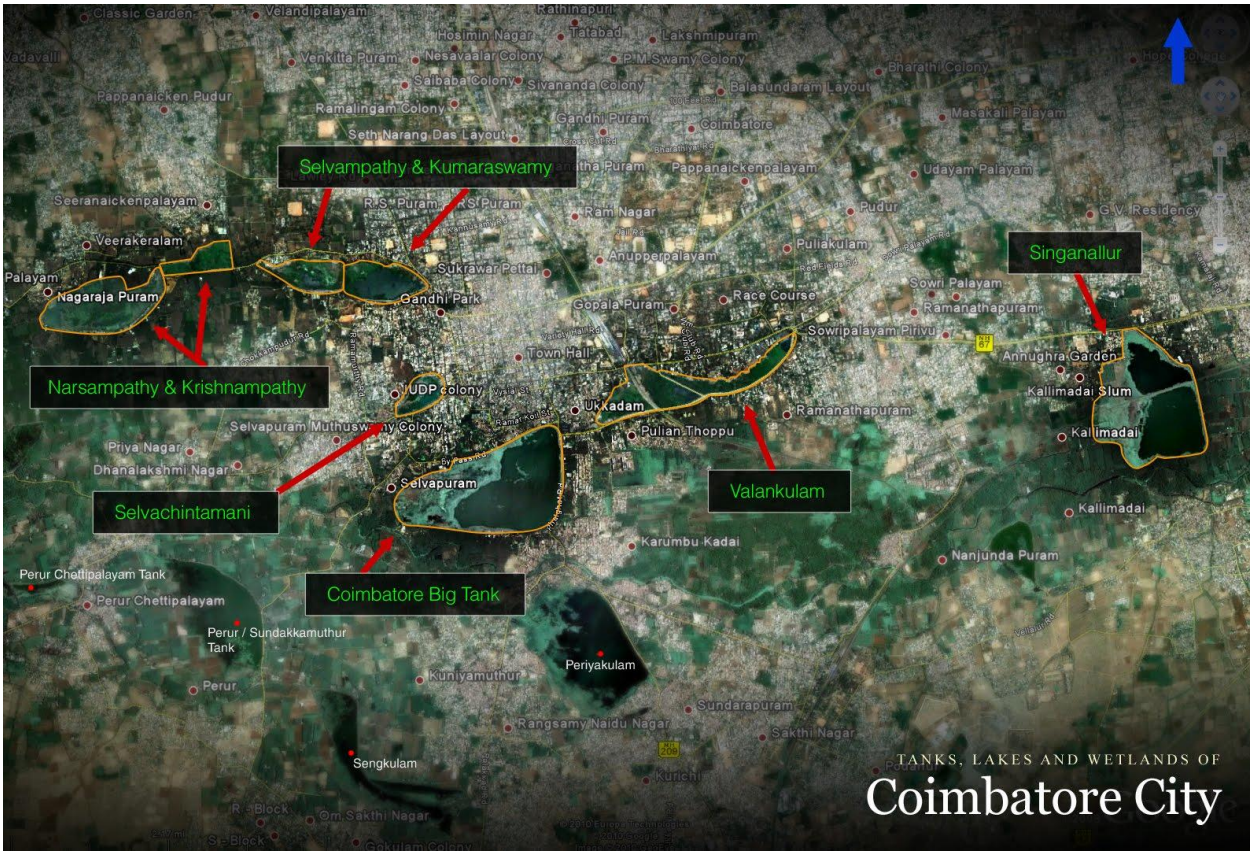
Birds of Coimbatore Wetlands

Report of the Survey conducted

on 12th January 2011



Submitted to
Tamilnadu Forest Department.

By ***Dr. P.Pramod***

Sálim Ali Centre for Ornithology and Natural History (SACON)

Coimbatore – 641 108, INDIA

The Synchronized count of Coimbatore Wetland birds

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INTRODUCTION

Development and prosperity of any city directly depend on the availability of water for various human consumption. Water bodies such as lakes and rivers not only provide us water, they replenish the ground water and support high diversity of life forms. In turn, the identities of the life forms in a water body indicate the quality of the ecosystem.

All landscapes will have its own native biodiversity pool, which is a result of local climate and human influences. One such ecosystem, which is considerably rich in biodiversity, especially in India, is the urban ecosystem. In any type of urban ecosystem, wetlands or the water bodies form an important area in supporting a great biodiversity and also regulate the ecological web. They support high concentrations of birds, mammals, reptiles, amphibians, fish and invertebrate species. But these water bodies are fragile ecosystems, which are fast disintegrating and fast shrinking due to regular human activities. Through the ages, urban wetlands have been the lifeline of most cities in India. They were preserved and looked after by the people as their main source of water supply for drinking and irrigation. The wrong process of urbanization alters and creates a dramatic change in the whole of urban ecosystem particularly urban wetlands. Hence, world have started careful observation on wetlands.

Birds do indicate quality of the ecosystem and they will work as one of the best early warning system for the changes in the environment. Waterbirds, being generally at or near the top of most wetland food chains are highly susceptible to habitat disturbances and are therefore good indicators of the general condition of wetland

habitats (Kushlan, 1992). In Coimbatore, even though most of these wetlands are considered to be most polluted area, still it attracts a large number of birds. While we have some information about the birds of one or two lakes, we don't have any idea about many ecologically significant taxa that directly tell us about the health of these wetlands. Hence a proper and scientific survey of biodiversity of these lakes has to be done to give a much informed input for the proper management of these important areas.

Geographically, Coimbatore (11º N latitude and 77º E longitude) is situated on the banks of river Noyyal and foothills of Western Ghats of Nilgiri Biosphere Reserve, accommodate a large number of flora and fauna . Noyyal and associated wetlands form the major life supporting factor for Coimbatore region. People from many large cities of India have attempted to document the urban biodiversity particulary birds. Delhi surrounding and its has reported to support 444 species, followed by Mumbai with 350 species, Pune with 332 species (Patwardhan 2000) and Bangalore with 330 species. But unfortunately no such comprehensive survey records exist for Coimbatore. A study by Joseph Reginald and Pramod from Salim Ali Centre for Ornithology and Natural History reported 114 species of birds from Singanallur Lake of Coimbatore in two years time. This study is restricted to a single lake of Coimbatore, and knowledge about the other lakes is is very little. SACON has conducted a survey of birds in 14 lakes of Coimbatore as a part of nature education programme in 2007 which identified 54 species and definitely there are enough reasons to believe that the Coimbatore harbors more number of birds than all these estimates.

The water bodies of Coimbatore city are man-made which were reported as built by Irulas in the Chola period. These wetlands still play a major role in city's water management system. The Coimbatore corporation is relatively small city with an area of 105.6 sq.kms, but has nine water bodies. They are Singanallur Lake, Amman Lake, Valan Lake, Peria kulam Lake (Ukkadam), Selvasinthamani Lake, Kumarasami Lake, Selvampatty Lake, Krishnampatty Lake, Narasampatty Lake. Surrouding this area, another eight more lakes are there. We don't have a comprehensive picture about the avifauna of these Coimbatore lakes. Water bodies of Coimbatore are significant in many ways. Living organisms such as birds that are depend on these water bodies indicate the quality of the ecosystem. They give prior warning of ecosystem changes and the information about them will be helpful for us to plan out our own priorities. The majority of bird diversity of these lakes are still remains unknown. So it is very essential to develop a long term monitoring programme of the bird fauna of these wetlands.

GENESIS AND METHODS ADOPTED

It was Mr. Thirunavukkarasu, Divisional Forest Officer, Coimbatore took initiative and asked SACON the willingness to conduct the synchronized bird census on behalf of Tamilnadu Forest Department. When approached, Director of SACON accepted the request and entrusted the work to the nature education division. SACON has been promoting the bird watching through the platforms such as Salim Ali Naturalist Forum, School nature club network and many likeminded NGOs. These efforts are now started fetching fruits as we have now enough bird watchers available in the city to carry out the

monitoring of birds. These bird enthusiasts of Coimbatore responded to the call very actively by counting the bird population of all the wetlands of Coimbatore.

For the true wetland birds, the method of total count employed to census the bird population. For the wetland associated water birds regular transect method followed. The birds are mostly observed during the most active period of the day i.e. Morning from 0600 to 1000.

Twenty six bird watchers associated with SACON as members of Salim Ali Naturalist Forum gave the names to participate in the bird count this time (Paricpants list is given as appendix.1). The previous Sunday (9th January 2011) we have conducted a briefing of the methodology adopted. Teams were selected for each wetland. Fourteen teams were selected for fourteen wetlands in and around the Coimbatore city, and three more minor wetlands are asked to survey along with this work. So, totally seventeen water bodies were planned to survey on that day. They have been given the datasheet format and explained the procedures to be followed. Participants have used the field guides such as Ali 2002, Ali and Ripley 1996, Rathinam 1998 and 2004 for reference in the field.

On the day of the survey (12th January 2011), each team of bird watchers started bird watching at 6.00 am in their destined wetland and it continued for two to three years depending on the availability of bird fauna in the region. At the evening they have assembled together in forest college campus with the filled datasheet, tabulated together and tried to find the extent of birdlife in the wetlands of Coimbatore. Speaking on the occasion, many of them have shared their experiences and anxieties regarding

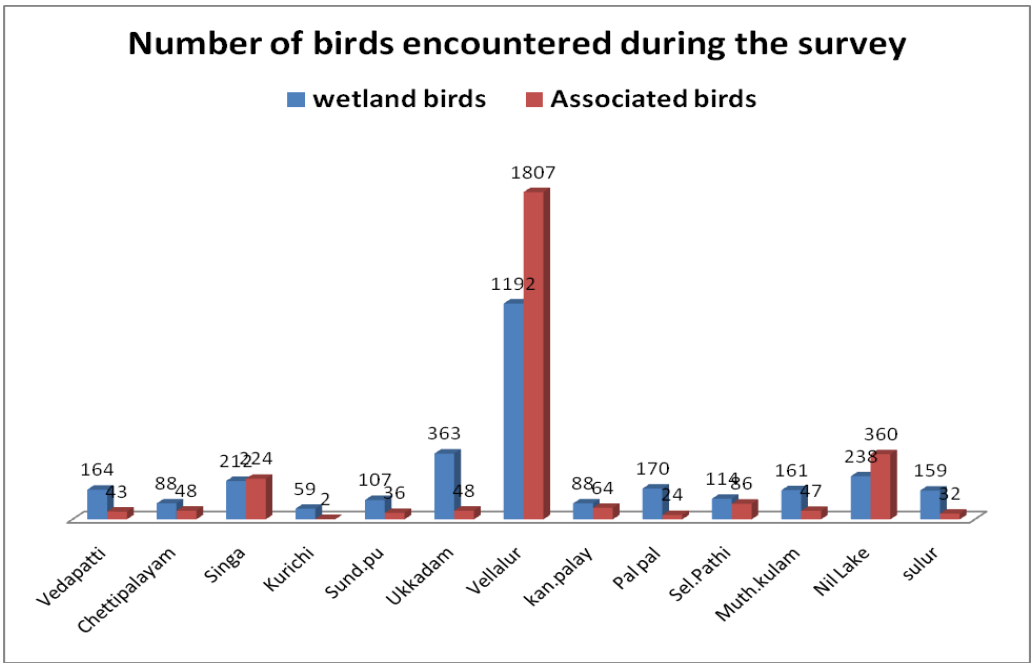
the conservation problems they have seen during the day. Subsequently, SACON has computerized the data and analysed for exploring the pattern and ecology of wetland bird of these wetlands.

RESULTS & DISCUSSION

Twenty six trained Bird watchers have gone for birding in and around the 17 urban wetlands of Coimbatore. Of these 17 wetlands, four wetlands were very small and all of them were surveyed for birds. The data of 13 wetlands were only considered for analysis. They have spotted 90 species of birds among about 5936 birds encountered in the first three hours of the day. This included 39 species of true water birds and 51 species of wetland associated birds. (List of birds with relative abundance and frequency is given in appendix 2).

Figure 1 gives details of the number of total birds encountered in each of the lakes in this survey. While in most of the wetlands, the participants encountered only a couple of hundreds of birds, one relatively smaller wetland has recorded about three thousand birds in the first three hours of the day.

Initial idea was for conducting the census only in the most significant and bigger tanks. But the enthusiasm of the bird watchers took the programme to all the lakes and the result is stunning. Many of the smaller tanks are equally or more important than the bigger wetlands in the view of the bird life. Infact many larger birds in which there are excellent records of occurrence of bird species and numbers this time showed a very mean presence of bird life. Where as some hitherto unknown wetlands with respect to bird life (like Vellalur tank) has showed high presence of bird life.See the figure 1.and 2.



Fige 1. Lake wise encounter of the wetland birds and wetland associated birds

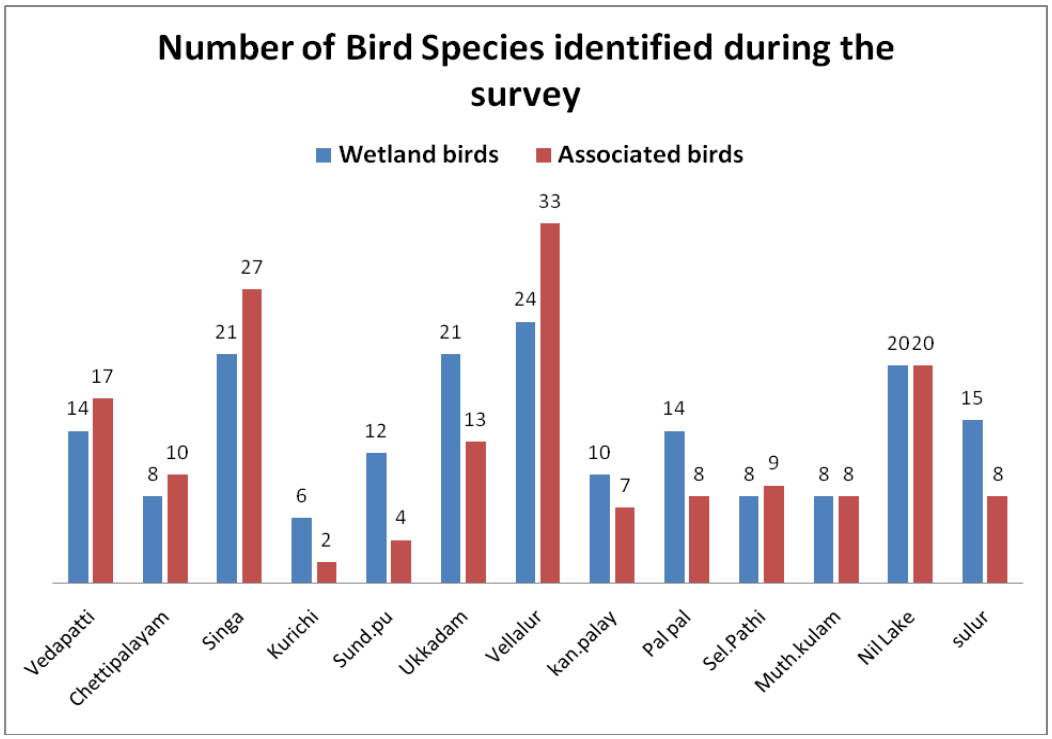


Fig. 2. Lake wise species richness of the wetland birds and wetland associated species

As there was no significant data on Coimbatore wetland birds in governmental records, this survey is very important and this information will become the baseline data for the future monitoring of the bird populations in these urban wetlands. Most of the birdwatchers were shocked to see the increasing trend of pollution in many of these wetlands.

The variations between the lakes were considerable (see table 1). Abundance did fluctuate very heavily between records of the lakes. Average number of Waterfowl species observed per wetland is 14 with a standard deviation of six species. Average number of waterfowl numbers encountered are 240 with a stadard deviation of 297.

Table 1. Basic statistics of bird community diversity in all the wetlands

	Mean	SD	Min	Max	CV
Abundance of WL birds	239.6153846	296.9611	59	1192	123.9324
Abd. Of associated birds	217	487.8461	2	1807	224.8139
Wetland bird species	13.92307692	5.964639	6	24	42.83995
Associated bird species	12.76923077	9.120982	2	33	71.42937

Though many migratory birds like Spotbilled pelican, painted stork sighted and recorded, the number of migratory species and abundance has become considerably low (only eleven species out of 39 which amounts to 10 percent of total abundance of birds recorded; see figures 3 and 4)compared to the bird count conducted by SACON one month back. Many of the migratory birds must have returned.

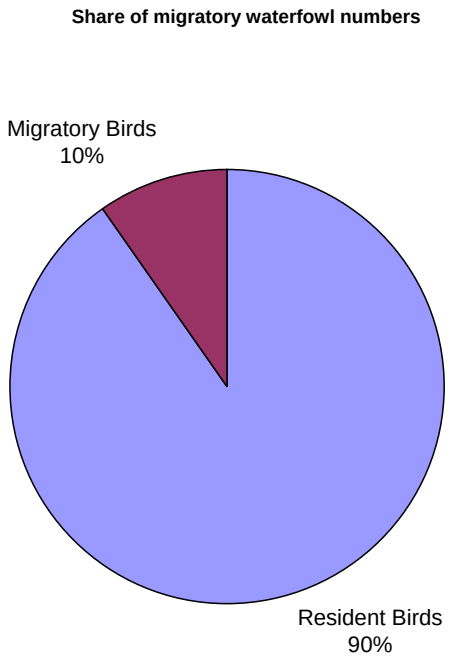


Fig.3. Share of migratory bird numbers(abundance) in the total bird observation

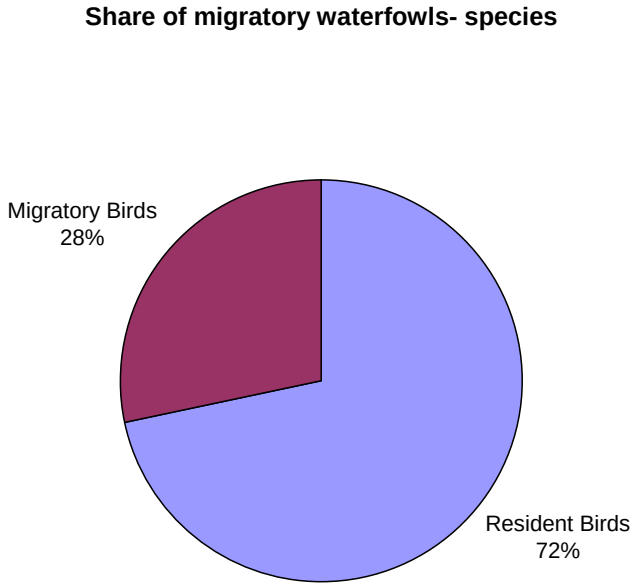


Fig.4. Share of migratory bird species (species richness) in the total bird observation

On January 31st 2007, in a similar exercise conducted by SACON in 14 wetlands we have recorded 12000 birds, belonging to 54 species. But this survey recorded only just half of this number. 19th December 2010 as part of the Bird race conducted by SACON, the same participants visited all these wetlands. The bird diversity was totally different on that day. More than three hundred Spot billed pelicans and hundreds of Painted storks they have witnessed in Ukkadam lake whereas most of these birds have left coimbatore by this survey day. In Kurichi lake more than twenty five species with nearly 300 coots hundreds of egrets etc have recorded in 2007 where as hardly any bird (8 species) recorded now in this survey. Almost similar is the case in Siganellur, Sulur and Sundakkamputhur.

All these records along with earlier observations indicate that in the case of birds in smaller wetlands such as the urban wetlands of coimbatore, birds see the landscape as one and keep changing the area of usage within a day as well as between the days and they change their area of activity periodically. Hence we need to consider all these wetlands with equal significance in terms of conservation. This year was an unusual year in Coimbatore Wetlands with more than 500 spot billed pelicans flying and feeding in and around these lakes. We have recorded an interesting regular pattern of movement of these magnificent regional migratory birds. They roost in Sundakkamputhur lake, uses Ukkadam for the early hours of the day, spend the forenoon in Singanellur lake, after noon they feed in Sulur lake and back again to sundakkamputhur lake for roosting in the evening. We have observed large scale changes in population of purple moorhen, coot, egrets and many such resident birds also.

Most of these prominent birds, particularly the resident ones are highly depend upon the vegetation of the ecosystem for various purposes. Recently, in the urban context, vegetation around the wetlands are neglected or being destroyed by human activities. Birds are sensitive to local landscape and vegetation pattern and hence the destruction can directly affect the population of birds in an area (Sujot et., al., 1998; Savard et., al., 1999).

During this survey, participants recorded heavy cattle grazing along with increase in the number of feral dogs in these areas. This may be disturbing the foraging of the birds in the lake. Cultivation of plants, wood cutting, dumping of wastes, sewage, Eichornia, feral dogs, poaching of the eggs and birds and fishing in the lake, all contribute cumulatively to the sad state of affairs for these resident as well as migratory birds of Coimbatore wetlands . A careful and scientific management can definitely improve the situation without causing damage to birds as well as people around this lake.

From our primary observations, ecological conditions in Coimbatore lakes do not represent a healthy situation. Still it supports relatively high diversity of resident and migratory birds. Presence of a good number of significant, beautiful birds will only add to the social, cultural, economic (in terms of tourist importance) and conservation value to the site. A good number of birds depend on the natural vegetation on the bunds for their various activities such as nesting. Hence there should be care in the management of such areas. The issues such as, fire, vehicle traffic, cattle grazing, spread of weeds, unauthorized encroachment and cultivation and sewages all cumulatively contribute to the overall threat to the bird population and the total biodiversity of the wetland. Most of

this destructive activities including detrimental thumb-rule management interventions such as putting fire happens due to the lack of knowledge and right information at the right place. This highlights the importance of local specific study directed towards the proper management of the area. We need also to cultivate a system of informed decision and management based on the proper scientific input.

Acknowledgements

First, I wish to thank all the participants for their voluntary participation and meticulous collection of data. SACON is grateful to Tamilnadu Forest Department, especially, Mr. Thirunavukarasu, IFS, Divisional Forest Officer, Coimbatore for giving this opportunity. I would like to record the gratitude to Director and my colleagues at SACON for all encouragements.

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Appendix 1

List of participant from Salim Ali Naturalist Forum in the survey

1) Sulur Lake – Mr. Sukumar Central excise.

2) Singanallur Lake – Mr. Selvaraj.SANF and Dr. Tolstoy PSH IMS

3) Kannampalayam Lake - C.R.Jayaprakash,PSGCAS and N.R. Sujith suri,Coimbatore

4) Vellalore Lake - Mr. K Mohanraj Sriasys, Coimbatore and Shaik Hussain, Coimbatore

5) Pallapalayam Lake - Mr. Murugesan, Coimbatore

6) Irugur Lake -. D Gowtham Thirupur

7) Neelambur Lake – Mr. Sivakumar, Adventure Shoppe, Coimbatore

Lakshminarayanan,Wildlife Conservation Society, Coimbatore

8) Muthannan Kulam (Kumarasami lake) and selvasinthamani, Mr. Thirumeni, Mr. Bhavin Shah

9) Sundakkamuthur Lake - and Senkulam : Mansoor Ahemed, Gayathri and Kannan

Environment Conservation Group

10 Ukkadam Periyakulam & Valamkulam Mohamed Saleem, Dilip Joshi and Deepan

Chakravarty.

11) Perur – Chettipalayam MrDorai Bhaskaran and Dr. M.Gunasekharan

12. Selvam pathi Ms.Naheed Sultana BSNL

13) Vedapatti lake Vijayaraj and Surekha Vijayaraj

14) Kurichi Lake : Mr.Dhaval, SANF

Appendix 2

Checklist of birds observed in the survey with the encounter rate (abundance) and the number of lakes they have been observed (frequency)

No	Species	Scientific Names	Abundance	Frequency
1	Little Grebe	*Tachybaptus ruficollis*	40	5
2	Spot Billed Pelican	*Pelecanus crispus*	54	6
3	Little Cormorant	*Phalacrocorax niger*	815	13
4	Indian Shag	*Phalacrocorax fuscicollis*	20	3
5	Great Cormorant	*Phalacrocorax carbo*	74	4
6	Darter	*Anhinga melanogaster*	13	5
7	Little Egret	*Egretta garzetta*	698	13
8	Grey Heron	*Ardea cinerea*	15	5
9	Purple Heron	*Ardea purpurea*	9	6
10	Large Egret	*Casmerodius albus*	69	6
11	Median Egret	*Mesophoyx intermedia*	62	5
12	Cattle Egret	*Bubulcus ibis*	58	7
13	Indian Pond Heron	*Ardeola grayii*	274	13
14	Black Crowned Night Heron	*Nycticorax nycticorax*	2	3
15	Painted Stork	*Mycteria leucocephala*	13	4
16	White Necked Stork	*Ciconia episcopus*	1	1
17	Spot Billed Duck	*Anas poecilorhyncha*	56	7
18	Northern Shoveller	*Anas clypeata*	110	1
19	Common Teal	*Anas crecca*	6	2
20	Brahminy Kite	*Haliastur indus*	9	5
21	Western Marsh Harrier	*Circus aeruginosus*	1	1
22	White Breasted Waterhen	*Amaurornis phoenicurus*	8	4
23	Water Cock	*Gallicrex cinerea*	4	1
24	Purple Moorhen	*Porphyrio porphyrio*	56	9
25	Common Moorhen	*Gallinula chloropus*	1	2
26	Common Coot	*Fulica atra*	65	10
27	Pheasant Tailed Jacana	*Hydrophasianus chirurgus*	10	2
28	Little Ringed Plover	*Charadrius dubius*	2	1
29	Yellow Wattled Lapwing	*Vanellus malabaricus*	6	3
30	Red Wattled Lapwing	*Vanellus indicus*	26	5
31	Marsh Sandpiper	*Tringa stagnatilis*	3	2

32	Wood Sandpiper	*Tringa glareola*	3	1
33	Common Sandpiper	*Actitis hypoleucos*	10	4
34	Black Winged Stilt	*Himantopus himantopus*	32	2
35	Small Blue Kingfisher	*Alcedo atthis*	5	3
36	White Breasted Kingfisher	*Halcyon smyrnensis*	17	10
37	Lesser Pied Kingfisher	*Ceryle rudis*	2	3
38	Openbilled stork	*Anastomus oscitans*	1	2
39	yellow bittern	*Ixobrychus sinensis*	1	2
	Wetland Associated Birds			
1	Shikra	*Accipiter badius*	2	1
2	Black Kite	*Milvus migrans*	11	6
3	Grey Francolin	*Francolinus pondicerianus*	6	3
4	Common Quail	*Coturnix coturnix*	6	2
5	Indian Peafowl	*Pavo cristatus*	24	7
6	Blue Rock Pigeon	*Columba livia*	17	4
7	Little Brown Dove	*Streptopelia senegalensis*	1	1
8	Spotted Dove	*Streptopelia chinensis*	11	5
9	Rose Ringed Parakeet	*Psittacula krameri*	77	8
10	Pied Crested Cuckoo	*Clamator jacobinus*	6	3
11	Asian Koel	*Eudynamys scolopacea*	17	7
12	Greater Caucal	*Centropus sinensis*	12	6
13	Asian Palm Swift	*Cypsiurus balasiensis*	407	4
14	House Swift	*Apus affinis*	312	2
15	Small Bee Eater	*Merops orientialis*	45	5
16	Blue Tailed Bee Eater	*Merops philippinus*	15	4
17	Indian Roller	*Corcias benghalensis*	4	4
18	Lesser Golden Backed Woodpecker	*Dinopium benghalense*	5	3
19	Red-winged Bush-Lark	*Mirafra erythroptera*	2	1
20	Common Swallow	*Hirundo rustica*	81	4
21	White Wagtail	*Motacilla alba*	1	1
22	Large Pied Wagtail	*Motacilla maderaspatensis*	6	2
23	Yellow Wagtail	*Motacilla flava*	9	2
24	Grey Wagtail	*Motacilla cinerea*	2	1
25	Paddyfield Pipit	*Anthus rufulus*	4	2
26	Common Woodshrike	*Tephrodornis*	1	1

		pondicerianus		
27	Red Whiskered Bulbul	*Pycnonotus jocosus*	1	1
28	Red Vented Bulbul	*Pycnonotus cafer*	15	3
29	Brown Shrike	*Lanius cristatus*	3	2
30	White Headed Babbler	*Turdoides affinis*	62	6
31	Ashy Prinia	*Prinia socialis*	43	6
32	Paddyfield Warbler	*Acrocephalus agricola*	5	2
33	Blyth's Reed Warbler	*Acrocephalus dumetorum*	6	2
34	Common Tailor Bird	*Orthotomus sutorius*	5	2
35	Greenish Leaf Warbler	*Phylloscopus trochiloides*	3	2
36	Asian Paradise Flycatcher	*Tersiphose paradisi*	3	2
37	Tickell's Flowerpecker	*Dicaeum erythorhynchos*	6	2
38	Purple Rumped Sunbird	*Nectarinia zeylonica*	9	5
39	Purple Sunbird	*Nectarinia asiatica*	16	6
40	Rosy Starling	*Sturnus roseus*	360	2
41	Common Mynah	*Acridotheres tristis*	1137	11
42	Eurasian Golden Oriole	*Oriolus oriolus*	2	2
43	Black Drongo	*Dicrurus macrocercus*	27	7
44	House crow	*Corvus splendens*	8	4
45	Jungle crow	*Corvus macrorhynchus*	2	1
46	Tree Pie	*Dendrocitta vagabunda*	4	3
47	Eurasian Collard dove	*Streptopelia decaocto*	8	1
48	Rufous turtle dove	*Streptopelia orientalis*	2	1
49	Brahmini Myna	*Sturnus pagodarum*	3	2
50	Common babbler	*Turdoides caudatus*	5	1
51	Black headed munia	*Lonchura malacca*	2	1

Map1. Map of the study area highlighting the locations of the wetlands.