>	LC	AL/OS/GL	R	C	I
128	Plain Prinia	<i>Prinia inornata</i>	LC	AL/OS/GL	R	C	I
129	Zitting Cisticola	<i>Cisticola juncidis</i>	LC	AL/OS/GL	R	C	I
130	Ashy Prinia	<i>Prinia socialis</i>	LC	AL/OS/GL	R	C	I
131	Jungle Prinia	<i>Prinia sylvatica</i>	LC	OS	R	C	I
	Leiothrichidae						
132	Yellow-billed Babbler	<i>Argya affinis</i>	LC	OS	R	C	I
	Acrocephalidae						
133	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	LC	OS	R/NB	UC	I
134	Booted Warbler	<i>Iduna caligata</i>	LC	OS	R/NB	Ra	I
135	Clamorous Reed-Warbler	<i>Acrocephalus stentoreus</i>	LC	OS	R	C	I

	Order/Family/Common name	Scientific name	IUCN Red List status	Habitat	Resident status	Relative abundance	Feeding habits
136	Thick-billed Warbler	<i>Arundinax aedon</i>	LC	OS	R/NB	Ra	I
137	Sykes's Warbler	<i>Iduna rama</i>	LC	OS	R/NB	Ra	I
	Hirundinidae						
138	Barn Swallow	<i>Hirundo rustica</i>	LC	AL/WL	WV	Ra	I
139	Red-rumped Swallow	<i>Cecropis daurica</i>	LC	AL/WL	R	UC	I
140	Dusky crag Martin	<i>Ptyonoprogne concolor</i>	LC	WL/AL	R	UC	I
	Pycnonotidae						
141	Red-vented Bulbul	<i>Pycnonotus cafer</i>	LC	OS	R	C	F
142	White-browed Bulbul	<i>Pycnonotus luteolus</i>	LC	OS	R	Ra	F
	Sturnidae						
143	Brahminy Starling	<i>Sturnia pagodarum</i>	LC	OS	R	UC	F
144	Common Myna	<i>Acridotheres tristis</i>	LC	OS	R	C	F
145	Chestnut-tailed Starling	<i>Sturnia malabarica</i>	LC	OS	WV	UC	F
146	Rosy Starling	<i>Pastor roseus</i>	LC	OS	PM	UC	F
	Muscicapidae						
147	Indian Robin	<i>Copsychus fulicatus</i>	LC	OS/AL	R	C	I
148	Oriental Magpie-Robin	<i>Copsychus saularis</i>	LC	OS/AL	R	C	I
149	Pied Bushchat	<i>Saxicola caprata</i>	LC	OS	R	C	I
	Dicaeidae						
150	Pale-billed Flowerpecker	<i>Dicaeum erthrorhynchus</i>	LC	OS	R	UC	N

IUCN Red list status: LC—Least Concern | NT—Near Threatened | Vu—Vulnerable.

Resident status: WV—Winter Visitor | LM—Local Migrant | R—Resident | R/NB—Resident/Non-Breeding.

Relative abundance: C—Common | UC—Uncommon | Ra—Rare.

Habitats: W—Wetland | AL—Agricultural Land | Tr—Tree | GL—Grass Land | OS—Open Scrub.

Feeding status: I—Insectivore | G—Granivore | C—Carnivore | O—Omnivore | N—Nectarivore | F—Frugivore.

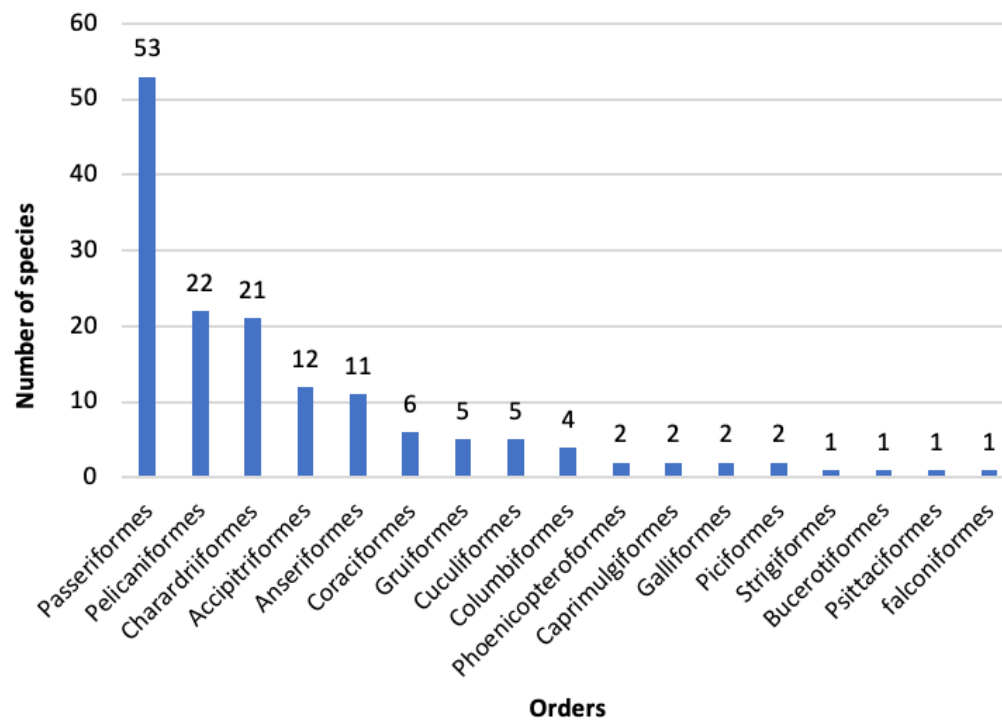
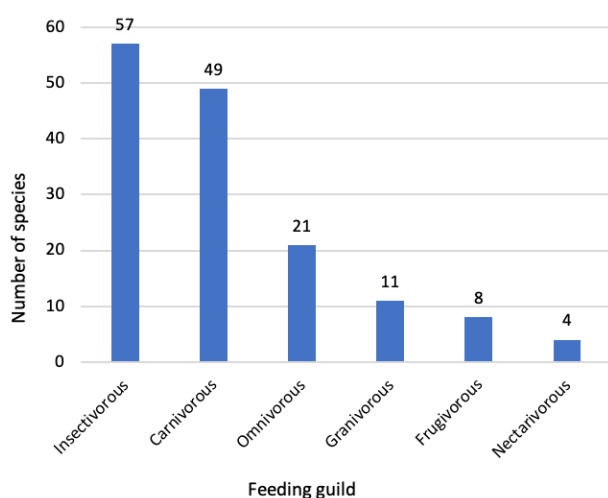


Table 1. Checklist of bird species in Samanatham tank, Madurai, Tamil Nadu, India.

Table 2. Relative diversity (RDi) of various avian families at Samanatham tank, Madurai.

	Family	No of species	RDi %
1	Anatidae	11	7.33
2	Phoenicopteridae	1	0.66
3	Podicipedidae	1	0.66
4	Columbidae	4	2.66
5	Apodidae	2	1.33
6	Cuculidae	5	3.33
7	Rallidae	5	3.33
8	Phasianidae	2	1.33
9	Ciconiidae	3	2.00
10	Pelecanidae	1	0.66
11	Ardeidae	9	6.00
12	Threskiornithidae	4	2.66
13	Phalacrocoracidae	3	2.00
14	Anhingidae	1	0.66
15	Recurvirostridae	1	0.66
16	Charadriidae	4	2.66
17	Jacaniidae	1	0.66
18	Scolopacidae	11	7.33
19	Laridae	3	2.00
20	Pandionidae	1	0.66
21	Accipitridae	11	7.33
22	Strigidae	1	0.66
23	Upupidae	1	0.66
24	Picidae	1	0.66
25	Megalaimidae	1	0.66
26	Meropidae	1	0.66
27	Coraciidae	1	0.66

	Family	No of species	RDi %
28	Alcedinidae	3	2.00
29	Falconidae	1	0.66
30	Psittacidae	1	0.66
31	Oriolidae	1	0.66
32	Pittidae	1	0.66
33	Artamidae	1	0.66
34	Dicruridae	1	0.66
35	Laniidae	2	1.33
36	Vangidae	1	0.66
37	Corvidae	3	2.00
38	Monarchidae	1	0.66
39	Nectariniidae	3	2.00
40	Ploceidae	2	1.33
41	Estrildidae	3	2.00
42	Passeridae	1	0.66
43	Motacillidae	5	3.33
44	Alaudidae	3	2.00
45	Cisticolidae	5	3.33
46	Leiotrichidae	1	0.66
47	Acrocephalidae	5	3.33
48	Hirundinidae	3	2.00
49	Pycnonotidae	3	1.65
50	Sturnidae	4	2.66
51	Muscicapidae	3	1.65
52	Dicaeidae	1	0.66
Total		150	

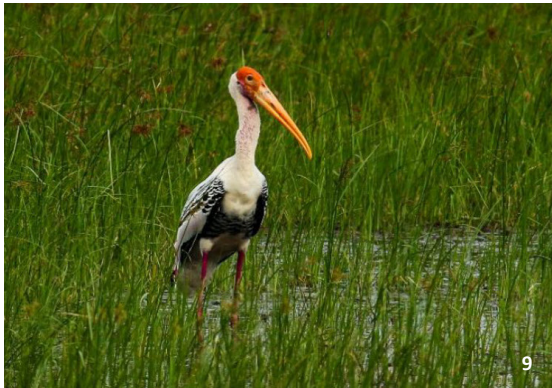
**Figure 3. Feeding guilds of birds at Samanatham tank, Madurai.**

passage migrant (PM) Rosy Starling *Pastor roseus*.

The wetland being used by the long-distance migrant shorebirds including the Bar-tailed Godwit and the Black-tailed Godwit, the two Near Threatened species in reasonable numbers makes this an important wintering area for those species. Similar works were reported recently from the Changaram wetlands of Kerala highlighting the need of conserving hitherto undocumented new areas of shorebird wintering sites (Anand et al. 2023). The consistent occurrence of the Near Threatened River Tern represents another ecologically significant species within this geographic region. It is also interesting to note that another two Near Threatened species namely Spot-billed Pelican and Oriental Darter were breeding in the Samanatham tank. Tamil Nadu is home to 535 bird species (Praveen et al.



Image 1–8. 1—Black-crowned Night Heron *Nycticorax nycticorax* | 2—Black-tailed Godwit *Limosa limosa* | 3—Black headed Ibis *Threskiornis melanocephalus* & Glossy Ibis *Plegadis falcinellus* | 4—Eurasian Spoonbill *Platalea leucorodia* | 5— Greater Flamingos *Phoenicopterus roseus*, Northern Shoveler *Spatula clypeata*, & Garganey *Spatula querquedula* | 6—Bar-headed Goose *Anser indicus* & Black-winged Stint *Himantopus himantopus* | 7—Flocks of duck species with Greater Flamingos | 8—Spot-billed Pelican *Pelecanus philippensis* nesting. © N. Raveendran.



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Image 9–16. 9—Painted Stork *Mycteria leucocephala* | 10—Osprey *Pandion haliaetus* | 11—Oriental Darter *Anhinga melanogaster* | 12—Grey Heron *Ardea cinerea* | 13— *Prosopis juliflora* serves as nesting trees for cormorants and egrets | 14—*Prosopis juliflora* trees used as roosting spot for egrets | 15—Brown Shrike *Lanius cristatus* | 16—Greater Spotted Eagle *Clanga clanga*. © N. Raveendran.



17



18

Image 17–18. 17—Indian Spotted Eagle *Clanga hastata* | 18—Samanatham tank view. © N. Raveendran.

2018) and we recorded 150 (28%) species during the current study at this single water tank in Madurai.

Our study provides important baseline information and the presence of many important waterbird species; this will help in the long-term monitoring of birds in the tank besides acting as an essential document in planning conservation efforts for the wetland. This tank is an artificial waterbody that supports a variety of plant and animal life. Samanatham tank plays a role in water management and flood control for the surrounding area. Hence, this tank should be recognized as a valuable ecosystem that should be elevated to protection status and conserved for future generations.

REFERENCES

- Anand, J., H. Byju, A. Nefa, S. Abhijith, O.R. Reshi & K.M. Aarif (2023). Conservation significance of Changaram wetlands - a key wintering site for migratory shorebirds and other waterbirds in the western coast of Kerala, India. *Journal of Threatened Taxa* 15(1): 22410–22418. <https://doi.org/10.11609/jott.8089.15.1.22410-22418>
- Ali, S. (2002). *The Book of Indian Birds*. Oxford University Press, New Delhi, 326 pp.
- Ali, S. & S.D. Ripley (1987). *Compact handbook of the Birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan, and Sri Lanka*. Oxford University Press, Delhi, India, 737 pp.
- Bibby, C.J., N.D. Burgess, D.A. Hill & S. Mustoe (2000). *Bird Census Techniques*. Academia Press, Belgium, 302 pp.
- Byju, H., N. Raveendran, S. Ravichandran & R. Kishore (2023). An annotated checklist of the avifauna of Karangadu mangrove forest, Ramanathapuram, Tamil Nadu, with notes on the site's importance for waterbird conservation. *Journal of Threatened Taxa* 15(3): 22813–22822. <https://doi.org/10.11609/jott.8356.15.3.22813-22822>
- Canterbury, G.E., T.E. Martin, D.R. Petit, L.J. Petit & D.F. Bradford (2000). Bird communities and habitat as ecological indicators of forest condition in regional monitoring. *Conservation Biology* 14(2): 544–558. <https://doi.org/10.1046/j.1523-1739.2000.98235.x>
- Deomurari, A., A. Sharma, D. Ghose & R. Singh (2023). Projected shifts in bird distribution in India under climate change. *Diversity* 15(3): 404. <https://doi.org/10.3390/d15030404>
- Gadgil, M. (1996). Documenting diversity: An experiment. *Current Science* 70: 36–44.
- Gokula, V. (2010). Avifauna of Karaivetti Bird Sanctuary, Tamil Nadu, India. *Zoo's Print Journal* 28(6): 23–29.
- Gokula V. & P.A. Raj (2011). Birds of Vaduvor Bird Sanctuary, Tamil Nadu, India: an annotated checklist. *Zoo's Print* 26(6): 20–24.
- Grimmett, R., C. Inskipp & T. Inskipp (2011). *Birds of the India, Pakistan, Nepal, Bangladesh, Bhutan, Sri Lanka, and the Maldives*. Princeton University Press, New Jersey, 528 pp.
- Howes, J.G. & D. Bakewell (1989). *Shore Bird Studies Manual*. Asian Wetland Bureau Publication No. 55, Kuala Lumpur, 362 pp.
- Jha, C.S., C.B.S. Dutt & K.S. Bawa (2000). Deforestation and land use changes in Western Ghats, India. *Current Science* 79: 231–238.
- Kazmierczak, K. (2006). *A Field Guide to the Birds of India*. Pica Press, United Kingdom, 352 pp.
- La Torre-Cuadros, M.Á., S. Herrando-Pérez & K.R. Young (2007). Diversity and structural patterns for tropical montane and premontane forests of central Peru, with an assessment of the use of higher-taxon surrogacy. *Biodiversity Conservation* 16: 2965–2988. <https://doi.org/10.1007/s10531-007-9155-9>
- Llanos, F.A., M. Failla, G.J. García, P.M. Giovine, M. Carbajal, P.M. González, D.P. Barreto, P. Quillfeldt & J.F. Masello (2011). Birds from the endangered Monte, the Steppes, and Coastal biomes of the province of Río Negro, northern Patagonia, Argentina. *Checklist* 7(6): 782–797.
- MacKinnon, J. & K. Phillips (1993). *A field guide to the birds of Borneo, Sumatra, Java and Bali*. Oxford University Press, 391 pp.
- Nichols, E.G. (1944a). Occurrence of birds in Madura District [Part I]. *Journal of the Bombay Natural History Society* 44(3): 387–407.
- Nichols, E.G. (1944b). Occurrence of birds in Madura District. Part II. *Journal of the Bombay Natural History Society* 44(4): 574–584.
- Nichols, E.G. (1945). Occurrence of birds in Madura District. Part III. *Journal of the Bombay Natural History Society* 45(2): 122–132.
- Paul, E. & R.J. Cooper (2005). New opportunities for bird conservation research. In: Ralph, C., R. John & D. Terrel (eds.). *Bird Conservation Implementation and Integration in the Americas: Proceedings of the Third International Partners in Flight Conference*, Asilomar, California (Vol. 2). US Department of Agriculture, Forest Service, Pacific Southwest Research Station 191: 1008–1017.
- Peterson, A.T., L.G. Ball & K.W. Brady (2000). Distribution of the birds of the Philippines: biogeography and conservation priorities. *Bird Conservation International* 10(2): 149–167.
- Piersma, T. & Å. Lindström (2004). Migrating shorebirds as integrative sentinels of global environmental change. *Ibis* 146(1): 61–69. <https://doi.org/10.1111/j.1474-919X.2004.00329.x>
- Praveen, J. & R. Jayapal (2023). Taxonomic updates to the checklists of birds of India and the South Asian region. *Indian BIRDS* 18(5):

131–134

Praveen, J., & R. Jayapal & A. Pittie (2021). Updates to the checklists of birds of India, and the South Asian region—2021. *Indian BIRDS* 17 (1): 1–3.

Prigent, C., F. Papa, F. Aires, C. Jimenez, W.B. Rossow & E. Matthews (2012). Changes in land surface water dynamics since the 1990s and relation to population pressure. *Geophysical Research Letters* 39(8): 1–5. <https://doi.org/10.1029/2012GL051276>

Purvis, A. & A. Hector (2000). Getting the measure of biodiversity. *Nature* 405(6783): 212–219. <https://doi.org/10.1038/35012221>

Raj, P.P.N., J. Ranjini, R. Dhanya, J. Subramaniyan, P.A. Azeez & S. Bhupathy (2010). Consolidated checklist of birds in the Pallikaranai Wetlands, Chennai, India. *Journal of Threatened Taxa* 2(8): 1114–1118. <https://doi.org/10.11609/JoTT.o2220.1114-8>

Rajagopal, T., K. Sonaimuthu, S. Subbiah, P. Ponmanickam & M. Sekar (2022). A survey on avifauna diversity in some selected localities in and around Madurai city. *Ecology Environment & Conservation* 28 (December Suppl. Issue): 207–216. <https://doi.org/10.53550/EEC.2022.v28i08s.032>

Rashiba, A.P., K. Jishnu, H. Byju, C.T. Shifa, J. Anand, K. Vichithra, Y. Xu, A. Nefla, S.B. Muzaffar, K.M. Aarif & K.A. Rubeena (2022). The paradox of shorebird diversity and abundance in the west coast and east coast of India: a comparative analysis. *Diversity* 14: 885. <https://doi.org/10.3390/d14100885>

Rika S.D. & Y. Santosa (2007). Diversity of bird species at some habitat type in Ciremai Mountain National Park. *Conservation Media* 12(3): 1–3.

Roopha, D.P., A.J. Thatheyus, T. Sonia & R. Kishore (2022). Avifaunal diversity in the tropical thorn forest of Kiluvamalai, Madurai district, Tamil Nadu, India. *Asian Journal of Conservation Biology* 11(2): 274–280. <https://doi.org/10.53562/ajcb.71111>

Sathasivam, K. (2015). The birds of Madurai city. *Indian BIRDS* 10(2): 29–34

Sievers, M., R. Hale, M.K. Parris & S.E. Swearer (2018). Impacts of human-induced environmental change in wetland on aquatic animals. *Biological Reviews* 93(1): 529–554. <https://doi.org/10.1111/brev.12358>



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