

Prioritised Wetlands and its Biodiversity in Tamil Nadu



**Goldin Quadros ■ M. Mahendiran ■ T. Siva
N. Mohamed Ibrahim ■ A. Julffia Begam**

Funded by



**Tamil Nadu State ENVIS Hub
Department of Environment, Govt. of Tamil Nadu
Chennai**



Sálim Ali Centre for Ornithology and Natural History (SACON)
(A Centre of Excellence under the Ministry of Environment, Forest and Climate Change, Govt. of India)
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FOREWORD

Wetlands are among the highly vulnerable ecosystems that are the lifelines of the society. They are known to support biodiversity and provide vital ecosystem services to mankind from time immemorial. Alteration of the wetlands through anthropogenic and non-anthropogenic pressure can adversely affect the health of the wetlands and thereby impact biodiversity, lead to climatic insecurity and affects human well being. The conservation and wise use of wetlands has become a priority in the country and with the notification of the Wetland (Conservation and Management) Rules 2010 later amended in 2017 has now become an important guideline for policy and management of wetlands.

Tamil Nadu Forest Department along with the State Planning Commission has been at the forefront in implementing the Wetland (Conservation and Management) Rules and adhering to the guidelines has prepared the brief documents for 141 wetlands across the State. These wetlands will be prioritized and taken up for conservation keeping the biodiversity, ecosystem services and livelihood aspects into consideration.

Tamil Nadu State ENVIS HUB is committed towards promoting, awareness, conservation and dissemination of the concerns related to environment along with the State line departments of forest and environment. Keeping with our commitment we have prepared this literature on 'Prioritised Wetlands and its Biodiversity in Tamil Nadu' along with Sálim Ali Centre for Ornithology and Natural History (SACON) who has done the primary research for the wetlands. We are hopeful this document will help not only policy makers but also academicians and researchers in their tryst to conserve the wetlands.


(Jayanthi M.)
Director of Environment



PREFACE

Wetlands are increasingly becoming the most threatened ecosystems globally despite their significance and contribution to biodiversity. The continuous indiscriminate, overt or otherwise, abuse of the wetland resources has led to pollution of various kinds as well as the extinction of several valuable species and ecosystem services. Wetlands have been evaluated for their social, economic and ecological importance however the appreciation to their services is undervalued. Unsustainable human pressures have posed a looming threat to the wetlands globally including India.

India is the seventh largest country in the world occupying about 2.4% of the world's land area. As per the National Wetland Atlas of 2011, 4.63% of the country's land area comprises of wetlands. Recognizing the threats wetlands face, India has been at the forefront promoting conservation and awareness of wetlands and is a signatory to several international conventions and treaties. India has also designated 27 wetlands under the Ramsar convention as wetlands of International importance. In keeping with its commitment, India has through the MoEF&CC established the National Wetland Conservation Program (NWCP) way back in 1986. The NWCP provides an overarching policy framework and financial assistance to the state governments for implementation of site management plans. In 2001 the National Lake Conservation Program (NLCP) was introduced to address the pollution issues. In 2013 the two schemes were merged under the National Plan for Conservation of Aquatic Ecosystems (NPCA) with a common regulatory framework to conserve and manage wetlands. India also notified the Wetlands (Conservation and Management) Rules 2010 and amended it in 2017 that provides a basis towards protecting and sustainable management of wetlands across its geographic boundaries.

The Tamil Nadu State Forest Department while implementing the Wetland Rules 2017 has taken a lead in preparing the brief documents for over 100 of its wetlands for prioritization and conservation. This book on the "*Prioritized Wetlands and its Biodiversity in Tamil Nadu*" is an outcome of our efforts supported by The Tamil Nadu State Planning Commission and Tamil Nadu State Wetland Authority. The book has the information on biodiversity, ecosystem services and threats, in addition to the characteristics of each of the wetlands documented. The details of 141 wetlands covering all the districts from the state are included with maximum wetlands from Kanchipuram district and the minimum from Nilgiris district. I am hopeful that this book will be of use to not only the policy and decision makers but also to the society at large who avail the benefits from the wetlands.

Dr. K. Sankar
Director, SACON

Acknowledgements

Our book namely '*Prioritised Wetlands and its Biodiversity in Tamil Nadu*' has been possible due to the encouragement received from Dr. Jayanthi Murali, IFS, Director Department of Environment, Tamil Nadu State, her help and commitment was always communicable even when she was the Member Secretary of the Tamil Nadu State Wetland Authority (TNSWA). We also acknowledge the interest showed by Mrs. Geetanjali K., IFS Additional Director, Department of Environment, Tamil Nadu. The patience towards the compilation process shown by the ENVIS team comprising of Dr K. Muthukumar, Ms. T. Indira Devi, Ms. J. Dhivyabarathi and Ms. Aishwarya from the Tamil Nadu State ENVIS Hub is highly appreciated.

As a precursor to this book, the Tamil Nadu State Wetland Authority (TNSWA) through The State Planning Commission (SPC) sanctioned a project to SACON for prioritization of wetlands in the state of Tamil Nadu. Under the project SACON visited 32 districts and prioritized 141 wetlands based on the biodiversity, ecosystem services and anthropogenic activities. Having received this opportunity, the authors sincerely thank the Heads of Land Use from The State Planning Commission namely Dr. SugatoDutt, IFS, Mr. Debasis Jena, IFS and Mr. Jahan Mohan IFS. The Member Secretary from Tamil Nadu State Wetland Authority are also acknowledged here viz., Mr. Karayat Mohandas, IFS, APCCF, Dr. Jayanthi Murali, IFS, CCF and Mr. A. Udayan, IFS, APCCF. We gratefully acknowledge the administrative staff from both the SPC and TNSWA for their cooperation extended during the project. Further, we are indebted to the DFOs and the respective forest staff from all the 32 districts for the logistic support, cooperation and help extended during the field work. The book '*Prioritised Wetlands and its Biodiversity in Tamil Nadu*' is based on the data collected for the project and compiled to its present form on the request from the Director, Department of Environment, Tamil Nadu State.

While working on this book, The Director SACON Dr. K. Sankar has always been an optimist and maintained our enthusiasm. We also take this opportunity to acknowledge the faculty, support staff and researchers from SACON for their interest in our work. There are many individuals who we have missed out on mentioning here, it is inadvertent and we sincerely thank each and every one for their help extended at every step of the work.

Goldin Quadros
Mahendiran Mylswamy
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Executive Summary

Wetlands are increasingly being recognised for their vital role in nature and in natural processes that extend far beyond their geographical locations and boundaries. India is the seventh largest country in the world, occupying only 2.4 % (i.e. 3.28 million sq km) of the world's land area and supports over 16% of the world's population. The wetland ecosystems in India are spread over a wide range of varied climatic conditions, variously estimated to be occupying 1-5% of the geographic area supporting about a fifth of the known biodiversity. Like any other place in the world, there is a looming threat of unsustainable human pressures to the Indian wetlands. Looking into the urgent need for sustainable management of these assets, the Government of India has initiated many steps in terms of policies, programmes and plans for the preservation and conservation of these ecosystems.

The total wetland area estimated by the Space Applications Centre (SAC, ISRO), Ahmedabad is 15.26 M ha, which is 4.63% of the geographic area of the country. As per the 2011 National wetland atlas, Tamil Nadu has 6.92% of its land mass categorized under wetlands. These wetlands resources are mainly replenished by the seasonal rainfall during the northeast monsoon. The state is among the five Indian states that have over-exploited their ground water resource (Narayanamoorthy, 2010). According to Parvathi (2011), with a per capita water availability less than the national average, Tamil Nadu is one of the water starved states.

The Central government notified the Wetland (Conservation and Management) Rules, 2010, as a significant step to conserve, manage and to maintain the ecological character of the wetlands, without curtailing and restricting the legitimate and wise use of these ecosystems. The amended Wetland Rules 2017 are in line with the 'Wise Use' philosophy of the Ramsar Convention, and they accord greater emphasis on maintaining ecological character and integrity of wetlands.

The Wetland Rules as specified in Rule 3 require the State Governments/UT administrations to prepare a wetland inventory within their jurisdiction and identify / prioritize wetlands for notification by the Central Government. Further, the State Governments/UT administrations are required to submit a brief document for each of the identified/prioritized wetlands.

The primary objective of the framework is to identify/prioritize wetlands for conservation. This will have to be supported by a *brief document* on each of the wetlands giving the information as specified in Rule 6 as follows.

- (i) Broad geographic delineation of the wetland
- (ii) Its zone of influence along with a map (accurate and to scale)
- (iii) The size of wetland

The State Planning Commission Tamil Nadu State Land Use research Board (SPC-TNSLURB), funded the project to Sálim Ali Centre for Ornithology and Natural history (SACON) for prioritization and preparation of the brief document for wetlands from the State of Tamil Nadu. To achieve the purpose we identified 141 wetlands. The wetlands were selected based on the SACON ATLAS, scientific literature, internet based bird data and Google imagery. Our emphasis was to give a fair representation to all the 32 districts of Tamil Nadu. Moreover, the Wetland Rules 2017 ruled out the wetlands from Protected Areas (PAs) or under the jurisdiction of the forest department, hence we selected 141 wetlands in total.

A standardized sampling format was adopted and interactions with the forest officials formed the first step of the survey. Subsequently the team interacted with the Village Administrative Officers (VAO) to gain information on the wetlands in their jurisdiction including the Survey number, Field Management Book (FMB) Sketches, rights and privileges on the wetlands. The questionnaire was also used to interview local people or have community group discussions to identify the ecosystem services, disturbance and threats to the wetland. Data on socio-economic and cultural values of the wetlands were supplemented by observing the direct utilisation of wetland resources (eg. water extraction, fishing, etc) by the local community.

To prepare the maps, georeferencing and digitization of 32 districts for updated boundaries of Tamil Nadu was undertaken and projected to World Geographic System (WGS) 1984. The wetland boundaries of all the 141 wetlands were extracted from Google Earth Pro as a keyhole markup language (kml) format. As per the Wetland Rules 2017 the zone of influence is the part of the catchment area of the wetland in which developmental activities induce adverse changes in ecosystem structure and ecosystem services. To estimate the same a fixed 2 km buffer was generated on the Arc map, the land use & land cover data used was a classified data of 2004-2005 time period obtained from Landsat 5 and Resourcesat satellites.

During the study we prepared the *brief document* for maximum number of wetlands from the Kanchipuram district (15 wetlands) while a minimum of two wetlands were documented for the Nilgiris district. We visited all the wetlands selected and observed that almost 34 wetlands were completely dry for a minimum of three years to 10 years. This was attributed to lack of rainfall and diversion of channel waters. The wetlands however showed hydric soil characteristics indicating their importance in the landscape. Among the wetlands with water, we recorded Eutrophic, Mesotrophic and Oligotrophic wetlands that supported over 444 species of plants representing 95 families. The flora comprised of 31 Alien Invasive species including five invasive aquatic species, 27 fresh water plants and six marine plants. The 401 types of fauna were represented by Insects – 50 species, 82 species of Butterflies, 34 species of Odonata, six species of spiders, 34 species of fish species, four species of Amphibians, seven species of reptiles, 170 species of birds (92 Terrestrial, 60 Wetland birds and 18 Wetland dependant birds) and 14 species of domestic and wild mammals. Moreover the common problems that we documented for most of the wetlands include Reduction in area (Shrinkage), Reduction in depth (Siltation), Encroachments (Local Residents/Builders/Government), Algal blooms, Aquatic weeds, Decline or Loss of Fisheries, Eutrophication, Organic Pollution and Toxic Pollution. Apart from these, we observed illegal hunting of wild birds in around 20 wetlands.

Further, based on our primary studies we have calculated the Wetland Health Status score for each of the 141 wetlands taking into consideration the Ecosystem services, Land use patterns, threats and biodiversity values recorded during our field visits. Simultaneously we have ranked the wetlands based on the score and have found that out of the 141 wetlands 23 wetlands need immediate attention while four among the 23 are in a critical state. Thirty two wetlands are in a fairly healthy state, although we recommend that all the wetlands be wisely used and sustainable conservation management plans be implemented.

The Tamil Nadu Department of Environment and State ENVIS centre requested SACON based on the completed project of the Prioritised wetlands for Tamil Nadu for a compilation on the status of wetlands and the biodiversity of each of the prioritized wetlands. This book is an out come of the project completed for the SPC-TNSLURB. The book as the list for flora and fauna of the 141 wetlands prioritized in the state with a brief on each of the wetlands from the 32 districts.

1. Introduction

Wetlands are areas that are transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface or the land is covered by shallow water. According to the Ramsar Convention on Wetlands of International Importance, wetlands are defined as “areas of marsh, fen, peat-land or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters.”

Wetlands are vital for their role in natural processes that extend beyond the geographical locations and boundaries. The wetlands help in sustaining human habitations while performing a range of functions that include initiating primary production, regulating hydrological regimes such as groundwater recharge and flood mitigation, initiating succession of the floral community and providing habitat to several life forms. Wetlands are a source of drinking water, food and livelihood to billions across the globe. Being an integral part of the cultural heritage, wetlands enhance the aesthetic value of the landscape.

Wetlands are increasingly being recognised for their vital role in nature and in natural processes that extend far beyond their geographical locations and boundaries. They are the highest producers of biomass compared to any other ecosystem type worldwide, far outstripping river estuaries, tropical rain forests and even coral reefs (Ricklefs and Miller 2000). It is estimated that wetlands and other forms of deepwaters, cover about 6 per cent of the Earth's surface (Mitsch and Gosselink, 1993), and provide habitats for as much as 20 per cent of the planet's various life-forms (Gopal, 1977). Owing to this attribute, wetlands are often referred as “biological supermarkets” (Gawler 2000, Prasad et al., 2002).

India is the seventh largest country in the world, occupying only 2.4 % (i.e. 3.28 million sq km) of the world's land area and supports over 16% of the world's population. The wetland ecosystems in India are spread over a wide range of varied climatic conditions, variously estimated to be occupying 1-5% of the geographic area supporting about a fifth of the known biodiversity. Like any other place in the world, there is a looming threat of unsustainable human pressures to the Indian wetlands. Looking into the urgent need for sustainable management of these assets, the Government of India has initiated many steps in terms of policies, programmes and plans for the preservation and conservation of these ecosystems.

At the behest of the Ministry of Environment and Forests (MoEF), Government of India, the scientific mapping of the wetlands of the country was carried out by the Space Applications Centre (SAC, ISRO), Ahmedabad during 1992- 93 and 2011. The total wetland area estimated is 15.26 M ha, which is 4.63% of the geographic area of the country. As per the 2011 National Wetland Atlas, Tamil Nadu has 6.92% of its land mass categorized under wetlands.

The state of Tamil Nadu has limited water resources that are replenished by the seasonal rainfall during the northeast monsoon. The state is among the five Indian states that have over-exploited their ground water resource (Narayanamoorthy, 2010). According to Parvathi (2011), with a per capita water availability less than the national average, Tamil Nadu is one of the water starved states.

The Central government notified the Wetland (Conservation and Management) Rules, 2010, as a significant step to conserve, manage and to maintain the ecological character of the wetlands, without curtailing and restricting the legitimate and wise use of these ecosystems. The amended Wetland Rules 2017 are in line with the ‘Wise Use’ philosophy of the Ramsar Convention, and they accord greater emphasis on maintaining ecological character and integrity of wetlands.

Preparation of the Brief Document

The Wetland Rules as specified in Rule 3 require the State Governments/UT administrations to prepare a wetland inventory within their jurisdiction and identify / prioritize wetlands for notification by the Central Government. Further, the State Governments/UT administrations are required to submit a brief document for each of the identified/prioritized wetlands.

The primary objective of the framework is to identify/prioritize wetlands for conservation. This will have to be supported by a brief document on each of the wetlands giving the information as specified in Rule 6 as follows.

- (i) Broad geographic delineation of the wetland
- (ii) Its zone of influence along with a map (accurate and to scale)
- (iii) The size of wetland

Table 1.1: The number of wetlands selected from the 32 districts of Tamil Nadu State.

S. No	District	Total Number of Wetlands	SACON Atlas	Protected Area/Reservoir	Protected Area & Sanctuary
1	Ariyalur	3	-	-	
2	Chennai	5	-	1	Pallikaranai
3	Coimbatore	6	4	-	
4	Cuddalore	4	2	-	
5	Dharmapuri	3	-	-	
6	Dindigul	3	-	-	
7	Erode	4	2	1	Vellode Bird Sanctuary
8	Kanchipuram	15	9	1	
9	Kanyakumari	6	4	2	Suchindram, Theroor Bird Sanctuary
10	Karur	3	-	-	
11	Krishnagiri	3	-	-	
12	Madurai	4	2	-	
13	Nagapattinam	3	-	1	Point Calimere Wildlife Sanctuary
14	Namakkal	3	-	-	
15	Perambalur	3	-	-	
16	Pudukkottai	3	-	-	
17	Ramanathapuram	6	4	1	Chitrangudi Bird Sanctuary
18	Salem	3	-		
19	Sivagangai	4	1	1	Vettangudi Bird Sanctuary
20	Thanjavur	3	-	-	
21	The Nilgiris	2	-	-	
22	Theni	3	-	-	
23	Thoothukudi	5	2	-	
24	Tiruchirappalli	4	2	-	
25	Tirunelveli	6	2	1	Koonthankulam Bird Sanctuary
26	Tirupur	3	1	-	
27	Tiruvallur	7	2	1	Pulicat Lake
28	Tiruvannamalai	8	5	1	Sathanur Reservoir
29	Tiruvarur	5	3	2	Udayamarthandapuram, Vaduvur Bird Sanctuary
30	Vellore	3	-	-	
31	Villupuram	5	2	1	Kaliveli Lake
32	Virudhunagar	3	-	-	
		141	47	13	

To achieve the objective, SACON was sanctioned the work of prioritization of wetlands in the state of Tamil Nadu by the State Planning Commission Tamil Nadu State Land Use Research Board (SPC-TNSLURB). The study was undertaken from November 2017 to October 2018. The wetlands were selected based on the SACON ATLAS (Prasad *et al.*, 2004), Scientific Literature, e-bird database and Google imagery. The SACON Atlas did not have wetlands prioritized for almost 16 districts, while our emphasis was to give a fair representation to all the 32 districts of Tamil Nadu. In the process we surveyed a maximum of 15 wetlands from Kanchipuram district while a minimum of two wetlands were documented from the Nilgiris district. Moreover, the Wetland Rules 2017 ruled out the wetlands from Protected Areas or under the jurisdiction of the forest department, hence the reason for selecting 141 wetlands in total (Table 1.1 & Plates 1 to 35). The *brief document* is based on our rapid survey that helped to prepare this book requested to SACON by the Department of Environment and State ENVIS Centre, Tamil Nadu.

To comply with the time constraints, SACON undertook an extensive but rapid field work to assess the nature of the wetlands in terms of select indicators. A standardized sampling format was adopted and interactions with the forest officials formed the first step of the survey. Subsequently the team interacted with the Village Administrative Officers (VAO) to gain information on the wetlands in their jurisdiction including the Survey number, Field Management Book (FMB) Sketches, rights and privileges on the wetlands. For the interactions with the VAO we followed the draft questionnaire (Appendix 1) designed by the National Wetland Conservation Program (NWCP) on the National River Conservation Directorate (NRCD) portal. Interactions were also made with the local inhabitants, farmers, shepherds and cattle herders eliciting information as per the questionnaires supplemented the information on each of the wetlands.

We physically visited all the wetlands selected, adopting a strategy of time-constrained random walk spending a fixed duration of 30 minutes by three researchers at every wetland recording the flora, fauna and other aspects relating to the wetland to make a spot assessment of the ecological status following standard methods (Table 1.2). To maintain the clarity of visual observations along the wetlands, the flora and fauna were observed from within the wetland and up to fixed constant a distance of 30 meters from the edge of the wetland boundary towards the landward side. In addition, macrophytes as floating, submerged and emergent were also recorded in terms of coverage of the area and species. Similarly, the birds and obvious terrestrial plant species were also recorded. Based on the field observation each wetland was categorized for their trophic status as oligotrophic (low in nutrients), mesotrophic (with medium level nutrients), and eutrophic (high levels of nutrients) based on the classification originally suggested by Thienemann (1925). After ground truthing, the wetlands were delineated and presented as digital images drawing information from Google Earth, Bhuvan and LISS III imageries.

Table 1.2: Sampling technique used for floral and faunal enumeration

Taxa	Sampling Method	Reference
Insects	Visual encounter survey (Search)	Subramanian, 2009; Narendra & Kumar, 2006;
Butterflies	Visual encounter survey (Search)	Balmer, 2006; Kehimkar, 2008
Moths	Visual encounter survey (Search)	Balmer, 2006; Vaylure, 2018
Arachnida	Visual encounter survey (Search)	Sebastian, 2009
Other Invertebrates	Visual encounter survey (Search)	Tonapi, 1980
Amphibians	Visual encounter survey (Search)	Daniels, 2005
Reptiles	Visual encounter survey (Search)	Whitaker & Captain, 2008
Birds	Point count, Random walk & Opportunistic observation	Bibby <i>et al.</i> , 1993; Ali & Ripley 1983; Grimmett <i>et al.</i> , 1999
Mammals	Tracks, signs and visual encounter survey	Bang <i>et al</i> 1972; Menon, 2009
Flora	Opportunistic observation, Random search	Smith, 2011; Hill <i>et al.</i> , 2005; Menon & Bagla, 2009

The questionnaire was also used to interview local people or have community group discussions to identify the ecosystem services, disturbance and threats to the wetland. Data on socio-economic and cultural values of the wetlands were supplemented by observing the direct utilisation of wetland resources (eg. water extraction, fishing, etc) by the local community.

To prepare the maps, georeferencing and digitization of 32 districts for updated boundaries of Tamil Nadu was undertaken and projected to World Geographic System (WGS) 1984. The wetland boundaries of all the 141 wetlands were extracted from Google Earth Pro as a keyhole markup language (kml) format. Using Arcmap 10.5 software the extracted 141 wetlands kmfs were converted into shape file. As per the Wetland Rules 2017 the zone of influence is the part of the catchment area of the wetland in which developmental activities induce adverse changes in ecosystem structure and ecosystem services. To estimate the same a fixed 2 km buffer was generated on the Arc map using buffer analysis tool for demarcating the zone of influence around each wetlands. SRTM [Shuttle Radar Topography Mission] data was downloaded from USGS for creating elevation and generation of contour with 5 m intervals. The land use & land cover data was a classified data of 2004-2005 time period obtained from Landsat 5 and Resourcesat satellites where the (Enhanced Thematic Mapping Plus) ETM+, LISS III (Linear Image Scanning Sensor) are the sensors with the spatial resolution of 30 m for ETM+ and 23.5 m for LISS III respectively.



Map 1.2: Distribution of wetlands selected for the study across Tamil Nadu State.

The maps generated from the above procedure provided the Landscape elements, the elevation and contours around the wetlands. The landscape elements provide the information on the land use around the wetland while the elevation and contour map helps assess the influence to and of the wetland. The 2 Km buffer as zone of influence was arrived at based on the contours and elevation around the wetlands that were influenced by the development and other human activities. These maps can help in management planing of the wetlands.

Observations

On the basis of our field visits and field interactions the following are the brief observations of the study.

From the 141 wetlands covering 32 districts, maximum number of 15 wetlands were surveyed in Kanchipuram and a minimum of two from the Nilgiris district. The overall characteristics of the wetlands surveyed are.

- ✓ The wetlands were either Natural (Inland) or Human Made
- ✓ 29 wetlands were dry and of the remaining 112 wetlands 32 were wetlands with water throughout the year while the remaining 80 wetlands are Seasonal Intermittent lakes
- ✓ Three type of wetlands: Eutrophic - 15, Mesotrophic - 59, Oligotrophic – 47, Status unknown - 19
- ✓ Encroachment levels recorded were - High – 33 wetlands, Medium – 30 wetlands, Low – 72 wetlands and No encroachment observed in 6 wetlands.
- ✓ Industry or industrial setup was observed around 30 wetlands.

The wetlands studied have a vast diversity of flora and fauna that includes 444 species of plants (Plates 36 - 46 including the invasive species (Plate 47) where as the fauna comprises of 401 different species representing Arthropods, Arachnida, Fish, Amphibians, Reptiles Birds and Mammals (Plates 48 - 69). We recorded several species of Threatened fauna as per the IUCN criteria as well as many Schedule species as per the Wild life Protection Act of 1972 (Table 1.3). The flora was also categorized into Native and Alien species.

Table 1.3: Flora and Faunal Diversity recorded during the Field Visit is categorized as follows

S. No	Flora/Fauna	Total Number of Species	IUCN Category	WPA 1972
1	Flora	444	EN-1, VU-2; EW-1; LC-81;	
2	Arthropoda & Arachnida	56	-	
3	Lepidoptera	82		Sch I - 4, Sch II - 6, Sch IV - 1
4	Odonates	34	-	
5	Fishes	34	LC- 22, NE - 3, NT -1, VU -1	
6	Amphibians	4	LC - 4	Sch IV - 4
7	Reptiles	7	LC - 7	Sch II - 2
8	Birds	170	NT - 8, V - 1, LC - 161	Sch I - 12, Sch IV - 148
9	Mammals	14	LC - 7	Sch I - 1, Sch II - 2, Sch III - 2, Sch IV - 2

Based on the species origin and distribution the floral species were further categorized into

- ❖ Native Species – 339
- ❖ Alien Invasive Species – 31
- ❖ Alien Non-Invasive Species (including Naturalised) – 48
- ❖ *Eichornia crassipes*, *Ipomoea aquatica*, *Ipomea obscura*, *Ipomea staphylina*, *Prosopis juliflora* are the wide spread Alien Invasive species recorded.

Common Issues & Threats in the Wetland (Plates 132 - 149) that were observed are

- ✓ Reduction in area (Shrinkage)
- ✓ Reduction in depth (Siltation)
- ✓ Encroachments (Local Residents/Builders/Government)
- ✓ Algal blooms
- ✓ Aquatic weeds
- ✓ Invasive species
- ✓ Decline or Loss of Fisheries
- ✓ Eutrophication
- ✓ Organic Pollution
- ✓ Toxic Pollution
- ✓ Signs of Hunting for Water birds observed in almost 20 wetlands

During our field visits we conducted a questionnaire survey where we interacted with the local community, the village administration and the forest department. Based on the status of the wetlands we documented wetlands in several stages of land use change. However there were some wetlands that did not have water at all for a long spell of time. List of Dry Wetlands in Tamil Nadu for over 5 years but still have the hydric property are as given in Table 1.4. Our study of the soil characteristics indicate the existence of hydric properties and hence necessitate protection from landuse change, as these wetlands have the potential of revival.

The subsequent sections we have given the details of each of the wetlands as per the NWCP format.

Table 1.4: List of wetlands that are dry for a minimum of 5 years.

S.No	District	Wetland	Trophic status
1	Dharmapuri	Kadagathur Lake	not known
2	Erode	Avalpoondurai Lake	not known
3	Kanchipuram	Magaral Lake	Eutrophic
4	Karur	Panjappatti Lake	Eutrophic
5		Uppidamangalam Lake	not known
6		Velliyantai Lake	not known
7	Madurai	T. Kunnathur	Eutrophic
8		Periyakulam Kanmai (Thenur)	not known
9		Urapanur Periyakanmai	not known
10	Namakkal	Puthur Lake	not known
11	Perambalur	Kurumbalur Lake	not known
12		Arumbavur Big Lake	not known
13	Puthukottai	Annavasal Periyakulam	Mesotrophic
14	Ramanathapuram	Sakkarakottai Bird Sanctuary	Mesotrophic
15		Rajasingamangalam	Eutrophic
16		Melayakudi Kulam	not known
17	Salem	Panai Eri	not known
18		Panamarathupatti Lake	not known
19	Sivagangai	Piravalur Kanmai	Mesotrophic
20	Thanjavur	Sendakkottai Lake	not known
21		Panavayal Eri	not known
22		Kallaperambur Lake	Mesotrophic
23	Theni	Kamarajapuram Lake	Eutrophic
24	Thoothukudi	Tirupani Puthantharuvai Tank	not known
25	Thiruvarur	Vadaku Eri	not known
26		Moovanallur Lake	not known
27	Tiruchirappalli	Valavanthankottai Tank	not known
28	Tirupur	KongurIdaichikulam	not known
29	Villupuram	Mel Malayanur Lake	not known

Prioritization of wetlands

On preparing the brief document we evaluated the wetland health status giving a score to each wetland. The score was calculated at two levels before arriving at the final score. The first level included allotting points to the wetlands on the basis of Ecosystem services, the landscape use pattern and the threats observed on 10 point scale. At the second level we used the Biodiversity recorded during the field visit. The biodiversity value was calculated on the basis of the total flora and fauna recorded for the wetland divided against the total flora and fauna recorded from the district during our field study. Both scores were totalled to arrive at the final wetland health status score. Based on the Wetland Health Status (WHS) Score we have ranked (Rank 1- Bad to Rank 141 - Good) the wetlands and prioritised them for conservation. The WHS scores obtained have been categorised into six groups (Table 1.5) as follows:

Table 1.5: Groups of wetlands on the basis of Wetland Health Status (WHS) Score.

S.No	Wetland Health Status Score group	Number of wetlands	Status	Action needed
1	-0.75 to 0.00	04	Critical & Serious concern	Most Urgent and immediate
2	0.001 to 0.500	19	Critical & Serious concern	Urgent and immediate
3	0.501 to 1.00	21	Serious concern	Immediate
4	1.001 to 1.500	40	Advance concerns	Threats need to be addressed on a priority
5	1.501 to 2.00	25	Threats are in initial stages	Conservation measures need to be initiated
6	Above 2.000	32	Stable conditions	Conservation plan should be implemented

Based on our calculations and the ranks (Table 1.6) we have found 23 wetlands from 15 districts with critical concerns regarding the threats to the land use and biodiversity. Four of these 23 wetlands namely Uppidamangalam Lake, Velliyanai Lake from Karur and Panamarathupatti Eri from Salem and Madipakkam Lake from Chennai need the most urgent and immediate conservation action. Among the 141 wetlands, 32 come in the stable condition category, however only the Marlimund wetland from Nilgiris district has the best status existing in a pristine unspoilt state. The remaining 31 have several environmental concerns that should not be neglected, as they could lead to fast deterioration of the wetland.

Table 1.6: Ranking of wetlands based on the Wetland Health Status (WHS) Score.

District	Wetland	Wetland Health Status Score	Rank
Karur	Uppidamangalam Lake	-0.742	1
Karur	Velliyanai Lake	-0.517	2
Salem	Panamarathupatti Eri	-0.361	3
Chennai	Madipakkam Lake	-0.183	4
Chennai	Pallikaranai Wetland	0.004	5
Thoothukudi	Puthantharuvai Tank	0.132	6
Ramanathapuram	Melayakudi Kulam	0.147	7
Villupuram	Melmalayanur Lake	0.179	8
Erode	Avalpoondurai Lake	0.181	9
Namakkal	Puthur Lake	0.189	10
Thanjavur	Sendakkottai Lake	0.207	11
Sivagangai	Piravalur Kanmai	0.231	12
Salem	Panai Eri	0.233	13
Madurai	Thenur Periyakulam Kanmai	0.287	14
Ramanathapuram	Rajasingamangalam Lake	0.289	15
Kanchipuram	Magaral Lake	0.305	16
Pudukkottai	Annavasal Periyakulam Lake	0.338	17
Madurai	Urapanur Periyakanmai	0.348	18
Perambalur	Kurumbalur Lake	0.36	19
Kanchipuram	Great Salt Lake	0.408	20
Madurai	T. Kunnathur Lake	0.433	21
Thanjavur	Pannavayal Eri	0.433	22
Perambalur	Arumbavur Big Lake	0.494	23
Salem	Vadamandri Lake	0.52	24
Cuddalore	Bahour Lake	0.551	25
Perambalur	Athiyur Lake	0.561	26

Krishnagiri	Rama Naicken Lake	0.589	27
Tiruvarur	Moovanallur Lake	0.636	28
Chennai	Korattur Lake	0.665	29
Ramanathapuram	Brahmanankulam	0.703	30
Kanchipuram	Sriperumbudur Lake	0.715	31
Tiruvannamalai	Pelasur Lake	0.734	32
Thanjavur	Kallaperambur Lake	0.747	33
Tiruvarur	Vadakku Eri	0.748	34
Karur	Panjappatti Lake	0.764	35
Krishnagiri	Kondama Eri	0.788	36
Tiruvannamalai	Anakkavoor Lake	0.788	37
Theni	Kamarajapuram Lake	0.832	38
Cuddalore	Wellington Lake	0.835	39
Villupuram	Sandapet Lake	0.85	40
Sivagangai	Kattikulam Kanmai	0.869	41
Tirunelveli	Chetruthamarai Kulam	0.879	42
Tirunelveli	V.M.Chatram Lake	0.882	43
Virudhunagar	Periyakulam Kanmai (Srivilliputhur)	0.921	44
Virudhunagar	Viragasamuthiram Kanmai	1.008	45
Tirunelveli	Puthukulam Lake	1.009	46
Theni	Periyakulam Kanmai	1.056	47
Vellore	Kalavai Lake	1.056	48
Theni	Thamaraikulam Kanami	1.088	49
Kanchipuram	Sirudavoor Lake	1.164	50
Kanchipuram	Odiyur Lake	1.227	51
Tiruchirappalli	Alathudaiyanpatti Lake	1.243	52
Tiruchirappalli	Valavanthankottai Tank	1.243	53
Tiruvallur	Pulicat Lake	1.26	54
Kanchipuram	Parandur Lake	1.27	55
Erode	Anthiyur Periya Eri	1.293	56
Kanyakumari	Vembanur Lake	1.303	57
Tiruvannamalai	Ponnur Lake	1.303	58
Kanyakumari	Sengulam	1.322	59
Ariyalur	Sukran Lake	1.33	60
Kanchipuram	Chembarambakkam Lake	1.34	61
Chennai	Velachery Lake	1.344	62
Tiruppur	Kongur Idachi Kulam	1.344	63
Tiruvannamalai	Dusi Mamandoor Lake	1.347	64
Kanchipuram	Uthukadu Lake	1.352	65
Vellore	Mahendravadi Lake	1.376	66
Tiruvallur	Padur-Thangal Eri	1.377	67
Dharmapuri	Thumbala Halli Lake	1.385	68
Tirunelveli	Melakulam Lake	1.386	69
Cuddalore	Perumal Lake	1.388	70
Tiruvarur	Thirumeni Eri	1.394	71
Tiruvannamalai	Vakkadai Lake	1.398	72
Kanchipuram	Kolavai Lake	1.404	73
Ramanathapuram	Sakkarakottai Bird Sanctuary	1.405	74
Tiruvannamalai	Kappalur Lake	1.412	75
Tiruvallur	Mappedu Lake	1.413	76
Tiruvannamalai	Thennampattu Lake	1.418	77
Thoothukudi	Sivagalai Kulam	1.434	78
Dharmapuri	Kadagathur Lake	1.435	79

Kanyakumari	Narikulam	1.444	80
Ramanathapuram	Uthirakosamangai Lake	1.448	81
Thoothukudi	Kadamba Kulam	1.45	82
Cuddalore	Veeranam Lake	1.458	83
Kanyakumari	Theroor Lake	1.466	84
Namakkal	Amirthasagaram Lake	1.507	85
Dindigul	Vaiyapuri Tank	1.526	86
Villupuram	Kaliveli Lake	1.526	87
Pudukkottai	Seiyanam Periya Eri	1.529	88
Kanyakumari	Suchindram Kulam	1.534	89
Thoothukudi	Seydunganallur Kulam	1.547	90
Vellore	Kaveripakkam Lake	1.561	91
Madurai	Vandiyur Lake	1.573	92
Thoothukudi	Karungulam Lake	1.585	93
Dharmapuri	Dharmapuri Lake	1.615	94
Virudhunagar	Ammappatti Lake	1.624	95
Nilgiris	Ooty Lake	1.641	96
Tiruppur	Koolipalayam Lake	1.644	97
Ariyalur	Elanthaikudam Lake	1.647	98
Pudukkottai	Ponpethi Lake	1.65	99
Namakkal	Oomayampatti Lake	1.689	100
Krishnagiri	Barur Lake	1.73	101
Kanchipuram	Thenneri Lake	1.758	102
Tiruvannamalai	Sathanur Reservoir	1.791	103
Sivagangai	Andakudi Kanmai	1.793	104
Coimbatore	Perur Lake	1.795	105
Dindigul	Idumban Kulam	1.803	106
Kanyakumari	Manavalakurichi Kulam	1.803	107
Chennai	Ambattur Lake	1.835	108
Kanchipuram	Thirupulivanam Lake	1.867	109
Ramanathapuram	Chitrangudi Bird Sanctuary	2	110
Kanchipuram	Govindavadi Lake	2.322	111
Kanchipuram	Uthiramerur Lake	2.342	112
Tiruvallur	Puzhal Lake	2.355	113
Tirunelveli	Vijayanarayanan Tank	2.379	114
Coimbatore	Kovaiipudur Lake	2.409	115
Nagapattinam	Keeran Lake	2.415	116
Coimbatore	Kurichi Kulam	2.418	117
Villupuram	Ousteri Lake	2.42	118
Tiruvallur	Poondi Lake	2.421	119
Tiruvallur	Coovam Lake	2.434	120
Coimbatore	Ukkadam Lake	2.465	121
Nagapattinam	Embavai Perunthottam Lake	2.481	122
Tiruvarur	Udayamarthandapuram Bird Sanctuary	2.52	123
Villupuram	Valathy Lake	2.526	124
Tiruvarur	Vaduvur Lake	2.536	125
Tirunelveli	Koonthankulam Bird Sanctuary	2.539	126
Ariyalur	Venganur Lake	2.548	127
Tiruchirappalli	Gundur Lake	2.573	128
Coimbatore	Sulur Lake	2.599	129
Tiruppur	Manickapuram Kulam	2.612	130
Sivagangai	Vettangudi Bird Sanctuary	2.671	131
Tiruchirappalli	Koothappar Big Tank	2.675	132

Kanchipuram	Madhuranthakam Lake	2.855	133
Erode	Kavilipalayam Lake	3.342	134
Kanchipuram	Kooram Lake	3.414	135
Nagapattinam	Point Calimere Wildlife and Bird Sanctuary	3.5	136
Erode	Vellode Bird Sanctuary	3.546	137
Coimbatore	Singanallur Tank	3.971	138
Dindigul	Kodaikanal Lake	3.974	139
Tiruvallur	Cholavaram Lake	4.347	140
Nilgiris	Marlimund Lake	5.115	141

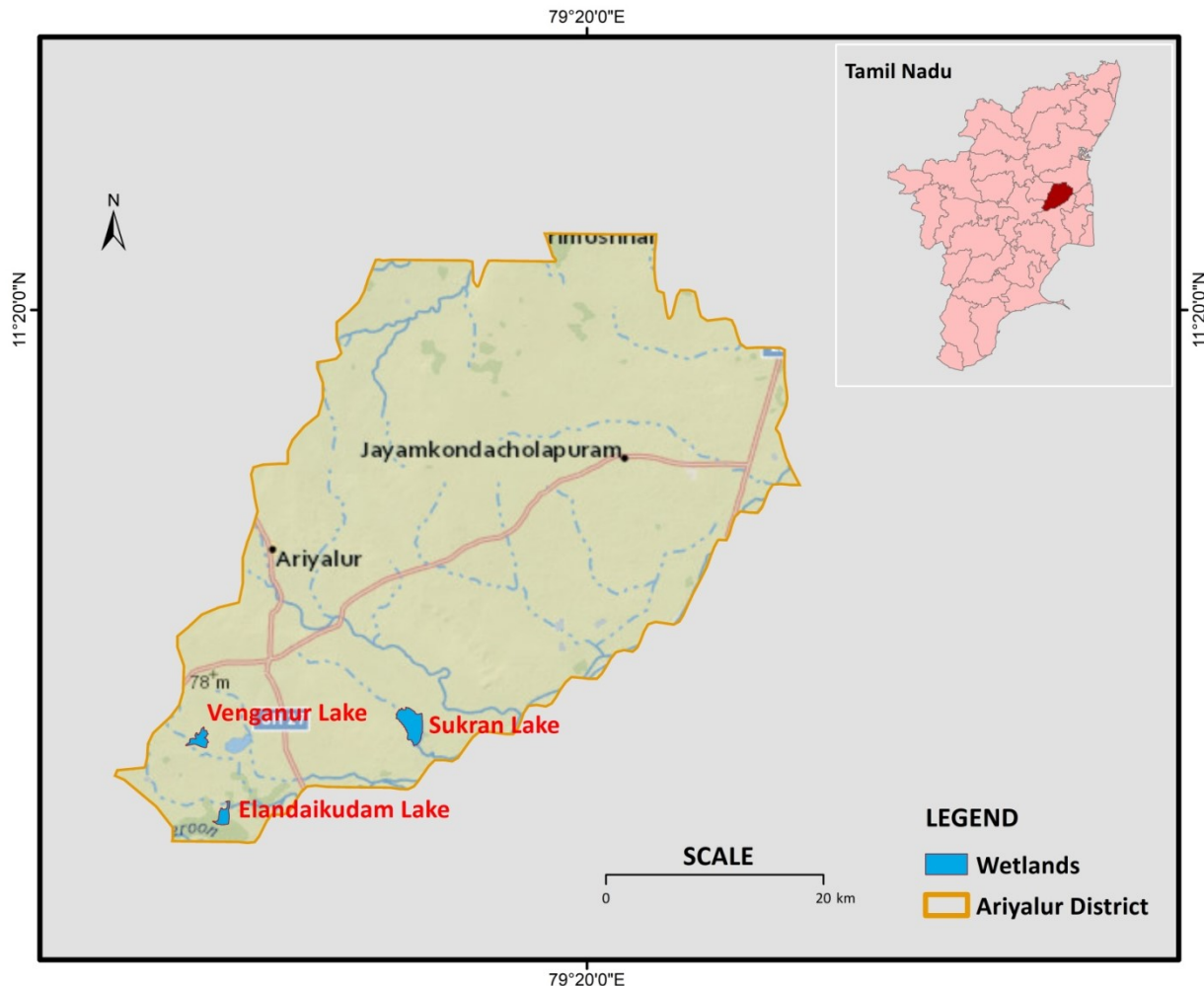
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2. Ariyalur District

Ariyalur district is bordered by the districts of Cuddalore to the north and northeast, Nagapattinam to the east, Thanjavur to the south and south-east, Tiruchirapalli to the south-west and Perambalur to the west. Gangaikonda Cholapuram built by the King Rajendra Cholan of Chola Empire, and UNESCO World Heritage site is situated in the district. This district is also known for its rich prehistoric fossils. Many fossils of gigantic Molluscs, Jawed fishes were discovered here.

The total geographic area of Ariyalur district is 1946.7 sq km. Total area under wetland is 11042 ha, which includes 637 small wetland (<2.25 ha). Tanks/Ponds occupy 31.43 % of wetland area. The other wetland types are; River/Stream (4177 ha) and Lakes/ponds (2657 ha). Three wetlands were prioritized from the district namely Elandaikudam Lake, Sukran Lake and Venganur Lake; Sukran being the largest and Elandaikudam Lake the smallest of the three (Map 2.1).



Map 2.1: Wetlands of Ariyalur district assessed for Prioritization

Elandaikudam Lake

Elandaikudam Lake also commonly known as Kandarathitham Lake (Plate 1) is under the jurisdiction of PWD but not a protected area. Villages that surround the wetland include Elandaikudam, Kandarathitham, Vaidhiyanathapuram, Baikanathapuram and Kanamettuthuru.

The **geographic coordinates** are Latitude: 10° 55.33.3" N; 10° 54'47.0" N; 10° 54'30.7" N; 10° 55'38.7" N; and Longitude: 079° 02'15.9" E; 079° 02'14.7" E; 079° 02'12.7" E; 079° 02'14.0" E.

The wetland is a seasonal, intermittent natural tank with an area of 156 hectares and a depth of 1.5 meters. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and Metur Dam Canal. The Nandiyar Canal system has an indirect influence on the wetland. The water from the wetland helps in replenishing the groundwater and the overflow joins the adjoining village tanks and agriculture fields. The wetland surrounded by 80 % agricultural fields, 10% grassland / scrubland and 10 % of rural settlements has an area of 2542.91 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 2.2).

The wetland was eutrophic during the visit, with the pH of the water being 7.8, salinity measuring 0.39 ppt, the TDS was high at 668 ppm. The vegetation comprised of 51 plant species (Table 2.1) including 12 invasive species dominated by *Ipomoea sp.*, *Prosopis juliflora*, *Eichornea crassipes* and other weeds. The *Borassus* plant sap is collected for local consumption and sale in the local market. The fauna comprised of 68 animal species including 4 domestic species were recorded during the survey (Table 2.2 to 2.10) The threatened bird species were not observed during the survey but one threatened and one vulnerable species of fish were recorded. Invasive faunal species like *Tilapia sp* and common carps were also recorded from the wetland.

The water from the wetland is used for agriculture. The Panchayat Union provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The commercial fishery is under the contract of the village panchayat, the fish species are local endemicones. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The threats that the wetland faces include dumping garbage, release of sewage and use as toilet. The wetland when dry is also used for agriculture and plantation activities within the wetland. There is mining for sand or silt undertaken on a minor scale. The wetland faces a severe threat from land use change mainly agriculture practices and compromise in the quality of the water.

The wetland under the jurisdiction of PWD does not have any conservation measures employed as on date. To conserve the wetland it is necessary to check the agriculture within the wetland and increasing human activities do not encroach into the wetland area any further.

Sukran Lake

Sukran lake is commonly known as Sukrandri lake or Kamarasavallieri, (Plate 1), is under the jurisdiction of PWD and is not a protected area. Villages that surround the wetland include Buthur, Nanaganur, Kamarasavalli, Mattur and Vandarakattalai.

The geographic coordinates are Latitude: 11° 00.08.7" N; 11° 00'18.4" N; 11° 00'08.9" N; and Longitude: 079° 10'38.9" E; 079° 10'44.2" E; 079° 10'42.6" E

The wetland is a seasonal, intermittent natural tank with an area of 506 hectares and a depth of 1.5 meters. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area, Karevati Bird Sanctuary

and Cauvery river. The water from the wetland helps in replenishing the groundwater and the overflow joins the adjoining Cauvery, village tanks and agriculture fields. The wetland surrounded by 80 % agricultural fields and 20 % of rural settlements has an area of 3199.12 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 2.3).

The wetland was mesotrophic during the visit, with the pH of the water being 8.9, salinity measuring 0.145 ppt, the TDS was moderate at 207 ppm. The vegetation comprised of 32 plant species (Table 2.1) including three invasive species dominated by *Ipomoea sp.*, and *Prosopis juliflora*. The fauna comprised of 30 animal species including 3 domestic species were recorded during the survey (Table 2.2 to 2.10). There were no threatened faunal species observed during the survey. Invasive faunal species like *Tilapia sp* and common carps were also recorded from the wetland.

The water from the wetland is used for agriculture. The Panchayat Union provides drinking water from the Cauvery and borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for recreational purpose. The commercial fishery is under the contract of the village panchayat, the fish species are local endemicones. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The threats that the wetland faces include dumping garbage, release of sewage and use as toilet. The wetland when dry is also used for agriculture and plantation activities within the wetland. There is mining for sand or silt undertaken on a major scale. The wetland faces a severe threat from land use change mainly agriculture practices and compromise in the quality of the water.

The ecological character of the wetland is changing rapidly due to lack of conservation measures. The wetland under the jurisdiction of PWD does not have any conservation measures employed as on date. To conserve the wetland it is necessary to check the agriculture within the wetland and increasing human activities do not encroach into the wetland area any further.

Venganur Lake

Venganur lake commonly known as Andivodai Eri (Plate 1) is under the jurisdiction of PWD and is not a protected area. Villages that surround the wetland include Burathakudi and Venganur.

The geographic coordinates are Latitude: 10° 58.22.2"N; 10° 58'20.4"N; 10° 58'31.8"N; 10° 58'18.6"N; 10° 58'33.3"N; and Longitude: 079° 00'06.0" E; 079° 08'49.7" E; 079° 01'10.4" E; 079° 01'09.4" E; 079° 00'54.09" E

The wetland is a seasonal, intermittent natural tank with an area of 181 hectares and a depth of 2.5 meters. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area, Karevati Bird Sanctuary and Cauvery river. The water from the wetland helps in replenishing the groundwater and the overflow joins the adjoining Cauvery, village tanks and agriculture fields. The wetland surrounded by 90 % agricultural fields and 10 % of rural settlements has an area of 2587.23 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 2.4).

The wetland was mesotrophic during the visit, with the pH of the water being 8.3, salinity measuring 0.176 ppt, the TDS was moderate at 262 ppm. The vegetation comprised of 33 plant species (Table 2.1) including ten invasive species dominated by *Prosopis juliflora*, *Accacia indica*, *Parthenium hysterophorus* and *Ipomoea sp.* The fauna comprised of 67 animal species including 3 domestic species were recorded during the survey (Table 2.2 to

2.10). Three threatened bird species were observed during the survey in addition to one threatened and one vulnerable species of fish. Invasive faunal species like *Tilapia sp* and common carps were also recorded from the wetland.

The water from the wetland is used for agriculture. The Panchayat Union provides drinking water from the Cauvery and borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for recreational purpose. The commercial fishery is under the contract allotted by the PWD, the fish species are local endemicones in addition to common carps and tilapia introduced into the wetland. Recreational fishery is also undertaken without any permits. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The threats that the wetland faces include dumping garbage, release of sewage and use as toilet. The wetland when dry is also used for agriculture and plantation activities within the wetland. There is mining for sand or silt undertaken on a major scale. The wetland faces a severe threat from land use change mainly agriculture practices and compromise in the quality of the water.

The ecological character of the wetland is changing rapidly due to lack of conservation measures. The wetland under the jurisdiction of PWD does not have any conservation measures employed as on date. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures. To conserve the wetland it is necessary to check the agriculture within the wetland and increasing human activities do not encroach into the wetland area any further.

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Table 2.1: List of plant species recorded in Ariyalur District (A - Elandaikudam Lake; B - Sukran Lake; C - Venganur Lake)

S. No	English Common Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN status	A	B	C
1	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	+	-	-
2	Indian tulip tree	<i>Thespesia populnea</i>	Malvaceae	Native	LC	+	-	-
3	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	-	+
4	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	-	-
5	Indian Plum	<i>Ziziphus mauritiana</i>	Rhamnaceae	Native	NA	+	-	-
6	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	+	-
7	Indian Ash Tree	<i>Lannea coromandelica</i>	Anacardiaceae	Native	NA	+	-	-
8	Siris Tree, Women's tongue	<i>Albizia lebbek</i>	Fabaceae	Native	NA	+	-	-
9	Purple orchid tree	<i>Bauhinia purpurea</i>	Fabaceae	Native	LC	+	+	-
10	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	+	+	-
11	Wild Tamarind	<i>Leucaena leucocephala</i>	Fabaceae	Invasive	NA	+	-	-
12	Manilla Tamarind	<i>Pithecellobium dulce</i>	Fabaceae	Exotic	NA	+	-	-
13	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
14	Tanner's Cassia	<i>Senna auriculata</i>	Fabaceae	Native	NA	+	-	+
15	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	+	-	-
16	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	+	-	+
17	Indian Almond	<i>Terminalia catappa</i>	Combretaceae	Native	NA	+	-	-
18	White Alder	<i>Turnera subulata</i>	Turneraceae	Invasive	NA	+	-	-
19	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	-	+
20	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	+	+	+
21	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	+	+	-
22	Lotus Sweetjuice, damascisa	<i>Glinus lotoides</i>	Molluginaceae	Native		+	+	+
23	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	+	-	-
24	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	+	-	-
25	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	-	+
26	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	-	-
27	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	-
28	Oleander	<i>Nerium oleander</i>	Apocynaceae	Native	LC	+	-	-
29	Pergularia	<i>Pergularia adaemia</i>	Apocynaceae	Native	NA	+	-	+
30	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	+	-	-
31	Indian Heliotrope	<i>Heliotropium indicum</i>	Heliotropiaceae	Native	NA	+	+	-
32	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	+	-	-
33	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	-	-
34	African Tulip Tree	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	LC	+	-	-
35	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	+	-
36	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	-	-
37	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	+	-	+
38	Purple Amaranth	<i>Amaranthus blitum</i>	Amaranthaceae	Native	NA	+	-	-
39	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	+	-	+
40	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	-	-
41	Peepal	<i>Ficus religiosa</i>	Moraceae	Native	NA	+	-	-
42	Banana Plant	<i>Musa paradisiaca</i>	Musaceae	Native	NA	+	-	-
43	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	+	-	-
44	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	+
45	Peri peri	<i>Cyperus corymbosus</i>	Cyperaceae	Native	NA	+	-	-
46	Giant Reed	<i>Arundo donax</i>	Poaceae	Invasive	LC	+	-	-
47	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	+
48	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	-	+
49	Kans grass	<i>Saccharum spontaneum</i>	Poaceae	Native	LC	+	-	+
50	Bristly Foxtail	<i>Setaria verticillata</i>	Poaceae	Alien	NA	+	-	-
51	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	+	-	+
Total						51	12	16

Table 2.2: List of Insects recorded in Ariyalur District (A - Elandaikudam Lake; B - Sukran Lake; C - Venganur Lake)

S. No	Common Name	Scientific Name	Family	A	B	C
1	Toothpick Grasshopper	<i>Leptysmia marginicollis</i>	Acrididae	+	-	-
2	Grasshopper species	<i>Spathosternum prasiniferum</i>	Acrididae	+	-	-
3	Mantis Egg (Ootheca)		Mantodae	+	-	-
4	Water Strider	<i>Gerris sp.</i>	Gerridae	+	-	-
5	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	+	-	-
6	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	-	+
7	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	+	-	-
Total				7	0	1

Table 2.3: List of Butterflies recorded in Ariyalur District (A - Elandaikudam Lake; B - Sukran Lake; C - Venganur Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+
2	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	+	-	+
3	Dark Grass Blue	<i>Zizeeria karsandra</i>	Polyommatainae	Common	+	-	-
4	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	+	-
5	Striped Tiger	<i>Danaus genutia</i>	Danainae	Common	+	-	-
6	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+
7	Joker	<i>Bybli ailiythia</i>	Biblidinae	Common	+	+	-
Total					7	4	3

Table 2.4: List of Odonates recorded in Ariyalur District (A - Elandaikudam Lake; B - Sukran Lake; C - Venganur Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	Brown Spreadwing	<i>Lestes umbrinus</i>	Lestidae	Uncommon	+	-	-
2	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	+	-	-
3	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	+	-	-
4	Coromandel Marsh Dart	<i>Ceriagrion coromandelianum</i>	Coenagrionidae	Common	+	-	-
5	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	-	-
6	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	-	-
7	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+
8	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+
9	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+
10	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	+	-	-
Total					10	3	3

Table 2.5: List of Arachnida recorded in Ariyalur District (A - Elandaikudam Lake; B - Sukran Lake; C - Venganur Lake)

S. No	Common Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	+
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	+	-	-
Total				2	0	1

Table 2.6: List of Fishes recorded in Ariyalur District (A - Elandaikudam Lake; B - Sukran Lake; C - Venganur Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	+	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	-	-
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	+	-	+
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	+	-
5	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	+	-	-
6	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	+	+
7	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	+	+	-
8	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	+	-	-
9	Catla	<i>Catla catla</i>	Cyprinidae	LC	+	-	+
10	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	-	-
Total					10	4	4

Table 2.7: List of Amphibians recorded in Ariyalur District (A - Elandaikudam Lake; B - Sukran Lake; C - Venganur Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	LC	-	+	-
Total					0	1	0

Table 2.8: List of Reptiles recorded in Ariyalur District (A - Elandaikudam Lake; B - Sukran Lake; C - Venganur Lake)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	-	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	+	-	+
Total					2	0	2

Table 2.9: List of Birds recorded in Ariyalur District (A - Elandaikudam Lake; B - Sukran Lake; C - Venganur Lake)

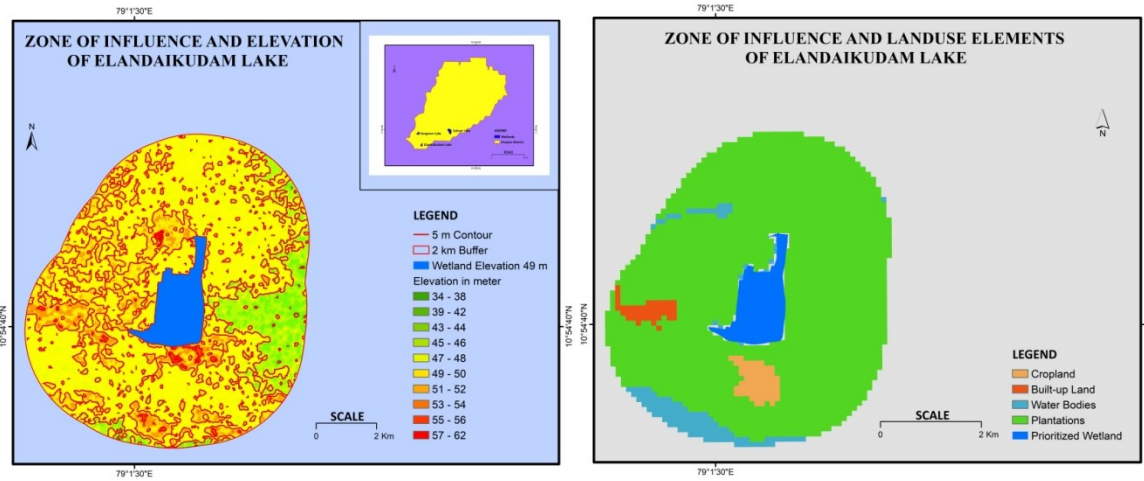
S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	+	-	+
2	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	-	-
3	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	-	+
4	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	+	-	-
5	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	-	+
6	Black-winged Kite	<i>Elanus caeruleus</i>	Accipitridae	Least Concern	+	-	-
7	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	+
8	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Least Concern	+	-	-
9	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	-	+
10	Jacobin Cuckoo	<i>Clamator jacobinus</i>	Cuculidae	Least Concern	+	-	+
11	Blue-faced Malkoha	<i>Rhopodytes viridirostris</i>	Cuculidae	Least Concern	+	-	-
12	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	Least Concern	+	-	+
13	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	+	+
14	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	Least Concern	+	-	-
15	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+
16	Indian Golden Oriole	<i>Oriolus kundoo</i>	Oriolidae	Least Concern	+	-	-
17	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	+	+	-
18	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+

19	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	+	-	-
20	White-browed Bulbul	<i>Pycnonotus luteolus</i>	Pycnonotidae	Least Concern	+	-	-
21	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
22	Brahminy Starling	<i>Sturnia pagodarum</i>	Sturnidae	Least Concern	+	-	-
23	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	Least Concern	+	-	-
24	Chestnut-shouldered petronia	<i>Gymnoris xanthocollis</i>	Passeridae	Least Concern	+	-	-
25	Paddyfield Pipit	<i>Anthus rufulus</i>	Motacillidae	Least Concern	+	-	-
Total					25	6	11

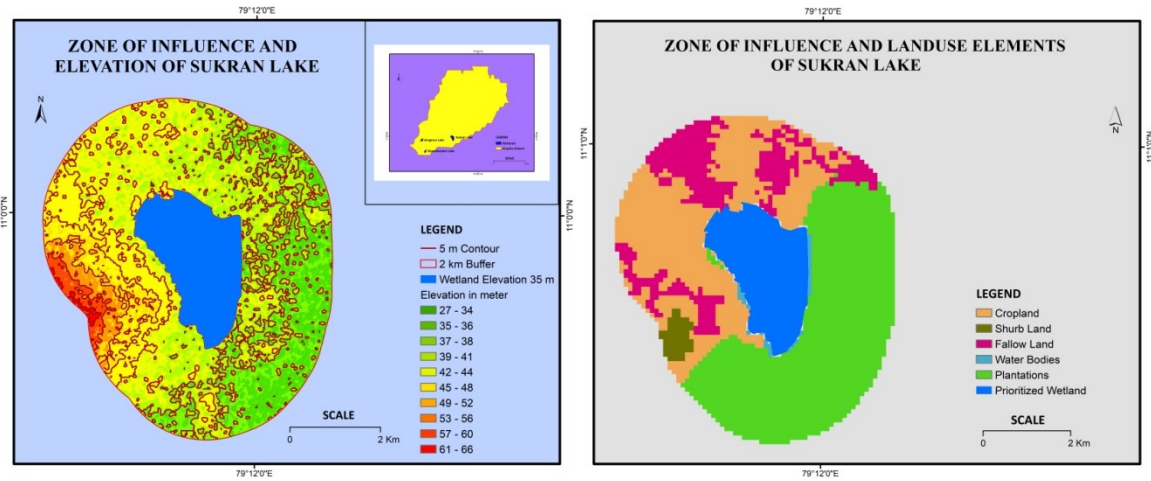
Table 2.10: List of Mammals recorded in Ariyalur District (A - Elandaikudam Lake; B - Sukran Lake; C - Venganur Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+
4	Pig	<i>Sus domesticus</i>	Suidae	Domestic	+	-	-
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Common	+	+	+
Total					5	4	4

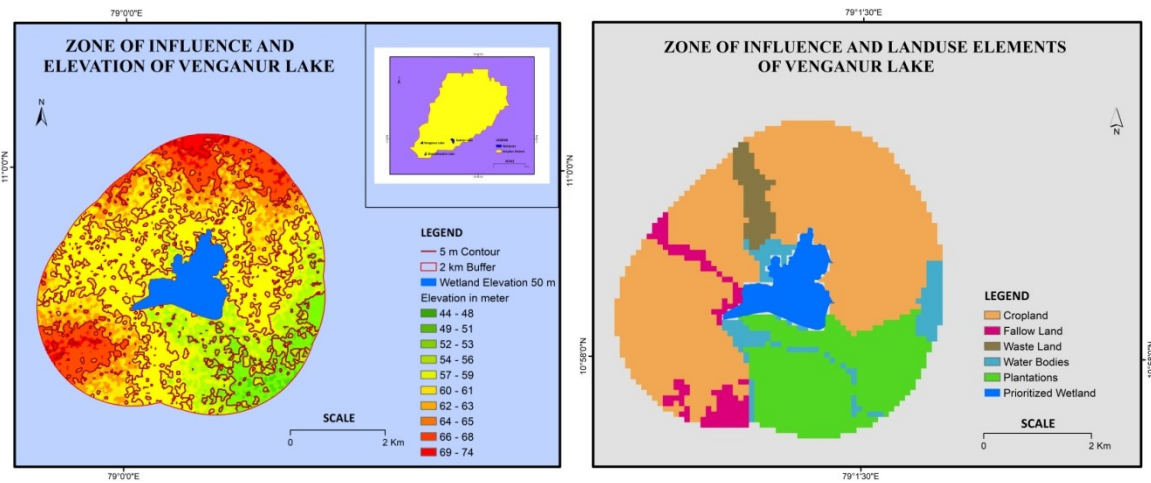
Map 2.2: The zone of influence around the Elandaikudam Lake.



Map 2.3: The zone of influence around the Sukran Lake.



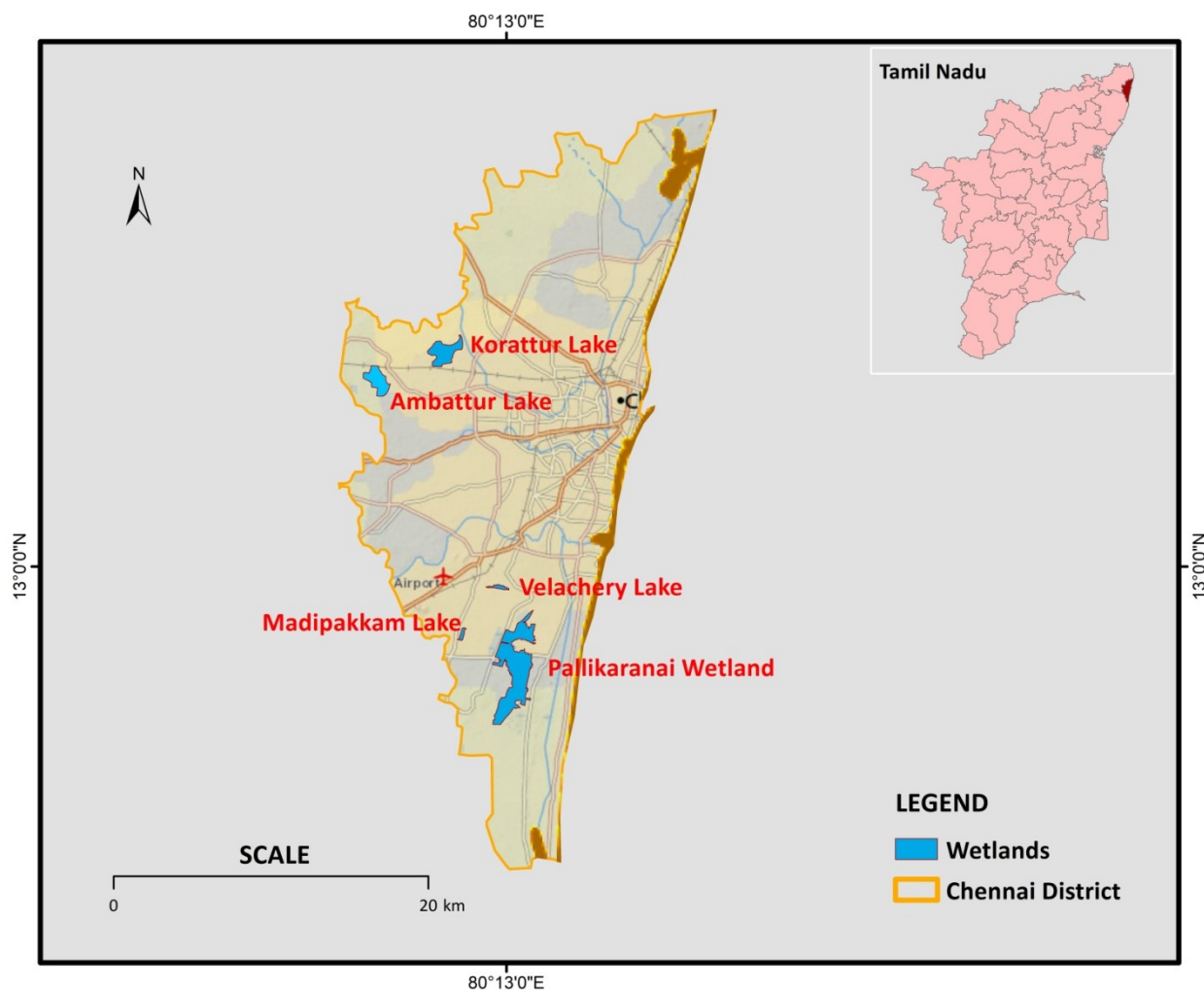
Map 2.4: The zone of influence around the Venganur Lake.



3. Chennai District

Chennai, the capital of Tamil Nadu, is an important coastal city of India having a major port and many industries. Chennai, besides being the capital city of Tamil Nadu is also an important district of the state. The district city is one of the four metropolises of India, playing significant role in the historical, cultural and intellectual development of the nation. The district is located on the north-east end of Tamil Nadu on the coast of Bay of Bengal. Surrounded by the Bay of Bengal in the east and the remaining three sides by Chengalpattu and Thiruvallur districts, Chennai has an even topography of land with slight rising from the sea level.

Total geographic area of Chennai as per SAC (2011) is 178.20 km². Total area under wetland is 917 ha, which includes 15 small wetland (<2.25 ha). Major wetland types of the district are Sand/beach, Creeks, River/stream and Lakes/ponds. Lakes/Ponds occupy 8.62% of wetland area. There are 5 Tanks/Ponds with 76 ha area (8.29%). Five wetlands were prioritized from the district, initially only Velachery and Madipakkam were selected for Chennai, however with the remapping of the district Pallikarani, Korattur and Ambattur were also added to the city (Map 3.1).



Map 3.1: Wetlands of Chennai district assessed for Prioritization

Ambattur Lake

The wetland is commonly known as Ambattur lake (Plate 1) is under the jurisdiction of PWD and is not a protected area. Villages that surround the wetland include MGR Puram east and MGR puram west, KK Nagar, Anna Nagar, Ambattur Housing board and city premises.

The geographic coordinates are Latitude: 13° 05'52.0" N; 13° 05'51.8" N; 13° 05'51.6" N; and Longitude: 080°08'32.5" E; 080° 08'35.7" E; 080° 08'40.6" E.

The wetland is a natural permanent lake with an area of 168 hectares and a depth of 2.5 to 4 meters. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and Ayyapakkameri. The water from the wetland helps in replenishing the groundwater and the overflow joins the adjoining Koratureri and then to Bay of Bengal. The wetland surrounded by 70 % Urban settlements, 10 % of Rural settlements and 20 % Industries and has an area of 2415.2 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 3.2).

The wetland was mesotrophic during the visit, with the pH of the water being 8.5, salinity measuring 1.30 ppt, the TDS was high recorded at 1410 ppm. The vegetation comprised of 33 plant species (Table 3.1) including seven invasive species dominated by *Parthenium hysterophorus*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 38 animal species including 4 domestic species were recorded during the survey (Table 3.2 to 3.8) One threatened bird species was observed during the survey. Invasive faunal species were not recorded from the wetland.

The water from the wetland is used for irrigation activities and bathing by livestock. The Panchayat Union provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for recreational purpose. Fishery is undertaken on a commercial and recreational level in the wetland, as fishing tenders are issued only recently by PWD. The fish species are local endemics in addition to Common carps and Tilapia introduced into the wetland. The bird enthusiasts visit the wetland during the birding season. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The threats that the wetland faces include dumping garbage, solid waste, excess release of sewage, effluents and use as toilet. The agriculture and plantation activities are undertaken around the wetland. There is mining for sand or silt undertaken as the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland faces a severe threat from sewage and effluent release and compromise in the quality of the water.

The wetland is mostly surrounded by city and has the pressure of pollution and solid waste. The wetland water quality and the ecological character of the wetland is changing rapidly due to lack of conservation measures. The wetland under the jurisdiction of PWD does not have any conservation measures employed as on date. To conserve the wetland it is necessary to check the effluent and sewage release and the solid waste dumping around the wetland and prevent human activities from encroaching into the wetland area any further.

Korattur Lake

Korattur Lake in Korattur, Chennai, Tamil Nadu, is one of the largest lakes in the western part of the city (Plate 2). Korattur lake is a chain of three lakes comprising of Ambattur lake, Madhavaram lake and Korattur lake. It is located to the north of the Chennai-Arakkonam railway line. The wetland under the jurisdiction of PWD is not a Protected area. Villages that surround the wetland include Koratur, Kalikuppam, Karukku, Pudhur, Villivakkam and Madhakuppam.

The geographic coordinates are Latitude: 13° 06'55.7" N; 13° 07'27.6" N; 13° 07'57.9" N; 13° 07'38.0" N and Longitude: 080° 10'47.6" E; 080° 11'22.3" E; 080° 11'25.1" E; 080° 10'50.6" E.

Korattur Lake is a natural permanent lake with an area of 213 hectares with a depth of 4 meters that receives water from Rainfall and Cooum river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining Retaeri. The wetland surrounded by 80 % Urban settlements and 20 % Industries and has an area of 2682 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 3.3).

The wetland was oligotrophic during the visit, with the pH of the water being 7.8, salinity measuring 0.604 ppt, the TDS was recorded moderately high at 645 ppm. The vegetation comprised of 51 plant species (Table 3.1) including nine invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 87 animal species including 4 domestic species were recorded during the survey (Table 3.2 to 3.8). One Near Threatened bird species in addition to one threatened and one vulnerable fish species were observed during the survey. Two invasive faunal species were also recorded from the wetland.

The water from the wetland is used for irrigation activities and bathing by livestock. The municipal corporation provides drinking water from the Puzhal lake and borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken only as a recreation activity by few locals and not as a livelihood. The fishes are mostly the local species; some individuals capture the fingerlings for ornamental aquaculture practice. The wetland is used for recreation and jogging track is present with an active civil society group that was observed around the wetland. The bird enthusiasts visit the wetland during the birding season. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The threats that the wetland faces include dumping garbage, solid waste, excess release of sewage, effluents and use as toilet. The agriculture and plantation activities are undertaken around the wetland. There are no agriculture or plantation activities within the wetland. There are high-tension electric wires that pass through the wetland. The locals have informed of the reduction in the depth of the wetland over a period. The wetland faces a severe threat from sewage and effluent release and compromise in the quality of the water.

The wetland has the pressure of pollution and solid waste and increasing encroachment. The wetland water quality and the ecological character of the wetland is changing rapidly due to lack of conservation measures. The wetland under the jurisdiction of PWD does not have any conservation measures employed as on date. Unplanned development and increasing sewage and effluents are a major threat that needs to be regulated. To conserve the wetland it is necessary to check the effluent and sewage release and the solid waste dumping around the wetland and prevent human activities from encroaching into the wetland area any further.

Madipakkam Lake

Madipakkam Lake based in Chennai Corporation (Plate 2) is under the jurisdiction of the PWD and not a protected area. Villages that surround the wetland include Karitkapuram, Madipakkam and Iyyapamn Nagar.

The geographic coordinates are Latitude: 12° 57'29.8" N; 12° 57'33.8" N; 12° 57'46.3" N; and Longitude: 080° 11'20.7" E; 080° 11'23.1" E; 080° 11'27.0" E

Madipakkam Lake is a natural intermittent lake with an area of 17.5 hectares with a depth of 4 meters that receives water from Rainfall, the surrounding runoff (Thirisulam hills) from the catchment area and the sewage outflow. The water from the wetland helps in replenishing the groundwater and the overflow water joins the Velacherry and Bay

of Bengal. The wetland surrounded by 95 % Urban settlements and 5 % Industries and has an area of 1701.62 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 3.4).

The wetland was oligotrophic during the visit, with the pH of the water being 9.6, salinity measuring 0.393 ppt, the TDS was recorded moderately high at 567 ppm. The vegetation comprised of 30 plant species (Table 3.1) including six invasive species dominated by *Parthenium hysterophorus* and *Ipomoea sp.* The fauna comprised of 40 animal species including 4 domestic species were recorded during the survey (Table 3.2 to 3.8) One Near Threatened birdspecies was observed during the survey. There is the presence of *Tilapia sp* and introduced common carps in the lake the extent of their invasion are not documented.

The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for commercial and recreational purpose. The fishes are mostly the local species; some individuals capture the fingerlings for ornamental aquaculture practice. The bird enthusiasts visit the wetland during the birding season. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The threats that the wetland faces include dumping garbage, solid waste, release of sewage, effluents and use as toilet. The agriculture and plantation activities are undertaken around the wetland. There are no agriculture or plantation activities within the wetland. There are high-tension electric wires that pass through the wetland. The locals have informed of the reduction in the depth of the wetland over a period. The wetland faces a severe threat from encroachment and sewage and compromise in the quality of the water.

The wetland has the pressure of pollution and solid waste and increasing encroachment. The wetland water quality and the ecological character of the wetland is changing rapidly due to lack of conservation measures. The wetland under the jurisdiction of PWD does not have any conservation measures employed as on date.

Pallikaranai Wetland

Pallikaranai wetland is a freshwater marsh near the city of Chennai. It is situated adjacent to the Bay of Bengal, about 20 kilometers (12 mi) south of the city centre. Pallikaranai marshland is the only surviving wetland ecosystem of the city. Commonly known as Pallikarani Marsh, or Pallikarani wetland or Pallikarani Bird Sanctuary (Plate 2). Villages that surround the wetland include Pallikarani, Balaji Nagar, Thooraipakkam, Narayanapuram, Velacherry, Kaivelli, Madipakkam, Santhoshpuram, etc. The wetland is a Protected Area and a Bird Sanctuary, it is also included under the national wetland conservation and management programs since 1985.

The geographic coordinates are Latitude: 12° 56'58.0" N; 12° 56'57.5" N; 12° 56'54.5" N; 12° 56'33.3" N; 12° 56'32.5" N and Longitude: 080° 13'34.4" E; 080° 13'22.8" E; 080° 12'49.5" E; 080° 13'02.9" E; 080° 13'05.3" E

Pallikaranai wetland is a natural intermittent lake with an area of 834 hectares with a depth of 2.5 meters. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and some minor connection with the Bay of Bengal. The wetland surrounded by 35 % Urban settlements, 5% Agriculture, 25% Grassland/scrubland and 30 % Industries. It has an area of 5086.98 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 3.5).

The wetland was Mesotrophic during the visit, with the pH of the water being 9.0, salinity measuring 1.824 ppt, the TDS was recorded moderately high at 342 ppm. The vegetation comprised of 30 plant species (Table 3.1) including eight invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora*, *Ipomoea sp.* and *Microcystis sp.* The fauna comprised of 93 animal species including 3 domestic species were recorded during the survey (Table 3.2 to 3.8) Four Near Threatened birdspecies was observed and one threatened fish were recorded

during the survey. There is the presence of *Tilapia sp* and introduced common carps in the lake the extent of their invasion are not documented.

The municipal corporation provides drinking water at regular intervals that is used by the locals to fulfill their daily requirements. The water from the wetland forms a main source for the cattle and to a minor extent used is used for agriculture around the wetland. Fishery is undertaken for commercial and recreational purpose. The fishes are mostly the local species. The wetland provides a suitable habitat for birds as we also recorded the local and migratory bird species during our survey. The bird enthusiasts visit the wetland during the birding season. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The threats that the wetland faces include encroachment, dumping garbage, solid waste, release of sewage, effluents and use as toilet. The agriculture and plantation activities are undertaken around the wetland. There are no agriculture or plantation activities within the wetland. There is increase in industrialization and urbanization around the wetland. There are high-tension electric wires that pass through the wetland. The locals have informed of the reduction in the depth of the wetland over a period. The wetland faces a severe threat from encroachment and sewage and compromise in the quality of the water.

The wetland has the pressure of pollution and solid waste and increasing encroachment along the banks of the wetland is too high and uncontrolled. The encroachment for developmental activities by public and government agencies needs a serious thought before the marsh can be completely wiped out. The wetland water quality and the ecological character of the wetland is changing rapidly due to lack of conservation measures. The wetland is declared as a Bird Sanctuary and also included in the National Wetland Conservation and management program.

Velachery Lake

Commonly known as Velachery Lake is under the jurisdiction of Chennai Corporation (Plate 2) and not a Protected Area. Villages that surround the wetland include Velachery, Vijaya Nagar, Adhambakkam, Ram Nagar and Kakkannagar.

The geographic coordinates are Latitude: 12° 59'19.8" N; 12° 59'21.4" N; 12° 59'19.0" N; and Longitude: 080°12'54.2" E; 080° 12'48.1" E; 080° 12'33.1" E.

Velachery Lake is a natural permanent lake with an area of 21.4 hectares with a depth of 3 meters. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and the sewage outflow. The water from the wetland helps in replenishing the groundwater and the overflow feeds the Pallikaranimarsh. The wetland surrounded by 90 % Urban settlements, 5% Grassland/scrubland and 5 % Industries. It has an area of 1883.95 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 3.6).

The wetland was Eutrophic during the visit, with the pH of the water being 8.5, salinity measuring 0.532 ppt, the TDS was recorded moderately high at 154 ppm. The vegetation comprised of 34 plant species (Table 3.1) including 11 invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea sp*. The fauna comprised of 41 animal species including 4 domestic species were recorded during the survey (Table 3.2 to 3.8) There were no Threatened bird species but two threatened fish were recorded during the survey. There is the presence of *Tilapia sp* and introduced common carps in the lake the extent of their invasion are not documented.

The municipal corporation provides drinking water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for recreational purpose. The fishes are mostly the local species. The wetland provides a suitable habitat for birds as we also recorded the local bird species during our survey. The bird enthusiasts

visit the wetland during the birding season. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The threats that the wetland faces include encroachment, dumping garbage, solid waste, release of sewage, effluents and use as toilet. There is increase in industrialization and urbanization around the wetland. There are high-tension electric wires that pass through the wetland. The locals have informed of the reduction in the depth of the wetland over a period. The wetland faces a severe threat from encroachment and sewage and compromise in the quality of the water.

The wetland has the pressure of pollution, effluents and solid waste and increasing encroachment along the banks of the wetland is too high and uncontrolled. The wetland water quality and the ecological character of the wetland is changing rapidly due to lack of conservation measures. The polluting practices around the wetland should be taken care and it should be seen that it does not encroach into the wetland area any further.

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Table 3.1: List of plant species recorded in Chennai District (A - Ambattur Lake; B - Korattur Lake; C - Madippakkam Lake; D - Pallikarani Wetland; E - Velachery Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Status	A	B	C	D	E
1	Wild Spider Flower	<i>Gynandropsis gynandra</i>	Cleomaceae	Native	NA	+	-	-	-	-
2	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	+	-	+	-
3	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	+	-	+	-
4	Heart leaf sida	<i>Sida cordifolia</i>	Malvaceae	Native	NA	+	-	+	-	-
5	Jamaica Cherry	<i>Muntingia calabura</i>	Muntingiaceae	Exotic	NA	+	-	-	-	-
6	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	-	+	+	+
7	Siris Tree, Women's tongue	<i>Albizia lebbek</i>	Fabaceae	Native	NA	+	-	-	+	-
8	Wild Tamarind	<i>Leucaena leucocephala</i>	Fabaceae	Invasive	NA	+	-	+	+	-
9	Tanner's Cassia	<i>Senna auriculata</i>	Fabaceae	Native	NA	+	-	-	-	-
10	Stinking Cassia	<i>Senna tora</i>	Fabaceae	Native	NA	+	-	-	-	-
11	Cucumber	<i>Cucumis sativus</i>	Cucurbitaceae	Native	NA	+	-	+	-	-
12	Pumpkin, Field pumpkin	<i>Cucurbita pepo</i>	Cucurbitaceae	Native	NA	+	-	-	-	-
13	Ribbed Sponge Gourd	<i>Luffa acutangula</i>	Cucurbitaceae	Native	NA	+	+	-	-	+
14	Desert Horse Purslane	<i>Trianthema portulacastrum</i>	Aizoaceae	Native	NA	+	-	+	-	+
15	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+	-	+
16	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	+	+	-	+
17	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+	+	+
18	Rosy Milkweed Vine	<i>Oxystelma esculentum</i>	Apocynaceae	Native	LC	+	+	-	-	-
19	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	+	+	-	-	+
20	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	+	+	-
21	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	-	+	-	-
22	Large caltrops	<i>Pedaliium murex</i>	Pedaliaceae	Native	NA	+	-	-	+	-
23	Calico Plant	<i>Alternanthera ficoidea</i>	Amaranthaceae	Introduced		+	-	+	-	-
24	Sessile Joyweed	<i>Alternanthera sessilis</i>	Amaranthaceae	Native	LC	+	-	-	+	+
25	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	+	-	+	-	+
26	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+	-	-
27	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	+	+	+	+
28	Mountain Coffee Bush	<i>Breynia vitis-idaea</i>	Phyllanthaceae	Native	NA	+	-	-	-	-
29	Stone Breaker, Seed Under Leaf	<i>Phyllanthus niruri</i>	Phyllanthaceae	Native	NA	+	-	-	-	-
30	Black-Honey Shrub	<i>Phyllanthus reticulatus</i>	Phyllanthaceae	Native	NA	+	-	-	-	-
31	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	+	+	-	+	+
32	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	+	+	+	+
33	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	+	-	+	-	+
Total						33	13	16	12	13

Table 3.2: List of Insects recorded in Chennai District (A - Ambattur Lake; B - Korattur Lake; C - Madippakkam Lake; D - Pallikarani Wetland; E - Velachery Lake)

S.No	Common Name	Scientific Name	Family	A	B	C	D	E
1	Water Strider	<i>Gerris sp.</i>	Gerridae	+	+	+	+	+
2	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	-	+	-	-
3	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	+	+	-	-
4	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	+	+	-
Total				4	3	4	2	1

Table 3.3: List of Odonates recorded in Chennai District (A - Ambattur Lake; B - Korattur Lake; C - Madippakkam Lake; D - Pallikarani Wetland; E - Velachery Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E
1	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	+	-	+	-	-
2	Coromandel Marsh Dart	<i>Ceriagrion coromandelianum</i>	Coenagrionidae	Common	+	-	-	+	-
3	Trumpet Tail	<i>Acisoma panorpoides</i>	Libellulidae	Common	+	-	-	-	-
4	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	-	+	+	+
5	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	-	-	+	+

6	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	-	+	+	+
7	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	-	+	+	-
Total					7	0	4	5	3

Table 3.4: List of Arachnida recorded in Chennai District (A - Ambattur Lake; B - Korattur Lake; C - Madippakkam Lake; D - Pallikarani Wetland; E - Velachery Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	-	+	-	-	-
Total				0	1	0	0	0

Table 3.5: List of Fishes recorded in Chennai District (A - Ambattur Lake; B - Korattur Lake; C - Madippakkam Lake; D - Pallikarani Wetland; E - Velachery Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	+	-	-	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	+	-	+	-
3	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	+	+	-	+	+
4	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	-	-	+	+
Total					4	3	0	3	3

Table 3.6: List of Reptiles recorded in Chennai District (A - Ambattur Lake; B - Korattur Lake; C - Madippakkam Lake; D - Pallikarani Wetland; E - Velachery Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+	+
Total					1	1	1	1	1

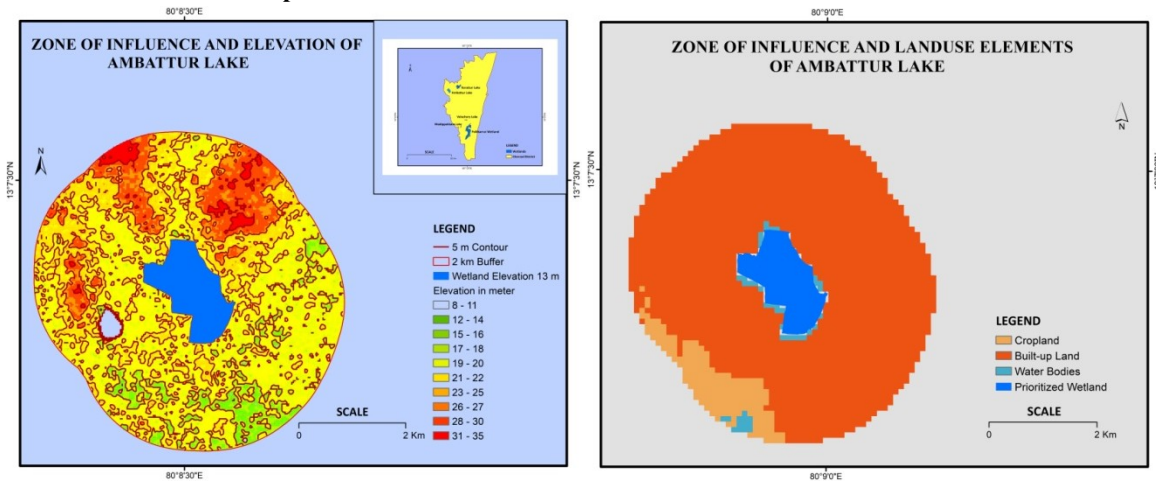
Table 3.7: List of Birds recorded in Chennai District (A - Ambattur Lake; B - Korattur Lake; C - Madippakkam Lake; D - Pallikarani Wetland; E - Velachery Lake)

S.No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D	E
1	Cotton Pygmy-goose	<i>Nettapus coromandelianus</i>	Anatidae	Least Concern	+	-	-	-	-
2	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	+	-	-	-	-
3	Striated Heron	<i>Butorides striata</i>	Ardeidae	Least Concern	+	-	-	-	-
4	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	-	+	+
5	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	+	+	-	+	-
6	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	Least Concern	+	+	-	+	-
7	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	+	+	+	-
8	Spot-billed Pelican	<i>Pelecanus philippensis</i>	Pelecanidae	Near Threatened	+	+	-	+	-
9	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	+	+	+	+
10	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	+	+	-	+	-
11	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	+	+	-	-	-
12	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	-	+	-
13	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	Least Concern	+	-	-	+	-
14	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	-	+	-	-
15	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+	+	+
16	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+	+	+
Total					16	11	5	11	4

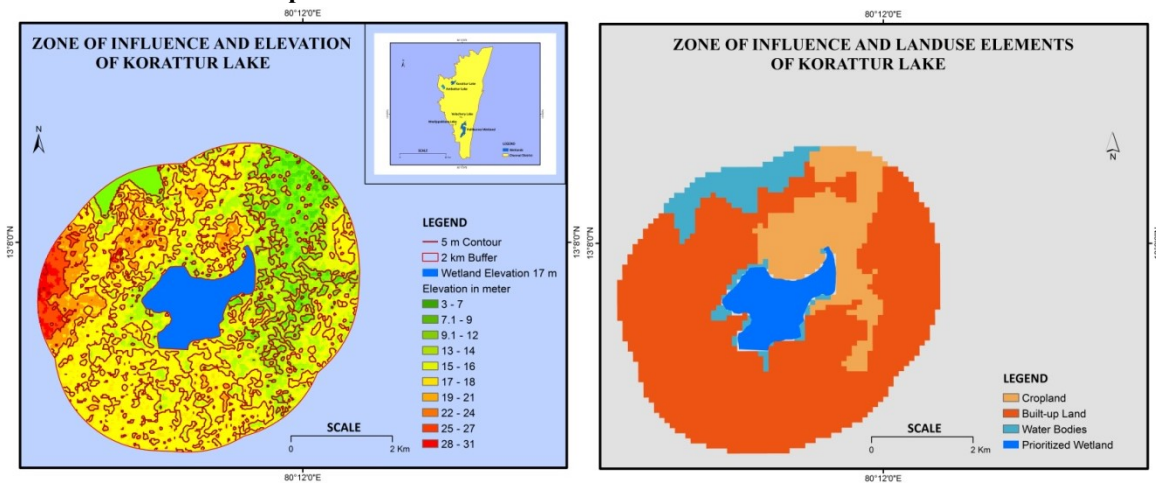
Table 3.8: List of Mammals recorded in Chennai District (A - Ambattur Lake; B - Korattur Lake; C - Madippakkam Lake; D - Pallikarani Wetland; E - Velachery Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+	-	+
4	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	+	+	+	+	-
Total					4	4	4	3	3

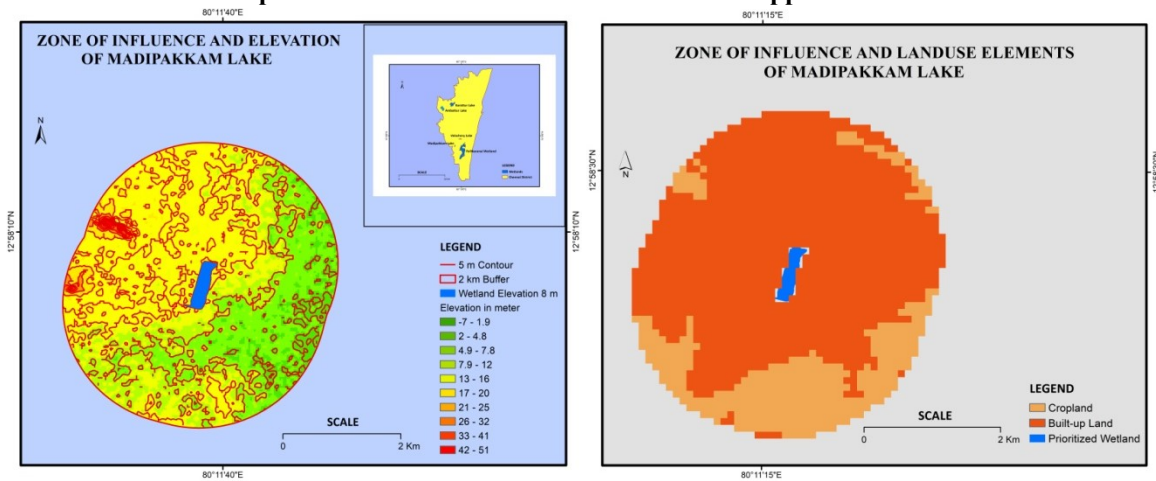
Map 3.2: The zone of influence around the Ambattur Lake.



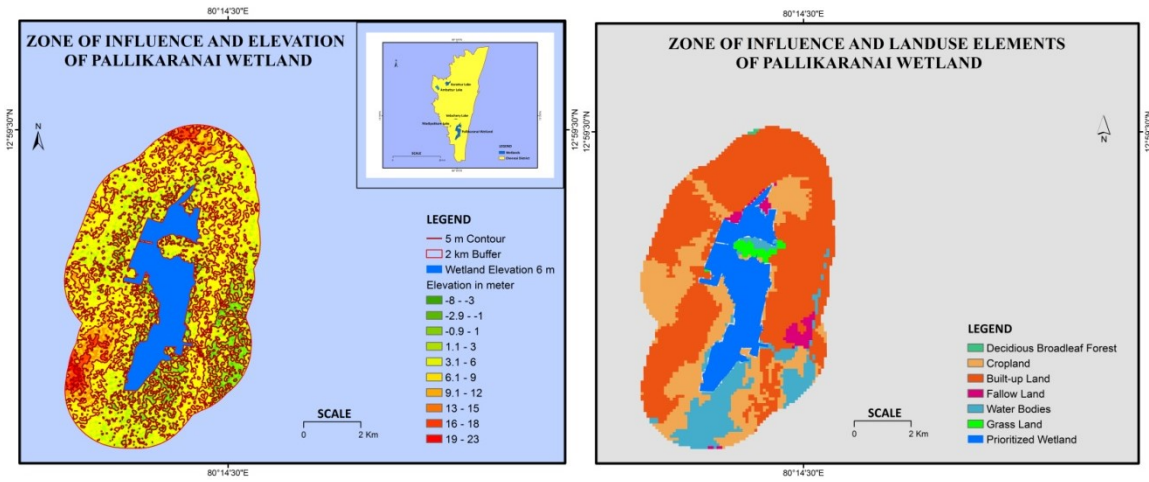
Map 3.3: The zone of influence around the Korattur Lake.



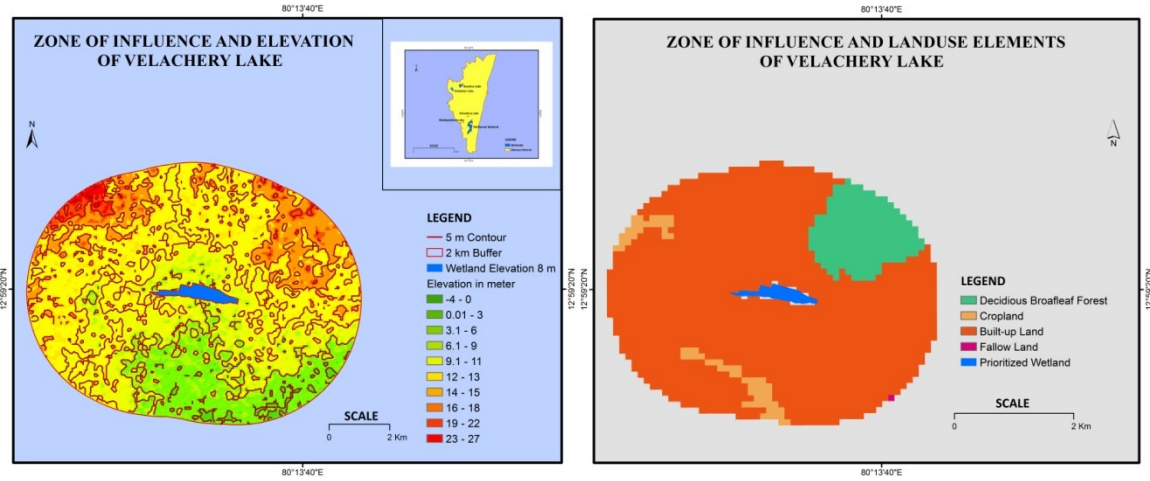
Map 3.4: The zone of influence around the Madippakkam Lake.



Map 3.5: The zone of influence around the Pallikarnai Wetland.



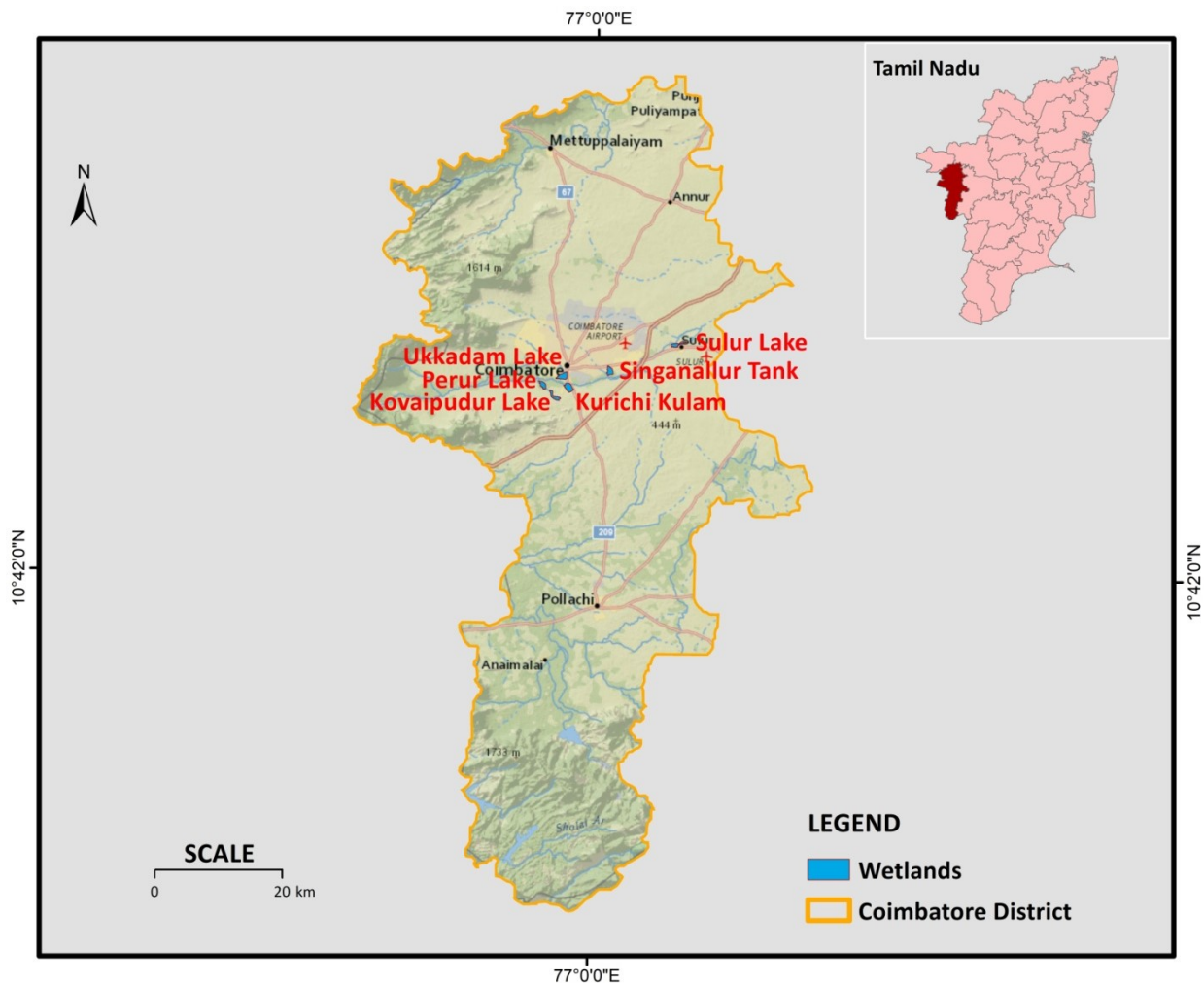
Map 3.6: The zone of influence around the Velachery Lake.



4. Coimbatore District

Coimbatore district has a geographic area of 7,47,079 hectares, it is located between 10° 55' and 11° 10'N and 77° 10' and 76° 50' E with an approximate altitude of 470m. It forms part of the upland plateau region of Tamil Nadu with many hill ranges, hillocks and undulating topography with gentle slopes towards east from the hilly terrain in the west. The river Noyyal is a prominent and historical feature of Coimbatore and surrounding districts of Erode and Tirupur. During the KonguChola regime in the 8th and 9th centuries AD, 28 interconnected wetlands were constructed for irrigation and flood mitigation on both sides of the river Noyyal. The wetlands provide an ideal habitat for several wetland birds apart for bearing the brunt of industrialization and urbanization.

Among the six wetlands selected only two wetlands *i.e* Singanallur and Ukkadam are within the city limits while the other four are located on the outskirts of the city (Map 4.1). Of the six wetlands selected in the district, Kurichi lake is the largest while KovaiPudur wetland is the smallest.



Map 4.1: Wetlands of Coimbatore district assessed for Prioritization

Kovaipudur Lake

This wetland is situated outside the Coimbatore city limits and is under the jurisdiction of Municipal Corporation of Coimbatore city. The wetland gets its name from the Kovaipudur township and is also known as Senkulam lake. Kovaipudur lies at the mouth of the Palghat Pass and at the south western fringe of the Coimbatore city, bordering the Western Ghats at the foothills of the Madukkarai range in Coimbatore and the Walayar ranges in Kerala. Kovaipudur has mainly scrub vegetation as these hills make it a rainshadow area. The wetland connected to the Noyyal river has remained undisturbed by industrial activities. Villages that surround the wetland include Kulathupalayam, Kuniyamuthur, Vaikappalayam, Sundakkamuthur. These villages come under Coimbatore South Thesil.

The geographic coordinates are Latitude: from 10° 57'10.1" N to 10° 57'36.5" N and Longitude from 076°56'27.1" E to 076° 56'22.0" E

Kovaipudur Lake (Plate 3) is a manmade intermittent tank with an area of 83.3 hectares with a depth of 3 meters. The main source of water for the wetland is rainfall, the overflow from the Perur lake, Noyyal river and the surrounding runoff from the catchment area. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater. The wetland surrounded by 50% agriculture, 30% Rural human settlements 15% new constructions and 5% Industries. It has an area of 2318.75 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 4.2).

The wetland was oligotrophic during the visit, with the pH of the water being 7.9, salinity measuring 0.353 ppt, the TDS was recorded moderately high at 225 ppm. The vegetation comprised of 54 plant species (Table 4.1) including 11 invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora*. The fauna comprised of 81 animal species including 4 domestic species were recorded during the survey (Table 4.2 to 4.10). Three Threatened birds species but one vulnerable species fish were recorded during the survey. There is the presence of *Tilapia sp* and introduced common carps in the lake the extent of their invasion are not documented.

The municipal corporation provides drinking water from Shiruvani reservoir as well as borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is a major activity around the wetland however; the water used is mostly from the ground water. Fishery is a major livelihood option in the wetland and fishing is done on the basis of tender through a society allowed by the municipal corporation. The fish seed is introduced and mostly comprises of the common carps. The wetland provides a suitable habitat for birds as we also recorded the local bird species during our survey. The bird enthusiasts visit the wetland during the birding season. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The threats that the wetland faces include encroachment, dumping garbage, solid waste, release of sewage, effluents and use as toilet. Agriculture is the main practice within and around the wetland. There are high-tension electric wires that pass through the wetland. The locals have informed of the reduction in the depth of the wetland over a period. There is an increase in the invasive plant species that is changing the habitat of the wetland. The wetland faces a severe threat from encroachment and sewage and compromise in the quality of the water.

The wetland has the pressure of pollution, solid waste and increasing encroachment resulting in high potential of change in the outflow of the water. The wetland water quality and the ecological character of the wetland is changing rapidly due to lack of conservation measures. The wetland under the jurisdiction of Municipal Corporation does not have any conservation measures employed as on date. Unplanned development and increasing sewage and effluents are a major threat that needs to be regulated. To conserve the wetland it is necessary to check the effluent and

sewage release and the solid waste dumping around the wetland and prevent human activities from encroaching into the wetland area any further.

KurichiKulam

Kuruchikulam is based in Madukarai taluk in Coimbatore district, it is not a Protected Area (Plate 3) and comes under the jurisdiction of PWD. Villages that surround the wetland include Athupalam, Kuniyamuthur, Kurichi and Macchampalayam.

The geographic coordinates are Latitude: 10° 58'11.1" N; 10° 58'12.3" N; 10° 58'18.8" N; 10°58'20.9" N; 10°57'46.5" N; and Longitude: 076°57'25.3" E; 076°57'28.3" E; 077°57'33.7" E; 077°57'44.1" E; 077° 58'14.4" E

Kovaipudur Lake is a manmade permanent tank with an area of 132 hectares with a depth of 2.5 meters. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, Shiruvani hills and the Noyyal river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the Noyyal river and adjoining agriculture fields. The wetland surrounded by 10% agriculture, 85% Urban settlements and 5% Industries. It has an area of 2184.31 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 4.3).

The wetland was oligotrophic during the visit, with the pH of the water being 8.9, salinity measuring 0.177 ppt, the TDS was recorded moderately high at 258 ppm. The vegetation comprised of 46 plant species (Table 4.1) including nine invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes*, *Typha angustifolia*. The fauna comprised of 91 animal species including 5 domestic species were recorded during the survey (Table 4.2 to 4.10) Four Threatened bird species were recorded during the survey. There is the presence of introduced common carps in the lake the extent of their invasion are not documented.

The municipal corporation provides drinking water from Athikadavu and Shiruvani reservoir as well as borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland however; the water used is mostly from the ground water. Fishery is a major livelihood option in the wetland and fishing is done on the basis of tender through the PWD. The fish seed is introduced and mostly comprises of the common carps. The wetland provides a suitable habitat for birds as we also recorded the local bird species during our survey. The bird enthusiasts visit the wetland during the birding season. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The threats that the wetland faces include encroachment, dumping garbage, solid waste, release of sewage, effluents and use as toilet. Agriculture and cattle grazing is the main practice within and around the wetland. There are high-tension electric wires that pass through the wetland. The locals have informed of the reduction in the depth of the wetland over a period. There is an increase in the invasive plant species that is changing the habitat of the wetland. The wetland has a high potential of change in the outflow due to depleting water in the wetland sewage and compromise in the quality of the water.

The wetland water quality and the ecological character of the wetland is changing rapidly due to lack of conservation measures. The wetland under the jurisdiction of PWD does not have any conservation measures employed as on date. To conserve the wetland it is necessary to check the effluent and sewage release and the solid waste dumping around the wetland and prevent human activities from encroaching into the wetland area any further.

Perur Lake

Perur Lake is also known as PerurChettipalayam lake (Plate 3) comes under the jurisdiction of Municipal Corporation of Coimbatore city since 2015. Villages that surround the wetland include Perur, Sengulkalavai, Puthunvicky and Erimedu. These villages come under Coimbatore South Thesil.

The geographic coordinates are Latitude: 10° 58'09.9" N; 10° 58'30.4" N and Longitude: 076°55'51.0" E; 076° 55'26.7" E

Perur Lake is a manmade tank of intermittent nature with seasonal drying bouts, with an area of 82.6 hectares with a depth of 2 meters. The main source of water for the wetland is rainfall, the overflow from the Noyyal river and the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The wetland surrounded by 90% agriculture and 10% Rural settlements. It has an area of 2057.41 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 4.4).

The wetland was oligotrophic during the visit, with the pH of the water being 6.5, salinity measuring 0.425 ppt, the TDS was recorded high at 945 ppm. The vegetation comprised of 52 plant species (Table 4.1) including ten invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora*, *Accacia nilotica indica*, and *Ipomoea sp.* The fauna comprised of 46 animal species including 3 domestic species were recorded during the survey (Table 4.2 to 4.10). One each of Near Threatened bird and fish species and a one Vulnerable fish species was recorded during the survey. There is the presence of introduced common carps in the lake the extent of their invasion are not documented.

The municipal corporation provides drinking water from Shiruvani reservoir as well as borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture and grazing by live stalk is undertaken within and around the wetland. Fishery is an alternate seasonal livelihood option in the wetland. The wetland provides a suitable habitat for birds as we also recorded the local bird species during our survey. The bird enthusiasts visit the wetland during the birding season. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The wetland has a high potential of change in the outflow of the water due to the increasing development activities along the wetland as well as the Noyyal river. Though low in the present status, the pollution in the form of sewage, effluents and solid waste dumping is also an increasing threat to the bird habitat. The interior regions of the wetland are used for agriculture and plantation that can adversely affect the habitat. There is an increase in the invasive plant species that is changing the habitat of the wetland. The wetland is used for cultural and religious practices including the immersion of idols that impact the wetland.

The wetland water quality and the ecological character of the wetland is changing rapidly due to lack of conservation measures. The wetland is not included in any of the protection and conservation categories

Singanallur Tank

Singanallur lake is one of the biggest lakes in Coimbatore situated on the Coimbatore – Singanallur road (Plate 3). The wetland comes under the jurisdiction of Municipal Corporation of Coimbatore city since 2015. It has 3 major inlets one from river Noyyal and two sewage drains from Sangnanur and Kalimadai, one wier dam and two sluices act as outlets for the lake. A railway track connecting Podanur and Irugur passes through this lake. It is surrounded by agricultural and residential areas on the eastern, southern and western side of the lake. Villages that surround the

wetland include Vellalore, Kallimadai, Revati mills housing. These villages come under Coimbatore South Thesil.

The geographic coordinates are Latitude: 10° 59'53.5.1" N; 10° 59'44.4" N and Longitude: 077° 01'10.2" E; 077° 01'23.9" E

Singanallur lake is a manmade tank of permanent nature, with an area of 101 hectares with a depth of 4.25 meters. The main source of water for the wetland is rainfall, the overflow from the Noyyal river and the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The wetland surrounded by 50% agriculture, 30% Rural settlements, 10% new constructions and 10% Industries. It has an area of 2107.64 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 4.5).

The wetland was mesotrophic during the visit, with the pH of the water being 7.4, salinity measuring 0.604 ppt, the TDS was recorded high at 846 ppm. The vegetation comprised of 52 plant species (Table 4.1) including 11 invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornia crassipes* and *Ipomoea sp.* The fauna comprised of 112 animal species including 4 domestic species were recorded during the survey (Table 4.2 to 4.10) Three Near Threatened bird species and one vulnerable species of bird and fish were recorded during the survey. There is the presence of introduced common carps in the lake the extent of their invasion are not documented.

The water from the wetland is not used for drinking purpose due to sewage and effluent contamination. The municipal corporation provides drinking water from the Shiruvani reservoir as well as borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is a major activity around the wetland. Fishery is a major livelihood option in the wetland and mostly comprises of the introduced common carps. Fishing is done on the basis of tender through a society allowed by the municipal corporation. The wetland provides a suitable habitat for birds as we also recorded the local bird species during our survey. The wetland is frequented by nature enthusiast for bird watching and regulated boating. The wetland, apart from the ground water recharge plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The wetland has a high potential of change in the outflow of the water due to the increasing development activities along the wetland. Though low in the present status, the pollution in the form of sewage, effluents and solid waste dumping is also an increasing threat to the bird habitat. The interior regions of the wetland are used for agriculture and plantation that can adversely affect the habitat. There is an increase in the invasive plant species that is changing the habitat of the wetland.

The wetland is included in the smart city program and is given protection with conservation measures employed by the municipality and the local NGO consortium.

Sulur Lake

Sulur lake is situated in the suburban Coimbatore (Plate 4). They comprise of two adjoining wetlands namely the big and small lake. The wetland comes under the jurisdiction of Municipal Corporation of Coimbatore city since 2015. Villages that surrounds the wetland includes Sulur and Ranganathapuram. This lake comes under the Sulur Thesil of Coimbatore.

The geographic coordinates are Latitude: 11° 02'04.5" N to 11° 01'30.8" N and Longitude: 077°07'38.9" E to 077° 06'45.3" E

Sulur lake is a manmade tank of intermittent nature with seasonal drying bouts, with an area of 84.3 hectares with a depth of 2.5 meters. The main source of water for the wetland is rainfall, the overflow from the Noyyal river and the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The wetland surrounded by 75% Agriculture and 25% Rural settlements. It has an area of 2398.59 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 4.6).

The wetland was mesotrophic during the visit, with the pH of the water being 7.4, salinity measuring 0.425 ppt, the TDS was recorded high at 730 ppm. The vegetation comprised of 112 plant species (Table 4.1) including 14 invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora* and *Eichornia crassipes*. The fauna comprised of 124 animal species including one domestic species were recorded during the survey (Table 4.2 to 4.10). Two Near Threatened bird species were recorded during the survey. There is the presence of introduced common carps in the lake the extent of their invasion are not documented.

The water from the wetland is not used for drinking purpose due to sewage and effluent contamination. The municipal corporation provides drinking water as well as borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is a major activity around the wetland, coconut and banana plantation forms one of the major produce at the wetland. Fishery is a major livelihood option in the wetland and fishing is done on the basis of tender through a society allowed by the municipal corporation. The fish seed is introduced and mostly comprises of the common carps. The wetland is frequented by nature enthusiast for bird watching and regulated boating. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Major cultural and religious activities are performed in the wetland since there is a temple along its vicinity.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The pollution in the form of sewage, effluents and solid waste dumping is also an increasing threat to the bird habitat. The wetland is used for agriculture and plantation that can adversely affect the habitat. There is an increase in the invasive plant species that is changing the habitat of the wetland.

The wetland is not included in any of the protection and conservation categories. There is agriculture, plantation and fishery activities that are currently being undertaken, however these activities should remain limited as it can affect the water holding potential of the wetland apart from it providing habitat to the birds.

Ukkadam Lake

Commonly known as Ukkadam Periyakulam (Plate 4), also known as Periyakulam comes under the jurisdiction of PWD Coimbatore division. The Lake is based in Coimbatore West taluka in Coimbatore district of Tamil Nadu state.

The geographic coordinates are Latitude: 10° 59'07.8" N; 10° 59'04.8" N; 10° 58'59.0" N; 10° 58'49.0" N; and Longitude: 076° 57'08.9" E; 076° 57'00.1" E; 076° 56'55.3" E; 076° 56'48.3" E

Ukkadam lake is a manmade tank of permanent nature, with an area of 129 hectares with a depth of 2.0 meters. The main source of water for the wetland is rainfall, the overflow from the Noyyal river and the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The wetland surrounded by 30% Agriculture, 45% Urban settlements, 15% Rural settlements and 10% Industries. It has an area of 2252.02 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 4.7).

The wetland was mesotrophic during the visit, with the pH of the water being 8.9, salinity measuring 0.862 ppt, the TDS was recorded high at 1220 ppm. The vegetation comprised of 69 plant species (Table 4.1) including 12 invasive species dominated by *Eichhornia crassipes*, *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 88 animal species including 3 domestic species were recorded during the survey (Table 4.2 to 4.10). Three Threatened bird species were recorded during the survey. Tilapia is a very common invasive species that was recorded. There is the presence of introduced common carps in the lake the extent of their invasion are not documented.

The water from the wetland is not used for drinking purpose due to sewage and effluent contamination. The municipal corporation provides drinking water as well as borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland, Coconut and Banana Plantation forms one of the major produce at the wetland. Fishery is a major livelihood option in the wetland and fishing is done on the basis of tender through a society allowed by the municipal corporation and PWD. The fish seed is introduced and mostly comprises of the common carps although there are local fish species present in the wetland. The wetland is frequented by nature enthusiasts for bird watching. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There was mining for sand or silt undertaken in the past. Some cultural and religious activities are performed in the wetland since there are temples along its vicinity.

The wetland does not show major change in the pattern of water inflow and outflow, as there is insufficient water during the summers. The pollution in the form of sewage, effluents and solid waste dumping is seen but it is low threat in its present condition. The wetland has some amount of solid waste dumping and encroachment activities, there are also the high tension wires that pass through the wetland.

The wetland is included in Smart Cities program and some conservation measures are in place. The encroachment of the wetland has to be immediately addressed and the desiltation of the feeder channel should be undertaken to revive the wetland.

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Table 4.1: List of plants species recorded in Coimbatore District (A - Kovaipudur Lake, B - KurichiKulam, C - Perur Lake, D - Singanallur Tank, E - Sulur Lake, F - Ukkadam Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D	E	F
1	Mexican Prickly Poppy	<i>Argemone mexicana</i>	Papaveraceae	Invasive	NA	+	-	-	+	+	-
2	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	+	-	+	-	+	-
3	Wild Spider Flower	<i>Gynandropsis gynandra</i>	Cleomaceae	Native	NA	+	+	+	-	+	-
4	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	+	+	-	+	-	-
5	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	-	+	-	+	-
6	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	-	-	+	+	+
7	Creeping Wood Sorrel	<i>Oxalis corniculata</i>	Oxalidaceae	Invasive	NA	+	-	-	-	-	-
8	Indian Plum	<i>Ziziphus mauritiana</i>	Rhamnaceae	Native	NA	+	-	-	+	+	+
9	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	+	-	+	+	+
10	Necklace-Pod Alyce Clover	<i>Alysicarpus monilifer</i>	Fabaceae	Native	NA	+	-	-	-	-	+
11	Fyson's Rattlepod	<i>Crotalaria fysonii</i>	Fabaceae	Native	LC	+	-	-	-	-	-
12	Touch Me Not	<i>Mimosa pudica</i>	Fabaceae	Native	LC	+	-	-	-	-	-
13	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	+	+	+	-	+	+
14	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+	+	+	-
15	Tanner's Cassia	<i>Senna auriculata</i>	Fabaceae	Native	NA	+	-	-	-	-	+
16	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	-	-	-	+	-
17	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	+	+	+	+	+	+
18	Golden shower tree	<i>Cassia fistula</i>	Caesalpiniaceae	Native	NA	+	-	+	-	-	-
19	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	+	-	-	+	+	+
20	Desert Horse Purslane	<i>Trianthema portulacastrum</i>	Aizoaceae	Native	NA	+	-	+	-	-	-
21	Lotus Sweetjuice	<i>Glinus lotoides</i>	Molluginaceae	Native		+	-	-	-	-	+
22	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	+	-	+	-	-	-
23	Siam Weed	<i>Chromolaena odorata</i>	Asteraceae	Invasive	NA	+	-	+	-	-	-
24	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+	+	+	-
25	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	-	+	-	-	+
26	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	-	+	+	+	-
27	South Indian Mahua	<i>Madhuca longifolia</i> var. <i>latifolia</i>	Sapotaceae	Native	NA	+	-	-	-	-	-
28	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+	+	+	+
29	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	+	+	-	+	+	-
30	Black nightshade, Blackberry nightshade	<i>Solanum nigrum</i>	Solanaceae	Native	NA	+	-	-	-	+	+
31	Yellow bells	<i>Tecoma stans</i>	Bignoniaceae	Exotic	NA	+	-	-	-	-	-
32	Ganges Primrose	<i>Asystasia gangetica</i>	Acanthaceae	Native	NA	+	-	-	-	+	-
33	Malabar Catmint	<i>Anisomeles malabarica</i>	Lamiaceae	Native	NA	+	-	-	-	-	+
34	Hoary Basil	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	+	-	-	-	+	+
35	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	-	-	+	+	+
36	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	+	+	+	+	+
37	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	-	+	-	-	-
38	Kapok bush	<i>Aerva javanica</i>	Amaranthaceae	Native	NA	+	-	-	-	-	-
39	Calico Plant	<i>Alternanthera ficoidea</i>	Amaranthaceae	Introduced		+	+	-	-	-	-
40	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	+	+	-	-	+	+
41	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	-	+	-	-	-
42	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	+	+	+	-	+	-
43	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	+	+	-	-	+	-
44	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	+	+	-	+	+
45	Banana Plant	<i>Musa paradisiaca</i>	Musaceae	Native	NA	+	-	+	-	-	-
46	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	+	+	-	+	+	+
47	Bengal Dayflower	<i>Commelina benghalensis</i>	Commelinaceae	Native	LC	+	-	-	-	-	-
48	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	+	+	+	+
49	Coconut Tree	<i>Cocos nucifera</i>	Arecaceae	Native	NA	+	+	-	-	-	+
50	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	-	+	-	+	+
51		<i>Cyrtococcum trigonum</i>	Poaceae	Native	NA	+	-	-	-	-	-

52	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	+	+	+	+	+
53	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	+	+	+	+	+	+
54	Water Clover	<i>Marsilea quadrifolia</i>	Marsileaceae	Native	LC	+	-	+	-	-	-
Total						54	20	25	18	30	25

Table 4.2: List of Diplopoda recorded in Coimbatore District (A - Kovaipudur Lake, B - KurichiKulam, C - Perur Lake, D - Singanallur Tank, E - Sular Lake, F - Ukkadam Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F
1	Yellow Spotted Millipede	<i>Harpaphe haydeniana</i>	Xystodesmidae	+	-	-	-	-	-
Total				1	0	0	0	0	0

Table 4.3: List of Insects recorded in Coimbatore District (A - Kovaipudur Lake, B - KurichiKulam, C - Perur Lake, D - Singanallur Tank, E - Sular Lake, F - Ukkadam Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F
1	Spittle bug	<i>Clovio sp.</i>	Aphrophoridae	+	-	-	+	+	-
2	Water Strider	<i>Gerris sp.</i>	Gerridae	+	+	-	+	+	+
3	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	+	+	+	+	+	+
Total				3	2	1	3	3	2

Table 4.4: List of Butterflies recorded in Coimbatore District (A - Kovaipudur Lake, B - KurichiKulam, C - Perur Lake, D - Singanallur Tank, E - Sular Lake, F - Ukkadam Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E	F
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	+	+	+	+	+	+
2	Small Orange Tip	<i>Colotis etrida</i>	Pierinae	Common	+	-	-	+	+	-
3	Common Cerulean	<i>Jamides celeno</i>	Polyommatainae	Common	+	-	-	+	+	-
4	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	+	+	-	+	+	+
5	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	-	+	+	+
6	Blue Pansy	<i>Junonia orithiya</i>	Nymphalinae	Common	+	+	-	+	+	-
7	Yellow Pansy	<i>Junonia hierta</i>	Nymphalinae	Common	+	-	-	+	+	-
8	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	+	+	-	+	+	+
9	Danaid Eggfly	<i>Hypolimnas misippus</i>	Nymphalinae	Common	+	+	+	+	+	-
Total					9	6	2	9	9	4

Table 4.5: List of Odonates recorded in Coimbatore District (A - Kovaipudur Lake, B - KurichiKulam, C - Perur Lake, D - Singanallur Tank, E - Sular Lake, F - Ukkadam Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E	F
1	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	-	+	-	-	-	-
2	Coromandel Marsh Dart	<i>Ceragrion coromandelianum</i>	Coenagrionidae	Common	-	+	-	-	-	+
3	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	+	+	+	+	+
4	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	+	+	+	+	+
5	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+	+	+
6	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	-	+	-	-	-	+
7	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+	+	+	+
8	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	-	+	-	-	-	+
9	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	+	-	-	+	-	-
10	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	-	+	-	-	-	+
Total					5	9	4	5	4	8

Table 4.6: List of Arachnida recorded in Coimbatore District (A - Kovaipudur Lake, B - KurichiKulam, C - Perur Lake, D - Singanallur Tank, E - Sular Lake, F - Ukkadam Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	+	+	+	-
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	+	-	-	+	+	-
Total				2	0	1	2	2	0

Table 4.7: List of Fishes recorded in Coimbatore District (A - Kovaipudur Lake, B - KurichiKulam, C - Perur Lake, D - Singanallur Tank, E - Sular Lake, F - Ukkadam Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	-	+	+	+	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	-	+	+	+	+
3	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	+	-	+	+	+
4	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	+	+	-	+	+	+
5	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	+	+	+	+	-
6	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	+	+	+	+	+	+
7	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	+	+	+	-	+	-
8	Spiny eel	<i>Macrogynathus pancalus</i>	Mastacembelidae	LC	+	-	+	+	+	+
9	Pool barb, Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	+	-	+	+	-	+
10	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	+	-	+	-	+	-
11	Catla	<i>Catla catla</i>	Cyprinidae	LC	+	+	+	+	+	+
12	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	+	-	+	-	+	+
13	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	+	+	+	+	+
Total					13	7	11	10	12	10

Table 4.8: List of Reptiles recorded in Coimbatore District (A - Kovaipudur Lake, B - KurichiKulam, C - Perur Lake, D - Singanallur Tank, E - Sular Lake, F - Ukkadam Lake)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D	E	F
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	+	+	-	+	+	+
Total					2	2	1	2	2	2

Table 4.9: List of Birds recorded in Coimbatore District (A - Kovaipudur Lake, B - KurichiKulam, C - Perur Lake, D - Singanallur Tank, E - Sular Lake, F - Ukkadam Lake)

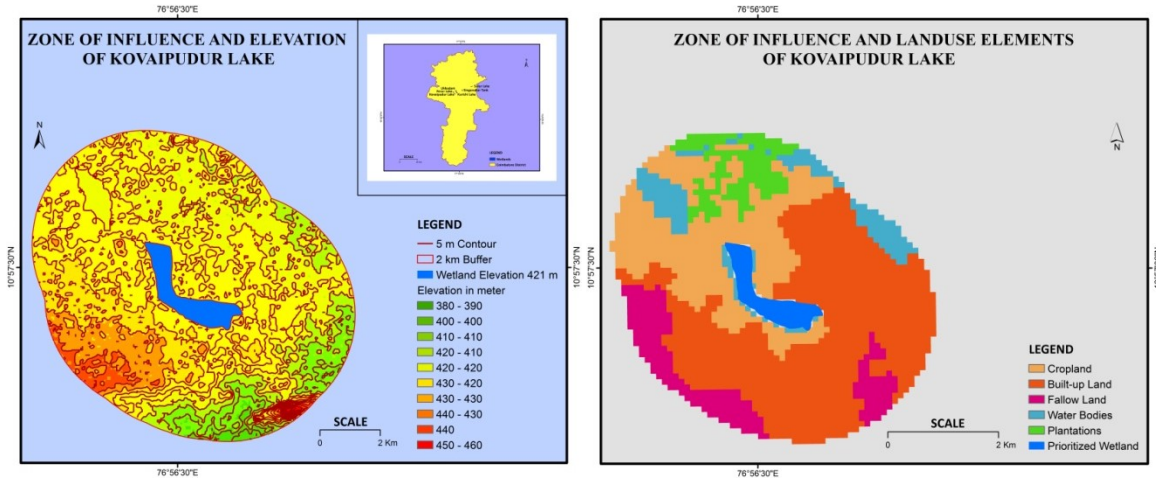
S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Least Concern	+	-	-	-	+	-
2	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Least Concern	+	+	+	+	+	+
3	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	Near Threatened	+	+	+	+	+	+
4	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	+	+	+	+	-	+
5	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	+	+	+	+
6	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	+	+	-	+	+	+
7	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	-	+	+	+	-
8	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	+	+	-	+	+	+
9	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	+	+	+	+	+
10	Spot-billed Pelican	<i>Pelecanus philippensis</i>	Pelecanidae	Near Threatened	+	+	-	+	+	+
11	Darter	<i>Anhinga melanogaster</i>	Anhingidae	Near Threatened	+	+	-	-	-	+
12	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	+	+	+	+	+
13	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	Least Concern	+	+	-	+	+	+
14	Black Kite	<i>Milvus migrans</i>	Accipitridae	Least Concern	+	-	-	+	+	-
15	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	Least Concern	+	-	-	-	+	+
16	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	+	+	-	+	+	+
17	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	+	+	+	-	+	+
18	Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>	Charadriidae	Least Concern	+	-	-	-	-	-
19	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	+	+	+	+
20	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	Least Concern	+	+	+	-	-	+
21	Marsh Sandpiper	<i>Tringa stagnatilis</i>	Scolopacidae	Least Concern	+	-	-	-	-	-
22	Green Sandpiper	<i>Tringa ochropus</i>	Scolopacidae	Least Concern	+	-	-	+	+	-
23	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae	Least Concern	+	-	-	-	-	-
24	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Least Concern	+	+	+	-	-	+
25	Little Stint	<i>Calidris minuta</i>	Scolopacidae	Least Concern	+	-	-	-	-	-
26	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	+	+	-	-	+	-
27	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	+	+	+	+	+

28	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	Least Concern	+	-	-	+	+	-
29	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	+	+	+	+	+
30	Common Hoopoe	<i>Upupa epops</i>	Upupidae	Least Concern	+	-	-	-	-	-
31	Blue-tailed Bee eater	<i>Merops philippinus</i>	Meropidae	Least Concern	+	-	-	-	+	-
32	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	-	-	-	+
33	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	+	+	-	-	+	+
34	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+	+	+	+
35	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	+	-	+	+	+	-
36	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Least Concern	+	-	-	-	-	-
37	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+	+	+	+
38	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	Least Concern	+	+	-	-	+	+
39	Yellow Wagtail	<i>Motacilla flava</i>	Motacillidae	Least Concern	+	-	+	-	-	-
40	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	Least Concern	+	+	-	+	+	+
41	Paddyfield Pipit	<i>Anthus rufulus</i>	Motacillidae	Least Concern	+	-	-	-	-	-
Total					41	25	17	22	28	25

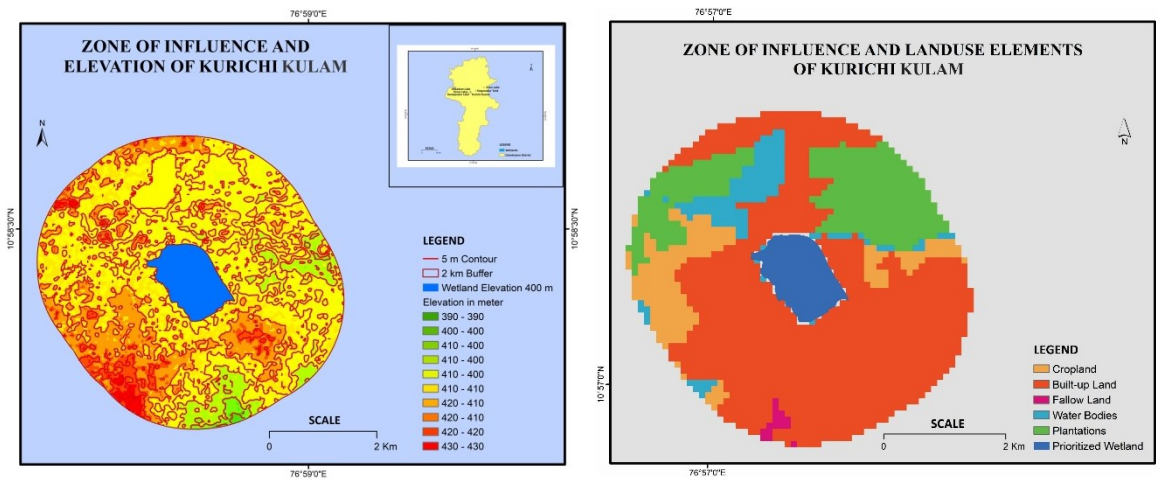
Table 4.10: List of Mammals recorded in Coimbatore District (A - Kovaipudur Lake, B - KurichiKulam, C - Perur Lake, D - Singanallur Tank, E - Sulur Lake, F - Ukkadam Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+	+	+
2	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+	+	+	+
3	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+	+	+
4	Horse	<i>Equus ferus caballus</i>	Equidae	Domestic	+	-	-	-	-	-
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+	+	+	+
Total					5	4	4	4	4	4

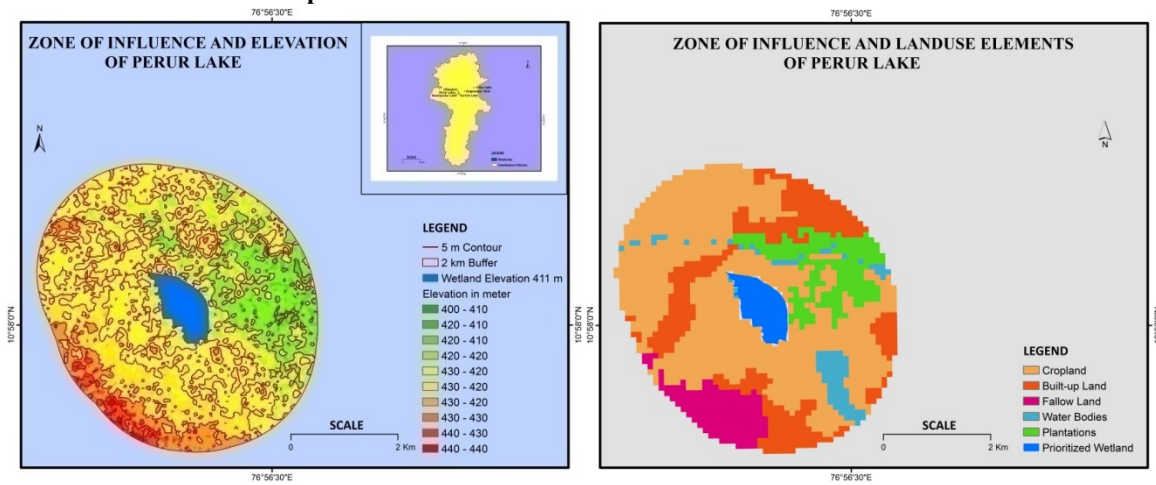
Map 4.2: The zone of influence around the Kovaipudur Lake.



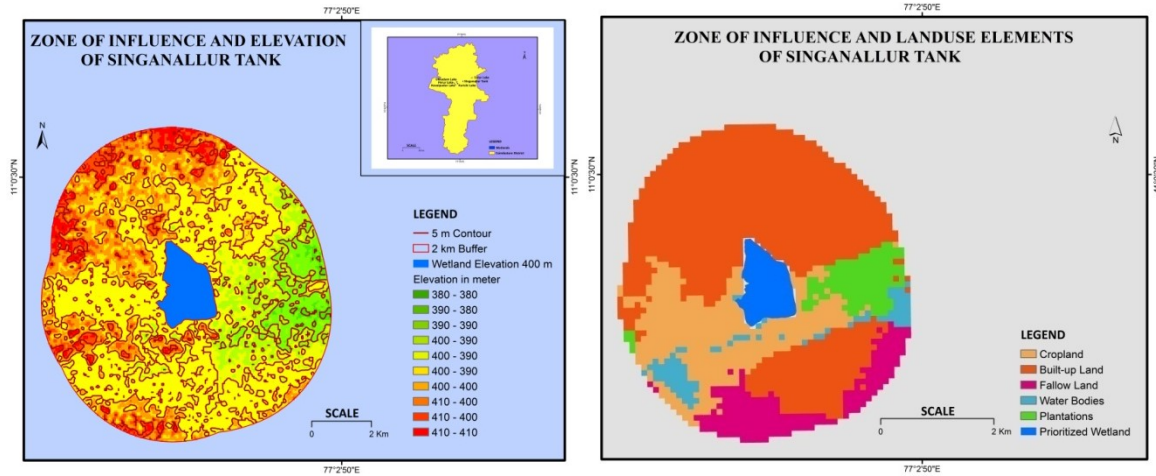
Map 4.3: The zone of influence around the KurichiKulam.



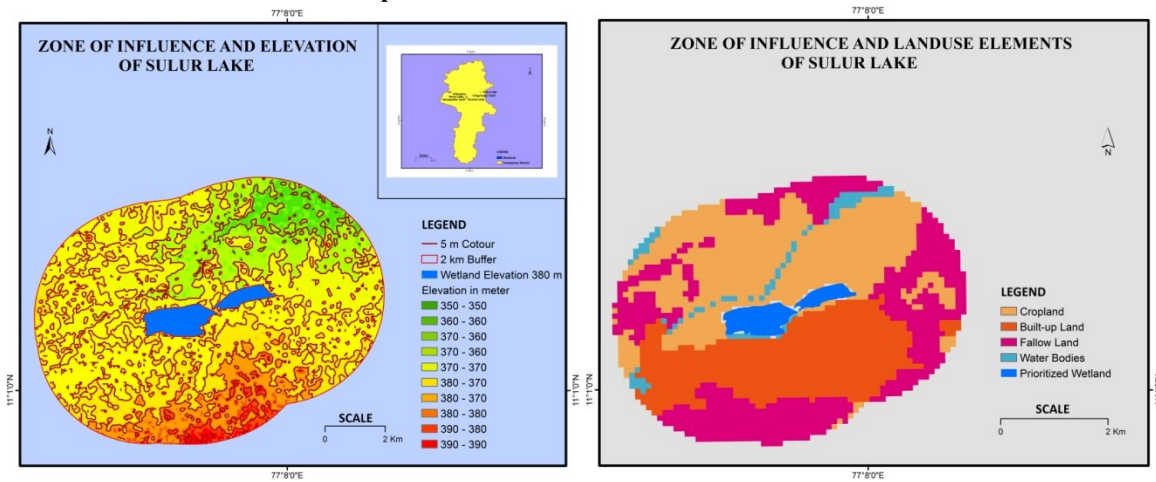
Map 4.4: The zone of influence around the Perur Lake.



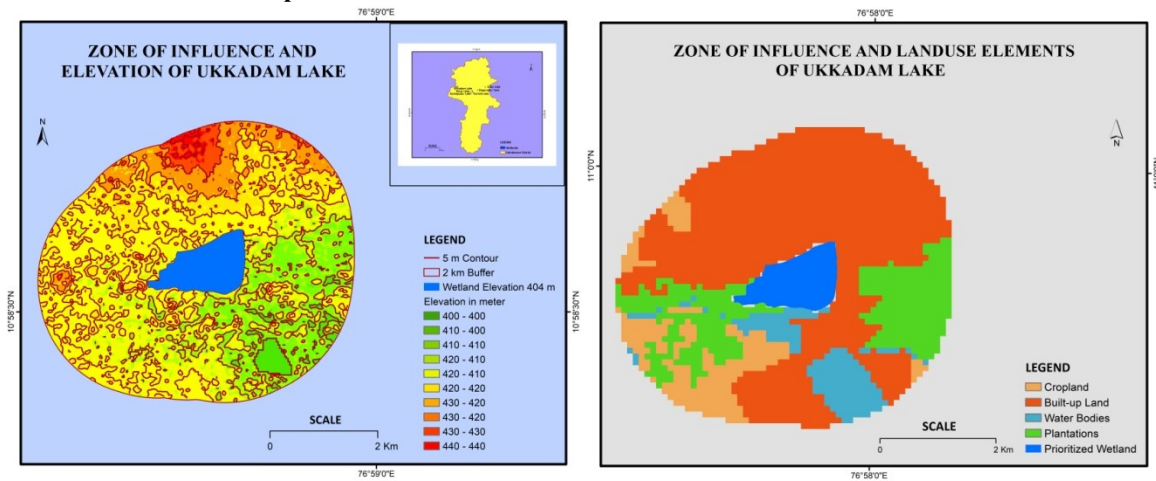
Map 4.5: The zone of influence around the Singanallur Tank.



Map 4.6: Zone of Influence at Sular Lake.



Map 4.7: The zone of influence around the Ukkadam Lake.

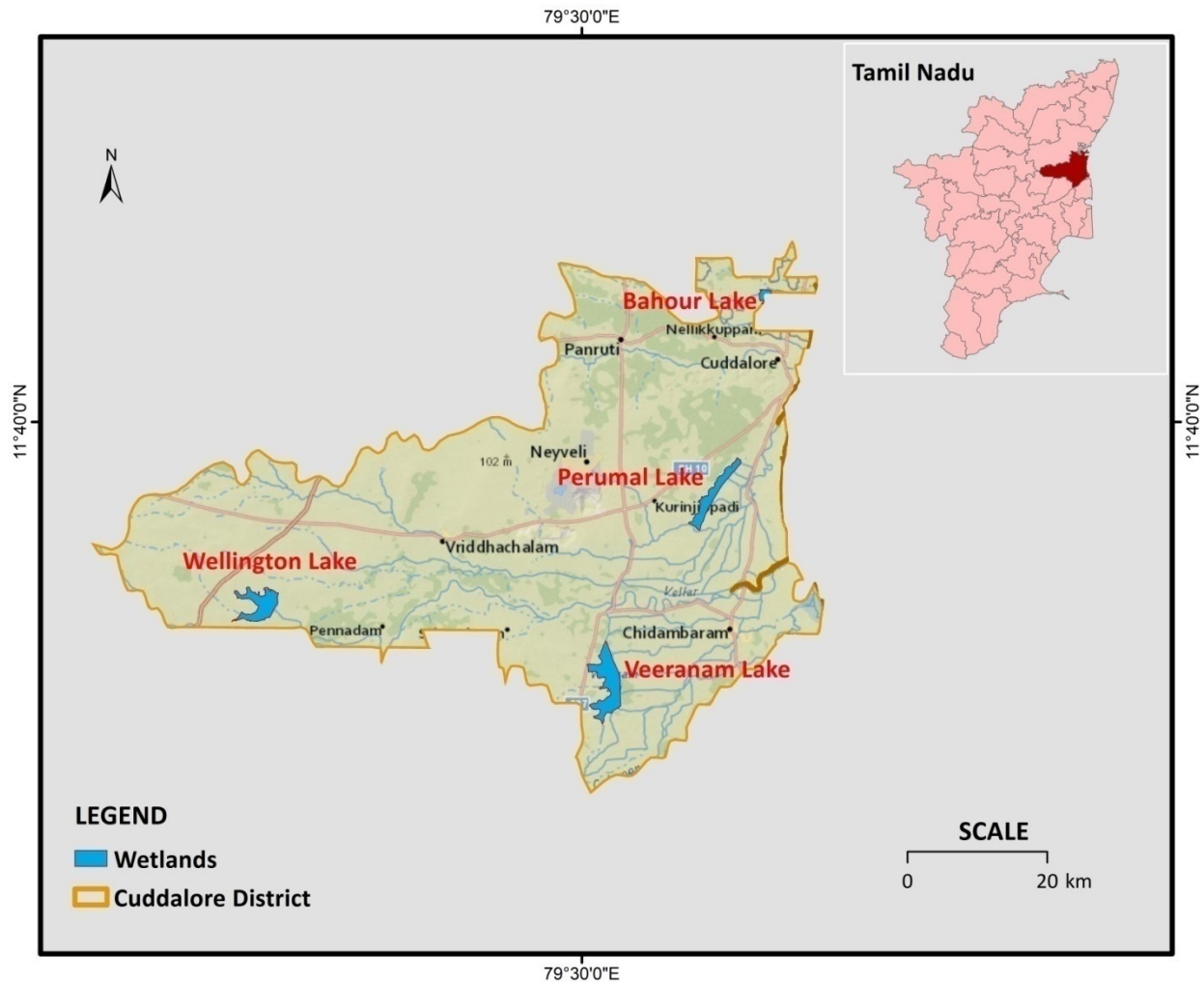


5. Cuddalore District

Cuddalore district is predominately an agricultural district with coastal line stretching from Pondicherry Union Territory in the North to the mouth of the river Coleroon in the South. district is having coastal line of 68 kms. The district is bounded on the north by Viluppuram district, on the east by the Bay of Bengal, on the south by Nagapattinam district, and on the west by Perambalur district.

Total geographic area of Cuddalore is 3678 km². Total area under wetland is 28135 ha, which includes 472 small wetland (<2.25 ha). Lanks/Ponds occupies 22.25 % of wetland area. The other wetland types are; River/Stream (8810 ha), Aquaculture ponds (1824 ha), Reservoirs (1612 ha), Salt marsh (1425 ha) and Mangroves (590 ha).

Four wetlands were selected for the study, of which Veeranam Lake was the largest while the Bahour Lake the transboundary wetland shared with Puducherry was the smallest of the four (Map 5.1).



Map 5.1: Wetlands of Cuddalore district assessed for Prioritization

Bahour Lake

Bahour Lake is the second largest lake in Puducherry state, it is a transboundary lake with a major portion in Puducherry and a small part in Tamil Nadu (Plate 4). This Lake is recognized as one of the Important Bird and Biodiversity Areas (IBA) of Puducherry. The wetland comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Bahour, Karaimeedu, Chinakaraimeedu, Megamedu, Ulleripittu, Karanappattu.

The geographic coordinates are Latitude: 11° 48'45.1" N; 11° 49'00.6" N; 11° 49'15.3" N; 11° 49'39.1" N; and Longitude: 079° 44'09.4" E; 079° 44'05.7" E; 079° 43'45.0" E; 079° 43'45.0" E

Bahour lake is a manmade tank of permanent nature having a few rare seasonal intermittent bouts of drying, with an area of 401 hectares with a depth of 3.0 meters. The main source of water for the wetland is rainfall and the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The wetland surrounded by 65% Agriculture, 15% Urban settlements, 15% Rural settlements and 10% Scrubland/grassland. It has an area of 2933.56 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 5.2).

The water from the wetland was inaccessible as it was completely covered by *Eichhornia crassipes*. The wetland was observed to be closer to Eutrophic as the wetland was observed to have maximum floating, submergent and emergent vegetation. Moreover the wetland receives large quantities of sewage and effluents and is rich in nutrients the wetland has agriculture is undertaken within the wetland. The vegetation comprised of 53 plant species (Table 5.1) including 14 invasive species dominated by *Eichhornia crassipes*, *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 66 animal species including 4 domestic species were recorded during the survey (Table 5.2 to 5.9). One Threatened species of fish was recorded during the survey. Tilapia is a very common invasive species that was recorded. There is the presence of introduced common carps in the lake the extent of their invasion are not documented.

The water from the wetland is not used for drinking purpose due to sewage and effluent contamination. The municipal corporation provides drinking water as well as borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around and within the wetland and the wetland water is extracted for irrigation. Grazing by the cattle is undertaken and the wetland is used for bathing by livestock. Fishery is undertaken without any permission in the lake, recreational fishery is also practiced. The wetland is frequented by nature enthusiast for bird watching. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland does have several temples and other religious institutions along its bank, except for recreation no major cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The pollution in the form of sewage, effluents and solid waste dumping is seen but it is low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities. The siltation is also observed near the inlet as well as the outlet of the wetland.

The wetland is not included in any of the protection and conservation categories. The wetland is shared by Pondicherry union territory and Tamil Nadu State.

Perumal Lake

Perumal eri (Plate 4) comes under the jurisdiction of PWD and is not a Protected Area. The lake is based in Kurinjipadi in Cuddalore district. Villages that surround the wetland include Aayathurai, Chittavali, Aalapakkam, Aayanthur and Karuppampadi.

The geographic coordinates are Latitude: 11° 31'36.9" N; 11° 31'50.8" N; 11° 32'09.7" N; 11° 32'52.6" N; 11°32'17.2" N; 11° 33'27.6" N; and Longitude: 079° 39'05.5" E; 079° 39'10.8" E; 079° 39'19.1" E; 079° 39'34.1" E; 079° 39'20.4" E; 079° 39'50.0"E

Perumal erii is a natural lake of permanent nature, with an area of 1281 hectares with a depth of 2.5 to 4 meters. The main source of water for the wetland is rainfall and the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The wetland surrounded by 45% Agriculture, 45% Rural settlements and 10% Urban settlements. It has an area of 6679.46 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 5.3).

The wetland was mesotrophic during the visit, with the pH of the water varying between 7.8 to 8.3, salinity measuring 0.661 ppt, the TDS was recorded high at 940 ppm. The vegetation comprised of 35 plant species (Table 5.1) including 11 invasive species dominated by *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 49 animal species including 4 domestic species were recorded during the survey (Table 5.2 to 5.10). One Threatened bird species were recorded during the survey. There is the presence of introduced common carps in the lake the extent of their invasion is not documented.

The water from the wetland is not used for drinking purpose. The local villages receive water from the village Panchayat and Municipal Corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. There are farmlands where agriculture is undertaken around the wetland using both the wetland and borewell water. The site is used majorly used by the locals for grazing their cattle and goats. Commercial and recreational fishery is undertaken. The PWD introduce the fingerlings and give out the contract annually. The wetland serves as a ground water recharge as long as the water is present. The wetland also plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There are high tension wires passing through the wetland. Solid waste dumping and encroachment is also seen.

The wetland has a high potential of change in the outflow of the water and faces a severe threat from gradually changing wetland character. The effluent and sewage release has threatened the wetland in a major way coupled with encroachment and solid waste dumping.

The wetland is not included in any of the protection and conservation categories. Unplanned development is a major threat that needs to be regulated. The wetland is facing a severe threat from the effluent release affecting the livelihood of the locals.

Veeranam Lake

Veeranam Lake also known as Veerananarayanapuram Lake is located 14 km (8.7 mi) South West of Lalpet in Cuddalore district (Plate 5). The lake, is one of the water reservoirs planned to supply water to Chennai. Veeranam Lake was built in the Tenth Century during the time of Greater Cholas, from 907–955 AD and is a 16-kilometre long dam in northern Tamil Nadu. The wetland comes under the jurisdiction of PWD, is not a Protected

Area. Villages that surround the wetland include Veeranam, Lalpet, Ruthirasolai, Palanchanallur, Karunagakaranallur, Kandhakumaran, Triuchinnapuram, Setthiyarthoppu, Chithamalli and Pudayur.

The geographic coordinates are Latitude: 11° 18'10.5"N; 11° 18'16.1"N; 11° 08'20.9"N; 11° 08'50.8"N; 11°19'50.2"N; 11° 20'49.7" N; 11° 21'45.9" N; 11° 22'41.1" N; 11° 24'15.4" N;and Longitude: 079° 33'00.1" E; 079° 33'00.1" E; 079° 33'00.1" E; 079° 32'58.6" E; 079° 32'57.1" E; 079° 32'46.1" E; 079° 32'21.6" E; 079° 32'06.9" E

Veeranam lake is a manmade wetland of seasonal intermittent nature, with an area of 2418 hectares with a depth of 5 meters. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, Metur dam and Vadavuru river canal. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields and goes through the Setthiyar Gokul canal and Lalpet canal to the sea. The wetland surrounded by 60% agriculture, 30% Rural settlements and 10% Grasslands/Scrublands. It has an area of 7631.22 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 5.4).

The wetland was mesotrophic during the visit, with the pH of the water being 8.8, salinity measuring 0.209 ppt, the TDS was recorded moderately high at 280 ppm. The vegetation comprised of 34 plant species (Table 5.1) including six invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 72 animal species including 4 domestic species were recorded during the survey (Table 5.2 to 5.9). One Threatened bird species and four fish species were recorded during the survey. There is the presence of introduced common carps in the lake the extent of their invasion is not documented.

The water from the wetland is used for drinking purpose only during monsoon, it is provided to Chennai Corporation. The local villages receive water from the municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Commercial and recreational fishery is undertaken. The PWD introduces the fingerlings and give out the contract annually. The site is used majorly by the locals for grazing their cattle and goats. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There are high tension wires passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The wetland has been facing drought condition since 2016.

The wetland is not included in any of the protection and conservation categories but the PWD and the TWAD board gives it some protection. The wetland faces a severe threat from drought and water scarcity gradually changing the wetland character, solid waste dumping. Unplanned development is a major threat that needs to be regulated. These activities although have spread all around the wetland should remain limited as it can adversely affect the wetland functions.

Wellington Lake

Commonly known as Wellington Lake (Plate 5) it is also called as Keelacheravui and Yama eri. The lake is based in Thittakudi in Cuddalore district, it is not a Protected Area but around 20 % of the wetland is with the forest department and also comes under the jurisdiction of PWD. Villages that surround the wetland include Aayathurai, Chittavali, Aalapakkam, Aayanthur and Karuppampadi.

The geographic coordinates are Latitude: 11° 25'08.5" N; 11° 25'32.9" N; 11° 24'59.5" N; 11° 24'55.7" N; and Longitude: 079° 06'01.8" E; 079° 06'08.4" E; 079° 06'14.5" E; 079° 05'56.9" E; 079° 05'54.9" E.

Wellington lake is a natural wetland of permanent nature, with an area of 1534 hectares with a depth of 10 meters. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and Vellar river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The overflow goes to Pulivalam Kulam. The wetland surrounded by 75% Agriculture, 20% Forestland 5% Grasslands/Scrublands. It has an area of 7631.33 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 5.5).

The wetland was oligotrophic during the visit, with the pH of the water being 8.8, salinity measuring 0.787 ppt, the TDS was recorded high at 1120 ppm. The vegetation comprised of 31 plant species (Table 5.1) including five invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 43 animal species including 2 domestic species were recorded during the survey (Table 5.2 to 5.9). One Threatened bird species and four fish species were recorded during the survey. There is the presence of introduced common carps in the lake the extent of their invasion is not documented.

The water from the wetland is not used for drinking purpose. The local villages receive water from the village Panchayat and Municipal Corporation provides drinking water from the borewell water and Vellar water at regular intervals that is used by the locals to fulfill their daily requirements. There are farmlands where agriculture is undertaken around the wetland use both the wetland and borewell water. The site is used majorly used by the locals for grazing their cattle and goats. Commercial and recreational fishery is undertaken. The PWD used to introduce the fingerlings and give out the contract annually. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There are high tension wires passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The wetland faces a severe threat from gradually changing the wetland character.

The wetland is not included in any of the protection and conservation categories. Unplanned development is a major threat that needs to be regulated.

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Table 5.1: List of Plant species recorded along the Cuddalore District (A - Bahour Lake, B - Perumal Lake, C - Veeranam Lake, D - Wellington Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D
1	Tapering-Leaf Tiliacora	<i>Tiliacora acuminata</i>	Menispermaceae	Native		+	-	-	-
2	Mexican Prickly Poppy	<i>Argemone mexicana</i>	Papaveraceae	Invasive	NA	+	-	+	-
3	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	+	+	+	-
4	Wild Spider Flower	<i>Gynandropsis gynandra</i>	Cleomaceae	Native	NA	+	-	+	-
5	Indian Parselane	<i>Portulaca oleracea</i>	Portulacaceae	Native	NA	+	-	-	-
6	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	+	-	-	-
7	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	-	-	-
8	Heart leaf sida	<i>Sida cordifolia</i>	Malvaceae	Native	NA	+	-	-	-
9	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	+	-	-
10	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	-	-
11	Indian Plum	<i>Ziziphus mauritiana</i>	Rhamnaceae	Native	NA	+	-	-	-
12	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	+	-	-
13	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	+	-	-	-
14	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	+	-	-	-
15	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	-	+
16	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	-	-	-
17	Papaya Tree	<i>Carica papaya</i>	Caricaceae	Native	DD	+	+	-	-
18	Desert Horse Purslane	<i>Trianthema portulacastrum</i>	Aizoaceae	Native	NA	+	+	-	+
19	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	+	+	-	+
20	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	+	-	+	-
21	Siam Weed	<i>Chromolaena odorata</i>	Asteraceae	Invasive	NA	+	-	+	-
22	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	+	-	-	-
23	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	+	-	+	-
24	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	-	+
25	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	-	-	-
26	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	-	-	-
27	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+	+
28	Sweet indrajao, Palaindigo plant	<i>Wrightia tinctoria</i>	Apocynaceae	Native	LC	+	-	-	+
29	Indian Borage	<i>Trichodesma indicum</i>	Boraginaceae	Native	NA	+	-	-	-
30	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	+	+	-	+
31	Indian Heliotrope	<i>Heliotropium indicum</i>	Heliotropiaceae	Native	NA	+	-	+	-
32	Clustered Morning Glory	<i>Hewittia malabarica</i>	Convolvulaceae	Invasive	NA	+	-	-	-
33	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	+	+
34	Thorny Nightshade	<i>Solanum virginianum</i>	Solanaceae	Native	NA	+	-	-	-
35	Marsh Barbel	<i>Hygrophila schulli</i>	Acanthaceae	Native	LC	+	-	-	-
36	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	+	-	-	-
37	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	+	+	-
38	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	-	+	-
39	Calico Plant	<i>Alternanthera ficoidea</i>	Amaranthaceae	Introduced		+	-	-	-
40	Sessile Joyweed	<i>Alternanthera sessilis</i>	Amaranthaceae	Native	LC	+	+	-	-
41	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	+	-	-	-
42	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	+	-
43	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+	+
44	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	+	-	-	+
45	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	+	-	-	-
46	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	-	-	-
47	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	+	+	-	-
48	Bengal Dayflower	<i>Commelina benghalensis</i>	Commelinaceae	Native	LC	+	-	-	-
49	Coconut Tree	<i>Cocos nucifera</i>	Areaceae	Native	NA	+	-	-	-
50	Common nut sedge, coco grass	<i>Cyperus rotundus</i>	Cyperaceae	Native	LC	+	-	-	-

51	Giant Reed	<i>Arundo donax</i>	Poaceae	Invasive	LC	+	+	-	-
52	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	-	+
53	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	-	+	+
Total						53	19	14	12

Table 5.2: List of Insects recorded along the Cuddalore District (A - Bahour Lake, B - Perumal Lake, C - Veeranam Lake, D - Wellington Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D
1	Spittle bug	<i>Clovioa sp.</i>	Aphrophoridae	+	-	-	-
2	Water Strider	<i>Gerris sp.</i>	Gerridae	+	+	+	-
3	Blue Banded Honeybee	<i>Amegilla cingulata</i>	Apidae	+	-	-	+
4	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	+	+	+
5	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	+	-	-	-
Total				5	2	2	2

Table 5.3: List of Butterflies recorded along the Cuddalore District (A - Bahour Lake, B - Perumal Lake, C - Veeranam Lake, D - Wellington Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	+	-	+	-
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	+	+	+
3	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	+
4	Dark Grass Blue	<i>Zizeeriakar sandra</i>	Polyommatainae	Common	+	-	-	-
5	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+	+
6	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	+	-	-	-
7	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	+	-	-	-
8	Grey Pansy	<i>Junonia atlites</i>	Nymphalinae	Common	+	-	-	-
9	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	+	+	+	-
Total					9	4	5	3

Table 5.4: List of Odonates recorded along the Cuddalore District (A - Bahour Lake, B - Perumal Lake, C - Veeranam Lake, D - Wellington Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D
1	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	+	-	-	-
2	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	+	-	+	-
3	Coromandel Marsh Dart	<i>Ceragrion coromandelianum</i>	Coenagrionidae	Common	+	-	+	-
4	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	+	-	-	-
5	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	-	+	+
6	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	-	-	-
7	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+
8	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+	-
9	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+	+
10	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	+	-	-	-
Total					10	3	6	3

Table 5.5: List of Arachnida recorded along the Cuddalore District (A - Bahour Lake, B - Perumal Lake, C - Veeranam Lake, D - Wellington Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	+	+
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	+	-	-	-
Total				2	0	1	1

Table 5.6: List of Fishes recorded along the Cuddalore District (A - Bahour Lake, B - Perumal Lake, C - Veeranam Lake, D - Wellington Lake)

S. No	Common Name	Scientific Name	Family	Category	IASI	A	B	C	D
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	IASI	+	-	+	+

2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA		+	-	+	-
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT		+	+	+	-
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	IASI	+	-	+	+
5	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	+	+	+	-
6	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC		+	-	+	+
7	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC		+	-	+	-
8	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC		+	-	-	+
9	Spiny eel	<i>Macrogobius pancalus</i>	Mastacembelidae	LC		+	+	+	-
10	Tank goby	<i>Glossogobius giurus</i>	Gobiidae	LC		+	-	-	-
11	Catla	<i>Catla catla</i>	Cyprinidae	LC		+	+	+	-
12	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC		+	-	+	-
13	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC		+	+	+	-
Total						13	5	11	4

Table 5.7: List of Reptiles recorded along the Cuddalore District (A - Bahour Lake, B - Perumal Lake, C - Veeranam Lake, D - Wellington Lake)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Fan-throated Lizard	<i>Sitana ponticeriana</i>	Agamidae	Least Concern	+	-	+	-
2	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+
Total					2	1	2	1

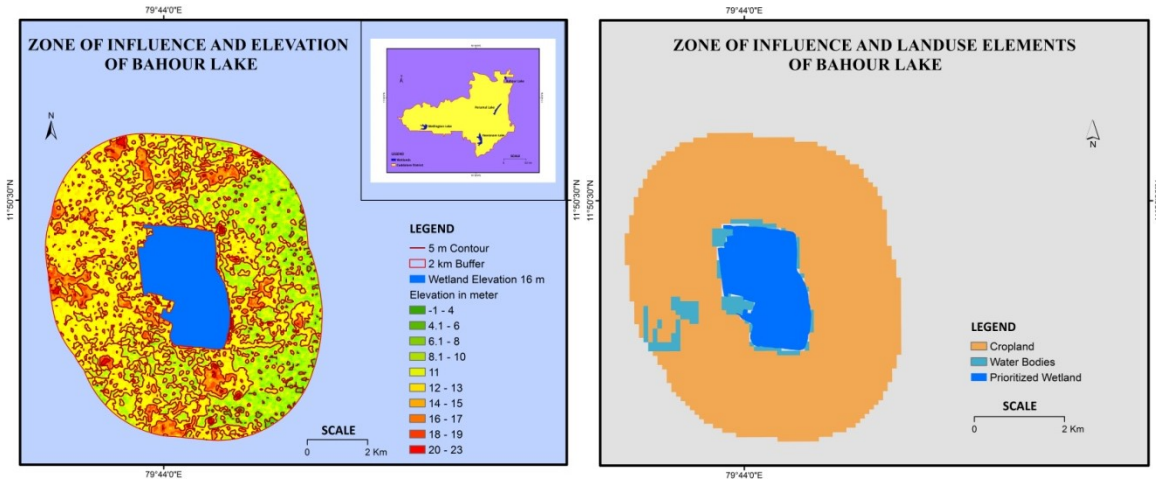
Table 5.8: List of Birds recorded along the Cuddalore District (A - Bahour Lake, B - Perumal Lake, C - Veeranam Lake, D - Wellington Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	+	-	-	-
2	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	+	+
3	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	Least Concern	+	-	+	-
4	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	-	+	-
5	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	+	-	+	+
6	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	-	+	+
7	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	+	+	-
8	Purple Swamphen	<i>Porphyrio porphyrio</i>	Rallidae	Least Concern	+	-	-	-
9	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	+	+	-	+
10	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	-	+
11	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	-	+	-
12	Jacobin Cuckoo	<i>Clamator jacobinus</i>	Cuculidae	Least Concern	+	-	-	-
13	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+	+
14	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	+	+	+	-
15	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+	+
16	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Least Concern	+	-	-	-
17	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	Least Concern	+	-	-	-
18	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	Least Concern	+	-	+	-
19	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	+	+	+	+
20	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+	+
21	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	+	-	+	-
Total					21	9	14	9

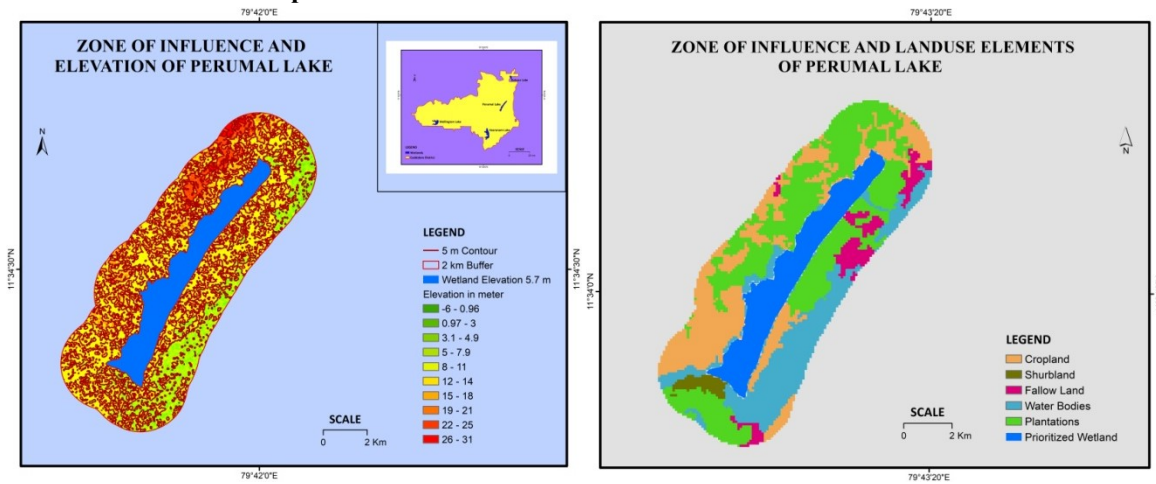
Table 5.9: List of Mammals recorded along the Cuddalore District (A - Bahour Lake, B - Perumal Lake, C - Veeranam Lake, D - Wellington Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+	-
4	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	+	-	-	-
Total					4	3	3	2

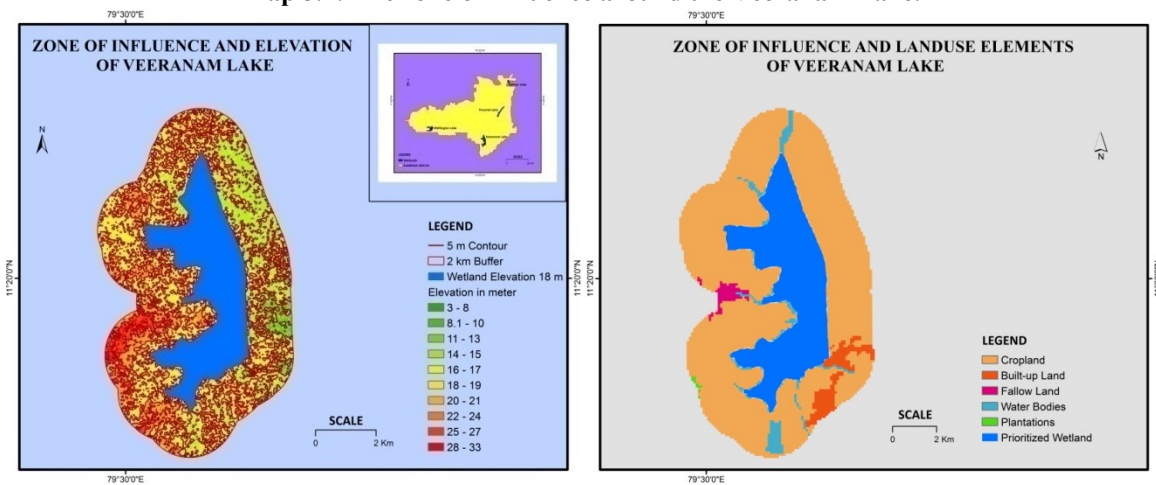
Map 5.2: The zone of influence around the Bahour Lake.



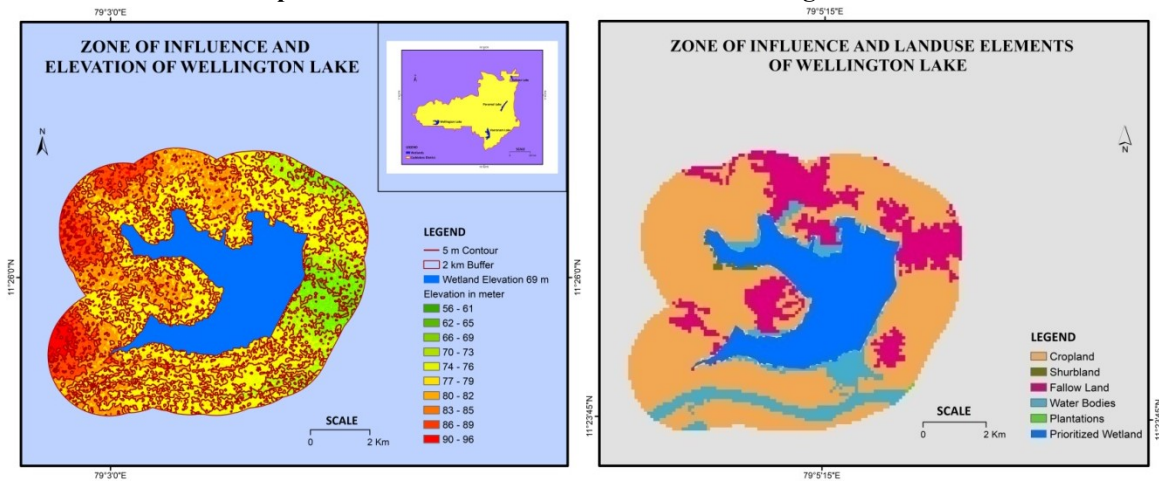
Map 5.3: The zone of influence around the Perumal Lake.



Map 5.4: The zone of influence around the Veeranam Lake.



Map 5.5: The zone of influence around the Wellington Lake.

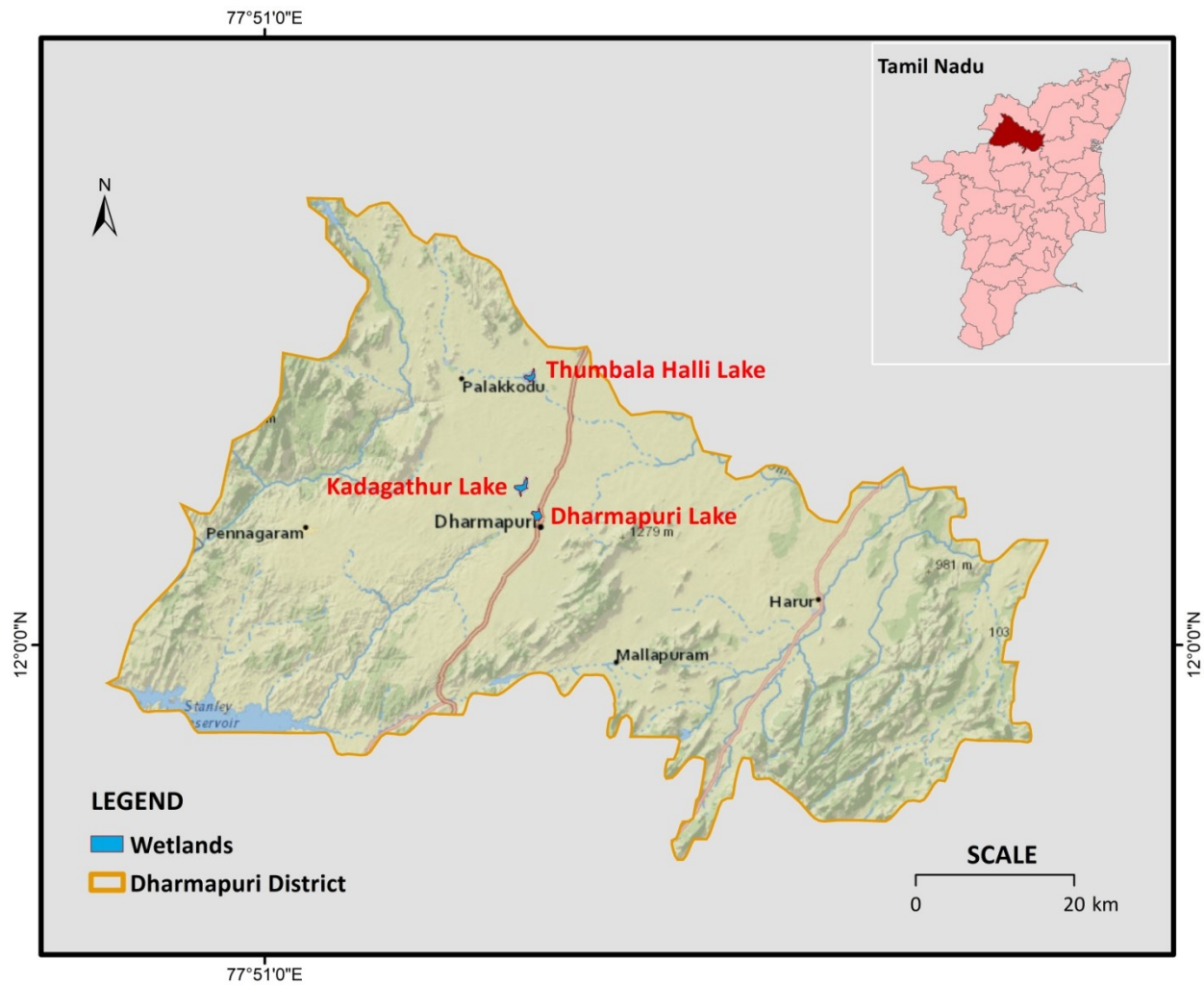


6. Dharmapuri District

Dharmapuri is situated in the north-western corner of the state and is bounded by Tiruvannamalai and Villupuram districts on the east, Salem district on the South, Krishnagiri district on the north and Cauveri river on the west. Dharmapuri district's economy depends on agriculture. About 70% of the population of the district depends on agriculture for their livelihood. A major portion of the cultivable land in the state comes under horticulture.

Dharmapuri was called Tagadur during the Sangam era. The name Tagadur is derived from two Tamil words, "Thagadu" meaning iron (iron ore), and "Oor" meaning "place". The name Tagadur was changed to Dharmapuri after the Sangam period.

Total geographic area of Dharmapuri is 4497.77 km². Total area under wetland is 18215 ha, which includes 482 small wetland (<2.25 ha). Lakes/Ponds occupies 12.42% of wetland area. The major wetland types are Tanks/Ponds and Reservoirs. There are about 812 Tanks/Ponds with 7069 ha area (38.81%) and six reservoirs (6329 ha) exists in the district. Three wetlands were selected for the study with Kadagathur Lake being the largest while the ThumbalaHalli Lake being the smallest of the three (Map 6.1).



Map 6.1: Wetlands of Dharmapuri district assessed for Prioritization

Dharmapuri Lake

Dharmapuri lake is also known as Ramakka Lake (Plate 5) comes under the jurisdiction of PWD, is not a Protected Area. Villages that surround the wetland include Dharmapuri Old Town, Maphikonepalayam, Metturkannur and Kumarasamypettai.

The geographic coordinates are Latitude: 12° 08'43.3" N; 12° 08'48.4" N; 12° 08'57.6" N; and Longitude: 078°09'53.5" E; 078° 09'51.8" E; 078° 09'47.40" E.

Dharmapuri lake is a manmade wetland of permanent nature, with an area of 112 hectares with a depth of 1.5 meters. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and sewage. The water from the wetland helps in replenishing the groundwater and the overflow joins the Ponni river and the agriculture fields. The wetland surrounded by 50% Agriculture, 20% Rural settlements, 20% Urban settlements and 10% Grasslands/Scrublands. It has an area of 2220.92 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 6.2).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.8, salinity measuring 0.461 ppt, the TDS was recorded high at 1120 ppm. The vegetation comprised of 47 plant species (Table 6.1) including 11 invasive species dominated by *Prosopis juliflora*, *Lantana camara* and *Ipomoea sp.* The fauna comprised of 57 animal species including 4 domestic species were recorded during the survey (Table 6.2 to 6.8). One Threatened bird species and four fish species were recorded during the survey. There is the presence of introduced common carps and Tilapia in the lake the extent of their invasion is not documented.

The water from the wetland is not used for drinking purpose, but regularly used for agriculture. Fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The commercial fishery is under the contract of the PWD, who introduces the fish seeds. The site adjoining the wetland is used majorly by the locals for agriculture and fish culture. The borassus plant sap is collected for local consumption and sale in the local market. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a major temple along its vicinity and major cultural and religious activities are performed in the wetland. The local visit the wetland as the municipality has developed the walking track. However, the entire area is littered with plastic making it a very sore site.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure, encroachment and garbage dumping. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures. The wetland faces a severe threat from land use change mainly due to solid waste dumping and plastic pollution.

The wetland is not a protected area. The dumping of waste, sewage and effluents within the wetland should be taken care and it should be seen that it does not encroach into the wetland area any further.

Kadagathur Lake

Kadagathur (Plate 5) based in Dharmapuri district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Kadagathur, Mattiyambatti, Satukottai and Mettukottai.

The geographic coordinates are Latitude: 12° 10'25.6" N; 12° 10'33.9" N; 12° 10'36.7" N; and Longitude: 078° 08'21.7" E; 078° 08'21.9" E; 078° 08'27.1" E.

Kadagathureri is a Natural (inland) tank category in the sub category seasonal intermittent tank there is no water for the past 15 years because of the check dams in the feeder channel. The lake has an area of 128 hectares with a depth of 2.5 meters. The main source of water for the wetland is rainfall, panchapalli dam (no water now) the surrounding runoff from the catchment area and sewage. The water from the wetland helps in replenishing the groundwater. The wetland surrounded by 80% Agriculture and 20% Rural settlements. It has an area of 1887.75 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 6.3).

The wetland was dry during the visit, hence the water quality was not assessed. The vegetation comprised of 16 plant species (Table 6.1) including five invasive species dominated by *Prosopis juliflora*, *Parthenium hysterophorus* and *Datura metel*. The fauna comprised of 15 animal species including 2 domestic species were recorded during the survey (Table 6.2 to 6.8). No Threatened species were recorded during the survey. Invasive species *Tilapia sp.* and common carps were recorded as per the locals. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is not used for agriculture. The wetland is used for agriculture and serves as a ground water recharge as long as the water is present. The borassus plant sap is collected for local consumption and sale in the local market. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a major temple along its vicinity and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure, encroachment and garbage dumping. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not a protected area, the growing agriculture activities need to be regulated as this is increasing due to absence of water for over 15 years.

Thumbala Halli Lake

Thumbala Halli Lake (Plate 6) commonly known as Thumbalahalli dam is based in Karyamangalam taluka in Dharmapuri district, is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Narinalli, Devankottai, Gundiganalli, Thumbalahalli, Nariyanahalli and Pothanalli.

The geographic coordinates are Latitude: 12° 18'03.7" N; 12° 18'03.0" N; 12° 18'06.7" N; 12° 18'13.3" N; 12° 18'09.7" and Longitude: 078° 09'16.5" E; 078° 09'12.2" E; 078° 09'14.5" E; 078° 09'11.3" E; 078° 09'18.9" E.

Thumbala Halli Lake is a wetland belongs to the Man-made (inland) tank category in the sub category seasonal intermittent tank there is no water for the past 10 years in full capacity and only the rainwater is collected that remains for four months. The Panchapalli dam that feed the dam is not supplying the water due to damaged channels. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and sewage. The lake has an area of 88 hectares with a depth of 4 meters. The water from the wetland helps in replenishing the groundwater. The wetland surrounded by 90% Agriculture and 10% Rural settlements. It has an area of 2246.44 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 6.4).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.7, salinity measuring 0.285 ppt, the TDS was recorded high at 416 ppm. The vegetation comprised of 43 plant species (Table 6.1) including eight invasive species dominated by *Parthenium hysterophorus*, *Ipomoea sp.*, *Lantana camara*. The fauna comprised of 48 animal species including 3 domestic species were recorded during the survey (Table 6.2 to 6.8). One Threatened

bird species was recorded during the survey. There is the presence of introduced common carps and Tilapia in the lake the extent of their invasion is not documented.

The wetland is used for agriculture and serves as a ground water recharge as long as the water is present. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The mining for sand or silt is undertaken. The wetland has a major temple along its vicinity and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water the overflow feeds the Satanur Dam if water is available. The wetland has been facing land use change pressure, encroachment and garbage dumping. During the time of our visit, there were several cement bags that were being washed in the wetland adding to the pollutants. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not a protected area. The wetland faces a severe threat from land use change mainly due to agriculture activities and solid waste dumping and plastic pollution.

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Table 6.1: List of Plant species recorded along the Dharmapuri District (A - Dharmapuri Lake, B - Kadagathur Lake, C - Tumbalahalli Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	---	<i>Abelmoschus angulosus</i>	Malvaceae	Native	NA	+	-	-
2	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	+	-	-
3	Fragrant Swamp Mallow	<i>Pavonia leptocalyx</i>	Malvaceae	Native	NA	+	-	-
4	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	-	+
5	Heart leaf sida	<i>Sida cordifolia</i>	Malvaceae	Native	NA	+	+	+
6	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	-	+
7	Indian Plum	<i>Ziziphus mauritiana</i>	Rhamnaceae	Native	NA	+	-	-
8	Siris Tree, Women's tongue	<i>Albizia lebbek</i>	Fabaceae	Native	NA	+	-	-
9	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	-
10	Common Sesban	<i>Sesbania sesban</i>	Fabaceae	Native	NA	+	-	-
11	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	+	-	-
12	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	+	+	-
13	Ribbed Sponge Gourd	<i>Luffa acutangula</i>	Cucurbitaceae	Native	NA	+	-	-
14	Desert Horse Purslane	<i>Trianthema portulacastrum</i>	Aizoaceae	Native	NA	+	-	-
15	Beggar Tick	<i>Biden spilosa</i>	Asteraceae	Exotic	NA	+	-	-
16	Siam Weed	<i>Chromolaena odorata</i>	Asteraceae	Invasive	NA	+	-	-
17	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	+	-	-
18	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	+	-	-
19	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+
20	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	-	+
21	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	-	-
22	Rosy Milkweed Vine	<i>Oxystelma esculentum</i>	Apocynaceae	Native	LC	+	-	-
23	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	+	-	+
24	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	-	+
25	Black nightshade	<i>Solanum nigrum</i>	Solanaceae	Native	NA	+	-	-
26	Ganges Primrose	<i>Asystasia gangetica</i>	Acanthaceae	Native	NA	+	-	-
27	Long-flower Barleria	<i>Barleria acuminata</i>	Acanthaceae	Native	NA	+	-	-
28	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	+	-	+
29	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	+	-	+
30	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	-	+
31	Diffuse Hogweed	<i>Commicarpus chinensis</i>	Nyctaginaceae	Native	NA	+	-	-
32	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	-	-
33	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	-	+
34	Smooth Chaff Flower	<i>Alternanthera paronychioides</i>	Amaranthaceae	Naturalized	NA	+	-	-
35	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	+	-	-
36	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	+	-	-
37	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+
38	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	+	-	+
39	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	+	-	-
40	Indian Elm	<i>Holoptelea integrifolia</i>	Ulmaceae	Native	NA	+	-	-
41	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	+	-	-
42	Palmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	-	+
43	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	-	+
44	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	-	+
45	Indian crowfoot grass	<i>Eleusine indica</i>	Poaceae	Native	LC	+	-	-
46	Finger grass	<i>Enteropogon dolichos tachyus</i>	Poaceae	Native	NA	+	-	-
47	Slimflower Lovegrass	<i>Eragrostis gangetica</i>	Poaceae	Native	NA	+	-	-
Total						47	5	16

Table 6.2: List of Insect species recorded along the Dharmapuri District (A - Dharmapuri Lake, B - Kadagathur Lake, C - Tumbalahalli Lake)

S. No	Common Name	Scientific Name	Family	A	B	C
1	Water Strider	<i>Gerris sp.</i>	Gerridae	+	-	+
2	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	-	+
3	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	-	+
Total				3	0	3

Table 6.3: List of Butterfly species recorded along the Dharmapuri District (A - Dharmapuri Lake, B - Kadagathur Lake, C - Tumbalahalli Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Papilionidae	Common	+	+	+
2	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	-	-
3	Plain Tiger	<i>Danaus chrysippus</i>	Danaidae	Common	+	+	+
4	Common Crow	<i>Euploea core</i>	Danaidae	Common	+	-	-
5	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalidae	Common	+	-	-
Total					5	2	2

Table 6.4: List of Odonates recorded along the Dharmapuri District (A - Dharmapuri Lake, B - Kadagathur Lake, C - Tumbalahalli Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+
2	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	-	-
3	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	-	-
4	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+
Total					4	2	2

Table 6.5: List of Fishes species recorded along the Dharmapuri District (A - Dharmapuri Lake, B - Kadagathur Lake, C - Tumbalahalli Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	-	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	-	+
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	+	-	+
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	-	+
5	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	-	+
6	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	+	-	-
7	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	+	-	-
8	Catla	<i>Catla catla</i>	Cyprinidae	LC	+	-	+
9	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	+	-	-
10	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	-	+
11	Spiny loach	<i>Lepidocephalichthys thermalis</i>	Cobitidae	LC	+	-	-
12	Long whiskers catfish	<i>Mystus gulio</i>	Bagridae	LC	+	-	-
Total					12	0	7

Table 6.6: List of Reptiles species recorded along the Dharmapuri District(A - Dharmapuri Lake, B - Kadagathur Lake, C - Tumbalahalli Lake)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C
1	Fan-throated Lizard	<i>Sitana ponticeriana</i>	Agamidae	Least Concern	+	-	-
2	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+
Total					2	1	1

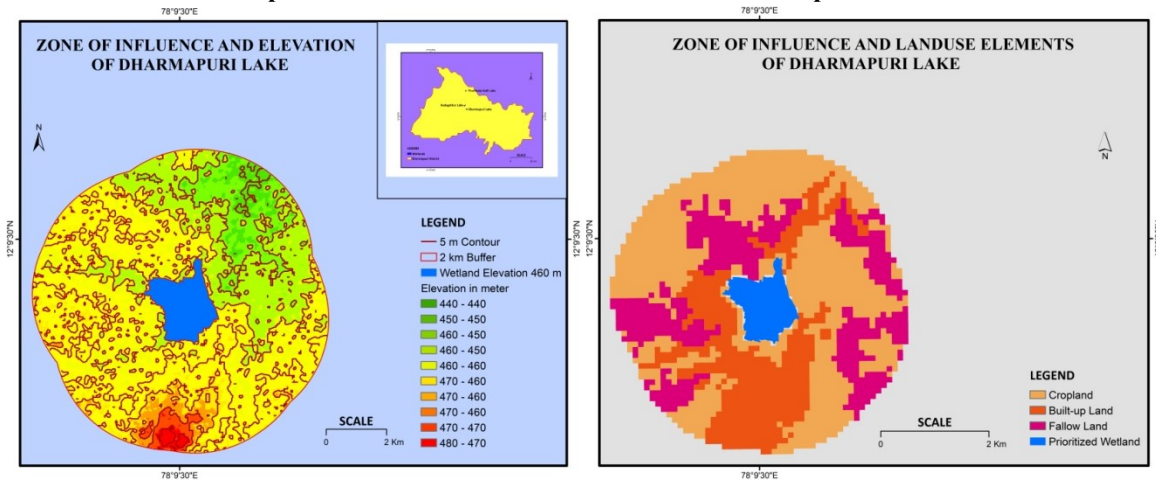
Table 6.7: List of Birds species recorded along the Dharmapuri District (A - Dharmapuri Lake, B - Kadagathur Lake, C - Tumbalahalli Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Least Concern	+	-	-
2	Garganey	<i>Anas querquedula</i>	Anatidae	Least Concern	+	-	-
3	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	-	+
4	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	-	-
5	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	-	+
6	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	-	+
7	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	+	-	-
8	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	-	+
9	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	Least Concern	+	-	+
10	Common Snipe	<i>Gallinago gallinago</i>	Scolopacidae	Least Concern	+	-	-
11	Green Sandpiper	<i>Tringa ochropus</i>	Scolopacidae	Least Concern	+	-	-
12	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Least Concern	+	-	-
13	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	+	-	-
14	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	-	+
15	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	+	+
16	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	-	+
17	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Least Concern	+	+	+
18	Blue-tailed Bee eater	<i>Merops philippinus</i>	Meropidae	Least Concern	+	-	-
19	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+
20	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	-	+
21	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	+	-	-
22	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	Least Concern	+	-	-
23	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	+	-	+
24	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
25	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	+	+	+
26	White Wagtail	<i>Motacilla alba</i>	Motacillidae	Least Concern	+	-	-
Total					26	5	14

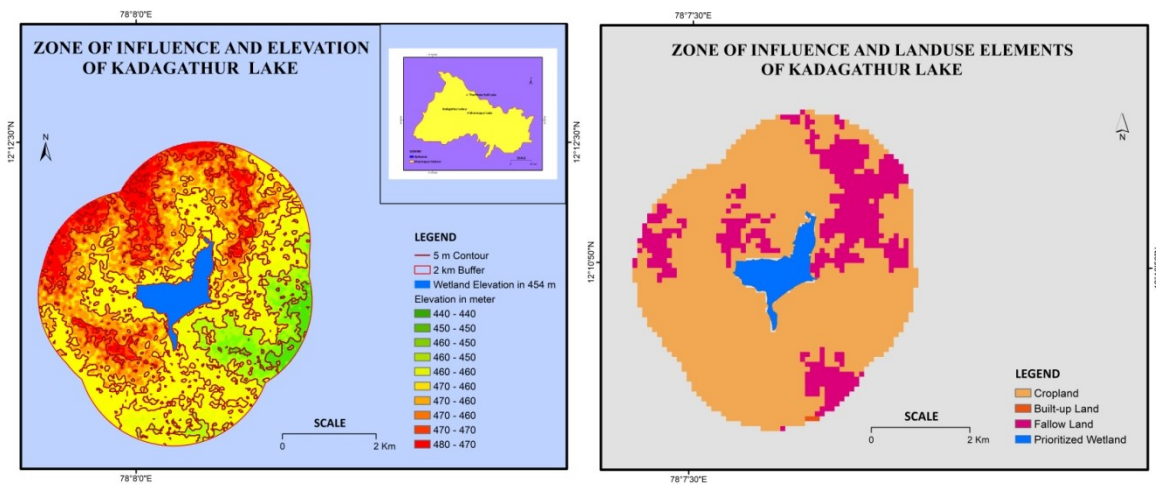
Table 6.8: List of Mammals species recorded along the Dharmapuri District (A - Dharmapuri Lake, B - Kadagathur Lake, C - Tumbalahalli Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	-	+
4	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	+	-	-
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Common	+	-	+
Total					5	2	4

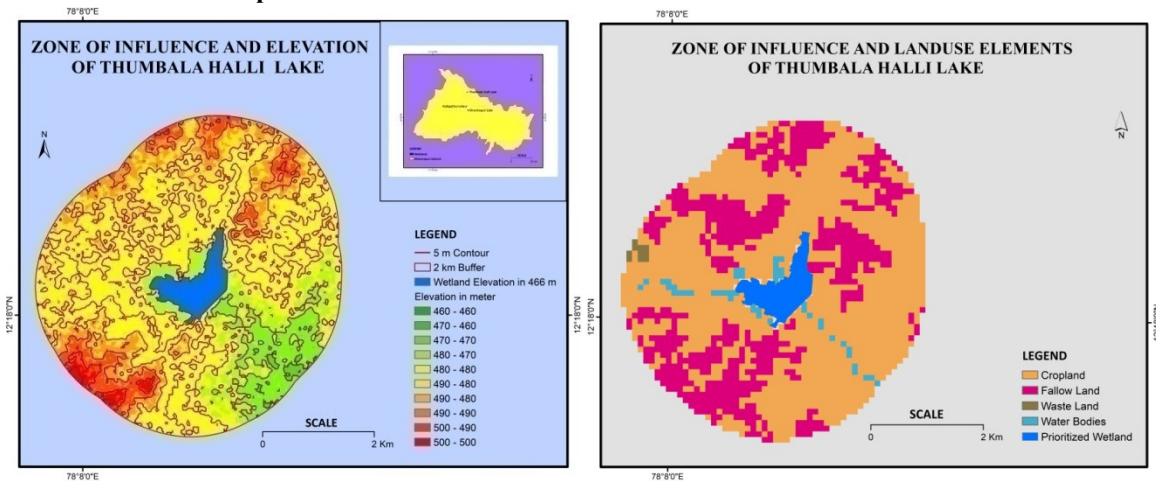
Map 6.2: The zone of influence around the Dharmapuri Lake.



Map 6.3: The zone of influence around the Kasagathur Lake.



Map 6.4: The zone of influence around the ThumbalaHalli Lake.



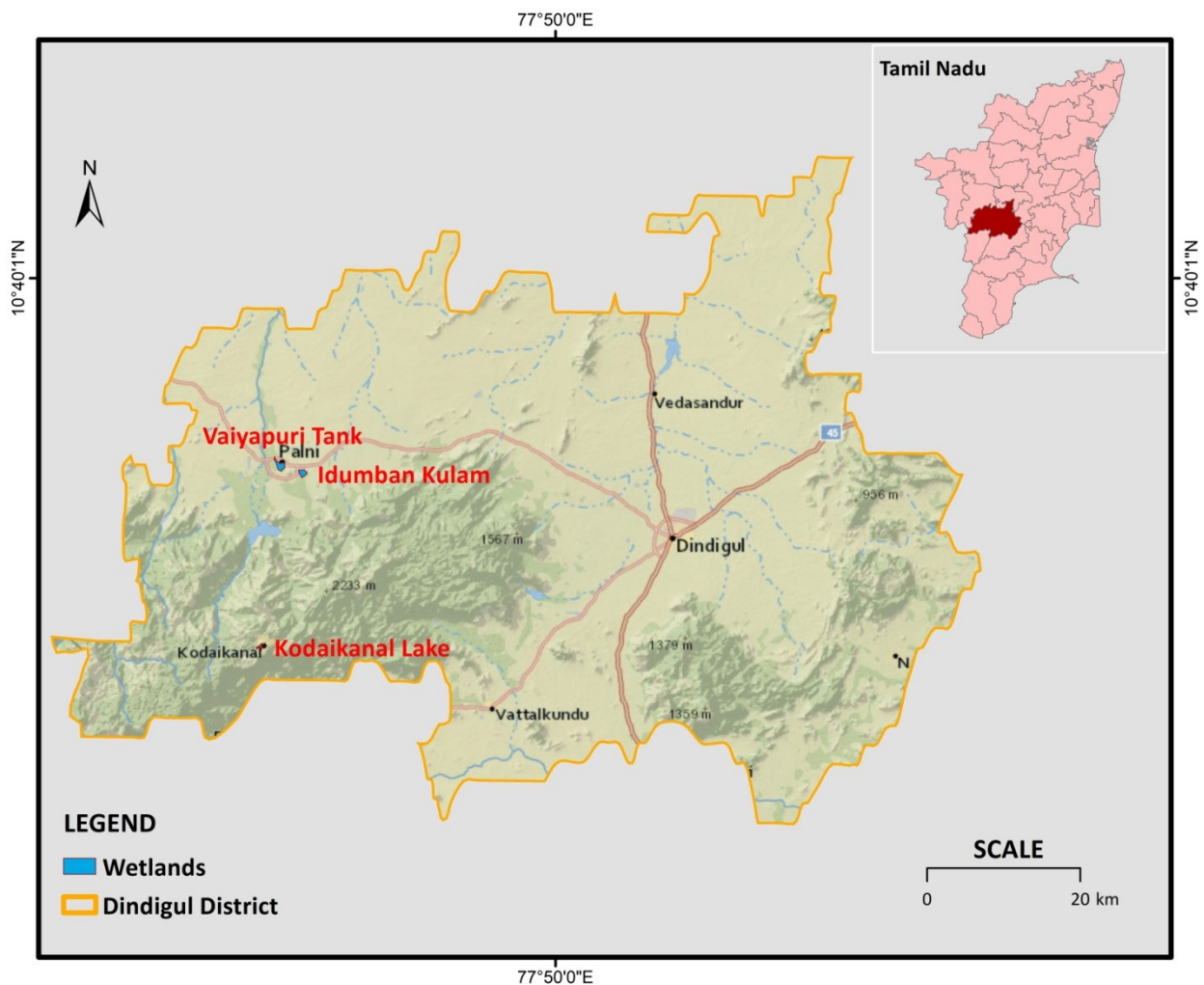
7. Dindigul District

Dindigul district is was carved out of Madurai district in 1985. It has an area of 6266.64 km². Dindigul district is bound by Erode, Coimbatore, Karur and Trichy districts on the North, by Sivaganga and Tiruchi District on the East, by Madurai district on the South and by Theni and Coimbatore districts and Kerala State on the West.

Numerous temples, mosques and churches are found in Dindigul and there is increased religious tourism in the district.

Total area under wetland is 13815 ha, which includes 964 small wetland (<2.25 ha). Tanks/Ponds occupy 46.08% of wetland area. Other wetland types are Lakes/Ponds (3481 ha), Reservoirs (8.81 %) and River/Stream (12.94 %).

Three wetlands were selected from Dindigul district the Vaiyapuri wetland was selected on the basis of available literature and religious importance the other two wetlands were selected on the basis of google imagery and secondary information (Map 7.1)



Map 7.1: Wetlands of Dindigul district assessed for Prioritization

Kodai Kanal Lake

Kodaikanal is one of the best hill stations of Tamil Nadu and Kodaikanal lake (Plate 6) is one of the main tourist attraction. The lake was formed during 1863 by the then collector of Madurai district Sir Venci Henry Levin. The wetland in Dindigul district comes under the jurisdiction of Kodai Kanal Municipal Corporation is not a Protected Area. Villages that surround the wetland include Kodaikanal town that comprises of Gymkhana road, lower shola road, Bombay Shola, Bryan park road, Club road, Observatory road and Old Convent road.

The geographic coordinates are Latitude: 10° 14'03.7" N; 10° 13'47.2" N; and Longitude: 077° 29'14.5" E; 077° 29'14.2" E.

Kodaikanal lake is a wetland belongs to the Man- made (inland) permanent tank category. The main source of water for the wetland is rainfall and the surrounding runoff from the catchment area. The lake has an area of 25.4 hectares with a depth varying from 2 to 7 meters. The water from the wetland helps in replenishing the groundwater and the overflow joins the Palar dam. The wetland surrounded by 05% Agriculture 80% Urban settlements and 15% Forest. It has an area of 1887.75 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 7.2).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.7, salinity measuring 0.084 ppt, the TDS was recorded high at 150 ppm. The vegetation comprised of 32 plant species (Table 7.1) including three invasive species dominated by *Oxalis sp.*, *Lantana camara*, and *Gomphrena sp.* The fauna comprised of 15 animal species including 2 domestic species were recorded during the survey (Table 7.2 to 7.9). Threatened bird species were not recorded during the survey.

The water from the wetland is used for agriculture and drinking at the downhill region. The township gets its drinking water from the borewells. The overflow water feeds the agricultural lands and the Palar dam. Fishery is not undertaken for commercial purpose, but some amount of recreational fishery is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a high tourism pressure that uses the lake for recreational purposes.

The site adjoining the wetland is used majorly used by tourist and the sewage and effluents from the surrounding hotels and residential areas is released into the lake. The locals are aware of the importance of the wetland but there are no major encroachment issues. The wetland faces a severe threat from the unregulated tourism that is affecting the quality of the water. The wetland has a little potential of change in the outflow of the water. The wetland water quality and the ecological character are changing rapidly due to lack of conservation measures.

The wetland is conserved under the NLCP, it is not a protected area. Tourism needs to be regulated and encouraged to practice conservation measures.

Idumban Kulam

Idumban Kulam (Plate 6) is based in Palani Taluk in Dindigul district comes under the jurisdiction of PWD is not a Protected Area. Villages that surround the wetland include Sivagiripatti, Merkuayakudi and Palani town.

The geographic coordinates are Latitude: 10° 26'28.5" N; 10° 26'28.6" N; 10° 26'19.1" N; and Longitude: 077° 31'54.8" E; 077° 31'55.9" E; 077° 31'55.4" E.

Idumban Kulam is a wetland that belongs to the Natural (inland) seasonal intermittent tank category. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and Barathanadi dam's indirect influence. The lake has an area of 71.5 hectares with a depth varying from 2.5 to 10 meters. The water

from the wetland helps in replenishing the groundwater and the overflow joins the Vaiyapuri tank. The wetland surrounded by 85% Agriculture and 15% Rural settlements. It has an area of 321 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 7.3).

The wetland was mesotrophic during the visit, with the pH of the water being 8.5, salinity measuring 0.038 ppt, the TDS was recorded high at 1050 ppm. The vegetation comprised of 45 plant species (Table 7.1) including ten invasive species dominated by *Prosopis juliflora*, *Parthenium sp.*, *Althandnthra sp.*, and *Ipomoea sp.* The fauna comprised of 64 animal species including 4 domestic species were recorded during the survey (Table 7.2 to 7.9). Three Threatened species of birds were observed during the survey. Two invasive fish species were recorded. Fishing is undertaken and is under the control of the PWD.

The water from the wetland is used for agriculture. The municipal corporation provides drinking water from the Palaru dam Bardhamanadi at regular intervals that is used by the locals to fulfill their daily requirements. The wetland is not used for any purpose but serves as a ground water recharge as long as the water is present. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a major Idumban temple along its vicinity and major cultural and religious activities are performed in the wetland. The site adjoining the wetland is used majorly used by the religious tourist for dumping garbage, release of sewage and effluents and as toilet.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure. The wetland water quality and the ecological character are changing rapidly due to lack of conservation measures. The wetland faces a severe threat from the unregulated tourism that is impacting the the quality of the water.

The wetland is not is not a protected area. Tourism needs to be regulated and encouraged to practice conservation measures.

Vaiyapuri tank

Vaiyapuri Lake is the Theertham associated with the Palani Murugan temple. Vaiyapuri Lake (Plate 6) is connected to Shanmuga Nadhi (river). Shanmuga Nadhi is also considered as one of the Theerthams associated with Palani Murugan temple. Vaiyapuri lake is situated at Palani, Dindukal district. Villages that surround the wetland include Palani, Balasamuthiram, Sanmuganathi, Dr. Ansari street and Madinanagar. The wetland comes under the jurisdiction of PWD is not a Protected Area.

The geographic coordinates are Latitude: 10° 26'59.8" N; 10° 27'04.7" N; 10° 27'04.0" N; 10° 26'55.6" N; 10° 26'47.9" N; and Longitude: 077° 30'44.9" E; 077° 30'24.3" E; 077° 30'16.9" E; 077° 30'19.0" E; 077° 30'23.4" E

Vaiyapuri Lake is a wetland that belongs to the Natural (inland) seasonal intermittent tank category. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and Barathamalai dam's indirect influence. The lake has an area of 103 hectares with a depth of 3.5 meters. The water from the wetland helps in replenishing the groundwater and the overflow joins the river. The wetland surrounded by 50% Agriculture and 50% Urban settlements. It has an area of 262 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 7.4).

The wetland was eutrophic during the visit, with the pH of the water being 6.5, salinity measuring 0.120 ppt, the TDS was recorded high at 156 ppm. The vegetation comprised of 42 plant species (Table 7.1) including nine invasive species dominated by *Prosopis juliflora*, *Eichorinea carssipes* and *Ipomoea sp.* The fauna comprised of 67

animal species including 5 domestic species were recorded during the survey (Table 7.2 to 7.9). Threatened species of birds were not observed during the survey.

The water from the wetland is used for agriculture. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is not undertaken for commercial purpose, but some amount of recreational fishery is undertaken. The borassus plant sap is collected for local consumption and sale in the local market. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a major Palani temple along its vicinity and major cultural and religious activities are performed in the wetland. The surrounding area of the wetland is heavily encroached upon.

The site adjoining the wetland is used majorly used by the locals for dumping garbage, release of sewage and effluents and as toilet. The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure. The wetland water quality and the ecological character are changing rapidly due to lack of conservation measures.

The wetland is not is not a protected area. The local municipality has encroached into the wetland and constructed the bus stand with the approval of the PWD. The wetland faces a severe threat from land use change and compromise in the quality of the water. The polluting practices around the wetland should be taken care and it should be seen that it does not encroach into the wetland area any further.

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Table 7.1: List of Plant species recorded along the Dindigul District (A - Kodaikanal Lake, B - IdumbanKulam, C - Vaiyapuri Tank)

S. No	Common Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	Blue water lily,	<i>Nymphaea nouchali</i>	Nymphaeaceae	Native	LC	+	-	-
2	Nilofar, White water lily	<i>Nymphaea alba</i>	Nymphaeaceae	Native	LC	+	-	-
3	Indian tulip tree	<i>Thespesia populnea</i>	Malvaceae	Native	LC	+	-	-
4	Creeping Wood Sorrel	<i>Oxalis corniculata</i>	Oxalidaceae	Invasive	NA	+	-	-
5	Wild Sword Bean	<i>Canavalia cathartica</i>	Fabaceae	Native	NA	+	-	+
6	Indian Coral Tree	<i>Erythrina suberosa</i>	Fabaceae	Native		+	-	-
7	Himalayan Strawberry	<i>Fragaria vesca</i>	Rosaceae	Native		+	-	-
8	Yellow Himalayan Raspberry	<i>Rubus ellipticus</i>	Rosaceae	Native		+	-	-
9	Lemon Scented Gum,	<i>Corymbia citriodora</i>	Myrtaceae	Introduced		+	-	-
10	Passion Fruit,	<i>Passiflora edulis</i>	Passifloraceae	Introduced		+	-	-
11	Hydrangea,	<i>Hydrangea macrophylla</i>	Hydrangeaceae	Introduced		+	-	-
12	Marguerite Daisy	<i>Argyranthemum gracile</i>	Asteraceae	Introduced		+	-	-
13	English Daisy, Lawn Daisy	<i>Bellis perennis</i>	Asteraceae	Naturalized		+	-	-
14	Paper daisy, Strawflower	<i>Xerochrysium bracteatum</i>	Asteraceae	Introduced		+	-	-
15	Scarlet Milkweed,	<i>Asclepias curassavica</i>	Apocynaceae	Naturalized		+	-	-
16	Common Morning Glory	<i>Ipomoea purpurea</i>	Convolvulaceae	Naturalized		+	-	-
17	Angel's trumpet	<i>Brugmansia suaveolens</i>	Solanaceae	Naturalized	EW	+	-	-
18	African Tulip Tree	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	LC	+	-	-
19	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	+	+	-
20	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	-
21	Nepal Alder, Indian Alder	<i>Alnus nepalensis</i>	Betulaceae	Native	LC	+	-	-
22	Water Thyme, hydrilla	<i>Hydrilla verticillata</i>	Hydrocharitaceae	Native	LC	+	-	-
23	Indian Shot, Wild canna	<i>Canna indica</i>	Cannaceae	Naturalized	NA	+	-	-
24	Cape lily	<i>Crinum powellii</i>	Amaryllidaceae	Introduced		+	-	-
25		<i>Alstroemeria pelegina</i>	Alstroemeriaceae	Introduced		+	-	-
26	Grass of the Dew	<i>Cyanotis arachnoidea</i>	Commelinaceae	Native	NA	+	-	-
27	Sahyadri Dew-Grass	<i>Cyanotis tuberosa</i>	Commelinaceae	Native	NA	+	-	-
28	Floating Lace Plant	<i>Aponogeton natans</i>	Aponogetonaceae	Native	LC	+	-	-
29	Bog Bullrush	<i>Schoenoplectiella mucronata</i>	Cyperaceae	Native	LC	+	-	-
30	Browntop Millet	<i>Brachiariaramosa</i>	Poaceae	Native	LC	+	-	-
31	Fish bone fern, Tuberous sword fern	<i>Nephrolepis cordifolia</i>	Nephrolepidaceae	Introduced		+	-	-
32	Boston Fern	<i>Nephrolepis exaltata</i>	Nephrolepidaceae	Introduced		+	-	-
Total						32	2	1

Table 7.2: List of Insect species recorded along the Dindigul District (A - Kodaikanal Lake, B - IdumbanKulam, C - Vaiyapuri Tank)

S. No	Common Name	Scientific Name	Family	A	B	C
1	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	+	+
2	Grasshopper species	<i>Criotettix bispinosus</i>	Tetrigidae	-	+	-
3	Water Strider	<i>Gerris sp.</i>	Gerridae	+	+	+
4	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	-	+	-
5	Whirligig Beetle	<i>Gyrinus sp.</i>	Gyrinidae	-	+	-
6	Blue Banded Honeybee	<i>Amegilla cingulata</i>	Apidae	-	+	-
7	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	-	+	-
8	ArborealBicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	+	-
9	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	-	+	+
10	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	+	+
Total				1	10	4

Table 7.3: List of Butterfly species recorded along the Dindigul District(A - Kodaikanal Lake, B - IdumbanKulam, C - Vaiyapuri Tank)

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	African Marbled Skipper	<i>Gomalia elma</i>	Pyrginae	Uncommon	-	+	-
2	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	-	+	+
3	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	-	+	-
4	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	-	+	+
5	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	-	+	+
6	Joker	<i>Byblia ilithyia</i>	Biblidinae	Common	-	+	-
7	Peacock Pansy	<i>Junonia almana</i>	Nymphalinae	Common	-	+	-
Total					0	7	3

Table 7.4: List of Fish species recorded along the Dindigul District (A - Kodaikanal Lake, B - IdumbanKulam, C - Vaiyapuri Tank)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	+	+	+
2	Catla	<i>Catla catla</i>	Cyprinidae	LC	+	-	+
3	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	-	-
4	White sardinella	<i>Sardinella albella</i>	Clupeidae	LC	+	-	-
Total					4	1	2

Table 7.5: List of Odonata species recorded along the Dindigul District (A - Kodaikanal Lake, B - IdumbanKulam, C - Vaiyapuri Tank)

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	+	+
2	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	-	+	-
3	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	-	+	+
4	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	-	+	+
5	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	-	+	+
6	Red Marsh Trotter	<i>Tramea basilaris</i>	Libellulidae	Common	-	+	-
7	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	-	+	-
8	Pigmy Dartlet	<i>Agriocnemis pygmaea</i>	Coenagrionidae	Common	-	-	+
9	Greater Crimson Glider	<i>Urothemis signata</i>	Libellulidae	Common	-	+	+
Total					0	8	6

Table 7.6: List of Arachnida species recorded along the Dindigul District (A - Kodaikanal Lake, B - IdumbanKulam, C - Vaiyapuri Tank)

S. No	Common Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	-	+	+
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	-	+
Total				0	1	2

Table 7.7: List of Reptiles species recorded along the Dindigul District (A - Kodaikanal Lake, B - IdumbanKulam, C - Vaiyapuri Tank)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	-	+	+
Total					0	1	1

Table 7.8: List of Bird species recorded along the Dindigul District (A - Kodaikanal Lake, B - IdumbanKulam, C - Vaiyapuri Tank)

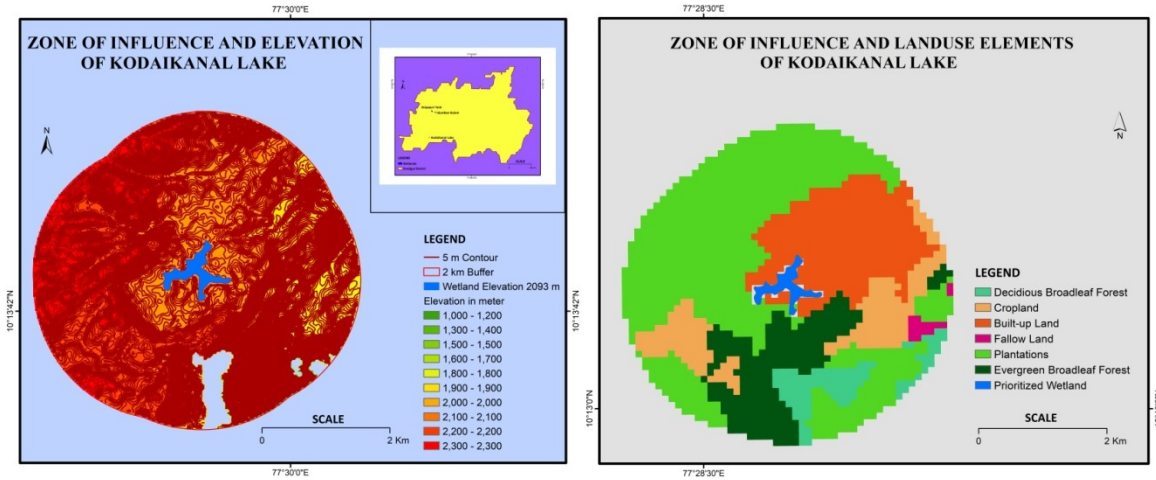
S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	+	+	-
2	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	Least Concern	+	-	-

3	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	+	-	-
4	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
5	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	Pycnonotidae	Least Concern	+	-	-
6	Jungle Myna	<i>Acridotheres fuscus</i>	Sturnidae	Least Concern	+	-	-
7	House Sparrow	<i>Passer domesticus</i>	Passeridae	Least Concern	+	-	-
8	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	Least Concern	+	+	-
Total					8	3	1

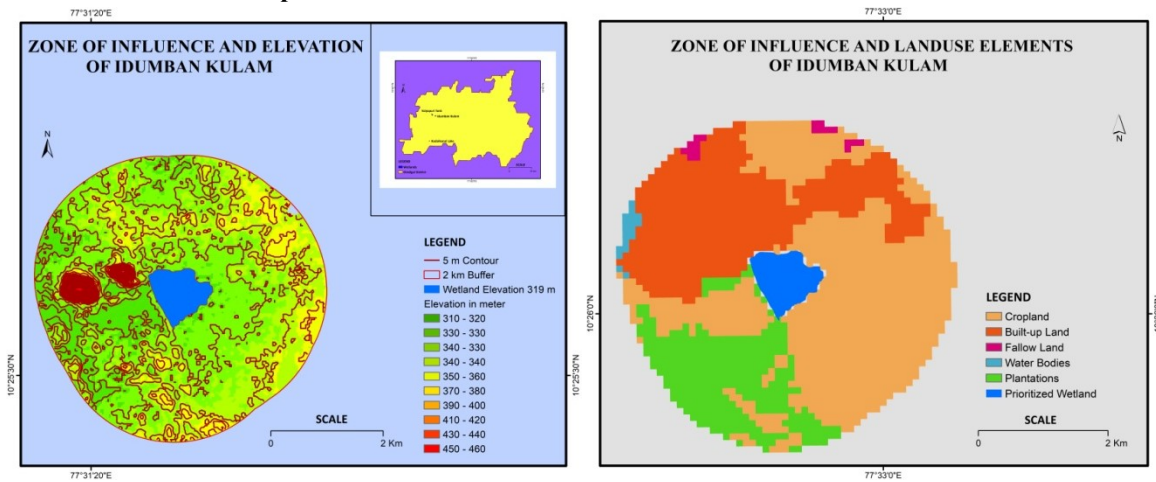
Table 7.9: List of Mammals species recorded along the Dindigul District (A - Kodaikanal Lake, B - IdumbanKulam, C - Vaiyapuri Tank)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	-	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	-	+	+
4	Horse	<i>Equus ferus caballus</i>	Equidae	Domestic	+	+	+
Total					2	4	4

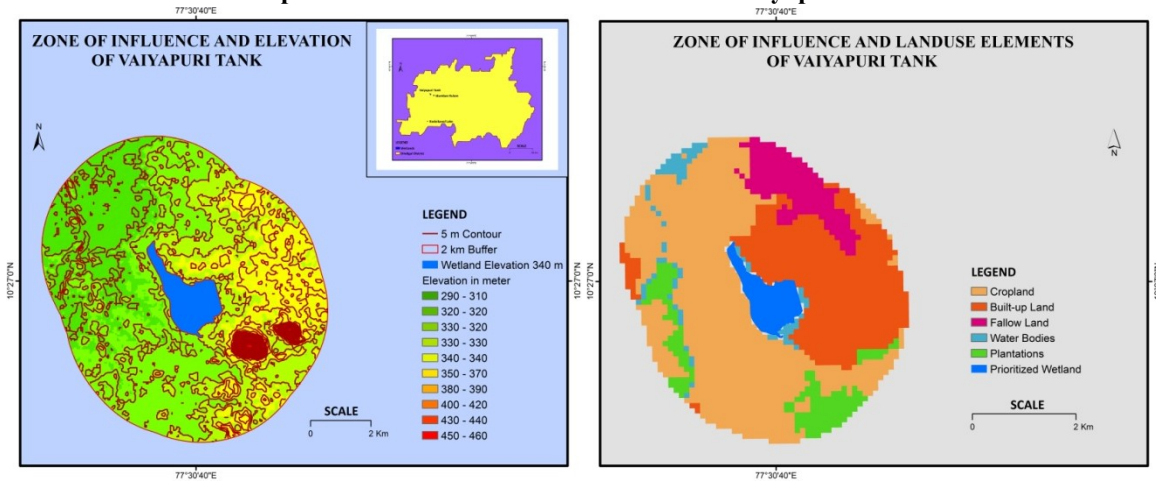
Map 7.2: The zone of influence around the Kodaikanal Lake.



Map 7.3: The zone of influence around the IdumbanKulam.



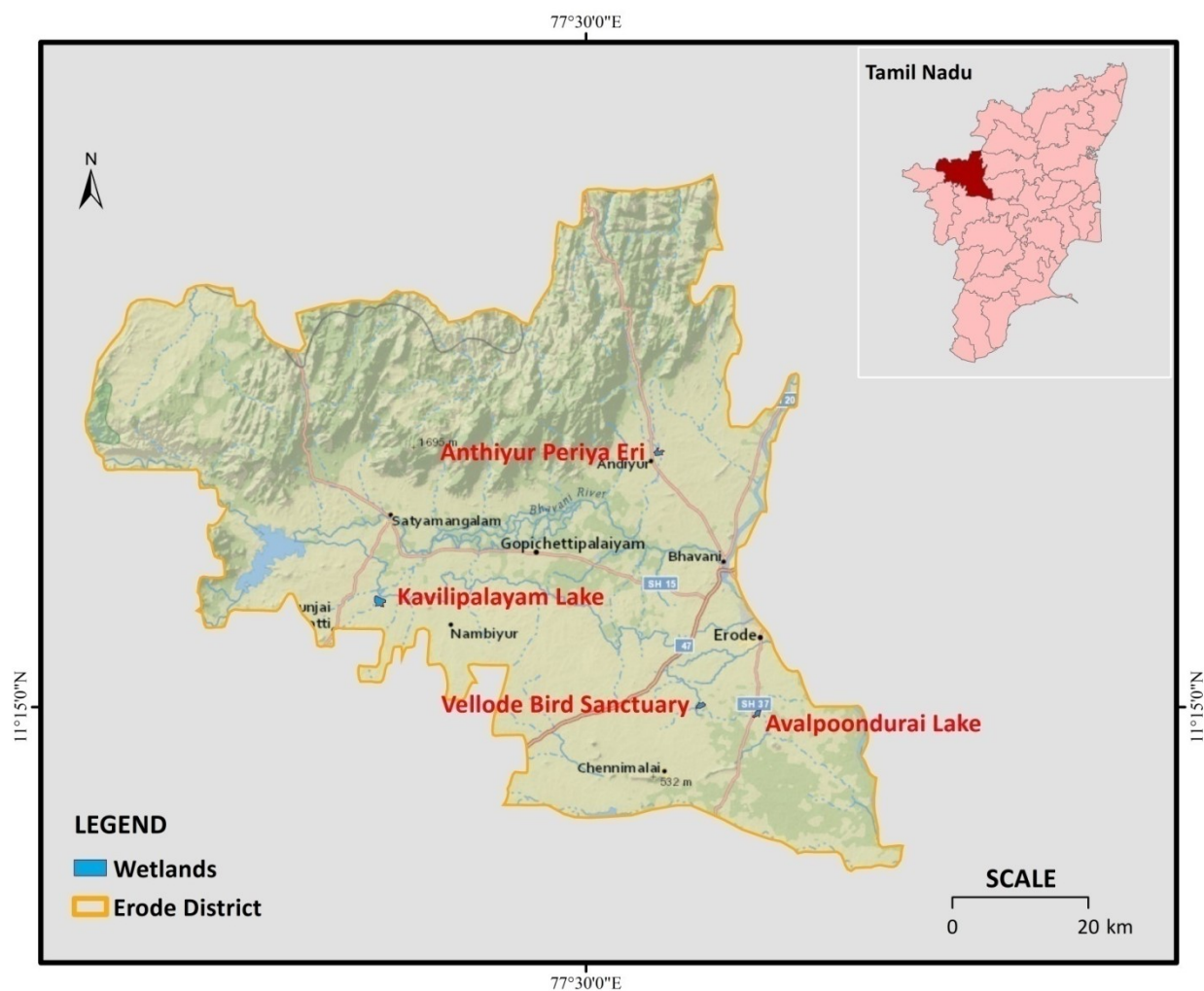
Map 7.4: The zone of influence around the Vaiyapuri Tank.



8. Erode District

Erode district is lying on the extreme north of the state. It is bounded mostly by Karnataka State and also river Palar covers long distance. To the East lies Namakkal and Karur districts. Dindigul district is its immediate neighbor to the South and on the West; it has Coimbatore and Nilgiri districts, as its boundaries. Thus Erode district is essentially a land-locked area having no sea-cost of its own.

Erode is blessed with a huge area under forests covers. Approximately 2287 km² of land is under dense forest. Total geographic area of Erode is 8161.91 km². Total area under wetland is 13570 ha, which includes 397 small wetland (<2.25 ha). Major wetland types of the district are Reservoirs (51.35 %), River/Stream (34.30 %) and Tanks/ponds (7.77 %). Four wetlands were selected from the district of which Kavilipalayam lake is the largest while Avalpoondurai lake was the smallest (Map 8.1).



Map 8.1: Wetlands of Erode district assessed for Prioritization

Anthiyur Periya Eri

Anthiyur Periyaeri (Plate 7) is not a Protected Area and is under the jurisdiction of PWD. Villages that surround the wetland include Kollupalayam, Koochikallur, Pudhupalayam and Andhiyur.

The geographic coordinates are Latitude: 11° 35'07.0" N; 11° 34'59.5" N; 11° 35'03.8" N; 11° 35'07.0" N; and Longitude: 077° 35'40.0" E; 077° 35'41.2" E; 077° 35'37.7" E; 077° 35'39.3" E.

Anthiyur Periyaeri is a wetland that belongs to the Natural (inland) seasonal intermittent tank category. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and Varathapallaum dam. The lake has an area of 81.2 hectares with a depth of 2.5 to 4 meters. The water from the wetland helps in replenishing the groundwater and the overflow feeds the Rajakullameri and adjoining agriculture fields. The wetland surrounded by 85% Agriculture and 15% Rural settlements. It has an area of 2152.88 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 8.1).

The wetland was oligotrophic during the visit, with the pH of the water being 9.3, salinity measuring 0.130 ppt, the TDS was recorded high at 187 ppm. The vegetation comprised of 42 plant species (Table 8.1) including nine invasive species dominated by *Parthenium hysterophorus* and *Prosopis juliflora*. The fauna comprised of 34 animal species including 3 domestic species were recorded during the survey (Table 8.2 to 8.10). Threatened species of birds were not observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water and Kootham pattieri water at regular intervals that is used by the locals to fulfill their daily requirements. The site is used majorly used by the locals for grazing their cattle and goats. There are farmlands where agriculture is undertaken around the wetland using borewell water. The wetland is not used for any purpose but serves as a ground water recharge as long as the water is present. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present.

Around the wetland we observed encroachment and excessive solid waste dumping. There is mining for sand or silt on tender basis from the PWD. The wetland was faced drought for the past few years due to the presence of check dams. The wetland has a high potential of change in the outflow due to depleting water in the wetland. The wetland has been facing drought condition for the past 5 years.

The wetland is not under any category. The wetland faces a severe threat from drought and water scarcity gradually changing the wetland character, solid waste dumping.

Avalpoonduri Lake

Avalpoondurai is a part of Erode Taluk, in Erode district comes under the jurisdiction of PWD

The geographic coordinates are Latitude: 11° 14'32.7" N; 11° 14'31.7" N; and Longitude: 077° 43'26.1" E; 077° 43'26.2" E

Avalpoondurai is a wetland that belongs to the Manmade (inland) seasonal intermittent tank category (Plate 7). The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area and from the Bhavani river. However the waters for the Bhavani are not released any more into the wetland for the past 10 years. The lake has an area of 65.9 hectares with a depth of 5 meters. The water from the wetland helps in

replenishing the groundwater. The wetland surrounded by 65% Agriculture, 15% Grasslands and 30% Rural settlements. It has an area of 2042.17 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 8.3).

The wetland dry and hence the water quality was not assessed. The vegetation comprised of 21 plant species (Table 8.1) including nine invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 32 animal species including 3 domestic species were recorded during the survey (Table 8.2 to 8.10). One Threatened species of birds was observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around the wetland. Fishery is not undertaken as the wetland does not have any water. Recreational garden and other recreations activities are set up around the wetland. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is no runoff from the surrounding catchment area. There is regular and mining that is increasing the depth of the wetland and also removing the hydric soil from the wetland.

The wetland does not show major change in the pattern of water inflow and outflow, as there is insufficient water. The pollution in the form of sewage, effluents and solid waste dumping is seen but it is low threat in its present condition. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from reclamation and encroachment, soil mining although it is observed around the wetland.

The encroachment of the wetland has to be immediately addressed and the desiltation of the feeder channel should be undertaken to revive the wetland.

Kavilipalayam Lake

Kavelipayayam lake (Plate 7) is based in Nambiar taluka in Erode District, comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Ponjalur, Marappagoundar Pudur, Koppakampalayam.

The geographic coordinates are Latitude: 11° 23'38.6" N; 11° 23'13.6" N; 11° 23'27.3" N; 11° 23'41.7" N; 11°23'41.2" N; and Longitude: 077°13'36.3" E; 077°13'18.4" E; 077°13'11.6" E; 077° 13'12.7" E; 077°13'31.9" E

Kavelipayayam lake is a wetland that belongs to the Natural (inland) permanent category. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area and from the Bhavani river and Notchikottai kulam. The lake has an area of 163 hectares with a depth of 5 meters. The water from the wetland helps in replenishing the groundwater. The wetland surrounded by 60% Agriculture, 15% Grasslands and 25% Rural settlements. It has an area of 2042.17 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 8.4).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.65, salinity measuring 0.125 ppt, the TDS was recorded high at 181 ppm. The vegetation comprised of 42 plant species (Table 8.1) including ten invasive species dominated by *Eichhornia crassipes*, *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 58 animal species including 2 domestic species were recorded during the survey (Table 8.2 to 8.10). Threatened species of birds were not observed during the survey. Tilapia is a very common invasive species

that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around. Fishery is undertaken as the wetland by giving tenders by PWD. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is no runoff from the surrounding catchment area. There is regular mining that is increasing the depth of the wetland and also removing the hydric soil from the wetland. The site is only used majorly for sand mining.

The wetland does not show major change in the pattern of water inflow and outflow, as there is insufficient water. The pollution in the form of sewage, effluents and solid waste dumping is seen but it is low threat in its present condition. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from reclamation and encroachment, soil mining although it is observed around the wetland.

Vellode Bird Sanctuary

Vellode Sanctuary Commonly known as Vellode Bird Sanctuary (Plate 7) is extended over an area of 77.1 hectares, and is situated in the Vadamugam Vellode village, 12 Kms from the city. The sanctuary serves as a dwelling place to several migratory birds as well as fishes and other aquatic animals. Villages that surround the wetland include Vellode, Thachankaraipazhi, Karukankattuvalasu, Semandabalayam, Selappampalayam, Vadamugam, Mettumpalayam, Vadamugam Vellode, Thenmugam Vellode, Pungambaadi. The wetland is a Protected Area it is a Bird Sanctuary under the jurisdiction of Forest Department.

The geographic coordinates are Latitude: 11° 15'00.5" N; 11° 15'03.5" N; 11° 15'10.8" N; 11° 15'15.4" N; 11° 15'14.7" N; 11° 15'18.1" N; and Longitude: 077° 39'18.1" E; 077° 39'22.3" E; 077° 39'29.8" E; 077° 39'24.7" E; 077° 39'29.8" E; 077° 39'19.1" E.

Vellode Bird Sanctuary is a wetland that belongs to the manmade (inland) intermittent seasonal lakes category. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The wetland used to get water through the Lower Bhavani which has been stopped for the past two years. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 77.5 hectares with a depth of 2 meters. The water from the wetland helps in replenishing the groundwater. The wetland surrounded by 85% Agriculture, 10% Grasslands and 5% Rural settlements. It has an area of 2375.6 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 8.5).

The wetland was mesotrophic during the visit, with the pH of the water being 8.0, salinity measuring 0.120 ppt, the TDS was recorded high at 120 ppm. The vegetation comprised of 64 plant species (Table 8.1) including nine invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 94 animal species including 4 domestic species were recorded during the survey (Table 8.2 to 8.10). Threatened species of birds were not observed but two species of threatened fish were recorded during the survey.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water and lower Bhavani water at regular intervals that is used by the locals to fulfill their daily requirements. There are farmlands where agriculture is undertaken around the wetland using borewell water. The wetland is not used for any purpose but serves as a ground water recharge as long as the water is present. The wetland is a bird sanctuary and attracts a good population of tourist. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There are high-

tension wires passing through the wetland. The wetland supports local fish species when water is present and there is no commercial fishery.

Around the wetland we observed encroachment and excessive solid waste dumping. There was no mining for sand or silt undertaken. Grazing by the cattle is undertaken. The wetland was faced drought for the past few years. The wetland has a high potential of change in the outflow due to depleting water in the wetland.

The wetland is a bird sanctuary protected by the forest department. The wetland faces a severe threat from drought and water scarcity gradually changing the wetland character, solid waste dumping. Increase in the temple activities around the wetland and the agriculture practices can majorly change the wetland character.

Literature available for Erode District

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Table 8.1: List of Plants recorded along the Erode District (A - AnthiyurPeriya Eri, B - Avalpoonduri Lake, C - Kavilipalayam Lake, D - Vellode Bird Sanctuary)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D
1	Sarsaparilla vine	<i>Cocculus diversifolius</i>	Menispermaceae	Introduced		+	-	-	-
2	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	+	-	-	+
3	Musk Mallow	<i>Abelmoschus moschatus</i>	Malvaceae	Native	NA	+	-	-	-
4	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	-	-	+
5	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	-	-	+
6	Heart leaf sida	<i>Sida cordifolia</i>	Malvaceae	Native	NA	+	-	-	+
7	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	+	+	+
8	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	-	+
9	Birdsville Indigo	<i>Indigofera linnaei</i>	Fabaceae	Native	NA	+	-	-	-
10	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+	+
11	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	-	+	+
12	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	+	-	+	+
13	Umbrella Thorn	<i>Vachellia planifrons</i>	Fabaceae	Native	NA	+	-	-	-
14	Blistering Ammannia	<i>Ammannia baccifera</i>	Lythraceae	Native	LC	+	-	-	-
15	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	+	+
16	Jima	<i>Glinus oppositifolius</i>	Molluginaceae	Native	NA	+	-	-	-
17	Purple leaved button	<i>Spermacoce ocymoides</i>	Rubiaceae	Native	LC	+	-	-	-
18	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	+	+	+	+
19	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+	+
20	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	+	+	+
21	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	-	-	-
22	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+	+
23	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	+	-	+	+
24	Sweet indrajao,	<i>Wrightia tinctoria</i>	Apocynaceae	Native	LC	+	-	-	+
25	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	+	-	-	-
26	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	-	+
27	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	+	-	-	+
28	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	-	+	+
29	Calico Plant	<i>Alternanthera ficoidea</i>	Amaranthaceae	Introduced		+	-	-	-
30	Plumed cockscomb	<i>Celosia argentea</i>	Amaranthaceae	Native	NA	+	-	+	+
31	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	+	-
32	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+	+
33	Triangular Spurge	<i>Euphorbia antiquorum</i>	Euphorbiaceae	Native		+	-	-	+
34	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	+	-	-	+
35	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	-	+
36	Coconut Tree	<i>Cocos nucifera</i>	Arecaceae	Native	NA	+	-	-	-
37	Flatsedge	<i>Cyperus eleusinoides</i>	Cyperaceae	Native	NA	+	-	-	-
38	Wiregrass	<i>Aristida setacea</i>	Poaceae	Native	NA	+	-	+	-
39	Bermuda grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	-	-
40	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	+	+	+
41	Slimflower Lovegrass	<i>Eragrostis gangetica</i>	Poaceae	Native	NA	+	-	-	-
42	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	+	+	+	-
Total						42	15	17	25

Table 8.2: List of Insects recorded along the Erode District (A - AnthiyurPeriya Eri, B - Avalpoonduri Lake, C - Kavilipalayam Lake, D - Vellode Bird Sanctuary)

S.No	Common Name	Scientific Name	Family	A	B	C	D
1	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	+	+	-	-
2	Mantis Egg	<i>Ootheca</i>	Mantodae	+	-	-	-
3	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	-	+	+

4	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	+	-	-	-
Total				4	1	1	1

Table 8.3: List of Butterflies recorded along the Erode District (A - AnthiyurPeriya Eri, B - Avalpoonduri Lake, C - Kavilipalayam Lake, D - Vellode Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	-	+	+
2	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	+
3	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	-	+	+
4	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+	+
5	Blue Pansy	<i>Junonia orithiya</i>	Nymphalinae	Common	+	-	-	-
Total					5	2	4	4

Table 8.4: List of Odonates recorded along the Erode District (A - AnthiyurPeriya Eri, B - Avalpoonduri Lake, C - Kavilipalayam Lake, D - Vellode Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	-	+	+
2	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	+	+	+
3	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+
4	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+	+
5	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	+	-	+	+
Total					5	3	5	5

Table 8.5: List of Arachnida recorded along the Erode District (A - AnthiyurPeriya Eri, B - Avalpoonduri Lake, C - Kavilipalayam Lake, D - Vellode Bird Sanctuary)

S.No	Common Name	Scientific Name	Family	A	B	C	D
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	-	+
Total				1	0	0	1

Table 8.6: List of Fishes recorded along the Erode District (A - AnthiyurPeriya Eri, B - Avalpoonduri Lake, C - Kavilipalayam Lake, D - Vellode Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	-	-	+	-
2	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	-	-	+	+
3	Spiny eel	<i>Macrogynathus pancalus</i>	Mastacembelidae	LC	-	-	+	+
Total					0	0	3	2

Table 8.7: List of Amphibians recorded along the Erode District (A - AnthiyurPeriya Eri, B - Avalpoonduri Lake, C - Kavilipalayam Lake, D - Vellode Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	Least Concern	-	-	+	-
2	Indian Cricket Frog	<i>Fejervarya limnocharis</i>	Dicroglossidae	Least Concern	-	-	+	-
Total					0	0	2	0

Table 8.8: List of Reptiles recorded along the Erode District (A - AnthiyurPeriya Eri, B - Avalpoonduri Lake, C - Kavilipalayam Lake, D - Vellode Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+
Total					1	1	1	1

Table 8.9: List of Birds recorded along the Erode District (A - AnthiyurPeriya Eri, B - Avalpoonduri Lake, C - Kavilipalayam Lake, D - Vellode Bird Sanctuary)

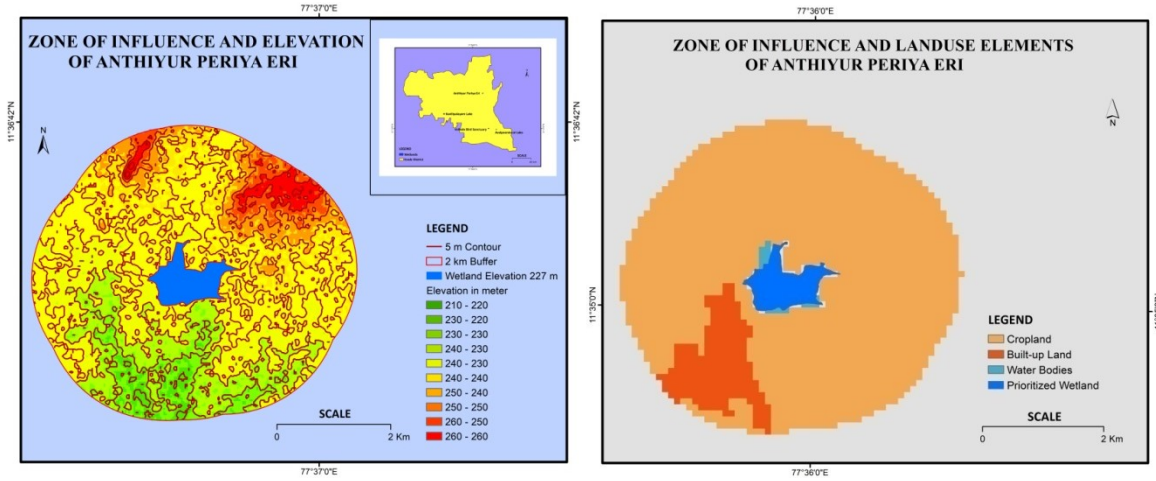
S.No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae	Least Concern	+	-	-	-
2	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Least Concern	+	-	+	+

3	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	-	+
4	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	+	-	+
5	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	-	+	+
6	Brahminy Kite	<i>Haliastur indus</i>	Accipitridae	Least Concern	+	-	-	-
7	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	+	+
8	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	Least Concern	+	-	-	-
9	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Least Concern	+	-	+	-
10	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	+	-	-	-
11	Jacobin Cuckoo	<i>Clamator jacobinus</i>	Cuculidae	Least Concern	+	-	-	-
12	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	+	-	+
13	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+	+
14	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	-	+
Total					14	6	5	8

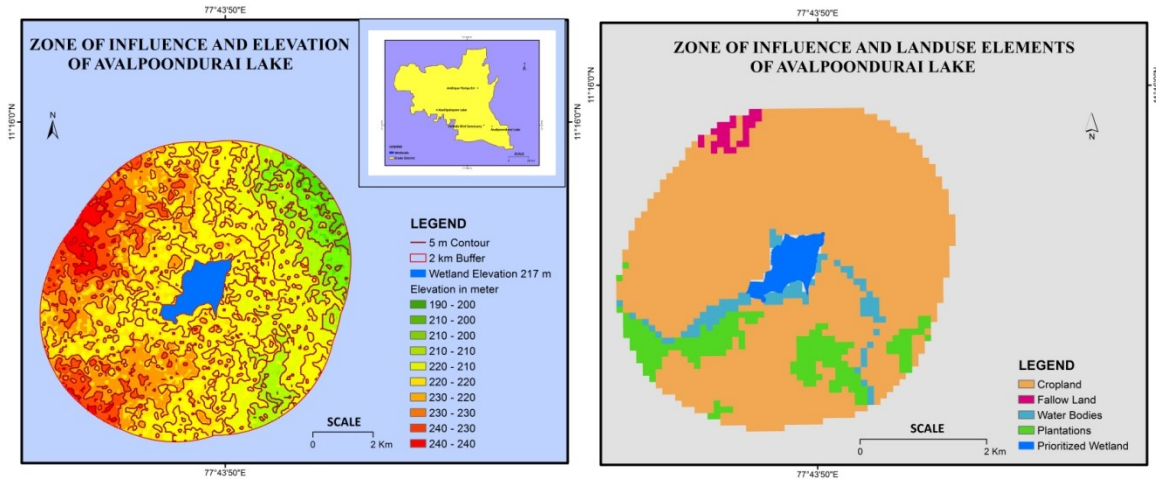
Table 8.10: List of Mammals recorded along the Erode District (A - AnthiyurPeriya Eri, B - Avalpoonduri Lake, C - Kavilpalayam Lake, D - Vellode Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	-	+
4	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	+	-	-	+
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	-	+	-
Total					5	3	3	4

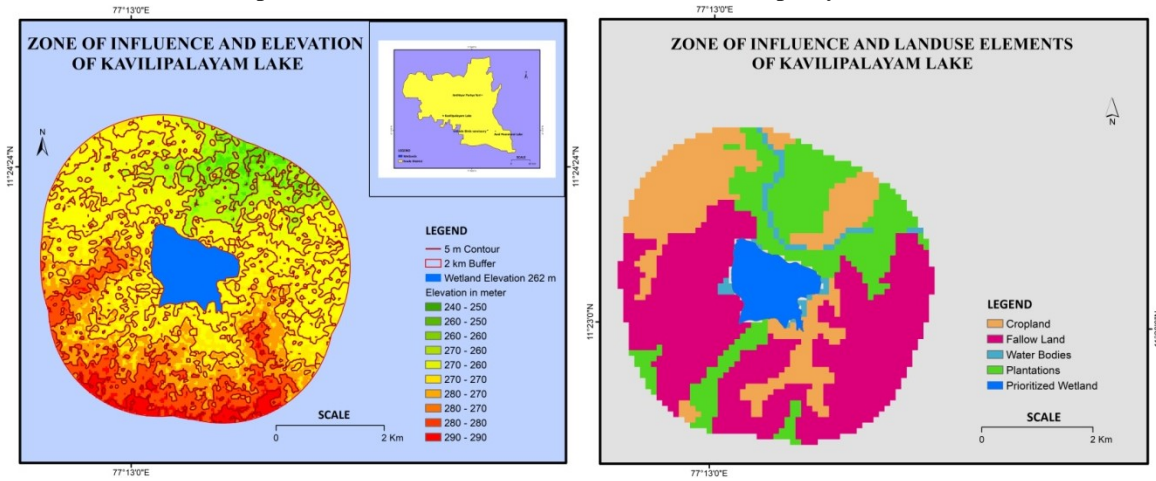
Map 8.2: The zone of influence around the AnthiyurPeriya Eri.



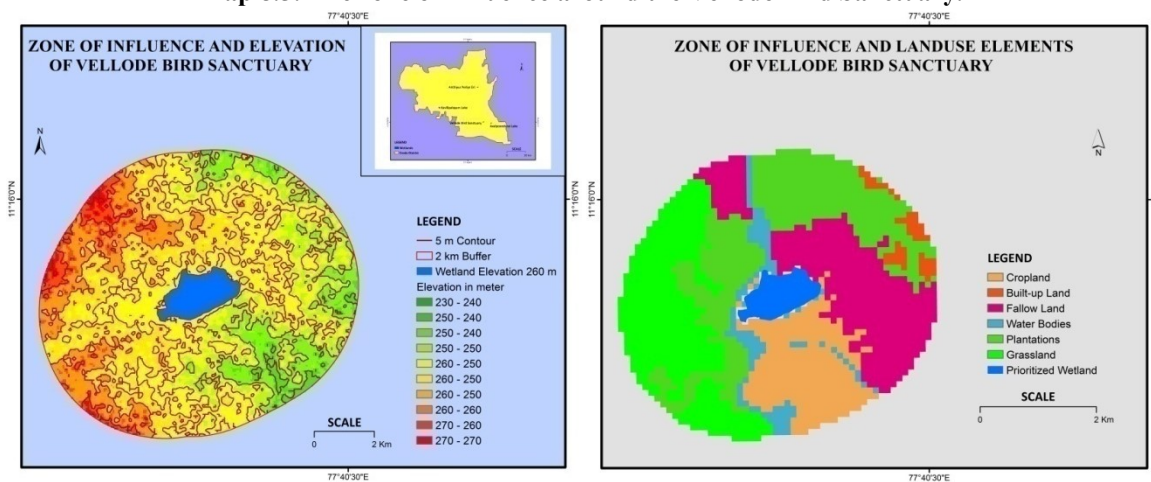
Map 8.3: The zone of influence around the Avalpoondurai Lake.



Map 8.4: The zone of influence around the Kavilipalayam Lake.



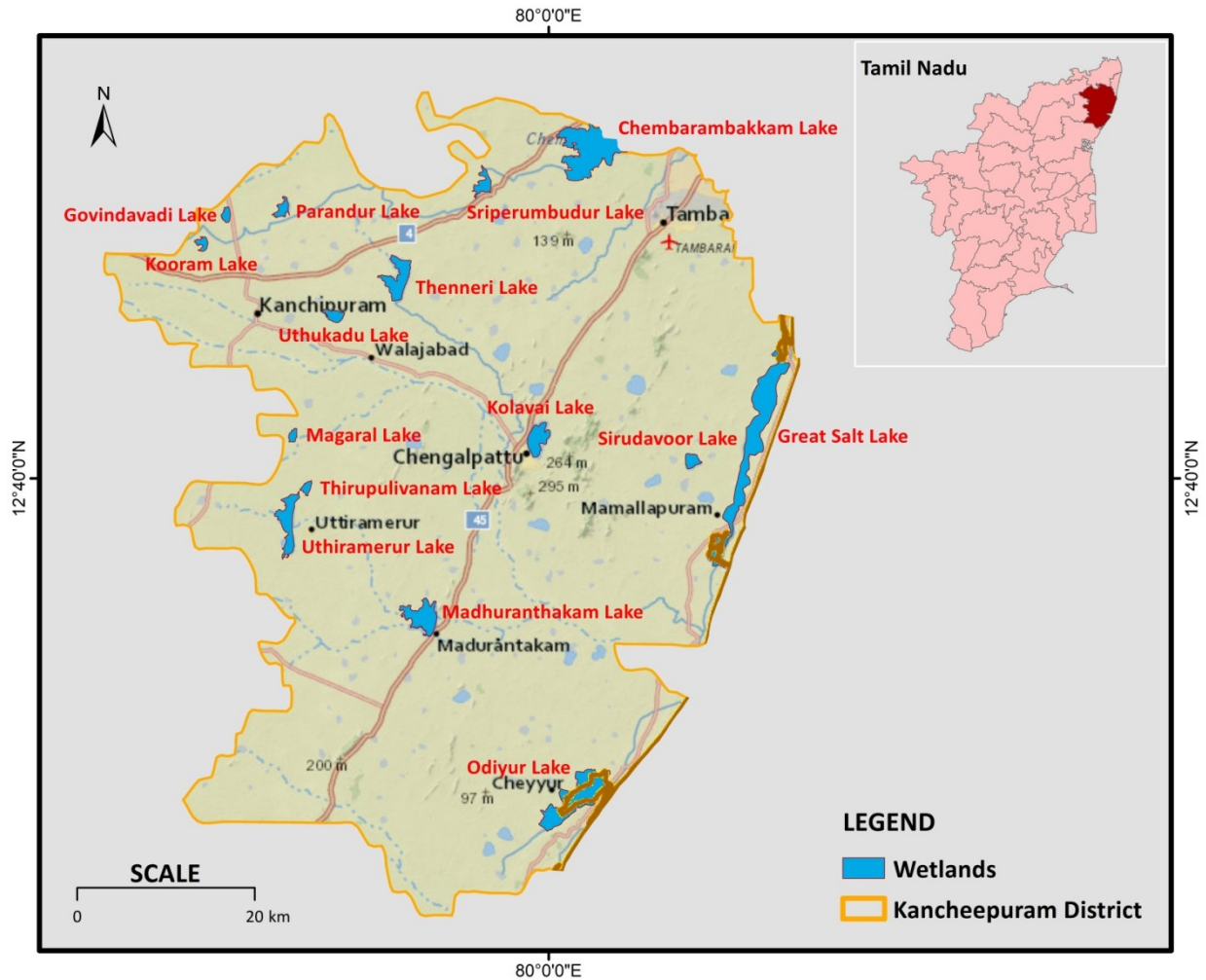
Map 8.5: The zone of influence around the Vellore Bird Sanctuary.



9. Kancheepuram District

Kancheepuram or Kanchi is considered as one of the seven sacred cities of India. Kancheepuram region is sometimes referred to as the “District of Lakes,” due to numerous tanks and lakes including the major ones at Chembarambakkam, Sriperumpudur, Thenneri, Mathuranthakam, Uthiramerur, and Chengalpattu (Kolavai Lake). There are 1,942 tanks in the region, maintained by the State P.W.D. and the local bodies. The tanks are mostly harnessed for irrigation purposes.

Kancheepuram is situated on the northern East Coast of the state and is adjacent to Bay of Bengal and Chennai city. The district is bounded on the west by Vellore and Thiruvannamalai district, on the north by Thiruvallur district and Chennai district, on the south by Villuppuram district and on the east of Bay of Bengal. Total geographic area of Kancheepuram is 7857 km². Major tourist attractions in the district include Vedantangal Birds Sanctuary, Covelong beach, Sadras beach, and the crocodile bank. Total area under wetland is 80445 ha, which includes 487 small wetland (<2.25 ha). Lakes/Ponds occupy 44.03% of wetland area. The second major wetland type is Tanks/Ponds. There are 1178 Tanks/Ponds with 18372 ha area (22.84%). Fifteen wetlands were selected in the district, with Great Salt Lake, Odiyur and Chembarambakkam being the largest while Magaral is the smallest of all the wetlands (Map 9.1).



Map 9.1: Wetlands of Kancheepuram district assessed for Prioritization

Chembarambakkam Lake

Chembarambakkam Lake, is a lake located about 25 km from Chennai. It is one of the two rain-fed reservoirs from where water is drawn for supply to Chennai City. The Adyar river originates from this lake. It is one of the 24 kottams (villages) that existed even during the later Chola period in ThondaiMandalam which had Kancheepuram as its headquarters. Commonly known as Chembarambakkam Lake was also known as PuliyurKottam (Plate 8) comes under the jurisdiction of PWD, is not a Protected Area. Villages that surround the wetland include Chembarambakkam, Palanjur, Chetipedu, Thomdalam, Kevalur, Katarambakkam, Pethipedu, Sarakalathur, Kelthipet.

The geographic coordinates are Latitude: 13° 00'35.2" N; 12° 59'07.5" N and Longitude: 080° 01'33.1" E; 080° 03'37.9" E

Chembarambakkam lake is a wetland that belongs to the Natural (inland) category in the sub category Permanent lakes. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and the overflow goes to the river Adayar. The lake has an area of 3383 hectares with an average depth of 4 meters. The wetland surrounded by 50% Industrial, 10% Agriculture, 20% Urban Settlements and 20% Rural settlements. It has an area of 7127.14 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.2).

The wetland was mesotrophic during the visit, with the pH of the water being 7.5, salinity measuring 0.174 ppt, the TDS was recorded high at 292 ppm. The vegetation comprised of 64 plant species (Table 9.1) including 16 invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora*, *Ipomoea sp* and *Microcystis sp*. The fauna comprised of 92 animal species including 4 domestic species were recorded during the survey (Table 9.2 to 9.11). One Threatened birds species and two species of threatened fish were recorded during the survey.

The water from the wetland is used for drinking purpose. Agriculture is undertaken around the wetland and almost 10% of the lake water is used for irrigation. Fishing is undertaken in the wetland with permission from the PWD department. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. It is a major source of ground water recharge. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period. The wetland provides a suitable habitat for birds as we also recorded the local and migratory bird species during our survey. There was no mining for sand or silt undertaken. Grazing by the cattle was observed. Bovines also use the wetland for drinking the water. However, extraction of water to supply for drinking was recorded. The wetland has several temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show a major change in the pattern of water inflow and outflow. There is release of sewage, effluents and solid waste dumping along the banks of the wetland. There is increase in agricultural activities around the wetland. There are invasive plant species that is changing the habitat of the wetland. The wetland has idol immersion while solid waste dumping and encroachment activities are observed to a very small extent. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. There are developmental activities that are taking place around the wetland that include setting up of new industries, encroachment and agriculture. Moreover the release of effluents and sewage has to be regulated and treated before it can spoil the wetland.

Govindavadi Lake

Govindavadi Lake in Kancheepuram district (Plate 8) comes under the jurisdiction of PWD is not a Protected Area. Villages that surround the wetland include Govindavadi, Oovarisathiram, Pudhupakkam, Veliannur and Kamarapalayam.

The geographic coordinates are Latitude: 12° 56'11.0" N; 12° 56'02.2" N and Longitude: 079° 40'38.9" E; 079° 40'40.2" E.

Govindavadi lake is a wetland that belongs to the Natural (inland) category in the sub category intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area. This is part of the Pallar river system. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and the overflow goes to the river. The lake has an area of 127 hectares with an average depth of 2.5 meters. The wetland surrounded by 90% Agriculture and 10% Rural settlements. It has an area of 2181.71 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.3).

The wetland was Eutrophic during the visit, with the pH of the water being 7.5, salinity measuring 0.174 ppt, the TDS was recorded high at 292 ppm. The vegetation comprised of 54 plant species (Table 9.1) including 12 invasive species dominated by *Parthenium hysterophorus*, *Prosopis juliflora*, *Ipomoea sp* and *Microcystis sp*. The fauna comprised of 98 animal species including 2 domestic species were recorded during the survey (Table 9.2 to 9.11). One Threatened birds species and two species of threatened fish were recorded during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. There is little commercial fishing activity and some recreational fishery is undertaken. The seeds are introduced by the fisheries department. Grazing by the cattle was observed. Bovines also use the wetland for drinking the water. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has several temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is increase in agricultural activities around the wetland. There is very little pollution in the form of sewage, effluents and solid waste dumping is seen but it is a low threat in its present condition as per the information from the locals. There are invasive plant species that is changing the habitat of the wetland however the density is less. The wetland has no idol immersion while solid waste dumping and encroachment activities are observed to a very small extent. The railway tract near the wetland could also have some impact on the bird diversity. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some grazing activities that should be regulated as they are in its initial stages.

Great Salt Lake

The Great Salt Lake (Plate 8) is between Nemmeli and Kovalam, the lake is based in Kancheepuram district. Villages that surround the wetland include Nemalikuppam, Perur, Nendi, Kalpakkam, Vadandmeli, Therkupattu, Thiruvadanthari, Semancherikappam, Kovalam.

The geographic coordinates are Latitude: 12° 37'10.3" N; 12° 39'24.4" N; 12° 42'12.1" N; 12° 44'53.6" N; 12° 47'01.3" N; and Longitude: 080° 11'06.5" E; 080° 11'44.7" E; 080° 12'54.9" E; 080° 13'51.1" E; 080° 14'14.6" E

Great Salt Lake is a wetland that belongs to the Natural (inland) category in the sub category Permanent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and the overflow goes to the river. The lake has an area of 4122 hectares with an average depth of 1.5 meters. The wetland surrounded by 10% Grassland, 15% Agriculture, 15 % Industries, 25% Urban settlements and 25% Rural settlements. It has an area of 18990.7 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.4).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.4, salinity measuring 16.9 ppt, the TDS was recorded high at 3025 ppm. The vegetation comprised of 54 plant species (Table 9.1) including 12 invasive species. The fauna comprised of 138 animal species including 4 domestic species were recorded during the survey (Table 9.2 to 9.11). Five Near Threatened bird species and two species of threatened fish were recorded during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is marine and used for salt preparation. Agriculture is undertaken around the wetland in very few locations mostly the area around is used for salt generation. Fishing is undertaken in the wetland and is a traditional community right. Grazing by the cattle was observed and washing of fishing crafts and gears is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The wetland provides a suitable habitat for birds as we also recorded the local and migratory bird species during our survey. Religious and cultural functions are performed along the banks of the wetland.

The wetland does not show a major change in the pattern of water inflow and outflow. There is release of sewage, effluents and solid waste dumping along the banks of the wetland. There are no invasive plant species but the plantation of terrestrial species along the banks is changing the habitat of the wetland. The wetland has idol immersion while solid waste dumping and encroachment activities are observed to increase.

The wetland is not included in any of the protection and conservation categories. There are developmental activities that are taking place around the wetland that include setting up of new industries, encroachment and agriculture. Moreover, the release of effluents and sewage has to be regulated and treated before it can spoil the wetland.

Kolavai Lake

The Kolavai Lake also known as Chengalpattu lake (Plate 8) is one of the largest lakes, situated in Chengalpet Taluk. Villages that surround the wetland include Ammanampakkam, Thondukarai, Pattaravakkam, Tannur, Arisur, Keunavakkam, Elanthoppur, Annumandhari, Kollamedu, Hanumanthai, Thenmelpakkam. The wetland is not a Protected Area and comes under the jurisdiction of PWD

The geographic coordinates are Latitude: 12° 41'16.9" N; 12° 41'57.5" N; 12° 43'21.2" N; 12° 43'30.2" N and Longitude: 079° 59'22.2" E; 079° 59'34.6" E; 079° 59'59.3" E; 079° 59'42.7" E

Kolavai Lake is a wetland that belongs to the Natural (inland) category in the sub category Permanent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater. It is also known to provide water to Chennai city at times of drought. The over flow also feeds into the Palar, Neenjal and Madura rivers. The lake has an area of 584 hectares with an average depth of 4.5 meters. The wetland surrounded by 5% Agriculture, 15% Rural settlements, 30% Urban Settlements and 45% Industries. It has

an area of 3340.91 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.5).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.0, salinity measuring 0.317 ppt, the TDS was recorded high at 338 ppm. The vegetation comprised of 78 plant species (Table 9.1) including 15 invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 114 animal species including 4 domestic species were recorded during the survey (Table 9.2 to 9.11). Three Near Threatened birds species and four species of threatened fish were recorded during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose due to sewage and effluent contamination. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland to some extent but ground water is used for irrigation. Fishery is a major livelihood option in the wetland and fishing is a community right. The fish seed is introduced by the Tamil Nadu Fisheries department and mostly comprises of the common carps. The wetland is used for recreation and boating is one of the activity observed in the wetland. The wetland is frequented by nature enthusiast for bird watching. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and due to deforestation the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has several major temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. There is an increase in the invasive plant species that is changing the habitat of the wetland. Around the wetland we observed encroachment and excessive solid waste dumping as well as industrial effluents released mostly from the Mahendra World city side. But there was no mining for sand or silt undertaken.

The wetland is not included in any of the protection and conservation categories. The wetland faces a severe threat from increasing reclamation and encroachment, solid waste dumping. There are existing industries that are releasing effluents that is detrimental the ecosystem as the wetland is becoming a sink for the waste released into the wetland.

Kooram Lake

Kooram Lake (Plate 9) in Kancheepuram district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Kooram, Aliyapakkam, Seranai, Vathiyur, Pudhupakkam.

The geographic coordinates are Latitude: 12° 54'04.5" N; 12° 53'51.8" N; 12° 53'50.4" N; 12° 53'54.0" N and Longitude: 079° 39'15.1" E; 079° 39'06.4" E; 079° 38'53.6" E; 079° 38'41.9" E

Kooram Lake is a wetland that belongs to the Manmade (inland) category in the sub category intermittent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. This is part of the Pallar river system. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and the overflow goes to the Pallar river. The lake has an area of 137 hectares with an average depth of 4.0 meters. The wetland surrounded by 90% Agriculture and 10% Rural settlements. It has an area of 2308.82 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.6).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.35, salinity measuring 0.138 ppt, the TDS was recorded high at 86 ppm. The vegetation comprised of 71 plant species (Table 9.1) including 13 invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 125 animal species including 2 domestic species were recorded during the survey (Table 9.2 to 9.11). Three species of threatened fish were recorded during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. Fishery is a recreational option in the wetland for many and fishing as a livelihood is undertaken by a few families. The seeds are introduced by the fisheries department. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period. The wetland has several temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition as per the information from the locals. There are invasive plant species that is changing the habitat of the wetland however the density is less. The wetland has idol immersion and solid waste dumping and encroachment activities are observed to a very small extent. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some grazing activities that should be regulated as they are in its initial stages.

Madhuranthakam Lake

Madhuranthakam is a town and a municipality in Kancheepuram district, the town is known for the man-made and one of the largest lake in Tamil Nadu, the Madhuranthakam lake (Plate 9) and it is located very near to the state capital Chennai. It is believed to be built by the Chola King Uthama Chozha, also called as Madhuranthakar, during his reign. Villages that surround the wetland include Madhuranthakam, Malaipalayam Bangalanagar, Ari Nagar, Periyannagar, Adisanthoppur, Agravaram, Pasumbur, Mocheri, Thondoripet, Vedathangal, Valaipudhur, Pillanchi. The wetland comes under the jurisdiction of PWD and is not a Protected Area.

The geographic coordinates are Latitude: 12° 31'49.6" N; 12° 30'32.6" N; 12° 13'35.2" N; 12° 30'40.2" N and Longitude: 079° 53'12.3" E; 079° 52'21.9" E; 079° 52'24.5" E; 079° 52'58.5" E

Madhuranthakam Lake is a permanent wetland that belongs to the Manmade (inland) category in the sub category Dam/ Reservoir. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and the overflow goes to the Pallar river. The lake has an area of 893 hectares with an average depth of 5.5 meters. The wetland surrounded by 30% Forest, 50% Agriculture, 15% Grassland and 5% Settlements (rural). It has an area of 4300.68 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.7).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.5, salinity measuring 0.209 ppt, the TDS was recorded high at 205 ppm. The vegetation comprised of 71 plant species (Table 9.1) including 10 invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 96 animal species including 4 domestic species were recorded during the survey (Table 9.2 to 9.11). Two near Threatened

species of birds and fish were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and the lake water is used for irrigation. Agriculture is undertaken within the wetland we also observed banana, coconut and sugarcane plantations within the wetlands. Grazing by the cattle is undertaken. Fishery is a major livelihood option in the wetland and fishing is a community right. The fish seed is introduced by the Tamil Nadu Fisheries department and mostly comprises of the common carps. There is also a good variety of local fish in the wetland. The wetland is used for recreation; as the Vedanthangal Bird Sanctuary is also close by the birds also flock to this wetland. The wetland is frequented by nature enthusiast for bird watching. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and due to deforestation, the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period. The wetland has several major temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow as it receives the overflow from Vedanthangal lake and the outflow goes to the Pallar river. The pollution in the form of sewage, effluents and solidwaste dumping is seen but it is low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland however the density is less. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities. Siltation is also observed near the inlet as well as the outlet of the wetland.

The wetland is not included in any of the protection and conservation categories. The wetland faces a minimal threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland.

Magaral Lake

Magaral Lake (Plate 9) in Kancheepuram district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Magaral, Sithalapakkam, Poonathangal, Arasanipalai.

The geographic coordinates are Latitude: 12° 42'12.2" N; 12° 42'12.3" N; 12° 42'12.1" N and Longitude: 079° 44'34.0" E; 079° 44'34.0" E; 079° 44'26.8" E.

Magaral Lake is a wetland that belongs to the Natural (inland) category in the sub category Seasonal intermittent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and direct inflow from the river Cheyyar. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater. The lake has an area of 105 hectares with an average depth of 1 meters. The wetland surrounded by 60% Agriculture, 30% Grassland and 10% Settlements (rural). It has an area of 2116.34 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.8).

The wetland was observed to be Eutrophic as the wetland was observed to be covered with floating, submergent and emergent vegetation. The lake has fresh water as it receives water from Cheyyar river but the water in the lake was not assessed due to inaccessibility to the water body. The vegetation comprised of 57 plant species (Table 9.1) including 10 invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 85 animal species including 2 domestic species were recorded during the survey (Table 9.2 to 9.11) . Two near Threatened species of birds and fish were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose as the wetland does receive domestic sewage from the surrounding villages. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Grazing by the cattle was observed. Bovines also use the wetland for drinking the water. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. Fishery is never undertaken in the wetland, as it is mostly seasonal. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The wetland has a few small temples along its bank and a few cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. The wetland is used for washing of vehicles as well as for other human activities. There are invasive plant species that is changing the habitat of the wetland.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some developmental activities that should be regulated as they are in its initial stages.

Odiyur Lake

Mudliyakuppam lake, also called Odiyur lake (Plate 9), the wetland comes under the jurisdiction of Govt of India with the undertaking by PWD and is not a Protected Area.

The geographic coordinates are Latitude: 12° 20'06.3" N; 12° 19'54.5" N; 12° 19'47.8" N; 12° 19'37.6" N; 12° 20'54.3" N; 12° 20'12.5" N and Longitude: 080° 00'53.0" E; 080° 00'58.8" E; 080° 01'03.5" E; 080° 01'10.6" E; 080° 03'18.8" E; 080° 02'45.8" E.

OdiyurLake is a permanent wetland that belongs to the Natural (Coastal) category in the sub category intertidal creek. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and connection With the Bay of Bengal. The water from the wetland forms a main source for the fishing activity. The water also helps in replenishing the groundwater. The lake has an area of 2172 hectares with an average depth of 1.5 meters. The wetland surrounded by 30% Agriculture, 30% Urban Settlements, 30% Rural Settlements and 10% Industrial. It has an area of 6352.14 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.9).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.53, salinity measuring 26.8 ppt, the TDS was recorded high at 34.05 ppm. The vegetation comprised of 49 plant species (Table 9.1) including eight invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 61 animal species including 4 domestic species were recorded during the survey (Table 9.2 to 9.11). One near Threatened species of birds was observed during the survey.

The water from the wetland is not used for drinking purpose. Grazing by the cattle was observed. Agriculture is not undertaken around the wetland and minimal water is used for irrigation. The sap of borassus plant is extracted and sold for consumption. Fishing is undertaken in the wetland as a community right. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period. The wetland has several temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland shows a major change in the pattern of water inflow and outflow. There are invasive plant species that is changing the habitat of the wetland. There is release of sewage, effluents and solidwaste dumping along the banks of the wetland. There is a trend of increase in industrialization and urbanization around the wetland. The wetland has idol immersion while solid waste dumping and encroachment activities are observed on a large scale.

The wetland is not under any conservation program. There are developmental activities that are taking place around the wetland that include setting up of new industries and encroachment. Moreover, the release of effluents and sewage has to be regulated and treated.

Parandur Lake

Parandur Lake (Plate 10) in Kancheepuram district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Parandur, Kottavakkam, Pattupattur, Madhuraparandur, Varadhapuram, Samanthipuram, Maniyachi, Nagapattu, Mettuparandur.

The geographic coordinates are Latitude: 12° 56'13.6" N; 12° 56'24.5" N and Longitude: 079° 44'11.6" E; 079° 44'10.5" E.

Parandur Lake is a permanent wetland that belongs to the Man-made (inland) category in the sub category Tank of intermittent nature. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. This is part of the Pallar river system. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and the overflow goes to the river. The lake has an area of 201 hectares with an average depth of 3 meters. The wetland surrounded by 80% Agriculture, 10% Rural Settlements and 10% Industrial. It has an area of 2746.42 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.10).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.3, salinity measuring 0.174 ppt, the TDS was recorded high at 121 ppm. The vegetation comprised of 44 plant species (Table 9.1) including 10 invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 84 animal species including 2 domestic species were recorded during the survey (Table 9.2 to 9.11). There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. Grazing by the cattle was observed. Bovines also use the wetland for drinking the water. Fishery is a recreational option in the wetland for many and fishing as a livelihood is not undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. It is a major source of ground water recharge and overflow from the wetlands passes to the Pallar river. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period. The wetland has several temples along its bank and major cultural and religious activities are performed in the wetland.

Fishing is done once a year when the water in the lake recedes during the summer. The fish seeds are introduced by the fisheries department and there is always a confrontation by PWD and the Fisheries department. Major portion of the water is utilized for irrigation. The wetland does not show major change in the pattern of water inflow and outflow. There are invasive plant species that is changing the habitat of the wetland however the density is less. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition as per the information from the locals. The wetland does not have any idol immersion but solid

waste dumping and encroachment activities are observed to a very small extent. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some grazing activities that should be regulated as they are in its initial stages.

Sirudavoor Lake

Sirudavoor lake (Plate 10) based in Tiruppur taluka in Kancheepuram district is not a Protected Area. The wetland comes under the jurisdiction of Govt of India with the undertaking by PWD. Villages that surround the wetland include Aamoor, Sirudavoor.

The geographic coordinates are Latitude: 12° 40'59.7" N; 12° 40'55.9" N; 12° 41'02.4" N; 12° 41'06.1" N; and Longitude: 080° 09'18.7" E; 080° 09'12.3" E; 080° 09'09.1" E; 080° 09'01.2" E.

Sirudavoor Lake is a wetland that belongs to the Natural (inland) category in the sub category Permanent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and connection Chembakkam and Kolameri. The water from the wetland forms a main source for the agriculture and fishing activity. The water also helps in replenishing the groundwater. The lake has an area of 203 hectares with an average depth of 2.5 meters. The wetland surrounded by 85% Agriculture and 15% Rural Settlements. It has an area of 2433.36 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.11).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.54, salinity measuring 0.236 ppt, the TDS was recorded high at 342 ppm. The vegetation comprised of 29 plant species (Table 9.1) including eight invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 49 animal species including 4 domestic species were recorded during the survey (Table 9.2 to 9.11).

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around the wetland. The wetland is a site for recreation and is frequented by nature enthusiast for bird watching as it is also a bird sanctuary. The wetland is used for bathing by livestock is undertaken for fishing as well as for some recreation. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. There is illegal mining for sand or silt undertaken. The wetland has several temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland shows a major change in the pattern of water inflow and outflow. There are invasive plant species that is changing the habitat of the wetland.

The wetland is not under any conservation program. Illegal mining of sand should be checked.

Sriperumpudur Lake

Sriperumpudur Lake (Plate 10) in Kancheepuram district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Sriperumpudur, Ramapuram, Bakthavachalam nagar, S.P. Chattram, Kadupattu.

The geographic coordinates are Latitude: 12° 58'41.8" N; 12° 58'14.2" N and Longitude: 079° 56'14.4" E; 079° 56'25.8" E

Sriperumpudur Lake is a wetland that belongs to the Natural (inland) category in the sub category Seasonal intermittent lakes. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and overflow from the wetlands passes to the Pallar river. The lake has an area of 314 hectares with an average depth of 4 meters. The wetland surrounded by 25% Agriculture, 15% Forest, 20% Urban settlements, 15% Rural Settlements and 25% Industrial. It has an area of 3244.89 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.12).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.5, salinity measuring 0.138 ppt, the TDS was recorded high at 133 ppm. The vegetation comprised of 42 plant species (Table 9.1) including nine invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, *Ipomoea spand* *Microcystis sp*. The fauna comprised of 61 animal species including 2 domestic species were recorded during the survey (Table 9.2 to 9.11). There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and almost 25% of the lake water is used for irrigation. Grazing by the cattle was observed. Bovines also use the wetland for drinking the water. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has several temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland shows a major change in the pattern of water inflow and outflow due to the industrial and domestic effluents. There are invasive plant species that is changing the habitat of the wetland. There is high level of pollution in the form of sewage, effluents and solidwaste dumping is seen. There is increase in agricultural activities around the wetland. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. There are developmental activities that are taking place around the wetland that include setting up of new industries, encroachment and agriculture. Moreover the release of effluents and sewage has to be regulated and treated before it can spoil the wetland.

Thenneri Lake

Thenneri Lake (Plate 10) in Kancheepuram district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Thenneri, Mettukclani, Sirupagal, Cinnivakkam, Papanguli, Alapakkam, Summarikuppam, Aiyemcheri, Kunnam.

The geographic coordinates are Latitude: 12° 51'03.6" N; 12° 51'20.6" N; 12° 55'49.9" N and Longitude: 079° 51'05.5" E; 079° 51'07.7" E; 079° 44'15.3" E

Thenneri Lake is a permanent wetland that belongs to the Man-made (inland) category in the sub category Tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in the replenishing the groundwater and the overflow from the wetlands passes to the Marutham village. The lake has an area of 807 hectares with an average depth of 4.5 meters. The wetland surrounded by 60% Agriculture, 30% Rural Settlements and 10% Industrial. It has an area of 4363.98 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.13).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.5, salinity measuring 0.138 ppt, the TDS was recorded high at 138 ppm. The vegetation comprised of 50 plant species (Table 9.1) including eight invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, *Ipomoea sp* and *Microcystis sp*. The fauna comprised of 72 animal species including 2 domestic species were recorded during the survey (Table 9.2 to 9.11). Two Threatened species fish and common species of birds were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. Grazing by the cattle was observed. Bovines also use the wetland for drinking the water. Fishery is a recreational option in the wetland for many and fishing as a livelihood is not undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There are invasive plant species that is changing the habitat of the wetland however the density is less. The wetland does not have any idol immersion but solid waste dumping and encroachment activities, as well as release of sewage and effluents are observed to a very small extent. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some grazing activities that should be regulated as they are in its initial stages. An industry dealing with plastics and sponge has started near the wetland that needs to be regulated.

Thirupulivanam Lake

Thirupulivanam town has an ancient almost 1000 year old Vyakrapureeswarar temple. Built by Pallava King Nandivarman. The Pallavas also constructed a tank with an area of 120 hectares adjacent to the temple. The wetland comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Thirupulivanam, Murugaeri, Andithongal and Alapulam.

The geographic coordinates are Latitude: 12° 39'48.1" N; 12° 39'45.5" N; 12° 39'29.6" N; 12° 39'20.6" N and Longitude: 079° 45'29.6" E; 079° 45'36.4" E; 079° 45'33.3" E; 079° 45'30.6" E.

Thirupulivanam Lake (Plate 11) is a wetland that belongs to the Man-made (inland) category in the sub category Tank of intermittent nature. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and direct inflow from the river Cheyyar. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater. The lake has an area of 116 hectares with an average depth of 3.5 meters. The wetland surrounded by 50% Agriculture, 25% Rural Settlements 15%, Barren Land and 10% Grassland /Shrubland. It has an area of 2228.38 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.14).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.0, salinity measuring 0.174 ppt, the TDS was recorded high at 206 ppm. The vegetation comprised of 64 plant species (Table 9.1) including 13 invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp*. The fauna comprised of 118 animal species including 4 domestic species were recorded during the survey (Table 9.2 to 9.11). Two near Threatened

species of birds and three fish species were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. Grazing by the cattle was observed. Bovines also use the wetland for drinking the water. Fishery is a recreational option in the wetland for many and fishing as a livelihood is done by very few families which is a community right but there is no society. The fish seed is introduced by the Tamil Nadu Fisheries department and mostly comprises of the common carps. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There are invasive plant species that is changing the habitat of the wetland however the density is less. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some developmental activities that should be regulated as they are in its initial stages.

Uthiramerur Lake

Uthiramerur Lake (Plate 11) also known as Vedapalayam Lake near Vedapalayam is in Uttiramerur town in Kancheepuram district. The man-made wetland was constructed during the Pallava regime. Villages that surround the wetland include Uthiramerur, Vedapalayam Kattampakkam, Neeradi, Pucheri, Kuppanthur, Manithottam, Angur, Vadavur, Nallur, S.P.Chatam, Purnthikollam, Pattakulam, Vallamkorramai and Thakkanallur. The wetland comes under the jurisdiction of PWD is not a Protected Area.

The geographic coordinates are Latitude: 12° 37'56.1" N; 12° 38'12.4" N; 12° 38'21.2" N; 12° 37'32.1" N and Longitude: 079° 44'27.8" E; 079° 44'32.5" E; 079° 44'33.3" E; 079° 43'22.7" E.

Uthiramerur Lake is a wetland that belongs to the Man-made (inland) category in the sub category Tank of intermittent nature. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water also helps in replenishing the groundwater. The over flow also feeds into the Pallar river. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater. The lake has an area of 788 hectares with an average depth of 2.5 meters. The wetland surrounded by 70% Agriculture, 28% Rural Settlements and 2% Industrial. It has an area of 5039.78 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.15).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.5, salinity measuring 0.174 ppt, the TDS was recorded high at 218 ppm. The vegetation comprised of 52 plant species (Table 9.1) including eight invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 109 animal species including 3 domestic species were recorded during the survey (Table 9.2 to 9.11). Two near Threatened species of birds and fish species were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture

is undertaken around the wetland and major portion of the lake water is used for irrigation. Fishery is a recreational option in the wetland for many and fishing as a livelihood is done by very few families which is a community right. The fish seed is introduced by the Tamil Nadu Fisheries department and mostly comprises of the common carps. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and due to deforestation, the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has several temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There are invasive plant species that is changing the habitat of the wetland however the density is less. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. The state highway passes close by the wetland leading to polluting activities. New industries are being set up in the catchment area. The wetland faces a minimal threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland.

Uthukadu Lake

Uthukadu Lake (Plate 11) is near the small village Uthukadu in Walajabad panchayat union, Kancheepuram district. Villages that surround the wetland include Uthukadu, Puthagaram, Neikuppam, Kaliyanur, Vaiyavur. The wetland comes under the jurisdiction of PWD is not a Protected Area.

The geographic coordinates are Latitude: 12° 49'53.2" N; 12° 49'38.5" N; 12° 49'28.7" N and Longitude: 079° 47'32.7" E; 079° 47'23.4" E; 079° 47'07.7" E

Uthukadu Lake is a permanent wetland that belongs to the Man-made (inland) category in the sub category Tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water also helps in replenishing the groundwater. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The lake has an area of 219 hectares with an average depth of 4 meters. The wetland surrounded by 80% Agriculture and 20% Rural Settlements. It has an area of 2543.27 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 9.16).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.5, salinity measuring 0.389 ppt, the TDS was recorded high at 435 ppm. The vegetation comprised of 58 plant species (Table 9.1) including nine invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 111 animal species including 2 domestic species were recorded during the survey (Table 9.2 to 9.11). There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. Grazing by the cattle were observed. Bovines also use the wetland for drinking the water. Fishery is a recreational option in the wetland for many and fishing is not a livelihood option. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There are invasive plant species that is changing the habitat of the wetland however the density is less. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. The wetland does not have any idol immersion but solid waste dumping and encroachment activities are observed to a very small extent. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some grazing activities that should be regulated as they are in its initial stages.

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Table 9.1: List of Plant species recorded at Kancheepuram District (A - Chembambakkam, B - Govindavadi, C - Great Salt Lake, D - Kolavi Lake, E - Kooram Lake, F - Madhuranthagam, G - Magaral Lake, H - Odiyur Lake, I - Parandur Lake, J - Sirudavoor Lake, K - Sriperumbudur Lake, L - Thenneri Lake, M - Thirupulivanam Lake, N - Uthiramerur Lake, O - Uthukadu Lake)

S. No	Common Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Meghalaya Red Water Lily	<i>Nymphaea odorata</i>	Nymphaeaceae	Native	LC	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-
2	Mexican Prickly Poppy	<i>Argemone mexicana</i>	Papaveraceae	Invasive	NA	+	-	+	+	-	-	-	-	-	-	-	+	+	-	+
3	Blue Mustard	<i>Chorispura tenella</i>	Brassicaceae	Native	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	+	+	-	+	+	-	+	-	+	-	-	-	-	+	-
5	Wild Spider Flower	<i>Gynandropsis gynandra</i>	Cleomaceae	Native	NA	+	+	-	+	+	+	-	-	-	-	-	-	-	-	-
6	Indian Parselane	<i>Portulaca oleracea</i>	Portulacaceae	Native	NA	+	-	-	+	+	+	-	+	-	-	-	-	-	-	+
7	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	+	+	-	+	-	-	-	+	-	+	-	-	+	+
8	East Indian Mallow,	<i>Corchorus aestuans</i>	Malvaceae	Native		+	+	-	-	-	-	-	-	-	-	-	+	+	-	-
9	Fragrant Swamp Mallow	<i>Pavonia leptocalyx</i>	Malvaceae	Native	NA	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-
10	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	-	-	+	+	+	+	+	+	-	+	+	+	-	+
11	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	-	+	+	+	+	+	+	+	-	+	-	+		+
12	Creeping Wood Sorrel	<i>Oxalis corniculata</i>	Oxalidaceae	Invasive	NA	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-
13	Siris Tree, Women's tongue	<i>Albizia lebbek</i>	Fabaceae	Native	NA	+	-	+	-	-	-	-	-	-	-	-	-	-	-	+
14	Alyce clover	<i>Alysicarpus ovalifolius</i>	Fabaceae	Native	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Alysiclover	<i>Alysicarpus vaginalis</i>	Fabaceae	Native	NA	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-
16	Narrowleaf Indigo	<i>Indigofera linifolia</i>	Fabaceae	Native	LC	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Touch Me Not	<i>Mimosa pudica</i>	Fabaceae	Native	LC	+	+	-	+	+	+	+	+	+	-	-	-	-	-	-
18	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	-	-	+	+	+	+	+	+	-	+	+	+	+
19	Agati	<i>Sesbania grandiflora</i>	Fabaceae	Native	NA	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-
20	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	-	-	+	+	-	+	+	+	-	+	-	-	+	-
21	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	+	+	+	-	+	-	-	-	-	+	-	-	-	-	-
22	Blistering Ammannia	<i>Ammannia baccifera</i>	Lythraceae	Native	LC	+	-	-	-	-	-	-	-	-	+	-	-	-	+	-
23	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	-	-	-	-	+	+	+	+	+	+	+	-	-	+
24	Bristly Starbur, Goat's Head	<i>Acanthospermum hispidum</i>	Asteraceae	Native	NA	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-
25	Siam Weed	<i>Chromolaena odorata</i>	Asteraceae	Invasive	NA	+	+	-	+	+	+	+	-	+	-	-	-	+	-	-
26	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	+	-	-	+	+	-	+	-	+	-	+	+	-	+	-
27	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	+	+	+	+	+	-	+	-	-	-	-	-	-	-	-
28	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	-	+	+	+	+	-	+	+	+	+	+	+	+
29	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	+	-	-	+	+	+	+	+	+	+	+	-	+	+
30	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+	+	+	+	+	+	+	-	+	+	+	+	-
31	Cowplant	<i>Gymnema sylvestre</i>	Apocynaceae	Native	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Rosy Milkweed Vine	<i>Oxystelma esculentum</i>	Apocynaceae	Native	LC	+	-	-	-	-	+	+	-	-	-	+	+	+	-	+
33	Indian Heliotrope	<i>Heliotropium indicum</i>	Heliotropiaceae	Native	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	Clustered Morning Glory	<i>Hewittia malabarica</i>	Convolvulaceae	Invasive	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	+	-	-	+	-	-	-	-	-	-	-	-	-	-	+
36	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	+	-	+	+	+	+	+	+	+	-	+	+	+
37	Kidney leaf morning glory	<i>Merremia emarginata</i>	Convolvulaceae	Native	LC	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	-	+	+	+	+	-	-	-	-	-	-	+	-	-
39	Black nightshade,	<i>Solanum nigrum</i>	Solanaceae	Native	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	Denseflower Witchweed	<i>Striga densiflora</i>	Orobanchaceae	Native	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Marsh Barbel	<i>Hygrophila schulli</i>	Acanthaceae	Native	LC	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	Blue Porterweed	<i>Stachytarpheta jamaicensis</i>	Verbenaceae	Native	NA	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-
43	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	+	+	-	+	+	+	+	+	+	-	+	+	+	+	+
44	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	+	+	+	+	+	+	-	+	-	+	-	+	+	+
45	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	-	-	+	+	+	+	-	-	-	-	-	+	+	+

46	Kapok bush	<i>Aerva javanica</i>	Amaranthaceae	Native	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-
47	Calico Plant	<i>Alternanthera ficoidea</i>	Amaranthaceae	Introduced		+	+	+	-	-	-	+	-	-	-	+	+	+	-
48	Smooth Chaff Flower	<i>Alternanthera paronychioides</i>	Amaranthaceae	Naturalized	NA	+	-	-	-	-	+	-	-	-	-	-	-	-	-
49	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	-	+	+	+	-	+	+	+	+	+	+	-
50	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	+	-	-	+	-	+	+	-	+	-	+	+	+	-
51	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	-	+	+	+	+	+	+	+	+	+	-	+
52	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	+	+	-	+	+	-	+	+	-	+	-	-	+	+
53	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	+	+	+	-	+	+	-	-	-	+	+	+	+
54	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	+	+	+	+	-	+	-	-	-	-	-	-	+	-
55	Narrow-Leaved Cattail	<i>Typha angustifolia</i>	Typhaceae	Native	LC	+	-	-	-	-	-	-	-	-	-	-	-	-	-
56	White Water Sedge	<i>Cyperus dubius</i>	Cyperaceae	Native	LC	+	-	-	-	+	-	-	+	-	-	-	-	-	-
57	Forked Fimbry	<i>Fimbristylis dichotoma</i>	Cyperaceae	Native	LC	+	-	-	-	-	-	-	+	-	-	-	-	-	-
58	Common Club-rush	<i>Schoenoplectus bulatus</i>	Cyperaceae	Native	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-
59	Wiregrass	<i>Aristida setacea</i>	Poaceae	Native	NA	+	-	-	-	-	+	-	-	-	-	-	+	-	-
60	Pitted beard grass	<i>Bothriochloa pertusa</i>	Poaceae	Native	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-
61	Bermuda grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	+	+	-	+	-	+	+	+	+	+	+	+
62	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-
63	Finger grass	<i>Enteropogon dolichostachyus</i>	Poaceae	Native	NA	+	-	-	-	-	-	-	-	-	-	-	-	-	-
64	Kans grass	<i>Saccharum spontaneum</i>	Poaceae	Native	LC	+	-	-	-	+	+	-	-	+	+	-	-	+	+
Total						64	22	16	25	29	27	24	17	21	12	19	16	22	18

Table 9.2: List of Diplopoda recorded at Kancheepuram District (A - Chembarambakkam, B - Govindavadi, C - Great Salt Lake, D - Kolavi Lake, E - Kooram Lake, F - Madhuranthagam, G - Magaral Lake, H - Odiyur Lake, I - Parandur Lake, J - Sirudavoor Lake, K - Sriperumbudur Lake, L - Thenneri Lake, M - Thirupulivanam Lake, N - Uthiramerur Lake, O - Uthukadu Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Yellow Spotted Millipede	<i>Harpaghe haydeniana</i>	Xystodesmidae	-	-	+	-	+	+	-	-	-	-	-	-	+	-	-
2	Millipede	<i>Spinotarsus colosseus</i>	Odonotopgidae	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-
Total				0	0	1	0	2	1	0	0	0	0	0	0	2	0	0

Table 9.3: List of Insect species recorded at Kancheepuram District (A - Chembarambakkam, B - Govindavadi, C - Great Salt Lake, D - Kolavi Lake, E - Kooram Lake, F - Madhuranthagam, G - Magaral Lake, H - Odiyur Lake, I - Parandur Lake, J - Sirudavoor Lake, K - Sriperumbudur Lake, L - Thenneri Lake, M - Thirupulivanam Lake, N - Uthiramerur Lake, O - Uthukadu Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Brown-spotted locust Grasshopper	<i>Cyrtacantha cristatarica</i>	Acrididae	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
2	Toothpick Grasshopper	<i>Leptysma marginicollis</i>	Acrididae	-	+	+	+	+	-	-	-	-	-	-	-	+	+	+
3	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	-	+	-	+	+	+	+	+	-	-	-	+	+	+
4	Mantis Egg	<i>Ootheca</i>	Mantodae	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
5	Spittle bug	<i>Clovio sp.</i>	Aphrophoridae	+	+	+	+	+	+	+	-	+	-	+	+	+	+	+
6	Water Strider	<i>Gerris sp.</i>	Gerridae	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+
7	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	-	-	+	-	+	-	-	-	-	-	-	-	+	+	-
8	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	+	+	+	+	+	+	+	-	+	-	+	+	-	+	+
9	Transverse lady beetle	<i>Coccinella transversalis</i>	Coccinellidae	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
10	Blister Beetle	<i>Hycleus sp.</i>	Meloidae	-	-	+	+	+	-	-	-	-	-	-	-	-	+	-
11	Small Dung Beetle	<i>Onthophagus sp.</i>	Scarabaeidae	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
12	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	-	-	+	-	+	+	+	+	-	+	-	+	+	+	+
13	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	+	+	-	+	-	-	-	-	-	-	-	+	+	-
14	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	-	-	+	+	+	+	-	+	+	+	+	-	+	+	+
15	Bicolour Ant	<i>Meranoplus bicolor</i>	Formicidae	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-
16	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+
17	Black and Yellow Mud Dauber	<i>Sceliphron caementarium</i>	Sphecidae	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-

	Wasp																	
18	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	+	+	+	-	-	-	-	-	-	-	-	-	+	-
19	House fly	<i>Musca domestica</i>	Muscidae	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
Total				4	8	19	9	11	7	6	4	5	4	5	5	9	13	8

Table 9.4: List of Butterfly species recorded at Kancheepuram District (A - Chembarambakkam, B - Govindavadi, C - Great Salt Lake, D - Kolavi Lake, E - Kooram Lake, F - Madhuranthagam, G - Magaral Lake, H - Odiyur Lake, I - Parandur Lake, J - SirudavoorLake, K - Sriperumbudur Lake, L - Thenneri Lake, M - Thirupulivanam Lake, N - Uthiramerur Lake, O - Uthukadu Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Continental Swift	<i>Parnara ganga</i>	Hesperiinae	Common	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
2	Large Branded Swift	<i>Pelopidas subochracea</i>	Hesperiinae	Uncommon	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
3	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	-	+	+	+	+	+	+	+	+	-	+	+	+	+	+
4	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5	Lime Butterfly	<i>Papilio demoleus</i>	Papilioninae	Common	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+
6	Common Grass Yellow	<i>Eurema hecabe</i>	Coliadinae	Common	+	+	+	+	+	+	+	-	+	-	+	+	+	+	+
7	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
8	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	-	+	+	+	+	+	+	-	+	-	+	+	+	+	+
9	Small Orange Tip	<i>Colotis etrida</i>	Pierinae	Common	+	+	+	+	+	+	+	-	+	-	-	+	+	+	+
10	Great Orange Tip	<i>Hebomoia glaucippe</i>	Pierinae	Common	-	+	-	-	+	-	-	+	-	-	-	-	-	-	+
11	Common Wanderer	<i>Pareronia hippia</i>	Pierinae	Common	-	+	+	+	+	+	+	-	-	-	-	-	+	+	+
12	Psyche	<i>Leptosia nina</i>	Pierinae	Common	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
13	Pioneer	<i>Belenois aurota</i>	Pierinae	Common	-	+	+	+	+	+	+	-	+	-	-	+	+	+	+
14	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	-	+	+	+	+	-	+	-	-	-	-	-	+	+	+
15	Lesser Grass Blue	<i>Zizina otis</i>	Polyommatainae	Common	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-
16	Tiny Grass Blue	<i>Zizula hylax</i>	Polyommatainae	Common	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
17	Lime Blue	<i>Chilades lajus</i>	Polyommatainae	Common	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
18	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	+	+	+	+	+	+	-	+	+	+	+	+	-	+	+
19	Striped Tiger	<i>Danaus genutia</i>	Danainae	Common	+	+	+	+	+	+	+	-	+	+	-	-	+	+	+
20	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
21	Common Crow	<i>Euploea core</i>	Danainae	Common	+	+	+	+	+	+	+	-	+	-	+	+	+	+	+
22	Common Evening Brown	<i>Melanitis leda</i>	Satyrinae	Common	-	+	+	-	+	-	-	-	-	-	-	-	-	-	-
23	Tawny Coster	<i>Acraea violae</i>	Acracinae	Common	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
24	Common Leopard	<i>Phalanta phalantha</i>	Heliconiinae	Common	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+
25	Joker	<i>Byblia lithyia</i>	Biblidinae	Common	-	+	+	-	+	+	+	-	-	-	-	-	+	+	+
26	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+
27	Common Castor	<i>Ariadne merione</i>	Biblidinae	Common	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
28	Blue Pansy	<i>Junonia orithiya</i>	Nymphalinae	Common	-	-	-	-	+	-	-	+	-	+	-	-	-	-	-
29	Yellow Pansy	<i>Junonia hierta</i>	Nymphalinae	Common	-	+	-	-	+	-	-	-	-	+	-	-	-	-	+
30	Peacock Pansy	<i>Junonia almana</i>	Nymphalinae	Common	-	-	-	-	+	+	-	+	-	+	-	-	-	-	+
31	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	+	+	+	+	+	+	+	-	+	-	+	+	+	+	+
32	Danaid Eggfly	<i>Hypolimnas misippus</i>	Nymphalinae	Common	+	+	+	+	+	+	+	-	+	-	-	+	-	+	+
Total					12	22	20	18	32	19	19	11	16	10	12	14	17	20	23

Table 9.5: List of Odonates recorded at Kancheepuram District (A - Chembarambakkam, B - Govindavadi, C - Great Salt Lake, D - Kolavi Lake, E - Kooram Lake, F - Madhuranthagam, G - Magaral Lake, H - Odiyur Lake, I - Parandur Lake, J - SirudavoorLake, K - Sriperumbudur Lake, L - Thenneri Lake, M - Thirupulivanam Lake, N - Uthiramerur Lake, O - Uthukadu Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	-	+	+	+	+	+	+	-	+	-	+	+	+	+	+

2	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	-	-	+	+	-	-	-	-	-	-	-	-	-	+	
3	Pigmy Dartlet	<i>Agriocnemis pygmaea</i>	Coenagrionidae	Common	+	-	+	+	+	-	-	-	-	-	-	-	-	-	
4	Blue Dart	<i>Pseudagrion microcephalum</i>	Coenagrionidae	Common	-	-	-	+	-	-	-	-	-	-	-	-	-	+	
5	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	-	-	-	+	-	+	-	-	-	-	-	-	-	+	
6	Coromandel Marsh Dart	<i>Ceriatrion coromandelianum</i>	Coenagrionidae	Common	-	+	+	+	+	+	+	-	+	-	+	+	+	+	
7	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	+	+	+	+	+	+	+	+	+	+	+	+	+	
8	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
9	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
10	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+	+	+	+	+	+	+	-	+	+	+	+	
11	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
12	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	+	-	-	+	-	+	-	-	-	-	-	+	-	-	
Total					6	7	9	12	8	9	7	4	7	4	7	8	7	7	10

Table 9.6: List of Arachnida recorded at Kancheepuram District (A - Chembarambakkam, B - Govindavadi, C - Great Salt Lake, D - Kolavi Lake, E - Kooram Lake, F - Madhuranthagam, G - Magaral Lake, H - Odiyur Lake, I - Parandur Lake, J - Sirudavoor Lake, K - Sriperumbudur Lake, L - Thenneri Lake, M - Thirupulivanam Lake, N - Uthiramerur Lake, O - Uthukadu Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	+	+	+	-	+	-	+	-	+	+	+	+	+
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	+	+	+	+	-	-	-	-	-	-	+	+	+	+
3	Wolf Spider	<i>Lycosidae sp.</i>	Lycosidae	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-
Total				1	1	2	2	3	0	1	0	2	0	1	2	2	2	2

Table 9.7: List of Fish species recorded at Kancheepuram District (A - Chembarambakkam, B - Govindavadi, C - Great Salt Lake, D - Kolavi Lake, E - Kooram Lake, F - Madhuranthagam, G - Magaral Lake, H - Odiyur Lake, I - Parandur Lake, J - Sirudavoor Lake, K - Sriperumbudur Lake, L - Thenneri Lake, M - Thirupulivanam Lake, N - Uthiramerur Lake, O - Uthukadu Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	-	+	+	+	+	-	-	-	-	-	-	-	+	+	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	-	-	-	-	+	+	+	-	+	+	+	+	+	+	+
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	+	+	+	-	-	+	-	-	+	-	-	-	-	+	+
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	+	-	+	+	-	+	-	-	+	+	+	+	-	+
5	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	+	+	-	+	-	-	-	+	+	-	-	+	+	+
6	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	-	-	+	-	-	+	+	-	-	-	-	+	-	+	+
7	Spiny eel	<i>Macroglyphus pancalus</i>	Mastacembelidae	LC	-	-	-	-	-	-	+	-	-	-	-	-	+	+	+
8	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	-	-	+	-	-	+	+	-	+	+	+	+	-	-	+
9	Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	+	+	-	+	+	+	-	-	+	-	-	+	+	-	+
10	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	+	+	+	-	-	+	+	-	+	-	+	-	+	+	+
11	Catla	<i>Catla catla</i>	Cyprinidae	LC	-	-	+	+	-	+	-	-	-	-	-	+	-	+	+
12	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	-	-	+	-	-	+	-	-	+	-	-	+	+	+	+
13	Bloch's Gizzard Shad	<i>Nematalosa nasus</i>	Clupeidae	LC	+	+	-	+	-	-	+	-	+	-	+	-	-	+	+
14	Spiny loach	<i>Lepidocephalichthys thermalis</i>	Cobitidae	LC	-	-	-	+	+	+	+	-	-	-	+	+	-	+	+
15	Long snouted barb	<i>Puntius dorsalis</i>	Cyprinidae	LC	-	-	+	+	-	-	+	-	+	-	+	+	+	-	+
16	White sardinella	<i>Sardinella albella</i>	Clupeidae	LC	-	-	+	-	-	-	-	-	+	-	-	-	-	-	+
17	Tenpounder	<i>Elops machnata</i>	Elopidae	LC	-	-	-	+	+	-	+	-	+	-	-	-	-	-	+
18	Dussumier's halfbeak	<i>Hyporhamphus dussumieri</i>	Hemiramphidae	NE	-	-	-	+	+	-	+	-	+	-	+	-	+	-	+
19	Thread fin	<i>Polynemus plebeius</i>	Polynemidae	NE	-	-	-	+	-	+	+	-	+	-	-	+	-	-	+
20	Featherback	<i>Notopterus notopterus</i>	Notopteridae	LC	-	-	-	+	-	+	+	-	-	-	+	+	+	-	+
21	Indian mackerel	<i>Rastrelliger kanagurta</i>	Scombridae	DD	-	-	-	-	+	+	+	-	+	-	-	-	+	-	+
Total					6	7	10	11	9	12	14	0	14	4	9	11	12	11	21

Table 9.8: List of Amphibians recorded at Kancheepuram District (A - Chembarambakkam, B - Govindavadi, C - Great Salt Lake, D - Kolavi Lake, E - Kooram Lake, F - Madhuranthagam, G - Magaral Lake, H - Odiyur Lake, I - Parandur Lake, J - Sirudavoor Lake, K - Sriperumbudur Lake, L - Thenneri Lake, M - Thirupulivanam Lake, N - Uthiramerur Lake, O - Uthukadu Lake)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	LC	-	+	-	-	+	-	-	-	-	-	-	-	-	+	+
2	Indian Pond Frog	<i>Euphlyctis hexadactylus</i>	Dicroglossidae	LC	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
Total					0	2	0	0	1	0	0	0	0	0	0	0	0	2	1

Table 9.9: List of Reptiles recorded at Kancheepuram District (A - Chembarambakkam, B - Govindavadi, C - Great Salt Lake, D - Kolavi Lake, E - Kooram Lake, F - Madhuranthagam, G - Magaral Lake, H - Odiyur Lake, I - Parandur Lake, J - Sirudavoor Lake, K - Sriperumbudur Lake, L - Thenneri Lake, M - Thirupulivanam Lake, N - Uthiramerur Lake, O - Uthukadu Lake)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Fan-throated Lizard	<i>Sitana ponticeriana</i>	Agamidae	LC	-	+	-	-	+	-	-	-	-	-	-	-	-	+	+
2	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	LC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
3	Common Skink	<i>Mabuya carinata</i>	Scincidae	LC	+	+	+	+	+	+	+	-	+	-	+	+	+	+	+
4	Water Snake	<i>Xenochrophis piscator</i>	Colubridae	LC	+	-	-	+	-	-	-	-	-	-	-	-	-	-	+
Total					3	3	2	3	3	2	2	1	2	1	2	2	2	3	4

Table 9.10: List of Birds recorded at Kancheepuram District (A - Chembarambakkam, B - Govindavadi, C - Great Salt Lake, D - Kolavi Lake, E - Kooram Lake, F - Madhuranthagam, G - Magaral Lake, H - Odiyur Lake, I - Parandur Lake, J - Sirudavoor Lake, K - Sriperumbudur Lake, L - Thenneri Lake, M - Thirupulivanam Lake, N - Uthiramerur Lake, O - Uthukadu Lake)

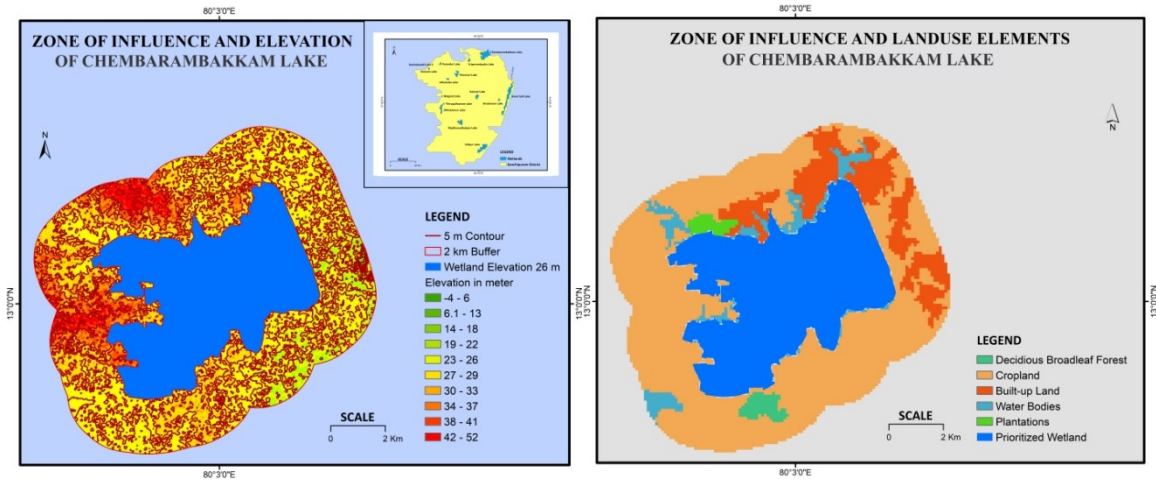
S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae	LC	+	-	+	-	-	-	-	+	-	-	-	-	-	-	+
2	Lesser Whistling-duck	<i>Dendrocygna javanica</i>	Anatidae	LC	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-
3	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	LC	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-
4	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	LC	-	-	+	-	+	-	-	+	-	-	-	-	-	+	-
5	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	NT	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-
6	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	LC	+	-	+	-	+	+	+	-	-	-	-	-	-	+	-
7	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	NT	+	-	+	+	-	+	-	-	-	-	-	-	-	+	-
8	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae	LC	+	-	+	+	+	+	-	-	+	-	-	-	-	+	+
9	Eurasian Spoonbill	<i>Platalea leucorodia</i>	Threskiornithidae	LC	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
10	Striated Heron	<i>Butorides striata</i>	Ardeidae	LC	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
11	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	LC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
12	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	LC	+	+	+	+	+	+	-	+	+	-	-	-	-	+	+
13	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	LC	+	+	+	+	+	-	-	-	+	-	-	-	-	+	+
14	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	LC	+	+	+	+	+	+	+	-	+	-	+	+	+	+	+
15	Great Egret	<i>Casmerodius albus</i>	Ardeidae	LC	+	-	+	-	+	-	-	+	-	-	-	-	-	-	-
16	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	LC	+	+	+	+	+	+	-	+	+	+	-	-	-	+	+
17	Little Egret	<i>Egretta garzetta</i>	Ardeidae	LC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
18	Spot-billed Pelican	<i>Pelecanus philippensis</i>	Pelecanidae	NT	-	-	+	+	-	+	-	-	-	-	-	-	-	+	-
19	Darter	<i>Anhinga melanogaster</i>	Anhingidae	NT	-	+	+	+	-	-	-	-	-	-	-	-	+	-	-
20	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	LC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
21	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	LC	+	+	+	+	-	+	-	-	-	-	-	-	-	+	+
22	Black Kite	<i>Milvus migrans</i>	Accipitridae	LC	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-
23	Shikra	<i>Accipiter badius</i>	Accipitridae	LC	-	-	+	-	-	-	-	-	-	-	-	-	+	-	-
24	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	LC	-	-	+	+	-	-	-	-	-	-	-	-	+	-	-
25	Purple Swampphen	<i>Porphyrio porphyrio</i>	Rallidae	LC	+	+	+	+	+	+	-	-	-	-	-	-	-	+	+
26	Eurasian Coot	<i>Fulica atra</i>	Rallidae	LC	+	-	+	+	+	+	-	-	+	-	+	+	+	+	+
27	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	Jacanidae	LC	+	-	+	+	+	-	-	-	-	-	-	-	-	-	+
28	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	LC	+	+	+	+	+	+	-	+	+	+	+	-	+	+	+
29	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	LC	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-
30	Eurasian Curlew	<i>Numenius arquata</i>	Scolopacidae	NT	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-

31	Common Redshank	<i>Tringa totanus</i>	Scolopacidae	LC	-	-	+	-	-	-	-	-	-	-	-	-	-	-
32	Marsh Sandpiper	<i>Tringa stagnatilis</i>	Scolopacidae	LC	-	-	+	-	-	-	-	-	-	-	-	-	-	-
33	Green Sandpiper	<i>Tringa ochropus</i>	Scolopacidae	LC	+	-	+	-	+	-	-	-	+	-	+	+	-	+
34	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae	LC	-	-	+	-	-	-	-	+	-	-	-	-	-	-
35	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Laridae	LC	-	-	+	-	-	-	-	-	-	-	-	-	-	-
36	Caspian Tern	<i>Hydroprogne caspia</i>	Laridae	LC	-	-	+	-	-	-	-	+	-	+	-	-	-	-
37	Gull-billed Tern	<i>Gelochelidon nilotica</i>	Laridae	LC	-	-	+	-	-	-	-	-	-	-	-	-	-	-
38	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	LC	+	+	+	+	+	+	+	+	+	-	+	+	+	+
39	Asian Koel	<i>Eudynamys scolopaceus</i>	Cuculidae	LC	+	+	+	+	+	+	+	+	-	+	-	-	-	+
40	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	LC	+	+	+	+	+	+	+	-	-	+	-	-	-	+
41	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	LC	+	+	+	+	+	+	+	+	-	+	-	+	+	+
42	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	LC	+	+	+	+	+	+	+	+	+	+	-	+	+	+
43	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	LC	+	+	+	+	+	+	+	+	+	+	+	+	+	+
44	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae	LC	+	+	+	+	+	+	-	-	-	-	-	-	+	-
45	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	LC	+	-	+	+	-	+	-	+	-	+	-	-	+	-
46	Blue-tailed Bee eater	<i>Merops philippinus</i>	Meropidae	LC	-	-	+	+	-	-	-	-	-	-	-	-	+	-
47	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	LC	-	-	+	+	-	-	-	-	-	-	-	-	-	-
48	House Crow	<i>Corvus splendens</i>	Corvidae	LC	+	+	+	+	+	+	+	+	+	+	+	+	+	+
49	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	LC	+	+	+	+	+	+	+	+	-	+	+	+	+	+
50	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	LC	+	+	+	+	+	+	+	+	-	+	-	+	+	+
51	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	LC	+	+	+	+	+	+	+	+	-	+	-	+	+	+
52	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	LC	+	+	+	+	+	+	+	+	-	+	-	+	+	+
53	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	LC	+	+	+	+	+	+	+	-	-	+	-	+	-	+
54	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	LC	+	+	+	+	+	+	+	+	+	+	+	+	+	+
55	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	LC	+	+	+	+	+	+	+	+	-	+	-	+	+	+
56	Scaly-breasted Munia	<i>Lonchura punctulata</i>	Estrildidae	LC	+	+	+	+	+	+	-	-	-	-	-	-	-	-
57	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	LC	+	+	+	-	+	-	-	-	-	+	-	-	-	-
58	Paddyfield Pipit	<i>Anthus rufulus</i>	Motacillidae	LC	-	-	+	-	-	-	-	-	-	+	-	-	-	-
Total					39	27	58	37	33	29	17	20	25	13	19	17	26	30

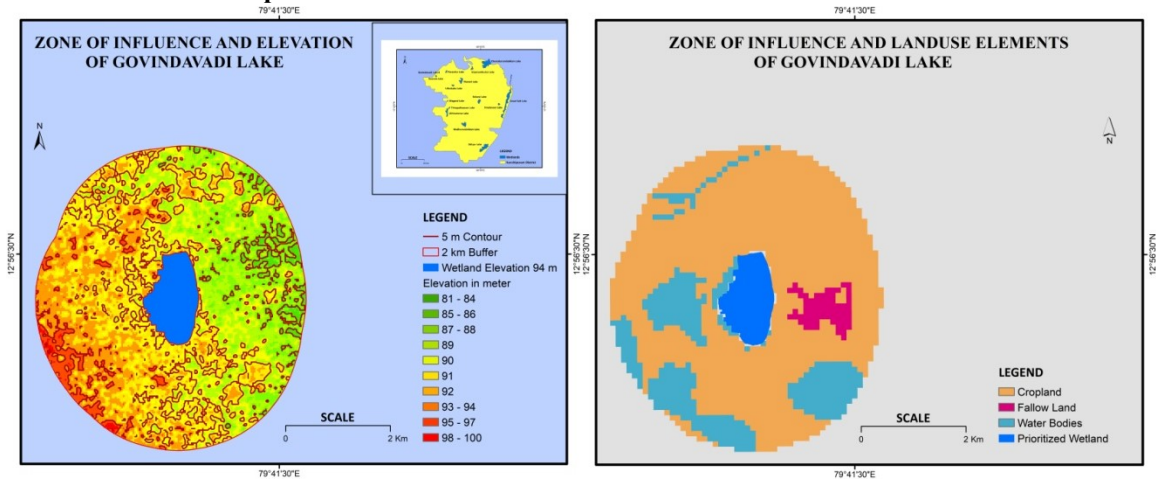
Table 9.11: List of Mammals recorded at Kancheepuram District (A - Chembarambakkam, B - Govindavadi, C - Great Salt Lake, D - Kolavi Lake, E - Kooram Lake, F - Madhuranthagam, G - Magaral Lake, H - Odiyur Lake, I - Parandur Lake, J - Sirudavoor Lake, K - Sriperumbudur Lake, L - Thenneri Lake, M - Thirupulivanam Lake, N - Uthiramerur Lake, O - Uthukadu Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+	+	-	+	-	+	-	+	-	-	+	+	-
4	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	+	-	+	+	-	-	-	+	-	+	-	-	+	-	-
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Total						5	4	5	5	3	4	3	5	3	5	3	5	4	3

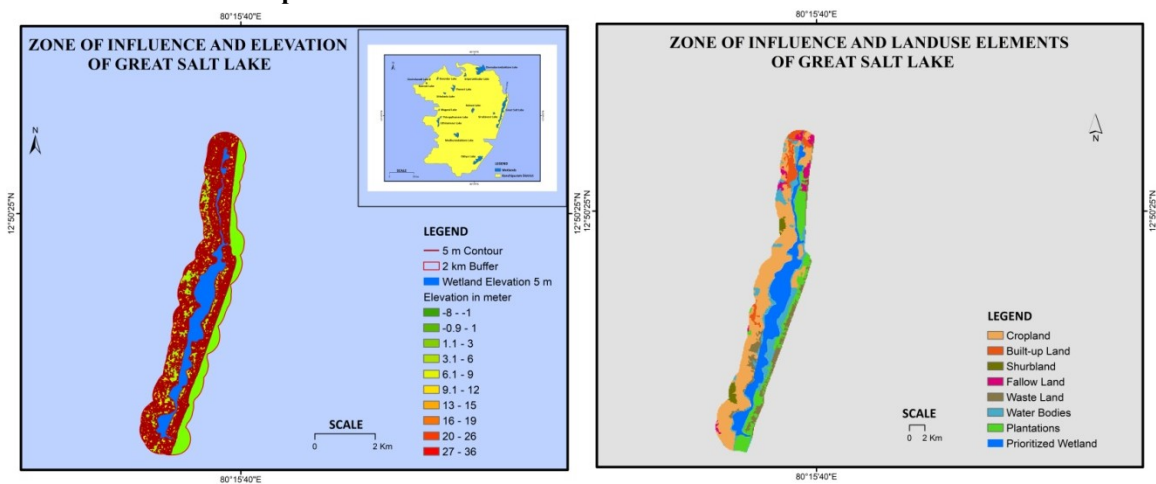
Map 9.2: The zone of influence around the Chembarambakkam Lake.



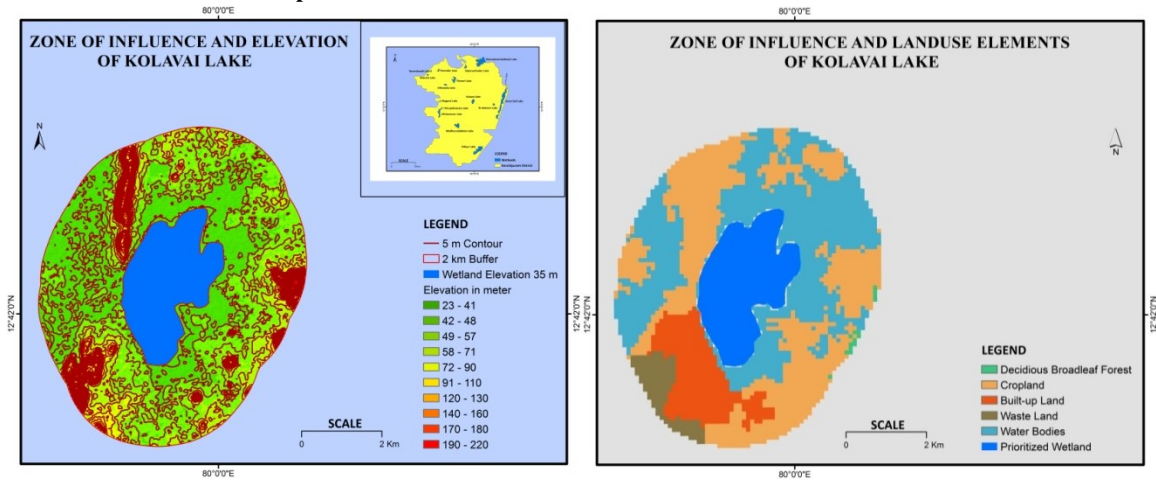
Map 9.3: The zone of influence around the Govandavadi Lake.



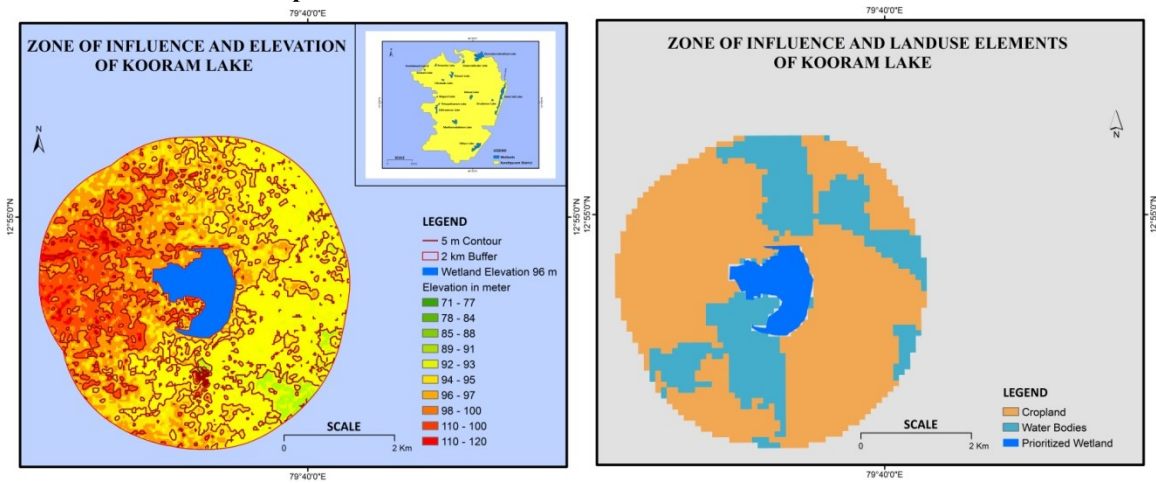
Map 9.4: The zone of influence around the Great Salt Lake.



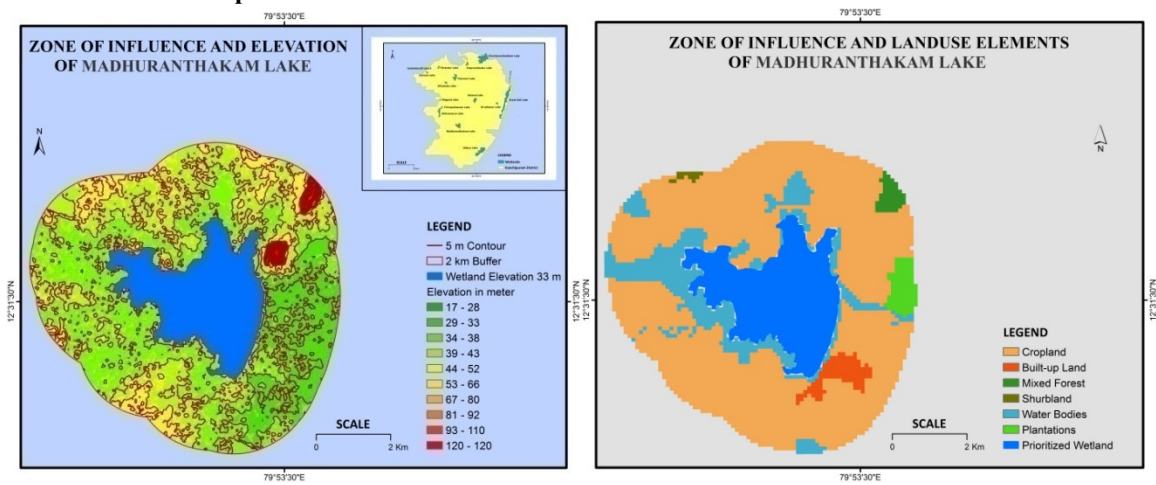
Map 9.5: The zone of influence around the Kolavai Lake.



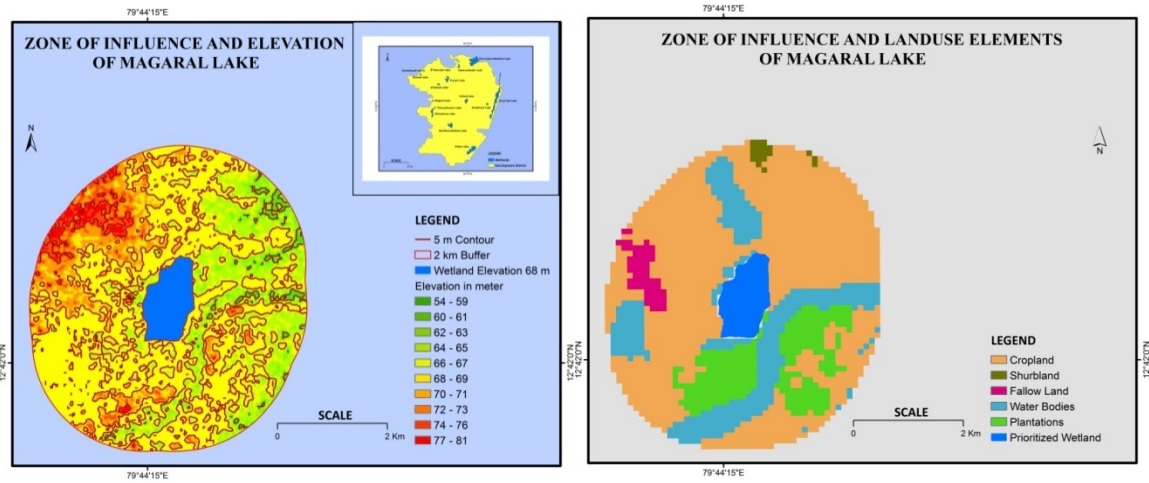
Map 9.6: The zone of influence around the Kooram Lake.



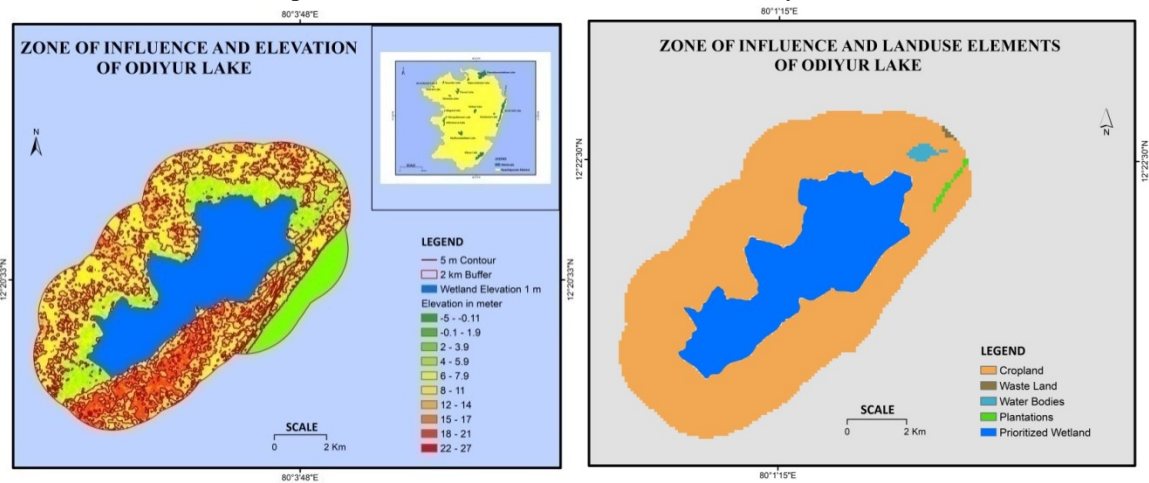
Map 9.7: The zone of influence around the Madhuranthakam Lake.



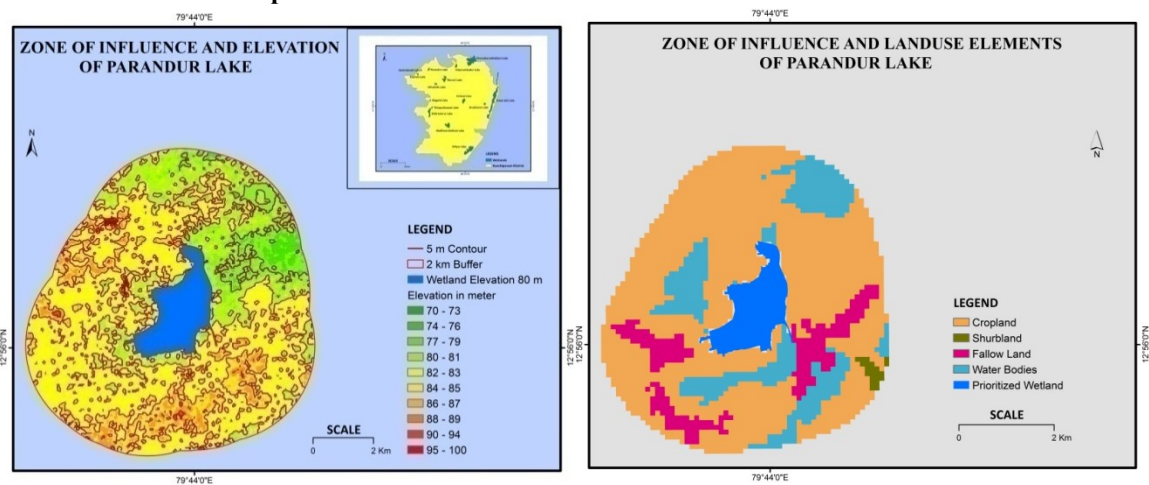
Map 9.8: The zone of influence around the Magaral Lake.



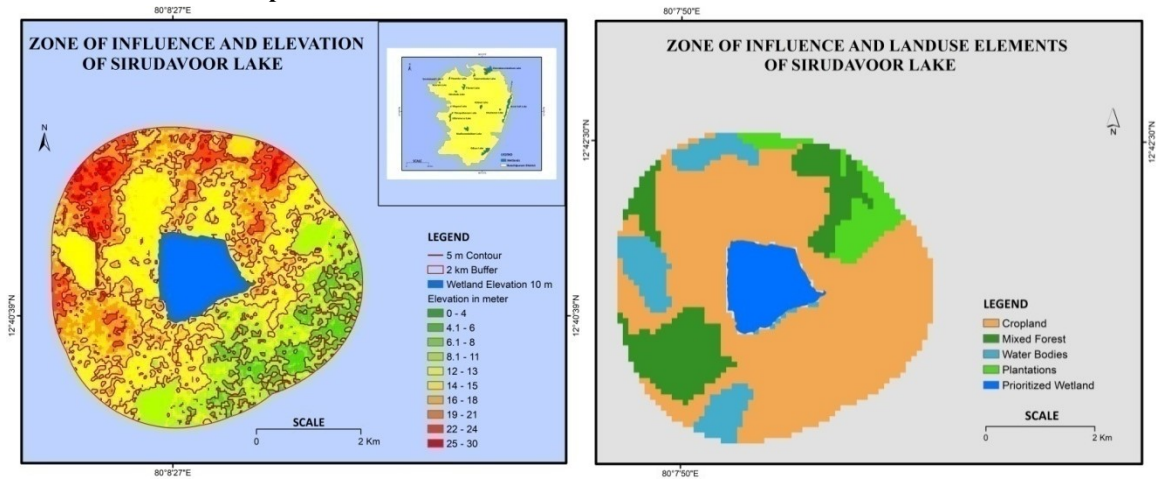
Map 9.9: The zone of influence around the Odiyur Lake.



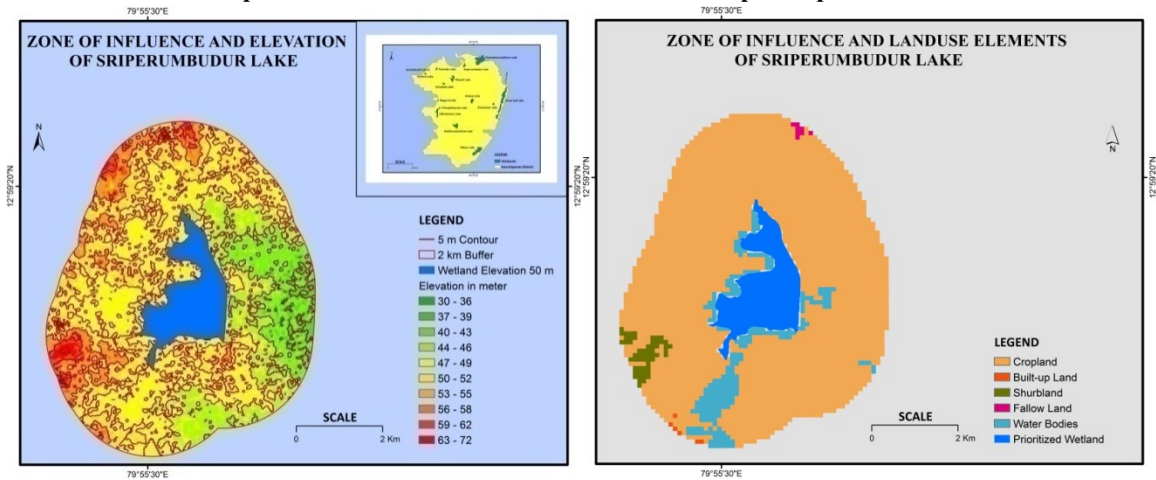
Map 9.10: The zone of influence around the Parandur Lake.



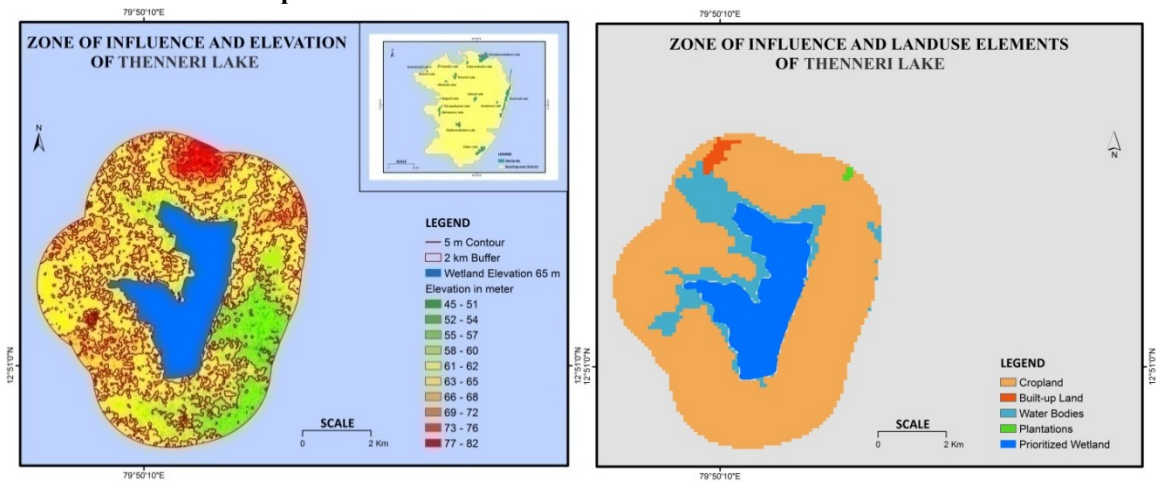
Map 9.11: The zone of influence around the Sirudavoor Lake.



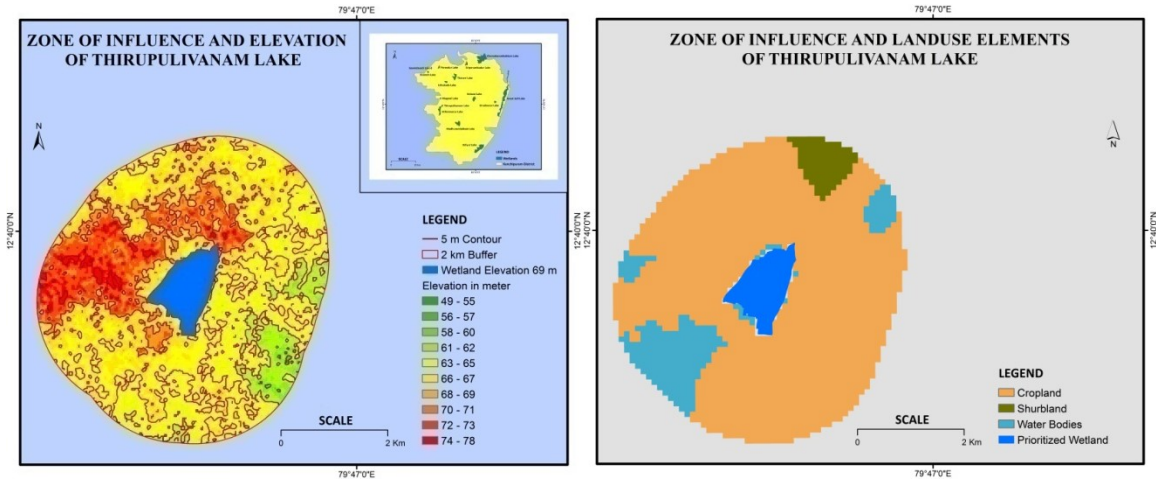
Map 9.12: The zone of influence around the Sriperumpudur Lake.



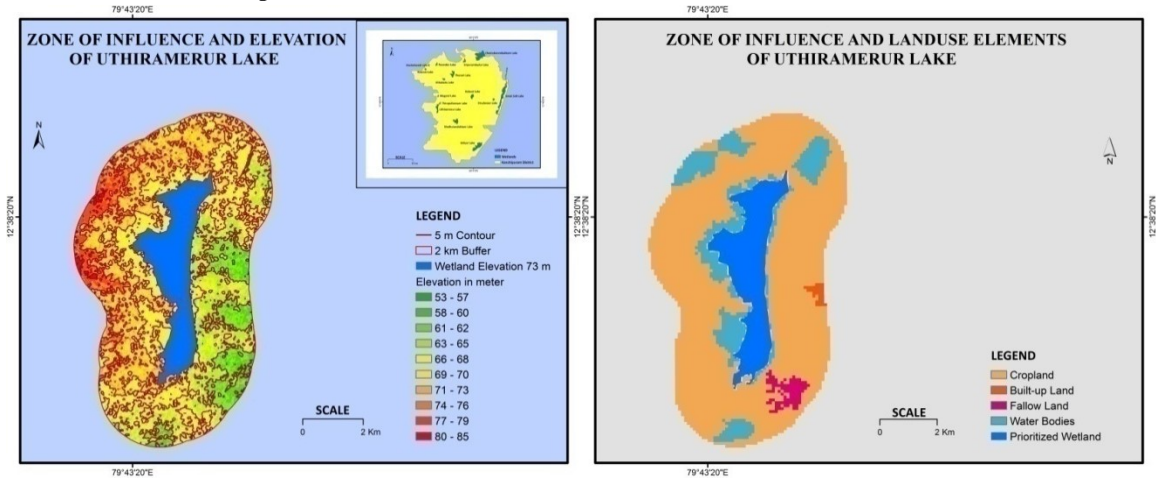
Map 9.13: The zone of influence around the Thenneri Lake.



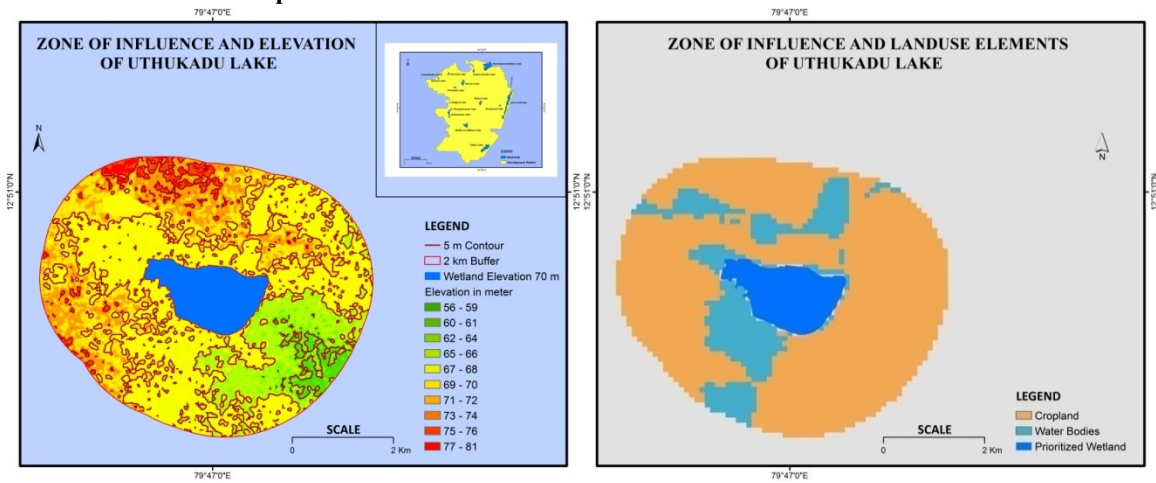
Map 9.14: The zone of influence around the Thirupulivanam Lake.



Map 9.15: The zone of influence around the Uthiramerur Lake.



Map 9.16: The zone of influence around the Uthukadu Lake.

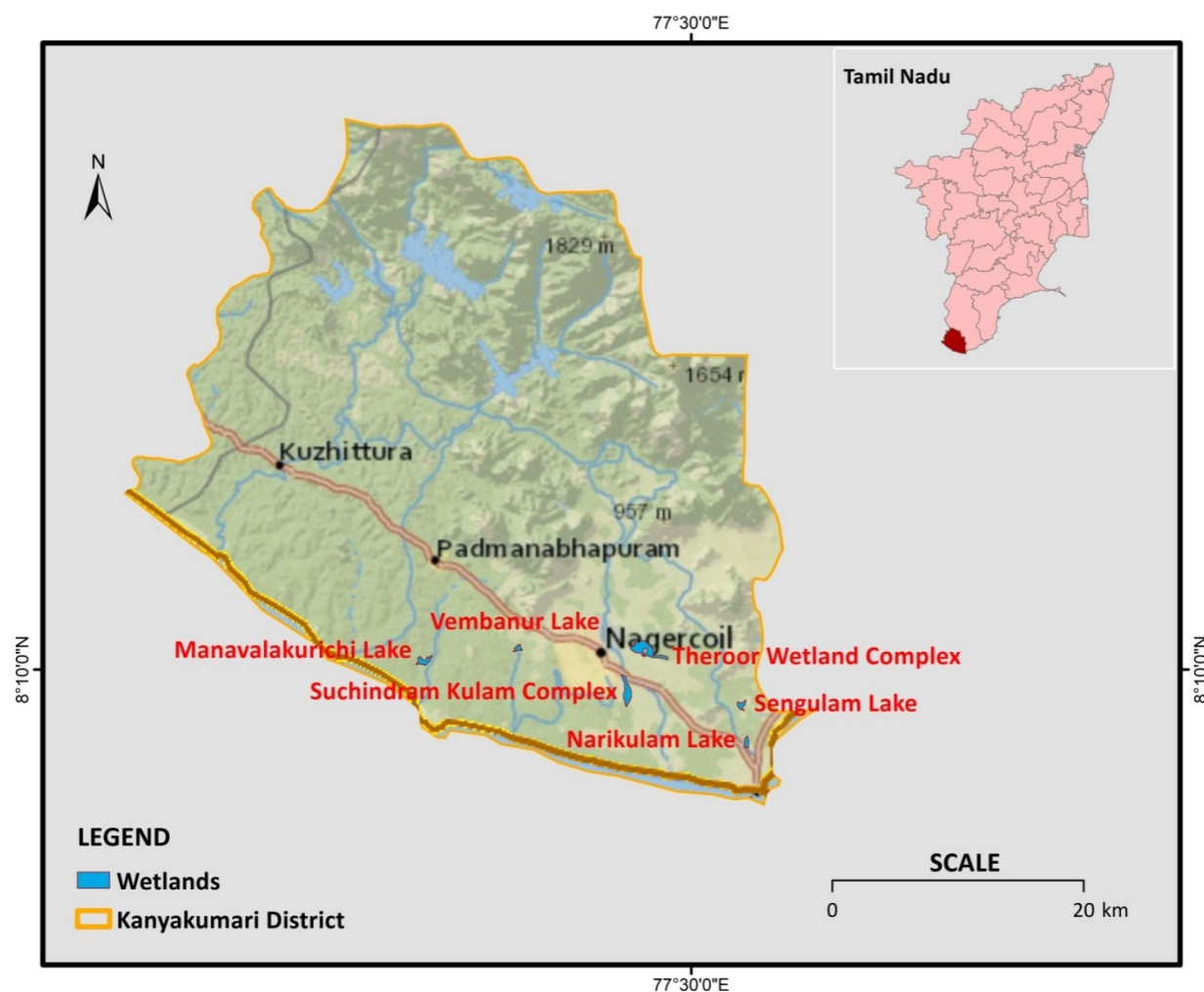


10. Kanyakumari District

Kanyakumari district is the southernmost district in Tamil Nadu state and mainland India. It stands second in terms of population density among the districts of Tamil Nadu and the second most urbanized, next only to Chennai district. Kanyakumari district has a varied topography with sea on three sides and the mountains of the Western Ghats bordering the northern side. The district shares common boundary with Tirunelveli district on the North and east. The South Eastern boundary is the Gulf of Mannar. On the South and the South West, the boundaries are the Indian Ocean and the Arabian Sea. On the West and North West it is bounded by Kerala state.

The district offers undulating valleys and plains between the mountainous terrain and the sea - coast. Major tourist attractions in the district include Pechiparai dam, Tirparappu water falls, Muttom beach, Sanguthurai beach, Chothavilai beach, and Bay watch (water theme amusement park).

Total geographic area of Kanyakumari is 1672 km². Total area under wetland is 7937 ha, which includes 654 small wetland (<2.25 ha). Major wetland types of the district are Reservoirs (3747 ha), Tanks/ponds (1109 ha), River/Stream (799 ha) and Inter-tidal mudflats (409 ha). Of the Six wetlands selected in the district, Theroor lake is the largest while Vembanur is the smallest of the six wetlands (Map 10.1).



Map 10.1: Wetlands of Kanyakumari district assessed for Prioritization

Manavalankuruchi Lake

Manavalankuruchi Lake also known as Periyakulam (Plate 11) is a part of Kalkulam in Taluk, in Kanyakumari district. Villages that surround the wetland include Manavalankuruchi, Kadiyapattinam, Thalakulam, Manvaikadu. The wetland comes under the jurisdiction of PWD, is not a Protected Area.

The geographic coordinates are Latitude: 08° 10'27.4" N; 08° 10'18.6" N; 08° 10'14.4" N; 08° 10'11.6" N and Longitude: 077° 18'15.1" E; 077° 18'15.7" E; 077° 18'19.9" E; 077° 18'37.2" E.

Manavalankuruchi Lake is a wetland that belongs to the Natural (inland) category in the sub category intermittent seasonal lakes. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and the Pachiparai dam and Perumchani dam. The water from the wetland helps in replenishing the groundwater and the overflow feeds the agriculture lands and joins the sea. The lake has an area of 47 hectares with an average depth of 2.5 meters. The wetland surrounded by 70% Agriculture, 20% Rural Settlements and 10% Grassland/Scrubland. It has an area of 1966.5 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 10.2).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.2, salinity measuring 0.102 ppt, the TDS was recorded high at 136 ppm. The vegetation comprised of 41 plant species (Table 10.1) including nine invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, *Accacia nilotica indica*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 50 animal species including 1 domestic species were recorded during the survey (Table 10.2 to 10.9). Threatened species of birds were not observed during the survey but one near threatened fish species was recorded. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. But there are bore wells dug in the wetland from which the water is provided for drinking. Agriculture is undertaken around the wetland using the wetland water and borewell water is also used. Grazing by the cattle and sheep is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has several large temple as well as a few small temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. Around the wetland there is solid waste dumping on a minor scale.

The wetland is not included in any of the protection and conservation categories. The wetland faces a severe threat from agricultural activities and solid waste dumping that need to be regulated.

Narikulam Lake

Narikulam Lake (Plate 12) is based in Agastheeswaram taluka in Kanyakumari district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Perumal Puram, Mahadanapuram, Panjalingapuram, Agastheeswaram.

The geographic coordinates are Latitude: 08° 06'37.2" N; 08° 06'38.5" N; 08° 06'52.7" N; 08° 06'57.9" N; and Longitude: 077° 32'24.5" E; 077° 32'28.0" E; 077° 32'27.8" E; 077° 32'27.6" E.

Narikulam Lake is a wetland that belongs to the Natural (inland) category in the sub category Permanent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and the Pachiparai dam. The water from the wetland helps in replenishing the groundwater. The lake has an area of 26 hectares with an

average depth of 3.5 meters. The wetland surrounded by 60% Agriculture and 40% Rural Settlements. It has an area of 1725.47 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 10.3).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.6, salinity measuring 0.102 ppt, the TDS was recorded high at 139 ppm. The vegetation comprised of 80 plant species (Table 10.1) including 14 invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichorniacrassipes*, *Typha angustifolia* and *Ipomoea sp.* The fauna comprised of 56 animal species including 2 domestic species were recorded during the survey (Table 10.2 to 10.9). Two near Threatened species of birds and fish were observed during the survey. Tilapia is a very common invasive species that was recorded. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The village has borewells for their regular needs. The municipality also provides water through the borewells. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Grazing by the cattle is undertaken around the wetland. Fishery is undertaken with permission in the lake, a tender system is followed by the PWD. However for the past four years it is only individual who is given the tender. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. There is mining for sand or silt undertaken with permission.

The wetland does show major change in the pattern of water inflow and outflow. There are few invasive plant species that is changing the habitat of the wetland. Construction of new highway has bifurcated the wetland with a rich diversity.

The wetland is not protected and the wetland faces a major threat from construction of road by the local government. Solid waste dumping and rampant agriculture should be regulated.

Sengulam Lake

Sengulam Lake (Plate 12) based in Agastheeswaram taluka in Kanyakumari district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Pottalkulam, Alagappapuram, Triumooaa nagar.

The geographic coordinates are Latitude: 08° 08'14.2" N; 08° 08'20.4" N; 08° 08'31.1" N; 08° 08'40.2" N; and Longitude: 077° 32'17.2" E; 077° 32'11.7" E; 077° 32'19.3" E; 077° 32'21.2" E

Sengulam Lake is a wetland that belongs to the Natural (inland) category in the sub category Permanent lake. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and inflow from Mambalathuriar river. The water from the wetland helps in replenishing the groundwater. The lake has an area of 28 hectares with an average depth of 3.5 meters. The wetland surrounded by 70% Agriculture and 30% Rural Settlements. It has an area of 1774.91 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 10.4).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.0, salinity measuring 0.134 ppt, the TDS was recorded high at 197 ppm. The vegetation comprised of 60 plant species (Table 10.1) including 10 invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornia crassipes*, *Typha angustifolia* and *Ipomoea sp.* The fauna comprised of 35 animal species including 3 domestic species were recorded during the survey (Table 10.2 to 10.9). Tilapia is a very common invasive species that was recorded. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The village has borewells for their regular needs. The municipality also provides water through the borewells. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Grazing by the cattle is undertaken around the wetland. Fishery is undertaken with permission in the lake, a tender system is followed by the PWD. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. There is mining for sand or silt undertaken with permission. The wetland has few temples around its bank and cultural activities are conducted.

The wetland does show major change in the pattern of water inflow and outflow. There are few invasive plant species that is changing the habitat of the wetland. Release of sewage and garbage dumping is on an increase.

The wetland is not protected and is the wetland faces a major threat from dumping of garbage.

SuchindramKulam Complex

Suchindramkulam complex (Plate 12) also known as Sumanthakulam is rich in flora and fauna. Suchindramkulam complex along with the Theeror wetland was identified as a bird sanctuary since 2002. The process is still underway, while the wetlands were identified for the plant and bird diversity along with its year round retention of water. Villages that surround the wetland include Suchindram. The wetland is not a Protected Area but the forest department has constructed awareness centers. The wetland comes under the jurisdiction of PWD.

The geographic coordinates are Latitude: 08° 09'38.8" N; 08° 09'32.3" N; 8° 09'19.9" N; 8° 09'08.0" N; 8° 08'35.5"N and Longitude: 077°27'12.7" E; 077°27'14.5" E; 077°27'19.5" E; 077°27'25.0" E; 077°27'19.7" E

Suchindramkulam is a wetland that belongs to the Natural (inland) category in the sub category Permanent lake. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and the indirect connection with the Pachiparai river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 96.6 hectares with an average depth of 3.0 meters. The wetland surrounded by 50% Agriculture, 20% Urban Settlements, 20% Rural Settlements and 10 % Grasslands / Scrublands. It has an area of 2399.53 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 10.5).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.5, salinity measuring 0.389 ppt, the TDS was recorded high at 136 ppm. The vegetation comprised of 67 plant species (Table 10.1) including 12 invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornia crassipes*, *Typha angustifolia* and *Ipomoea sp.* The fauna comprised of 102 animal species including 2 domestic species were recorded during the survey (Table 10.2 to 10.9). One Threatened species of bird and one threatened fish species were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water and Pechipari dam as well as from the Tambraparani river at regular intervals that is used by the locals to fulfill their daily requirements. There are few farmlands where agriculture is undertaken around the wetland using the wetland water. Grazing by the cattle and sheep is undertaken. Commercial Fishery is undertaken on annual contract basis obtained from the PWD. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There is high tension wires passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The wetland has been facing severe encroachment problems. Unplanned development and increasing sewage and effluents are a major threat that needs to be regulated.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from encroachment that gradually changing the wetland character, solid waste dumping.

Theroor Wetland Complex

Theroor Wetland Complex (Plate 12) is in Thovala, Kanniyakumari district. Suchindramkulam along with the Theeror wetland was identified as a bird sanctuary since 2002. The process is still underway, while the wetlands were identified for the plant and bird diversity along with its year round retention of water. Villages that surround the wetland include Therur, Puthugramam, Uthirpatty, Balakrishnanpudur, Kulasekaran-pudur, Thandanayakankoram, Sadayankulam, Mangalam, Kannanpathy. The wetland comes under the jurisdiction of Town Panchayat Union Lake and is not a Protected Area.

The geographic coordinates are Latitude: 08° 10'35.9" N; 08° 10'35.9" N; 08° 10'43.1" N; 08° 10'52.3" N; 08° 11'13.1" N; 08° 10'53.6" N; 08° 10'32.0" N; 08° 10'29.6" N; 08° 10'25.7" N; and Longitude: 077° 27'59.0" E; 077° 27'53.6" E; 077° 27'39.4" E; 077° 27'24.4" E; 077° 27'24.4" E; 077° 28'00.9" E; 077° 28'02.5" E; 077° 28'16.0" E; 077° 28'38.4" E; 077° 28'57.1" E.

Theroor Wetland Complex is a wetland that belongs to the Natural (inland) category in the sub category Permanent lake. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 163 hectares with an average depth of 2.5 meters. The wetland surrounded by 75% Agriculture, 20% Rural Settlements and 5 % Grasslands /Scrublands. It has an area of 2718.33 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 10.6).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.55, salinity measuring 0.389 ppt, the TDS was recorded high at 90 ppm. The vegetation comprised of 54 plant species (Table 10.1) including 10 invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornia crassipes*, *Microcystis* and *Ipomoea sp.* The fauna comprised of 92 animal species including 2 domestic species were recorded during the survey (Table 10.2 to 10.9). Two near threatened birds and fish were observed during the survey. Tilapia is a very common invasive species that was recorded. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The village has open dug wells and borewells for their regular needs. The municipality also provides water through the borewells. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Grazing by the cattle is undertaken. Fishery is undertaken with permission in the lake, a tender system is followed. The wetland receives some population of nature enthusiast as tourist to the bird sanctuary. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The wetland does have some temples religious institutions along its bank, a few cultural activities are organized around the wetland.

The wetland does show major change in the pattern of water inflow and outflow. There is organized fishing activity. There are few invasive plant species that is changing the habitat of the wetland.

The wetland is not protected. The wetland faces a major threat from encroachment, Solid waste dumping and rampant agriculture should be regulated.

Vembanur Lake

Vembanurkulam also known as Vembanur lake (Plate 13) surrounded by majestic hills and fringed with coconut trees and paddy fields, located in Kanyakumari district at the southern tip of Tamil Nadu. The wetland comes under the jurisdiction of PWD is not a Protected Area. Villages that surround the wetland include Vembanur, Perumselvavillai, Aasaripallam and Thoppupillai.

The geographic coordinates are Latitude: 08° 10'46.8" N; 08° 10'47.2" N; and Longitude: 077° 22'27.4" E; 077° 22'21.9" E.

Vembanurkulam is a wetland that belongs to the Natural (inland) category in the sub category seasonal intermittent lake. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and from the Ananthanar river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 20 hectares with an average depth of 3 meters. The wetland surrounded by 70% Agriculture, 20% Rural Settlements and 10 % Grasslands /Scrublands. It has an area of 1681.5 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 10.7).

The wetland was Mesotrophic during the visit, with the pH of the water being 6.7, salinity measuring 0.174 ppt, the TDS was recorded high at 147 ppm. The vegetation comprised of 65 plant species (Table 10.1) including eight invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornia crassipes* and *Ipomoea sp.* The fauna comprised of 54 animal species including 2 domestic species were recorded during the survey (Table 10.2 to 10.9). One near Threatened specie of bird and fish each were observed during the survey. Tilapia is a very common invasive species that was recorded. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides the borewell water to fulfill the daily needs. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Grazing by the cattle is undertaken. Fishery is undertaken without any permission in the lake, recreational fishery is also practiced whenever water is available. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland does have several temples and other religious institutions along its bank, and cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The pollution in the form of sewage, effluents and solid waste dumping is seen but it is low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland has some amount of solid waste dumping and encroachment activities. The siltation is also observed near the inlet as well as the outlet of the wetland.

The wetland is not protected under any official instruments. The wetland faces a major threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland.

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Table 10.1: List of Plant species recorded in Kanyakumari District (A - Manavalakurichi Lake, B - Narikulam Lake, C - Sengulam Lake, D - Suchindramkulam Complex, E - Theroor Wetland Complex, F - Vembanur Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D	E	F
1	Sacred Water Lotus	<i>Nelumbo nucifera</i>	Nelumbonaceae	Native	NA	-	+	+	+	+	-
2	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	-	+	+	-	-	-
3	Indian Parselane	<i>Portulaca oleracea</i>	Portulacaceae	Native	NA	-	+	-	-	-	-
4	Musk Mallow	<i>Abelmoschus moschatus</i>	Malvaceae	Native	NA	-	+	-	-	-	-
5	East Indian Mallow	<i>Corchorus aestuans</i>	Malvaceae	Native		-	+	-	-	-	-
6	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	+	+	-	+	-
7	Jamaica Cherry	<i>Muntingia calabura</i>	Muntingiaceae	Exotic	NA	-	+	+	-	-	-
8	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	-	+	-	+	+	-
9	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	-	+	+	-	+	+
10	Siris Tree, Women's tongue	<i>Albizia lebeck</i>	Fabaceae	Native	NA	-	+	+	+	-	-
11	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	+	+	+	+	+	+
12	Blue Rattlepod	<i>Crotalaria verrucosa</i>	Fabaceae	Native	NA	-	+	-	-	-	-
13	True indigo	<i>Indigofera tinctoria</i>	Fabaceae	Native	NA	-	+	-	-	-	-
14	Touch Me Not	<i>Mimosa pudica</i>	Fabaceae	Native	LC	+	+	+	+	+	-
15	Manilla Tamarind	<i>Pithecellobium dulce</i>	Fabaceae	Exotic	NA	-	+	+	-	-	-
16	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	-	+	+	+	+	+
17	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+	+	+	-
18	Coffee senna	<i>Senna occidentalis</i>	Fabaceae	Native	NA	-	+	-	-	-	-
19	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	+	+	+	+	+
20	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	-	+	-	-	-	-
21	Lemon Scented Gum	<i>Corymbia citriodora</i>	Myrtaceae	Introduced		-	+	-	-	-	-
22	White Alder	<i>Turnera subulata</i>	Turneraceae	Invasive	NA	-	+	-	-	-	-
23	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	-	+	+	+	+	+
24	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	-	+	-	+	-	-
25	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	-	+	+	+	-	-
26	Pumpkin, Field pumpkin	<i>Cucurbita pepo</i>	Cucurbitaceae	Native	NA	-	+	-	-	-	-
27	Indian Mulberry	<i>Morinda coreia</i>	Rubiaceae	Native		-	+	-	-	-	+
28	Chay Root, Indian madder	<i>Oldenlandia umbellata</i>	Rubiaceae	Native		-	+	-	-	-	-
29	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	+	+	-	+	+	-
30	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+	+	+	+
31	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	+	+	+	+	+
32	Chitrak	<i>Plumbago zeylanica</i>	Plumbaginaceae	Native	NA	-	+	+	-	+	+
33	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+	+	+	+
34	Oleander	<i>Nerium oleander</i>	Apocynaceae	Native	LC	-	+	-	-	-	-
35	Rosy Milkweed Vine	<i>Oxystelma esculentum</i>	Apocynaceae	Native	LC	-	+	+	+	+	+
36	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	+	+	+	-	-	-
37	Indian Heliotrope	<i>Heliotropium indicum</i>	Heliotropiaceae	Native	NA	-	+	-	-	-	-
38	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	-	+	+	+	+	-
39	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	+	+	+	+	+
40	Cutleaf Ground Cherry	<i>Physalis angulata</i>	Solanaceae	Native	LC	-	+	-	-	-	-
41	Thorny Nightshade	<i>Solanum virginianum</i>	Solanaceae	Native	NA	-	+	-	-	-	-
42	Large caltrops	<i>Pedaliu murex</i>	Pedaliaceae	Native	NA	-	+	-	+	-	-
43	Long-flower Barleria	<i>Barleria acuminata</i>	Acanthaceae	Native	NA	+	+	-	-	-	-
44	Box-Leaved Barleria	<i>Barleria buxifolia</i>	Acanthaceae	Native	NA	-	+	-	-	-	-
45	Wedge-Leaf Foldwing	<i>Dicliptera paniculata</i>	Acanthaceae	Native	NA	-	+	+	+	-	+
46	Green Shrimp Plant	<i>Ecbolium ligustrinum</i>	Acanthaceae	Native	NA	-	+	-	-	-	-
47	Malabar Nut, white vasa	<i>Justicia adhatoda</i>	Acanthaceae	Native		-	+	-	-	-	-
48	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	-	+	+	+	-	+
49	Blue Porterweed	<i>Stachytarpheta jamaicensis</i>	Verbenaceae	Native	NA	+	+	-	-	+	+
50	Malabar Catmint	<i>Anisomeles malabarica</i>	Lamiaceae	Native	NA	+	+	-	-	-	-
51	American mint, Wild spikenard	<i>Mesosphaerum suaveolens</i>	Lamiaceae	Naturalized	NA	-	+	-	-	-	-
52	Hoary Basil,	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	-	+	-	+	-	-

53	Chaste Tree	<i>Vitex negundo</i>	Lamiaceae	Native	NA	-	+	-	-	-	-
54	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	-	+	+	+	+	+
55	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	+	+	+	-	+
56	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	-	+	+	+	-	-
57	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	-	+	-	-	-	-
58	Sessile Joyweed	<i>Alternanthera sessilis</i>	Amaranthaceae	Native	LC	-	+	+	-	+	-
59	False Amaranth	<i>Digera muricata</i>	Amaranthaceae	Native	NA	-	+	+	-	-	-
60	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	-	+	-	+
61	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	-	+	-	+
62	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	+	+	-	+	-	+
63	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	-	+	+	+	+	-
64	Stone Breaker	<i>Phyllanthus niruri</i>	Phyllanthaceae	Native	NA	-	+	-	-	-	-
65	Peepal	<i>Ficus religiosa</i>	Moraceae	Native	NA	-	+	-	+	-	-
66	Water Thyme, hydrilla	<i>Hydrilla verticillata</i>	Hydrocharitaceae	Native	LC	-	+	-	-	+	-
67	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	-	+	-	+	+	-
68	Creeping Cradle Plant	<i>Cyanotis axillaris</i>	Commelinaceae	Native	LC	-	+	-	-	-	-
69	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	-	+	+	-	-	-
70	Coconut Tree	<i>Cocos nucifera</i>	Arecaceae	Native	NA	-	+	-	+	+	-
71	Narrow-Leaved Cattail	<i>Typha angustifolia</i>	Typhaceae	Native	LC	-	+	+	+	-	-
72	Water cabbage, Nile cabbage,	<i>Pistia stratiotes</i>	Araceae	Native	LC	-	+	+	+	+	-
73	Floating Lace Plant	<i>Aponogeton natans</i>	Aponogetonaceae	Native	LC	-	+	-	-	-	-
74	Clasping pondweed	<i>Potamogeton perfoliatus</i>	Potamogetonaceae	Native	LC	-	+	-	-	-	-
75	Six Weeks threeawn	<i>Aristida adscensionis</i>	Poaceae	Native	NA	-	+	-	-	-	-
76	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	+	-	-	-
77	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	-	+	+	+	+	+
78	Annual Bluegrass	<i>Poa annua</i>	Poaceae	Naturalized	LC	-	+	-	-	-	-
79	Kans grass	<i>Saccharum spontaneum</i>	Poaceae	Native	LC	-	+	-	-	-	-
80	Mosquito fern, Water velvet	<i>Azolla caroliniana</i>	Salvinaceae	Introduced	NA	-	+	-	-	+	-
Total						16	80	35	35	28	21

Table 10.2: List of Insect species recorded at Kanyakumari District (A - Manavalakurichi Lake, B - Narikulam Lake, C - Sengulam Lake, D - SuchindramKulam Complex, E - Theroor Wetland Complex, F - Vembanur Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F
1	Mantis Egg	<i>Ootheca</i>	Mantodae	-	+	-	-	-	-
2	Common Red Soldier Beetle	<i>Rhagonycha sp.</i>	Cantharidae	-	+	-	-	-	-
3	Blue Banded Honeybee	<i>Amegilla cingulata</i>	Apidae	-	+	+	-	-	-
4	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	-	+	+	-	+	-
5	Giant Honey Bee	<i>Apis dorsata</i>	Apidae	-	+	-	-	-	-
6	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	+	+	+	-	-
7	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	-	+	+	+	+	+
8	Black Ant	<i>Myrmecaria brunnea</i>	Formicidae	-	+	+	-	-	-
9	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	-	+	+	-	+	-
10	Spider Wasp	<i>Pompilidae sp.</i>	Pompilidae	-	+	-	-	-	-
11	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	+	-	+	-	-
12	House fly	<i>Musca domestica</i>	Muscidae	-	+	-	-	-	-
Total				0	12	6	3	3	1

Table 10.3: List of Butterfly species recorded at Kanyakumari District (A - Manavalakurichi Lake, B - Narikulam Lake, C - Sengulam Lake, D - SuchindramKulam Complex, E - Theroor Wetland Complex, F - Vembanur Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E	F
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	-	+	-	+	+	+
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	+	-	+	+	+
3	Lime Butterfly	<i>Papilio demoleus</i>	Papilioninae	Common	-	-	-	+	-	-
4	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	-	-	+	+	-	-
5	Common Grass Yellow	<i>Eurema hecabe</i>	Coliadinae	Common	-	-	-	+	+	-
6	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	+	+	+

7	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	-	-	-	+	-	-
8	Yellow Orange Tip	<i>Ixias pyrene</i>	Pierinae	Common	-	-	-	+	+	-
9	Great Orange Tip	<i>Hebomoia glaucippe</i>	Pierinae	Common	-	+	-	+	-	-
10	Common Gull	<i>Cepora nerissa</i>	Pierinae	Common	-	-	-	+	+	-
11	Common Jezebel	<i>Delias eucharis</i>	Pierinae	Common	-	-	-	+	+	+
12	Long-Banded Silverline	<i>Spindasis lohita</i>	Aphnaeinae	Common	-	-	-	+	+	-
13	Common Cerulean	<i>Jamides celeno</i>	Polyommatainae	Common	-	-	-	+	+	-
14	Zebra Blue	<i>Leptotes plinius</i>	Polyommatainae	Common	-	-	-	+	-	+
15	Common Pierrot	<i>Castalius rosimon</i>	Polyommatainae	Common	-	-	-	+	-	-
16	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	-	-	+	+	+
17	Tiny Grass Blue	<i>Zizula hylax</i>	Polyommatainae	Common	-	-	-	+	-	-
18	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	-	-	+	+	-
19	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	+	+	-	+	+	+
20	Striped Tiger	<i>Danaus genutia</i>	Danainae	Common	-	-	-	+	+	-
21	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	-	-	+	+	+	+
22	Joker	<i>Byblia ilithyia</i>	Biblidinae	Common	-	-	-	+	+	-
23	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	-	+	+	+	+	-
24	Chocolate Pansy	<i>Junonia iphita</i>	Nymphalinae	Common	-	-	-	+	+	-
25	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	+	-	-	+	+	-
Total					6	5	4	25	18	8

Table 10.4: List of Odonates recorded at Kanyakumari District (A - Manavalakurichi Lake, B - Narikulam Lake, C - Sengulam Lake, D - SuchindramKulam Complex, E - Theroor Wetland Complex, F - Vembanur Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E	F
1	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	+	-	-	-	+	-
2	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	-	-	-	-	+	-
3	Pigmy Dartlet	<i>Agriocnemis pygmaea</i>	Coenagrionidae	Common	-	-	-	-	+	-
4	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	-	+	-	-	+	-
5	Trumpet Tail	<i>Acisoma panorpoides</i>	Libellulidae	Common	-	+	-	-	+	-
6	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	+	+	+	+	+
7	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	-	+	+	+	+	-
8	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+	+	+
9	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+	+	+	+
10	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+	+	+	-
11	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	-	+	+	-	+	-
Total					4	8	6	4	11	3

Table 10.5: List of Arachnida recorded at Kanyakumari District (A - Manavalakurichi Lake, B - Narikulam Lake, C - Sengulam Lake, D - SuchindramKulam Complex, E - Theroor Wetland Complex, F - Vembanur Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	+	+	+	+	+
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	-	-	+	-	-
Total				1	1	1	2	1	1

Table 10.6: List of Fishes recorded at Kanyakumari District (A - Manavalakurichi Lake, B - Narikulam Lake, C - Sengulam Lake, D - SuchindramKulam Complex, E - Theroor Wetland Complex, F - Vembanur Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	+	-	+	+	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	-	-	+	+	+
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	+	-	+	+	+
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	-	-	+	+	+
5	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	-	+	+	+	+
6	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	-	-	+	+	+
7	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	+	+	-	+	+	+
8	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	+	-	+	+	+	-

9	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	+	-	-	+	+	-
10	Spiny eel	<i>Macrognathus pancalus</i>	Mastacembelidae	LC	-	+	-	-	+	-
11	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	-	-	+	-	+	+
12	Pool barb, Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	-	+	-	-	+	+
13	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	+	-	-	+	+	+
14	Catla	<i>Catla catla</i>	Cyprinidae	LC	+	+	-	+	+	+
15	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	-	-	-	+	+	-
16	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	+	+	+	+	-
17	Climbing erch	<i>Anabas testudineus</i>	Anabantidae	DD	-	-	-	-	+	-
18	Bloch's Gizzard Shad	<i>Nematalosa nasus</i>	Clupeidae	LC	-	-	-	-	+	-
Total					10	7	4	13	18	11

Table 10.7: List of Reptiles recorded at Kanyakumari District (A - Manavalakurichi Lake, B - Narikulam Lake, C - Sengulam Lake, D - SuchindramKulam Complex, E - Theroor Wetland Complex, F - Vembanur Lake)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D	E	F
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	LC	+	+	+	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	LC	+	-	-	-	-	-
Total					2	1	1	1	1	1

Table 10.8: List of Bird species recorded at Kanyakumari District (A - Manavalakurichi Lake, B - Narikulam Lake, C - Sengulam Lake, D - SuchindramKulam Complex, E - Theroor Wetland Complex, F - Vembanur Lake)

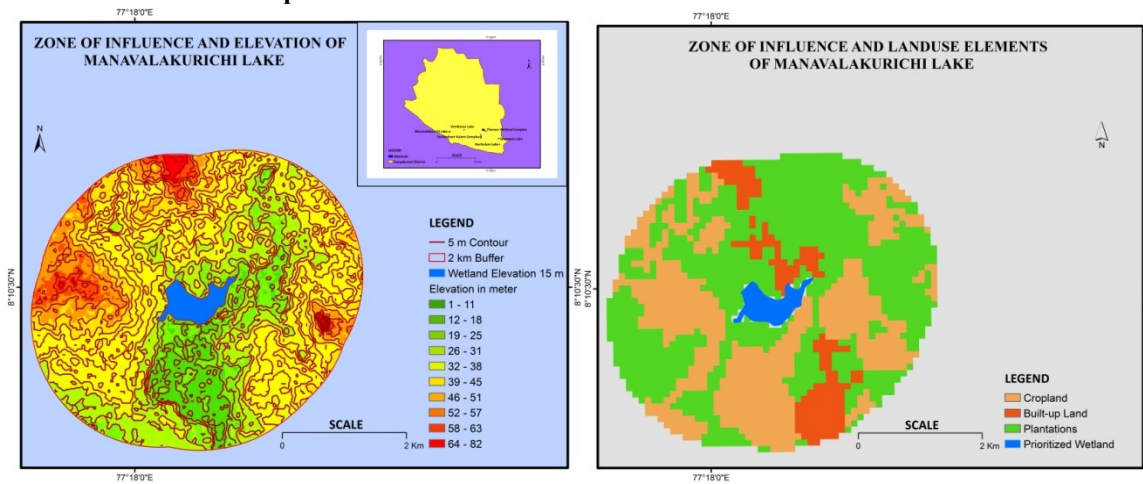
S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	NT	-	+	-	+	-	-
2	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	NT	-	+	-	+	-	-
3	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae	LC	-	-	-	+	-	-
4	Yellow Bittern	<i>Ixobrychus sinensis</i>	Ardeidae	LC	-	-	-	+	+	-
5	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	LC	+	-	+	+	+	+
6	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	LC	-	-	-	+	-	-
7	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	LC	-	+	+	+	+	-
8	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	LC	+	-	-	+	+	+
9	Great Egret	<i>Casmerodius albus</i>	Ardeidae	LC	+	-	-	+	+	-
10	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	LC	-	-	-	+	-	-
11	Little Egret	<i>Egretta garzetta</i>	Ardeidae	LC	+	+	-	+	+	+
12	Spot-billed Pelican	<i>Pelecanus philippensis</i>	Pelecanidae	NT	-	-	-	+	+	+
13	Darter	<i>Anhinga melanogaster</i>	Anhingidae	NT	-	-	-	+	+	+
14	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	LC	+	+	-	+	+	+
15	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	LC	-	-	-	+	-	-
16	Booted Eagle	<i>Hieraaetus pennatus</i>	Accipitridae	LC	-	-	-	+	-	+
17	Purple Swamphen	<i>Porphyrio porphyrio</i>	Rallidae	LC	+	+	-	+	+	-
18	Eurasian Coot	<i>Fulica atra</i>	Rallidae	LC	-	+	-	+	-	-
19	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	Jacanidae	LC	+	+	-	+	+	-
20	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	LC	+	-	-	+	+	-
21	Common Pigeon	<i>Columba livia</i>	Columbidae	LC	+	-	-	+	-	+
22	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	LC	-	-	-	+	+	+
23	Asian Koel	<i>Eudynamys scolopaceus</i>	Cuculidae	LC	+	-	-	+	+	+
24	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	LC	-	-	-	+	+	-
25	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	LC	+	-	-	+	+	+
26	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	LC	-	-	-	+	+	+
27	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	LC	-	+	-	+	+	-
28	Black-capped Kingfisher	<i>Halcyon Pileata</i>	Alcedinidae	LC	-	-	-	+	-	-
29	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	LC	+	-	-	+	+	+
30	Rufous Treepie	<i>Dendrocitta vagabunda</i>	Corvidae	LC	-	-	-	+	-	-
31	House Crow	<i>Corvus splendens</i>	Corvidae	LC	+	+	+	+	+	+
32	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	LC	-	-	-	+	+	+
33	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	LC	+	-	-	+	+	-
34	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	LC	+	+	+	+	+	+

35	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	LC	+	-	+	+	+	-
36	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	LC	-	-	-	+	+	-
37	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	LC	+	-	-	+	+	+
38	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	LC	+	+	+	+	+	+
39	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	LC	+	-	+	+	+	-
40	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	LC	+	-	-	+	+	+
41	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	LC	-	-	-	+	-	-
Total					20	12	7	41	28	19

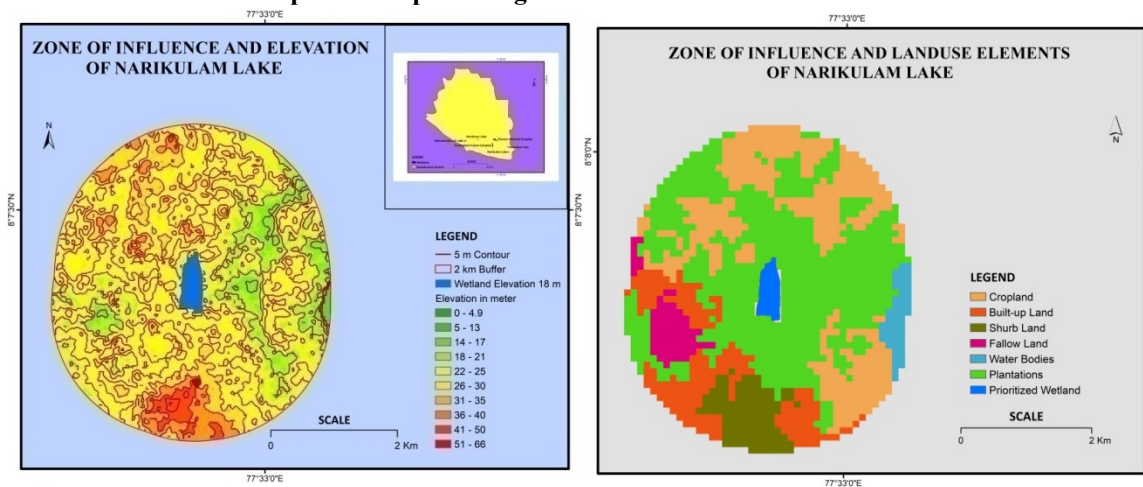
Table 10.9: List of Mammals recorded at Kanyakumari District (A - Manavalakurichi Lake, B - Narikulam Lake, C - Sengulam Lake, D - Suchindramkulam Complex, E - Theroor Wetland Complex, F - Vembanur Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+	+	+
2	Cattle	<i>Bos Taurus</i>	Bovidae	Domestic	-	-	+	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	-	-	+	-	-	-
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	-	+	+	-	+	-
Total					1	2	4	2	3	2

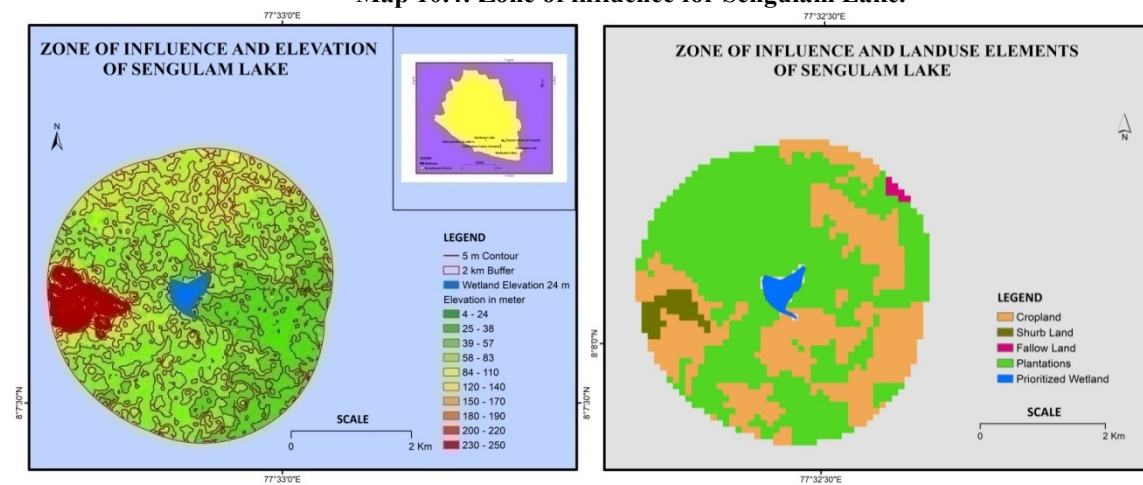
Map 10.2: The zone of influence around the Manavalakurichi Lake.



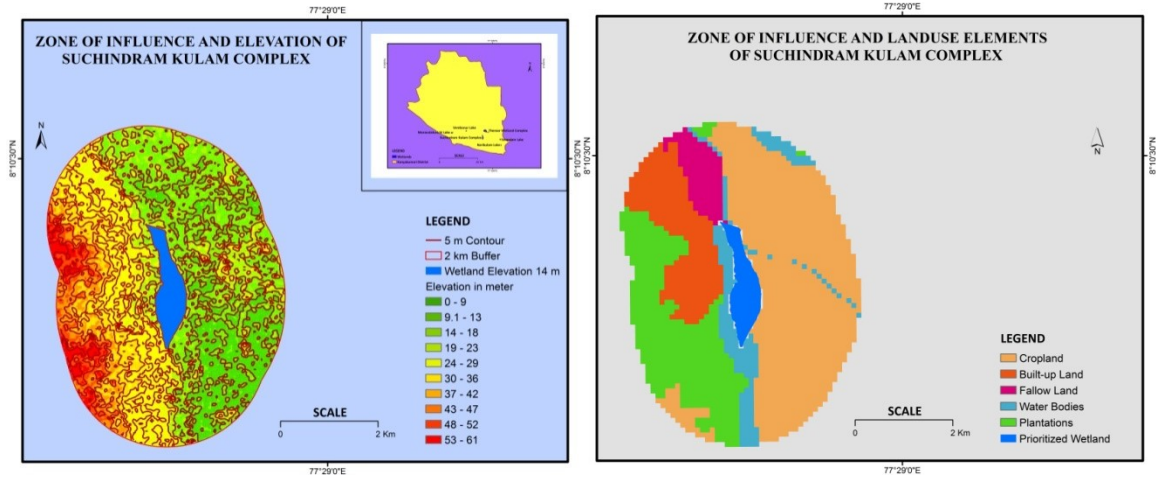
Map 10.3: Map showing the zone of influence for Narikulam Lake.



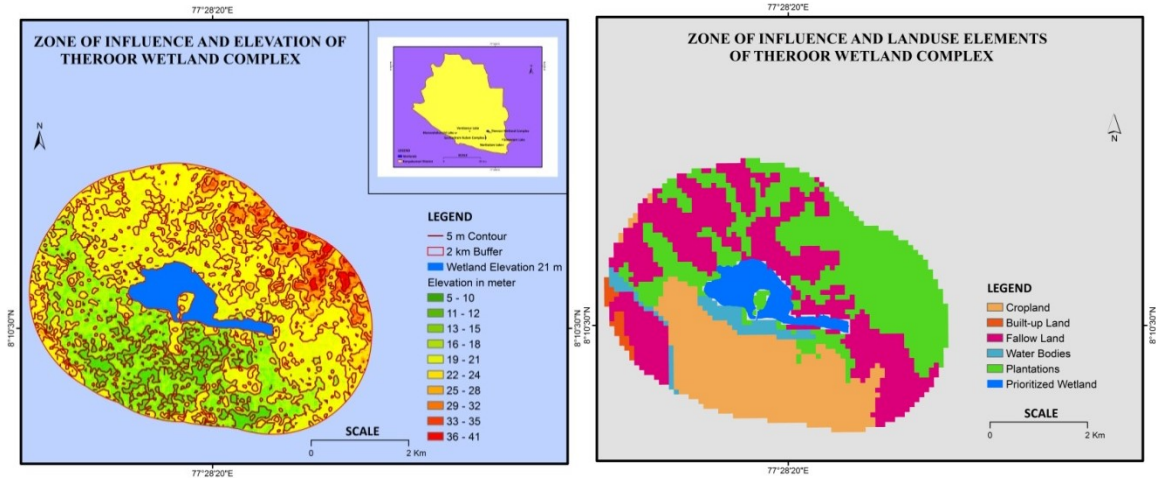
Map 10.4: Zone of influence for Sengulam Lake.



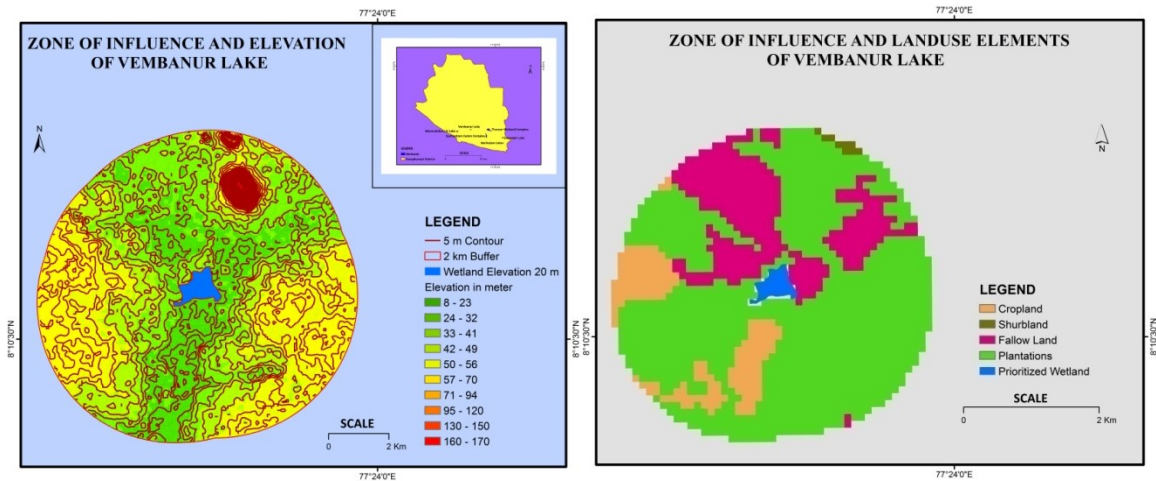
Map 10.5: The zone of influence around the SuchindramKulam Complex.



Map 10.6: The zone of influence around the Theroor Wetland Complex.



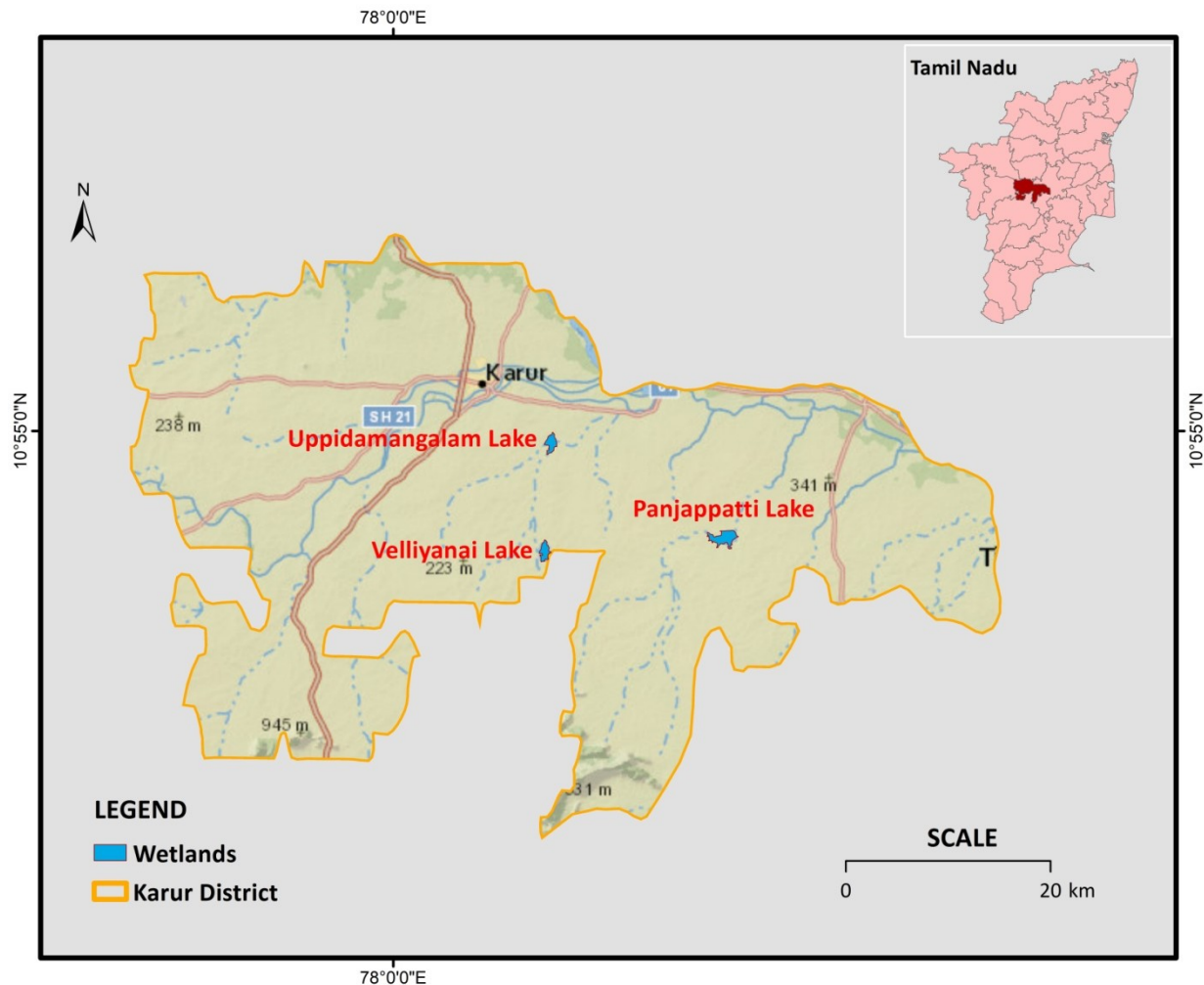
Map 10.7: The zone of influence around the Vembanur Lake.



11. Karur District

Karur is an ancient city of Tamil Nadu, also an administrative district of the state. It is the most centrally located district of Tamil Nadu. The district is bounded by Namakkal district in the north, the Dindigul district in the south, the Tiruchirappalli district on the east and Erode district on the west. The district is famous for its cottage industries. It belongs to Kongu Nadu Region. Karur is one of the oldest towns in Tamil Nadu. In the ancient and medieval times, the area was ruled by the Cheras, Gangas and Cholas. Karur was the capital of Cheras.

Total geographic area of Karur is 2895.57 km². Total area under wetland is 16383 ha, which includes 591 small wetland (<2.25 ha). Major wetland types of the district are River/Stream (11096 ha), Tanks/ponds (2166 ha), and Lakes/ponds (2068 ha). Among the three wetlands selected in the district, Panjappatti is the largest while Velliyanai is the smaller of the three wetlands (Map 11.1).



Map 11.1: Wetlands of Karur district assessed for Prioritization

Panjappatti Lake

Panjapatti Lake (Plate 13), near Panjapatti village in Karur district that comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Panjappatty, Alagapuri, karaikudi, Ponnipatty.

The geographic coordinates are Latitude: 10° 49'44.3" N; 10° 49'44.7" N; 10° 49'45.1" N; 10° 49'40.9" N; and Longitude: 078° 17'22.4" E; 078° 17'35.6" E; 078° 17'46.5" E; 078° 18'00.8" E

Panjapatti Lake is a wetland that belongs to the Man-made (inland) category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the Cauvery river canal. The lake has an area of 264 hectares with an average depth of 3 meters. The wetland surrounded by 80% Agriculture, 5% Rural Settlements and 15% Grasslands / Scrublands. It has an area of 2983.37 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 11.2).

The wetland was during the visit was completely dry hence the water quality was not assessed. However as per the secondary information the wetland has fresh water. The vegetation comprised of 33 plant species (Table 11.1) including five invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornia crassipes* and *Ipomoea sp.* The fauna comprised of 34 animal species including 3 domestic species were recorded during the survey (Table 11.2 to 11.8).

The water from the wetland is not used for drinking purpose. The Village Panchayat provides drinking water from the borewell water and the municipality provides the Cauvery water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is not undertaken as the wetland has water only for around 3 months. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland water quality and the ecological character is changing rapidly. The wetland has been facing land use change pressure with increasing encroachment and agriculture activities.

The wetland is not is not protected under any category. The wetland faces a severe threat from land use change and compromise in the quality of the water.

Uppidamangalam Lake

Uppidamangalam Lake (Plate 13) in Uppidamangalam taluka in Karur district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Sethupatti, Udayagoundanur, Lingathur.

The geographic coordinates are Latitude: 10° 54'30.1" N; 10° 54'30.1" N; 10° 54'30.9" N; and Longitude: 078° 08'07.6" E; 078° 08'04.3" E; 078° 07'58.0" E.

Uppidamangalam Lake is a wetland that belongs to the Natural (inland) category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and Selivelayam pond. The water from the wetland helps in replenishing the groundwater and the overflow feeds the surrounding wetlands. The lake has an area of 136 hectares with an average depth of 2 meters. The wetland surrounded by 85% Agriculture and 15% Rural Settlements. It has an area of 2341.06 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 11.3).

The wetland was during the visit was completely dry hence the water quality was not assessed. However as per the secondary information the wetland has fresh water. The vegetation comprised of Nine plant species (Table 11.1) including three invasive species including *Parthenium hysterophorus* and *Prosopis juliflora*. The fauna comprised of 12 animal species were recorded during the survey (Table 11.2 to 11.8).

The water from the wetland is not used for drinking purpose. The Village Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland water quality and the ecological character is changing rapidly. The wetland has been facing land use change pressure.

The wetland is not is not protected under any category. The wetland faces a severe threat from land use change and compromise in the quality of the water.

Velliyanai Lake

Velliyanai Lake (Plate 13) also known as Periyakulam in Uppidamangalam taluka in Karur district, comes under the jurisdiction of PWD is not a Protected Area. Villages that surround the wetland include Gudalur, Nadumettupatti, Vadadukuppatti, Kuttanaickenpatti.

The geographic coordinates are Latitude: 10° 49'04.7" N; 10° 49'05.6" N; 10° 49'03.5" N; and Longitude: 078° 08'05.7" E; 078° 08'01.4" E; 078° 07'57.6" E

Velliyanai Lake is a wetland that belongs to the Natural (inland) category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and Alagapuri Dam. The water from the wetland helps in replenishing the groundwater and the overflow feeds the surrounding wetlands. The lake has an area of 131 hectares with an average depth of 2 meters. The wetland surrounded by 80% Agriculture, 15% Rural Settlements and 5% Grasslands/scrublands. It has an area of 2323.4 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 11.4).

The wetland was during the visit was completely dry hence the water quality was not assessed. However as per the secondary information the wetland has fresh water. The vegetation comprised of 24 plant species (Table 11.1) including five invasive species including *Parthenium hysterophorus* and *Prosopis juliflora*. The fauna comprised of 14 animal species including 2 domestic species were recorded during the survey (Table 11.2 to 11.8).

The water from the wetland is not used for drinking purpose. The Village Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There was mining for sand or silt undertaken with PWD permission. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland water quality and the ecological character is changing rapidly. The wetland has been facing land use change pressure.

The wetland is not is not protected under any category. The wetland faces a severe threat from land use change and compromise in the quality of the water.

Table 11.1: List of Plant species recorded at Karur District (A - Panjappatti Lake, B - Uppidamangalam Lake, C - Velliyanai Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	+	-
2	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	-	+
3	Long-stalk Sida	<i>Sida cordata</i>	Malvaceae	Native	NA	+	-	+
4	Indian tulip tree	<i>Thespesia populnea</i>	Malvaceae	Native	LC	+	-	-
5	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	-	+
6	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	-	+
7	Indian Plum	<i>Ziziphus mauritiana</i>	Rhamnaceae	Native	NA	+	-	+
8	Bush Grape	<i>Cayratia trifolia</i>	Vitaceae	Native	NA	+	-	-
9	Siris Tree, Women's tongue	<i>Albizia lebbek</i>	Fabaceae	Native	NA	+	-	-
10	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
11	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	+	-	+
12	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	+	+
13	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	-	-
14	Lotus Sweetjuice,	<i>Glinus lotoides</i>	Molluginaceae	Native		+	-	+
15	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	+	-	-
16	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	+	-	-
17	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	-	-
18	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	-	-
19	Rosy Milkweed Vine	<i>Oxystelma esculentum</i>	Apocynaceae	Native	LC	+	-	-
20	Sweet indrajao, Palaindigo	<i>Wrightia tinctoria</i>	Apocynaceae	Native	LC	+	-	-
21	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	+	-	-
22	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	-	-
23	Lettuce Tree	<i>Pisonia grandis</i>	Nyctaginaceae	Native	NA	+	-	-
24	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	-	-
25	Plumed cockscomb	<i>Celosia argentea</i>	Amaranthaceae	Native	NA	+	-	-
26	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	-	-
27	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	+	-	+
28	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+
29	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	+	-	+
30	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	-	-
31	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	+
32	Slimflower Lovegrass	<i>Eragrostis gangetica</i>	Poaceae	Native	NA	+	-	-
33	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	+	-	-
Total						33	5	13

Table 11.2: List of Insects recorded at Karur District (A - Panjappatti Lake, B - Uppidamangalam Lake, C - Velliyanai Lake)

S. No	Common Name	Scientific Name	Family	A	B	C
1	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	+	+	-
2	Antlion	<i>Myrmeleontidae sp.</i>	Myrmeleontidae	+	+	+
3	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	-	-
4	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	-	+
5	Cow bug	<i>Oxyrachis tarandus</i>	Membracidae	-	-	+
6	Blister Beetle	<i>Hycleus sp.</i>	Meloidae	-	-	+
Total				4	2	4

Table 11.3: List of Butterflies recorded at Karur District (A - Panjappatti Lake, B - Uppidamangalam Lake, C - Velliyanai Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	Common Rose	<i>Pachliopta aristolochiae</i>	Nymphalidae	Common	+	+	-
2	Crimson Rose	<i>Pachliopta hector</i>	Nymphalidae	Common	+	-	+
3	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Papilionidae	Common	+	-	+

4	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	-	+
5	Plain Tiger	<i>Danaus chrysippus</i>	Danaidae	Common	+	-	+
Total					5	1	4

Table 11.4: List of Odonates recorded at Karur District (A - Panjappatti Lake, B - Uppidamangalam Lake, C - Velliyanai Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+
2	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	-	-
3	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+
Total					3	2	2

Table 11.5: List of Arachnida recorded at Karur District

S. No	Common Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	-
Total				1	0	0

Table 11.6: List of Reptiles recorded at Karur District (A - Panjappatti Lake, B - Uppidamangalam Lake, C - Velliyanai Lake)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+
Total					1	1	1

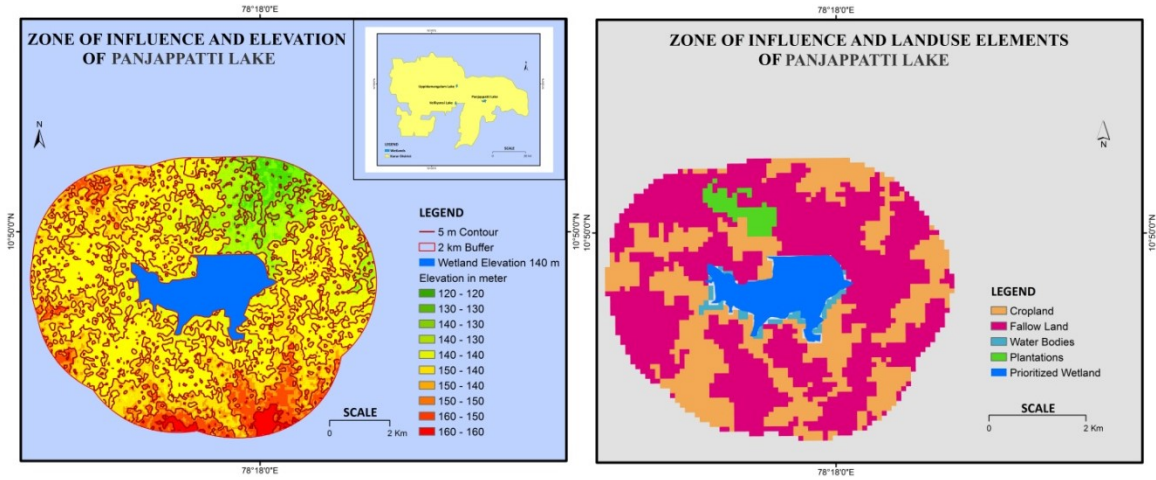
Table 11.7: List of Birds recorded at Karur District (A - Panjappatti Lake, B - Uppidamangalam Lake, C - Velliyanai Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae	Least Concern	+	+	-
2	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Least Concern	+	+	-
3	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	-	-
4	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	-	-
5	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	-	-
6	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	+	-	-
7	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	-	+
8	Indian Nightjar	<i>Caprimulgus asiaticus</i>	Caprimulgidae	Least Concern	+	-	-
9	Asian Palm Swift	<i>Cypsiurus balasensis</i>	Apodidae	Least Concern	+	-	-
10	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	-	+
11	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	+	-	-
12	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
13	Rufous-tailed Lark	<i>Ammomanes phoenicura</i>	Alaudidae	Least Concern	+	-	-
14	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
15	Indian Robin	<i>Saxicoloides fulicatus</i>	Muscicapidae	Least Concern	+	-	-
16	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	Least Concern	+	-	-
Total					16	4	4

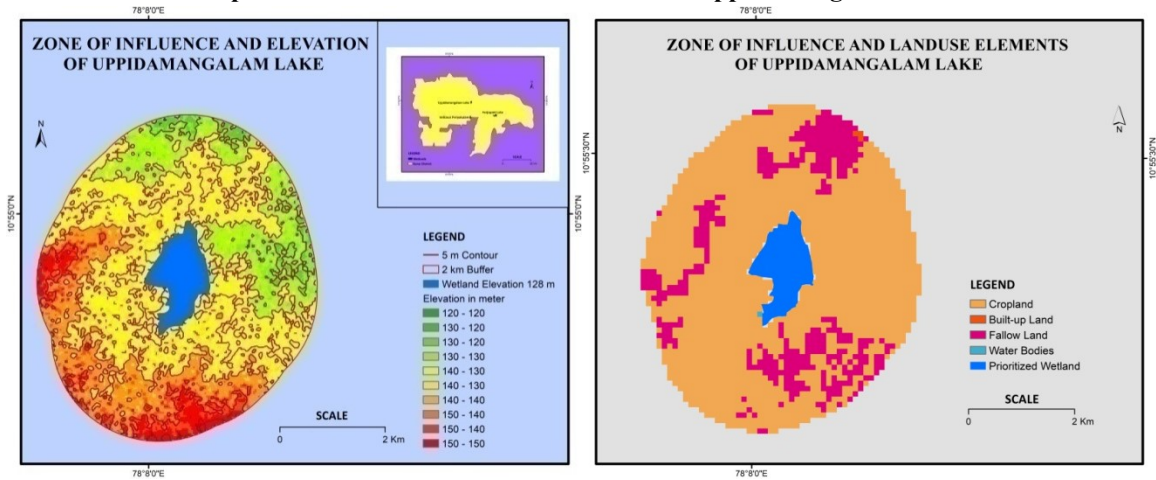
Table 11.8: List of Mammals recorded at Karur District (A - Panjappatti Lake, B - Uppidamangalam Lake, C - Velliyanai Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	-	+
2	Cattle	<i>Bos Taurus</i>	Bovidae	Domestic	+	-	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	-	-
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Common	+	-	-
Total					4	0	2

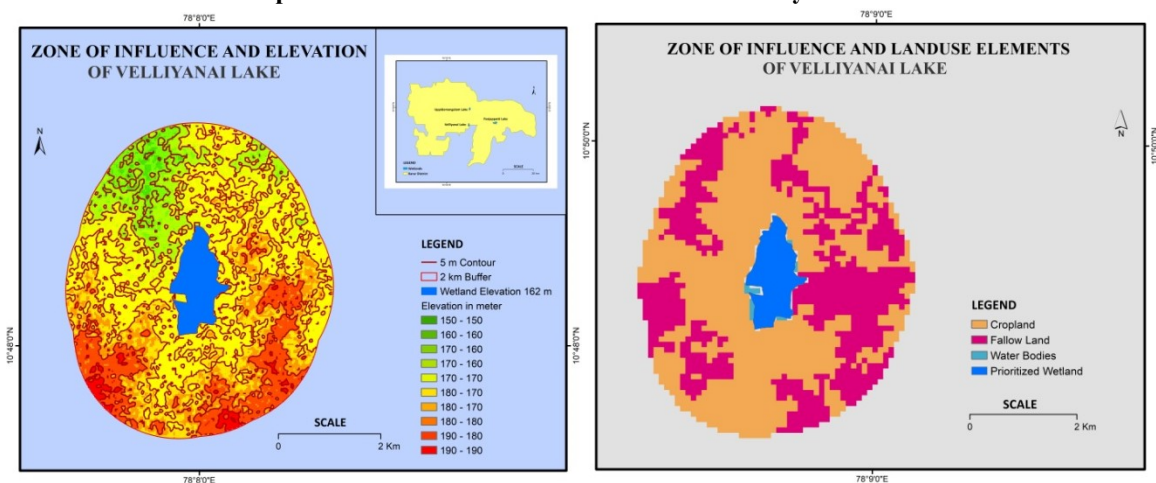
Map 11.2: The zone of influence around the Panjappatti Lake.



Map 11.3: The zone of influence around the Uppidamangalam Lake.



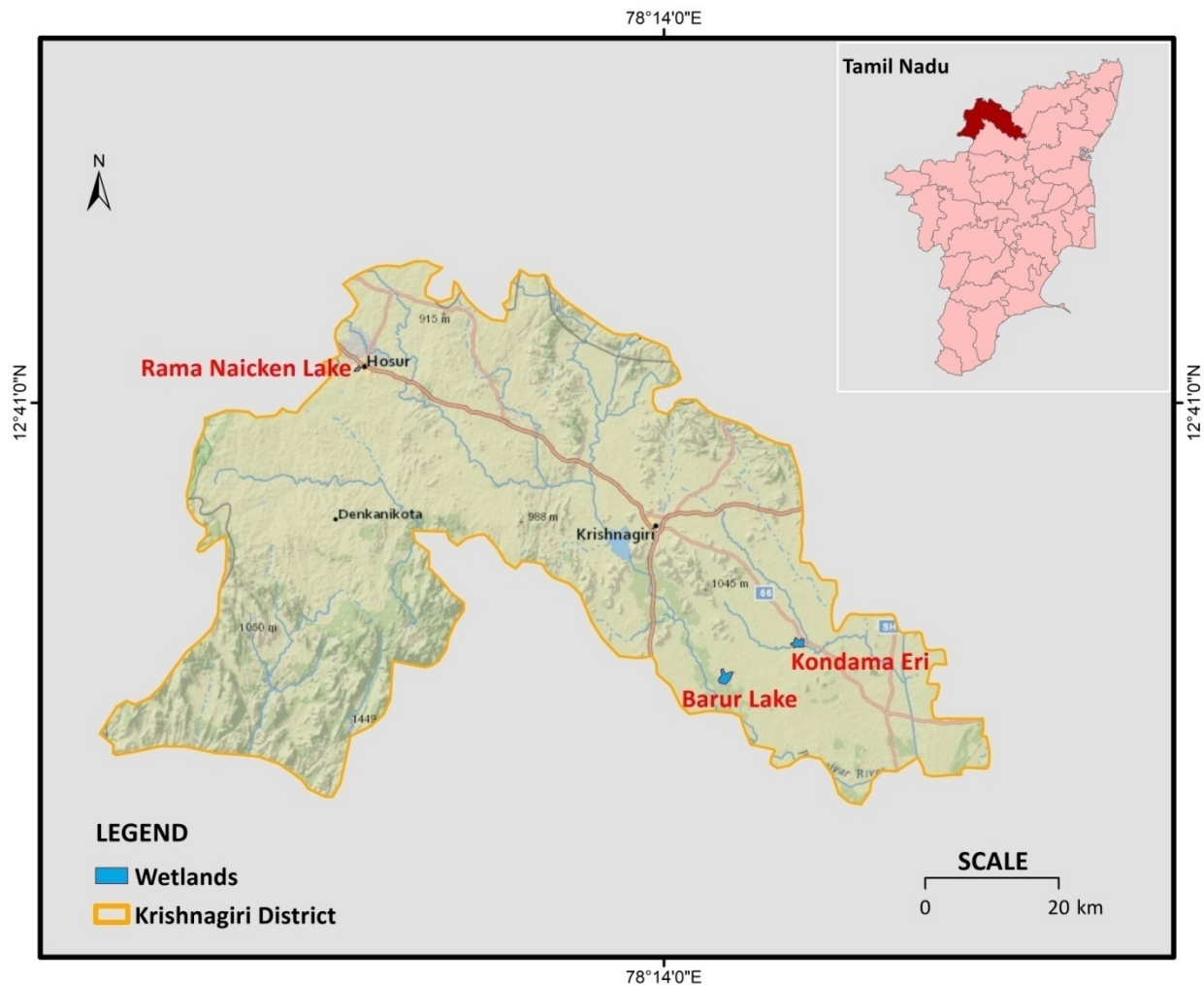
Map 11.4: The zone of influence around the Velliyanai Lake.



12. Krishnagiri District

Krishnagiri district is in the western part of the state of Tamil Nadu, in India. This district is carved out from Dharmapuri district by 2004. The area contains many granite hillocks, hence the name *Krishnagiri*. History says this area was under the Vijayanagar Empire, and those days it was custom to name a town or a landmark after one of its famous king, Krishnadevarayar.

Krishnagiri district covers an area of 5143 km². Krishnagiri district is bound by Vellore and Thiruvannamalai districts to the east, state of Karnataka to the west, the state of Andhra Pradesh to the north and Dharmapuri district to the south. It has a mountainous terrain. The flatlands are irrigated by the South Pennar river. Of the three wetlands selected in the district, Barur is the largest while Rama Naicken Lake is the smaller of the three wetlands (Map 12.1).



Map 12.1: Wetlands of Krishnagiri district assessed for Prioritization

Barur Lake

The Barur lake (Plate 14) in Krishnagiri district is due to the dam constructed on Thenpennai river. The wetland comes under the jurisdiction of PWD is not a Protected Area. Villages that surround the wetland include Barur, Keelakuppam, Mettupatti, Nagercoil, Vettrilaikannur, Amanatykkupa, Kavapudur.

The geographic coordinates are Latitude: 12° 18'.15.6" N; 12° 18'18.8" N; 12° 18'29.0" N; 12° 18'22.3" N; and Longitude: 078° 18'57.8" E; 078° 19'01.7" E; 078° 19'11.0" E; 078° 18'33.2" E

Barur Lake is a wetland that belongs to the Manmade (inland) tank category in the sub category permanent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and Krishnarajapuram Dam Canal. The water from the wetland helps in replenishing the groundwater and the overflow joins the adjoining village tanks namely Vlappakottai, Konphama, Chaphampatty and agriculture fields. The lake has an area of 264 hectares with an average depth of 4.5 meters. The wetland surrounded by 80% Agriculture, 10% Rural Settlements and 10% Grasslands/scrublands. It has an area of 2734.69 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 12.2).

The wetland was Oligotrophic during the visit, with the pH of the water being 9, salinity measuring 1.142 ppt, the TDS was recorded high at 512 ppm. The vegetation comprised of 38 plant species (Table 12.1) including nine invasive species including *Prosopis juliflora*, *Accacia indica*, *Lantana camara* and *Ipomoea sp.* The fauna comprised of 79 animal species including 2 domestic species were recorded during the survey (Table 12.2 to 12.9). Threatened species of birds were not observed but three threatened fish species were recorded during the survey. Tilapia is a very common invasive species that was recorded. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is used for agriculture. The villagers have open dugout wells and The Panchayat Union provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The commercial fishery is under the contract of the PWD, who introduces the fish seeds. The Borassus plant sap is also collected for local consumption and sale in the local market. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is mining for sand or silt not undertaken. The wetland has a major temples along its vicinity and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures. The wetland has been facing land use change pressure.

The wetland is not is not protected under any category. The wetland faces a severe threat from land use change mainly agriculture practices and compromise in the quality of the water.

Kondama Eri

Kondama Eri (Plate 14) in Pochampalli taluk of Krishnagiri district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Naganur, Ottapatti, Sanarravalli, Kalarpathy.

The geographic coordinates are Latitude: 12°21'38.6" N; 12°21'35.3" N; 12°21'31.7" N; 12°21'30.2" N; 12° 21'29.6" N; and Longitude: 078° 24'25.7" E; 078° 24'34.8" E; 078° 24'46.3" E; 078°24'55.6" E; 078°24'53.0" E.

Kondama Eri is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, Barureri, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater. The lake has an area of 199 hectares with an average depth of 4.5 meters. The wetland surrounded by 85% Agriculture, 10% Rural Settlements and 5% Forest. It has an area of 2512.22 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 12.3).

The wetland was Oligotrophic during the visit, with the pH of the water being 9.39, salinity measuring 0.777 ppt, the TDS was recorded high at 1100 ppm. The vegetation comprised of Nine plant species (Table 12.1) including four invasive species including *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 31 animal species including 4 domestic species were recorded during the survey (Table 12.2 to 12.9). Tilapia is a very common invasive species that was recorded. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water is not used for drinking, the municipality provides drinking water from the Hogenekal dam and borewell water at regular intervals that is used by the locals to fulfill their daily requirements. The site adjoining the wetland is majorly used by the locals for grazing by cattle. Fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The commercial fishery is under the contract of the PWD, who introduces the fish seeds. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has major temples along its vicinity and major cultural and religious activities are performed in the wetland.

The wetland has a major potential of change in the outflow of the water. The wetland water quality is being affected by the polluted Barur inflow and the ecological character is changing rapidly due to lack of conservation measures. The wetland has been facing land use change pressure.

The wetland is not is not protected under any category. The wetland faces a severe threat from land use change mainly agriculture practices and compromise in the quality of the water.

Rama Naicken Lake

Rama Naicken Lake (Plate 14) in Krishnagiri district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Hosur Municipality, Shantinagar, Ramnagar, Park.

The geographic coordinates are Latitude: 12° 43'31.3" N; 12° 43'58.4" N; 12° 43'56.4" N; 12° 43'58.2" N; and Longitude: 077° 49'00.9" E; 077° 49'14.9" E; 077° 49'15.9" E; 077° 49'18.7" E.

Rama Naicken Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, Avalapalli dam water, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater. The lake has an area of 45.8 hectares with an average depth of 4.5 meters. The wetland surrounded by 75% Urban Settlements, 5% Rural Settlements and 20% Industrial. It has an area of 1863.12 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 12.4).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.9, salinity measuring 7.9 ppt, the TDS was recorded high at 1020 ppm. The vegetation comprised of Nine plant species (Table 12.1) including four invasive species including *Parthenium sp.*, and *Eichornea carssipes*. The fauna comprised of 59 animal species including 4 domestic species were recorded during the survey (Table 12.2 to 12.9). Two threatened species of birds

were observed during the survey. Tilapia is a very common invasive species that was recorded. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water is not used for drinking. The wetland being in a urban setting the municipality provides drinking water from the Hogenekal dam and borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The commercial fishery is under the contract of the PWD, who introduces the fish seeds. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has major temples along its vicinity and major cultural and religious activities are performed in the wetland. The local tourist visit the wetland for its scenic settings as boating and walking track is present.

The wetland has a major potential of change in the outflow of the water. The site adjoining the wetland is majorly used by the locals for solid waste dumping and washing. The wetland has been facing land use change pressure. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not is not protected under any category. The wetland faces a severe threat from land use change mainly agriculture practices and compromise in the quality of the water. Solid waste including medical waste is also dumped along the wetland. The encroachment in the from of recreation activities should be regulated.

Literature available for Krishnagiri District

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- Manickam N., Saravana Bhavan P., Santhanam P., Muralisankar T., Srinivasan V., Vijayadevan K. and Bhuvandswari R. (2015) Biodiversity of freshwater zooplankton community and physico-chemical parameters of Barur Lake, Krishnagiri district, Tamilnadu, India, *Malaya Journal of Biosciences*, 2015, 2 (1), Pp.1-12, ISSN 2348-6236, 2348-3075.
- Manickam N., Santhanam P., Bhuvandswari R., Saravana Bhavan P., Vijayadevan K., and Ashokan V. (2017) Seasonal variations in Zooplankton diversity and physico-chemical characteristics of the Nagavathi reservoir, Dharmapuri district, Tamil Nadu, India, *Journal of Terrestrial and Marine Research*, Vol. 1(1) 2017, Pp. 28-35, ISSN: 2456-7639.

Table 12.1: List of Plant species recorded at Krishnagiri District (A - Barur Lake, B - Kondama Eri, C - Rama Naicken Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	Heart-leaved moonseed	<i>Tinospora cordifolia</i>	Menispermaceae	Native	NA	+	-	-
2	Tree Caper, Grand Caper	<i>Capparis grandis</i>	Capparaceae	Native	NA	+	-	-
3	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	+	-	-
4	Musk Mallow	<i>Abelmoschus moschatus</i>	Malvaceae	Native	NA	+	-	-
5	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	+	-	-
6	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	-	-
7	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	-	-
8	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	+
9	crab's eye, Jequirity	<i>Abrus precatorius</i>	Fabaceae	Native	NA	+	-	-
10	Peacock Flower	<i>Caesalpinia pulcherrima</i>	Fabaceae	Native		+	-	-
11	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	+	-	-
12	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	+	-	-
13	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
14	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	-	-
15	Popcorn Cassia	<i>Senna didymobotrya</i>	Caesalpinaceae	Native	NA	+	-	-
16	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	-	-
17	Erect Prickly Pear	<i>Opuntia stricta</i>	Cactaceae	Invasive	LC	+	-	-
18	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	+	-	-
19	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	+	-	-
20	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	+	-	-
21	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	-	-
22	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	-	-
23	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	-	-
24	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	-	-
25	Rosy Milkweed Vine	<i>Oxystelma esculentum</i>	Apocynaceae	Native	LC	+	-	-
26	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	+	-	-
27	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	+
28	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	+	-	-
29	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	-	-
30	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	-	-
31	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+
32	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	+	-	-
33	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	-	-
34	Peepal	<i>Ficus religiosa</i>	Moraceae	Native	NA	+	-	-
35	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	+
36	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	+
37	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	-	-
38	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	+	-	-
Total						38	6	6

Table 12.2: List of Insects recorded at Krishnagiri District (A - Barur Lake, B - Kondama Eri, C - Rama Naicken Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Toothpick Grasshopper	<i>Leptysmia marginicollis</i>	Acrididae	-	-	+
2	Short horned Grasshopper	<i>Acrida exaltata</i>	Acrididae	-	-	+
3	Water Strider	<i>Gerris sp.</i>	Gerridae	+	-	+
4	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	+	-	+
5	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	-	+
6	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	-	+
7	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	-	+
8	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	-	+
9	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	+	-	+
Total				6	0	9

Table 12.3: List of Butterflies recorded at Krishnagiri District (A - Barur Lake, B - Kondama Eri, C - Rama Naicken Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	+	-	-
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	+	-
3	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+
4	Small Orange Tip	<i>Colotis etrida</i>	Pierinae	Common	+	-	-
5	Common Cerulean	<i>Jamides celeno</i>	Polyommatainae	Common	+	-	-
6	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	-	-
7	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	-	+
8	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+
9	Common Crow	<i>Euploea core</i>	Danainae	Common	+	-	-
10	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	+	-	-
11	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	+	-	+
12	Blue Pansy	<i>Junonia orithiya</i>	Nymphalinae	Common	+	-	-
13	Chocolate Pansy	<i>Junonia iphita</i>	Nymphalinae	Common	+	-	-
14	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	+	-	-
Total					14	3	4

Table 12.4: List of Odonates recorded at Krishnagiri District (A - Barur Lake, B - Kondama Eri, C - Rama Naicken Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	+	-	-
2	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	+	+
3	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+
4	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	-	+
5	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+
6	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	+	-	-
Total					6	3	4

Table 12.5: List of Arachnida recorded at Krishnagiri District (A - Barur Lake, B - Kondama Eri, C - Rama Naicken Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	-
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	+	-	-
Total				2	0	0

Table 12.6: List of Fishes recorded at Krishnagiri District (A - Barur Lake, B - Kondama Eri, C - Rama Naicken Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	-	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	-	-
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	+	-	-
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	-	-
5	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	+	+	-
6	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	-	+
7	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	+	-	-
8	Spiny eel	<i>Macrogynathus pancalus</i>	Mastacembelidae	LC	+	-	-
9	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	+	+	-
10	Catla	<i>Catla catla</i>	Cyprinidae	LC	+	+	+
11	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	+	-	-
12	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	-	+
Total					12	3	4

Table 12.7: List of Reptiles recorded at Krishnagiri District (A - Barur Lake, B - Kondama Eri, C - Rama Naicken Lake)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	+	-	-
Total					2	1	1

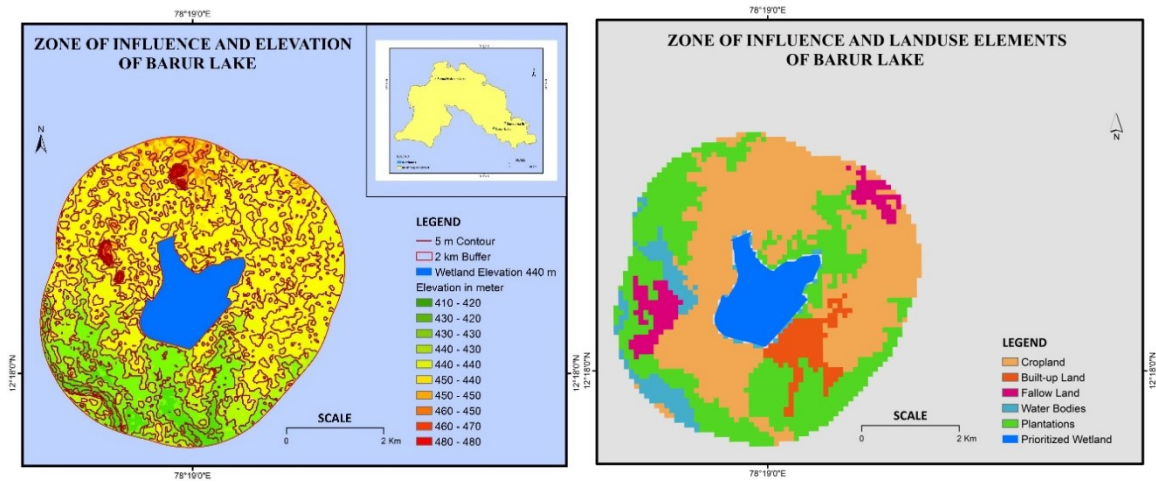
Table 12.8: List of Birds recorded at Krishnagiri District (A - Barur Lake, B - Kondama Eri, C - Rama Naicken Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Least Concern	+	+	+
2	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	+	+	+
3	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	+	-	+
4	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	+
5	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	+	+	+
6	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	Least Concern	+	-	+
7	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	+	-
8	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	+	+
9	Spot-billed Pelican	<i>Pelecanus philippensis</i>	Pelecanidae	Near Threatened	+	-	-
10	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	+	+
11	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	Least Concern	+	+	+
12	Brahminy Kite	<i>Haliastur indus</i>	Accipitridae	Least Concern	+	-	-
13	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	+	+	+
14	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	+	-	+
15	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	Least Concern	+	+	-
16	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae	Least Concern	+	-	-
17	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Least Concern	+	+	-
18	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	+	+
19	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	+	+
20	Jacobin Cuckoo	<i>Clamator jacobinus</i>	Cuculidae	Least Concern	+	-	-
21	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	Least Concern	+	-	-
22	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	-	-
23	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+
24	Rufous Treepie	<i>Dendrocitta vagabunda</i>	Corvidae	Least Concern	+	-	-
25	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	+	+	-
26	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
27	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	+	-	-
28	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	Least Concern	+	-	-
29	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	+	-	+
30	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
31	Indian Robin	<i>Saxicoloides fulicatus</i>	Muscicapidae	Least Concern	+	-	-
32	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	Least Concern	+	+	-
33	Yellow Wagtail	<i>Motacilla flava</i>	Motacillidae	Least Concern	+	-	-
Total					33	18	17

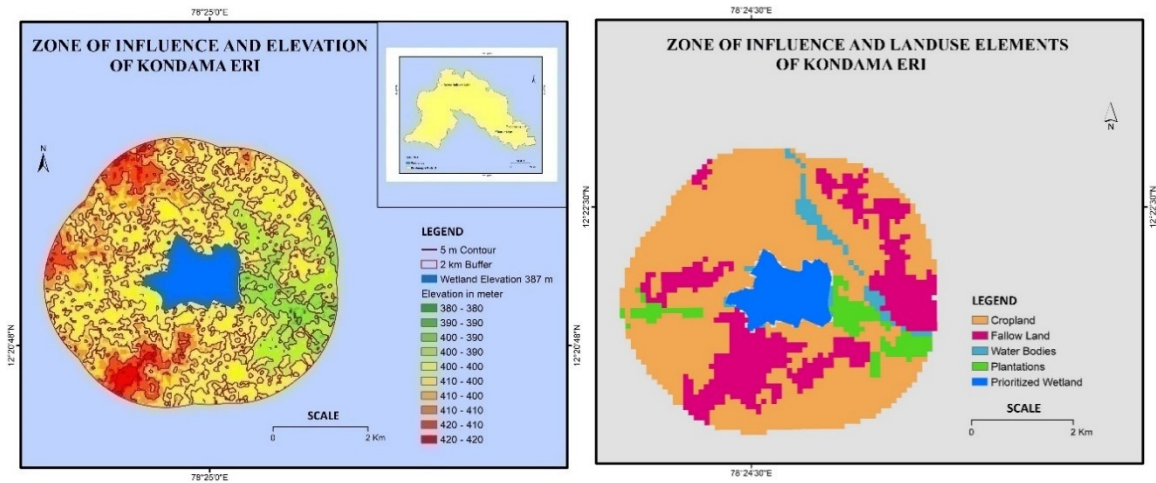
Table 12.9: List of Mammals recorded at Krishnagiri District (A - Barur Lake, B - Kondama Eri, C - Rama Naicken Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+
2	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	-
3	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Common	+	-	+
4	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	-	+	+
5	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	-	+	+
Total					3	4	4

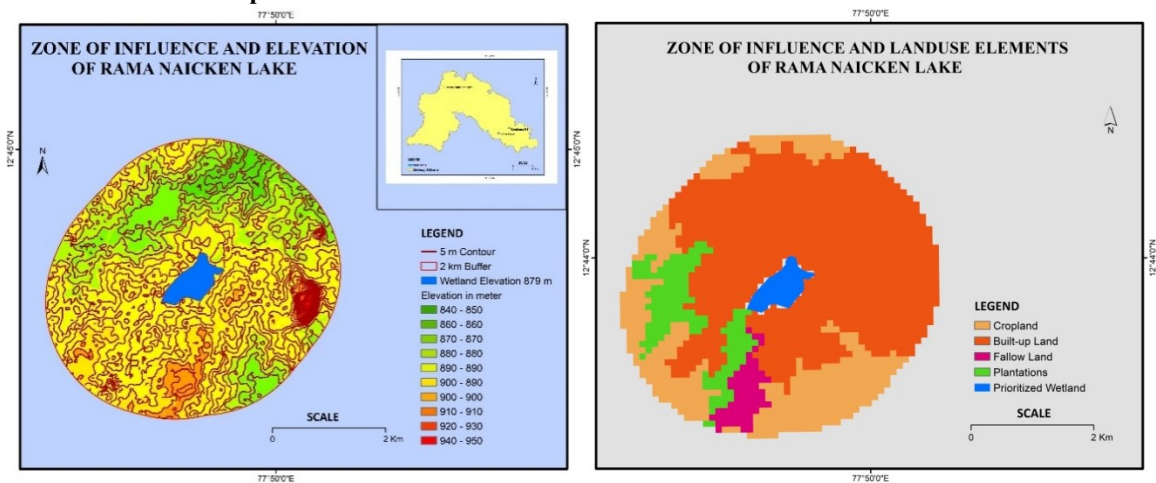
Map 12.2: The zone of influence around the Barur Lake.



Map 12.3: The zone of influence around the Kondama Eri.



Map 12.4: The zone of influence around the Rama Naicken Lake.

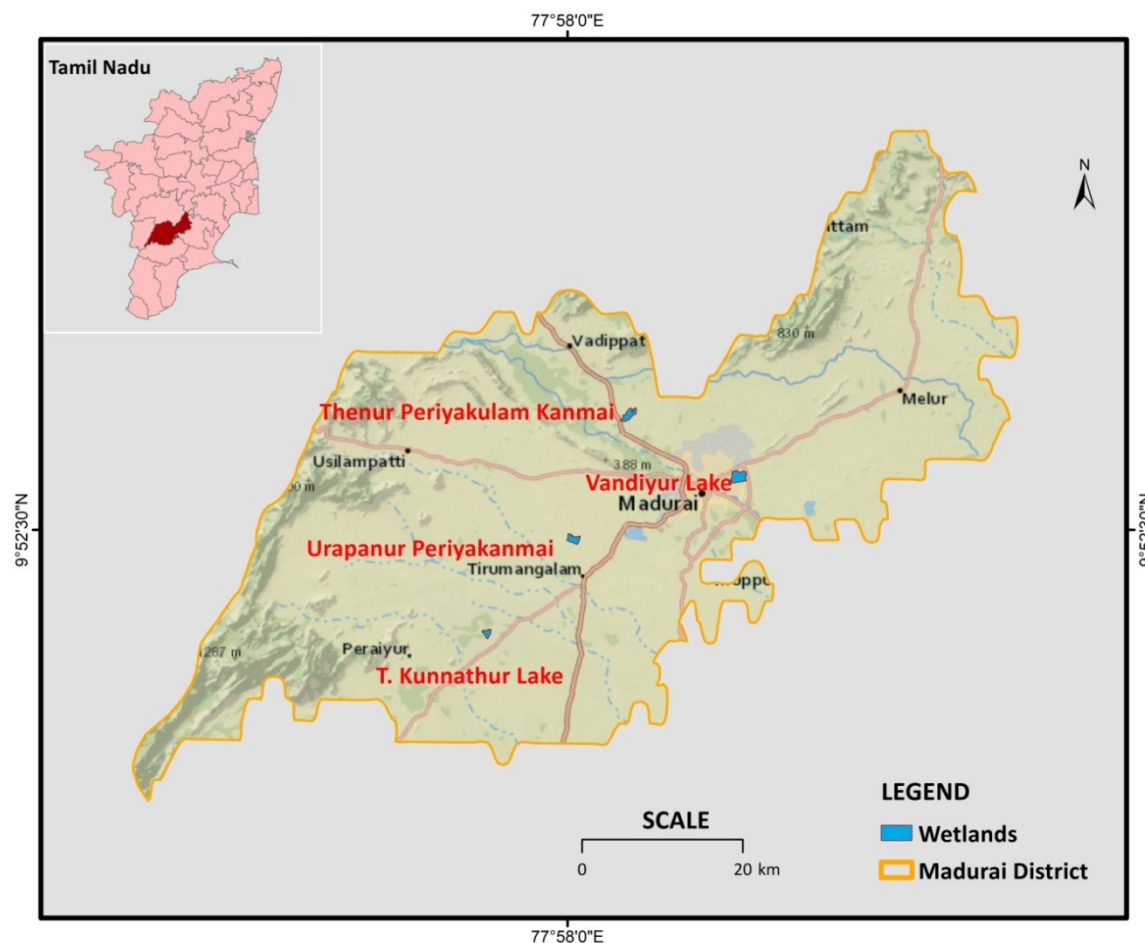


13. Madurai District

Madurai is the third largest city in Tamil Nadu after Chennai and Coimbatore. Madurai district is surrounded by several mountains, it is located on the banks of river Vaigai, Madurai has been a major settlement for two millennia. Madurai is called by various names like *Athens of the East*, *ThoongaNagaram* (City that never Sleeps), *Naan maadakoodal* (City of Four junctions), *MalligaiManagar* (City of Jasmine), *KoodalManagar* (City of Junction) *Koil Nagar* (Temple city) etc. The city is believed to be of significant antiquity and has been ruled, at different times, by the Pandyas, Cholas, Madurai Sultanate, Vijayanagar Empire, Madurai Nayaks, Carnatic kingdom, and the British.

The city has a number of historical monuments, with the Meenakshi Amman Temple and Tirumalai Nayak Palace being the most prominent. Madurai is an important industrial and educational hub in South Tamil Nadu. The city is home to various automobile, rubber, chemical and granite manufacturing industries. It has developed as a second-tier city for information technology (IT), and some software companies have opened offices in Madurai.

Total geographic area of Madurai is 3741.73 km². Total area under wetland is 24614 ha, which includes 984 small wetland (<2.25 ha). Lakes/Ponds occupies 48.52% of wetland area. The second major wetland type is Tanks/Ponds. There are 1051 Tanks/Ponds with 9732 ha area (39.54%). Of the four wetlands selected in the district, Vandiyur is the largest while T. Kunnathur is the smallest of the four wetlands (Map 13.1).



Map 13.1: Wetlands of Madurai district assessed for Prioritization

T. KunnathurLake

Kunnathur Lake (Plate 14) also known as Tirumangalam Kunnathur and Kariselkulam Kanmai in Madurai district comes under the jurisdiction of PWD, is not a Protected Area. Villages that surround the wetland include T. Kunnathur, Goundanpatti, Pappunayakkanpatty, Rengapalayam.

The geographic coordinates are Latitude: 09° 45'42.7" N; 09° 45'34.6" N; 9° 45'38.6" N; and Longitude: 077° 52'51.4" E; 077° 52'50.1" E; 077° 52'51.0" E

Kunnathur Lake is a wetland that belongs to the Manmade (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 70.5 hectares with an average depth of 2 meters. The wetland surrounded by 20% Urban Settlements and 80% Agriculture. It has an area of 2007.87 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 13.2).

The wetland during the visit was completely dry hence the water quality was not assessed. However as per the secondary information the wetland has fresh water. The vegetation comprised of 32 plant species (Table 13.1) including eight invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 42 animal species including 3 domestic species were recorded during the survey (Table 13.2 to 13.9).

The water from the wetland is not used for drinking purpose as the water is present for brief period. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Grazing by the cattle is undertaken in the wetland. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There is high tension wires passing through the wetland. The locals are well aware of the importance of the wetland with the presence of the civil society group that undertakes regular cleaning and awareness activities around the lake.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment and excessive solid waste dumping. The wetland has been facing drought condition for the past 5 years and water scarcity gradually changing the wetland character.

Unplanned development and increasing sewage and effluents are a major threat that needs to be regulated. These activities although have spread all around the wetland should remain limited as it can adversely affect the wetland functions as well as disturb the habitat of the birds.

ThenurPeriyakulamKanmai

ThenurKanmai (Plate 15) also known as Thenur Periyakulam Kanmai in Madurai north taluka in Madurai district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Thenur.

The geographic coordinates are Latitude: 09° 59'55.9" N; 09° 59'58.1" N; and Longitude: 078° 00'47.5" E; 078° 00'48.4" E.

ThenurKanmai is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, direct and indirect influence of Vaigai River. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. There is no runoff from the surrounding area as

it is a water deficient area but if excess water then it overflows to Vaigai river. The lake has an area of 159 hectares with an average depth of 2.5 meters. The wetland surrounded by 15% Rural Settlements and 85% Agriculture. It has an area of 2448.85 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 13.3).

The wetland during the visit was completely dry hence the water quality was not assessed. However as per the secondary information the wetland has fresh water. The vegetation comprised of 24 plant species (Table 13.1) including nine invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 23 animal species including 1 domestic species were recorded during the survey (Table 13.2 to 13.9).

The water from the wetland is not used for drinking purpose as the water is present for brief period. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken when water is present for commercial purpose. The site is majorly used by the locals for grazing their cattle and goats. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There was mining for sand or silt undertaken during our visit. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The wetland has been facing drought condition for the past 4 years.

The wetland is not included in any of the protection and conservation categories. The wetland faces a severe threat from drought and water scarcity gradually changing the wetland character. Soil mining should also be prohibited to retain the character of the wetland.

Urapanur Periyakanmai

Urapanur Periyakanmai (Plate 15), also known as Urapanur periyakulam Kanmai in Tirumangalam taluka in Madurai district comes under the jurisdiction of PWD, is not a Protected Area. Villages that surround the wetland include Mela Uraannur, Oorunea Uraannur, Pallathupatti.

The geographic coordinates are Latitude: 09° 51'46.8" N; 09° 51'36.8" N; 09° 51'31.9" N; and Longitude: 077° 58'47.6" E; 077° 58'41.0" E; 077° 58'35.3" E

Urapanur Periyakanmai is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, direct and indirect influence of the surrounding wetlands it is a complex wetland. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 128 hectares with an average depth of 6 meters. The wetland surrounded by 25% Rural Settlements, 70% Agriculture and 5% Industrial. It has an area of 2255.67 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 13.4).

The wetland during the visit was completely dry hence the water quality was not assessed. However as per the secondary information the wetland has fresh water. The vegetation comprised of 34 plant species (Table 13.1) including five invasive species including *Vachellia nilotica* and *Ipomoea sp.* The fauna comprised of 26 animal species including 3 domestic species were recorded during the survey (Table 13.2 to 13.9).

The water from the wetland is not used for drinking purpose as the water is present for brief period. The bore is even dug inside the wetland and used for drinking. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Grazing by the cattle is undertaken. The wetland supports local fish species when water is present. The mining for sand or silt is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present.

The wetland has a high potential of change in the outflow of the water. The wetland has been facing drought condition for the past 9 years.

The wetland is not included in any of the protection and conservation categories. Soil mining should also be prohibited to retain the character of the wetland. The wetland faces a severe threat from drought and water scarcity gradually changing the wetland character.

Vandiyur Lake

Vandiyur Lake (Plate 15) is one of the largest surface water bodies in Madurai city is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Vandivoor, Melamadaï and Managari.

The geographic coordinates are Latitude: 09° 56'25.2" N; 09° 56'2.19" N; 09° 55'56.0" N; 09° 55'58.3" N; and Longitude: 078° 09'02.5" E; 078° 09'03.5" E; 078° 08'59.4" E; 078° 09'01.4" E

Vandiyur Lake is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, groundwater, and the surrounding runoff from the catchment area and from the Vaigai river. The water from the wetland helps in replenishing the groundwater. The lake has an area of 230 hectares with an average depth of 3 meters. The wetland surrounded by 20% Grassland, 30% Agriculture and 50% Industrial. It has an area of 2524.67 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 13.5).

The wetland was Eutrophic during the visit, with the pH of the water being 8.7, salinity measuring 0.927 ppt, the TDS was recorded high at 1306 ppm. The vegetation comprised of 47 plant species (Table 13.1) including 10 invasive species including *Eichornea crassipes*, several grass species, *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 52 animal species including 2 domestic species were recorded during the survey (Table 13.2 to 13.9). One near Threatened specie of fish were observed during the survey. Tilapia is a very common invasive species that was recorded. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Fishery is undertaken without any permission in the lake, recreational fishery is also practiced. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Grazing by the cattle is undertaken. Recreational fishery, Jogging track, skating track, garden, and other recreations activities are in full swing around the wetland. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland does not have any several temples and other religious institutions along its bank, except for recreation no other cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The pollution in the form of sewage, effluents and solidwaste dumping is seen but it is low threat in its present condition. There are invasive

plant species that is changing the habitat of the wetland. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities. The siltation is also observed near the inlet as well as the outlet of the wetland.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland.

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Table 13.1: List of Plants recorded in Madurai District (A – ThenurPeriyakulam Kanmai, B - T.Kunnathur Lake, C – UrapanurPeriyakanmai, D - Vandiyur Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D
1	---	<i>Abelmoschus angulosus</i>	Malvaceae	Native	NA	-	-	-	+
2	White Silk-Cotton Tree	<i>Ceiba pentandra</i>	Malvaceae	Naturalized	LC	-	-	-	+
3	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	-	+	-	+
4	Heart leaf sida	<i>Sida cordifolia</i>	Malvaceae	Native	NA	-	-	-	+
5	Indian tulip tree	<i>Thespesia populnea</i>	Malvaceae	Native	LC	-	+	+	+
6	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	-	+	-	+
7	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	-	+
8	Devil's Backbone	<i>Cissus quadrangularis</i>	Vitaceae	Native	NA	-	-	-	+
9	Siris Tree, Women's tongue	<i>Albizia lebeck</i>	Fabaceae	Native	NA	-	-	-	+
10	Necklace-Pod Alyce Clover	<i>Alysicarpus monilifer</i>	Fabaceae	Native	NA	-	-	-	+
11	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	-	+
12	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	-	-	+
13	Golden shower tree	<i>Cassia fistula</i>	Caesalpinaceae	Native	NA	-	-	-	+
14	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	-	-	-	+
15	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	+	-	-	+
16	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	-	-	-	+
17	Butternut Pumpkin	<i>Cucurbita moschata</i>	Cucurbitaceae	Introduced		-	-	-	+
18	Pumpkin, Field pumpkin	<i>Cucurbita pepo</i>	Cucurbitaceae	Native	NA	-	-	-	+
19	Desert Horse Purslane	<i>Trianthema portulacastrum</i>	Aizoaceae	Native	NA	-	-	-	+
20	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	+	-	-	+
21	Siam Weed	<i>Chromolaena odorata</i>	Asteraceae	Invasive	NA	-	-	-	+
22	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	-	-	+	+
23	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	-	-	+
24	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	-	+	-	+
25	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	-	-	-	+
26	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+	+
27	Rosy Milkweed Vine	<i>Oxystelma esculentum</i>	Apocynaceae	Native	LC	-	-	-	+
28	Sweet indrajao,	<i>Wrightia tinctoria</i>	Apocynaceae	Native	LC	-	-	-	+
29	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	+	-	+
30	Large caltrops	<i>Pedaliu murex</i>	Pedaliaceae	Native	NA	-	-	+	+
31	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	-	-	-	+
32	Brittle False Pimpernel	<i>Torenia crustacea</i>	Linderniaceae	Native	LC	-	-	-	+
33	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	-	-	-	+
34	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	-	-	-	+
35	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	+	+
36	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+	+
37	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	-	-	-	+
38	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	-	+	+	+
39	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	-	-	-	+
40	Duckweed	<i>Spirodela polyrhiza</i>	Araceae	Native	LC	-	-	-	+
41	Peri peri	<i>Cyperus corymbosus</i>	Cyperaceae	Native	NA	-	-	-	+
42	Para Grass	<i>Brachiaria mutica</i>	Poaceae	Invasive	LC	-	-	-	+
43	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	+	+
44	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	+	+	+
45	Barnyard Grass	<i>Echinochloa crus-galli</i>	Poaceae	Native	LC	-	-	-	+
46	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	-	+	-	+
47	Signal grass	<i>Urochloa setigera</i>	Poaceae	Native	NA	-	-	-	+
Total						12	14	9	47

Table 13.2: List of Insects recorded in Madurai District (A – ThenurPeriyakulam Kanmai, B - T.Kunnathur Lake, C – UrapanurPeriyakanmai, D - Vandiyur Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C	D
1	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	+	-	-
2	Colour Grasshopper	<i>Neorthacris acuticeps</i>	Pyrgomorphidae	-	+	-	-
3	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	-	+	-	+
4	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	+	+
5	Short horned Grasshopper	<i>Acrida exaltata</i>	Acrididae	+	-	-	-
6	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	-	+	-
7	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	-	-	+	-
8	Spittle bug	<i>Clovia sp.</i>	Aphrophoridae	-	-	-	+
9	Water Strider	<i>Gerris sp.</i>	Gerridae	-	-	-	+
Total				3	4	3	4

Table 13.3: List of Butterflies recorded in Madurai District (A – ThenurPeriyakulam Kanmai, B - T.Kunnathur Lake, C – UrapanurPeriyakanmai, D - Vandiyur Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C	D
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	-	+	-	-
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	-	+	-	-
3	Common Grass Yellow	<i>Eurema hecabe</i>	Coliadinae	Common	-	+	-	+
4	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	+
5	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	-	+	-	+
6	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	-	+	-	+
7	Gram Blue	<i>Euchrysops cnejus</i>	Polyommatainae	Common	-	+	-	-
8	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	-	+	-	+
9	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	-	+	-	-
10	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	-	+	+	+
11	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	-	+	+	+
12	Joker	<i>Byblia ilithyia</i>	Biblidinae	Common	-	+	-	-
13	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	-	+	-	-
14	Yellow Pansy	<i>Junonia hierta</i>	Nymphalinae	Common	-	+	-	-
15	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	-	+	-	-
16	Heliotrope Moth	<i>Utetheisa pulchelloides</i>	Erebidae	Common	-	+	-	-
Total					1	16	3	7

Table 13.4: List of Odonates recorded in Madurai District (A – ThenurPeriyakulam Kanmai, B - T.Kunnathur Lake, C – UrapanurPeriyakanmai, D - Vandiyur Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C	D
1	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	-	-	-	+
2	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	-	+	+
3	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	-	+	-	-
4	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	-	+
5	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+	+
6	Coral-Tailed Cloud Wing	<i>Tholymis tillarga</i>	Libellulidae	Common	-	-	-	+
Total					2	3	2	5

Table 13.5: List of Arachnida recorded in Madurai District (A – ThenurPeriyakulam Kanmai, B - T.Kunnathur Lake, C – UrapanurPeriyakanmai, D - Vandiyur Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C	D
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	-	-
Total				1	0	0	0

Table 13.6: List of Fishes recorded in Madurai District (A – ThenurPeriyakulam Kanmai, B - T.Kunnathur Lake, C – UrapanurPeriyakanmai, D - Vandiyur Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	-	-	-	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	-	-	-	+
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	-	-	+
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	-	-	-	+
5	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	-	-	+
6	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	-	-	-	+
7	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	-	-	-	+
Total					0	0	0	7

Table 13.7: List of Reptiles recorded in Madurai District (A – ThenurPeriyakulam Kanmai, B - T.Kunnathur Lake, C – UrapanurPeriyakanmai, D - Vandiyur Lake)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+
Total					1	1	1	1

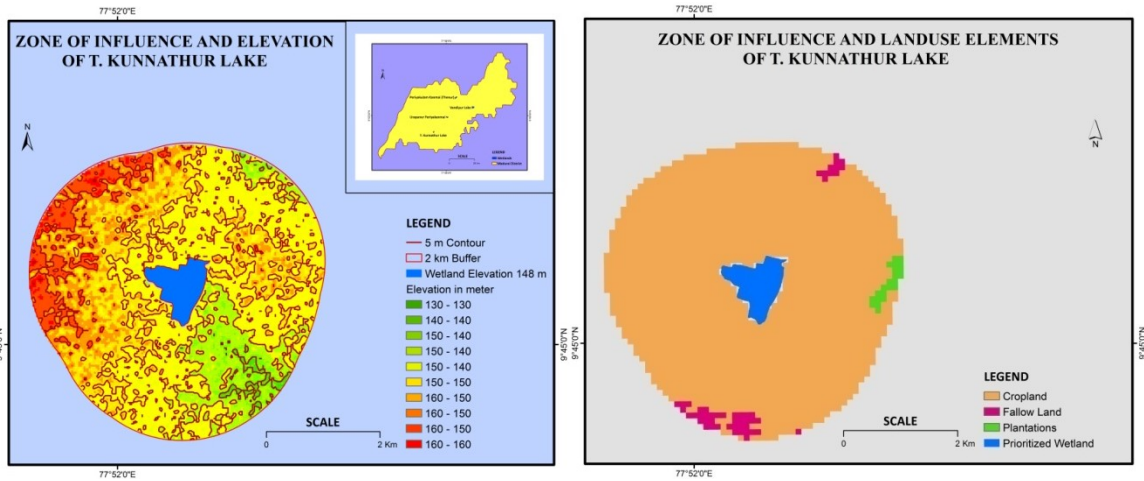
Table 13.8: List of Birds recorded in Madurai District (A – ThenurPeriyakulam Kanmai, B - T.Kunnathur Lake, C – UrapanurPeriyakanmai, D - Vandiyur Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C	D
1	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Least Concern	+	-	-	+
2	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	-	-	-	+
3	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae	Least Concern	-	-	-	+
4	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	-	+	+	+
5	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	-	+	-	+
6	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	-	-	-	+
7	Darter	<i>Anhinga melanogaster</i>	Anhingidae	Near Threatened	-	-	-	+
8	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	-	-	-	+
9	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	Least Concern	-	-	-	+
10	Black Kite	<i>Milvus migrans</i>	Accipitridae	Least Concern	-	-	-	+
11	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	Least Concern	-	-	+	+
12	Purple Swamphen	<i>Porphyrio porphyrio</i>	Rallidae	Least Concern	-	-	-	+
13	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	-	-	-	+
14	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	-	+	+	+
15	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Least Concern	-	-	-	+
16	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	+	+	+
17	Asian Palm Swift	<i>Cypsiurus balasensis</i>	Apodidae	Least Concern	-	+	+	+
18	Blue-tailed Bee eater	<i>Merops philippinus</i>	Meropidae	Least Concern	-	-	-	+
19	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+	+
20	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+	+
21	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	-	+	-	+
22	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	-	+	+	+
23	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+	+
Total					5	10	9	23

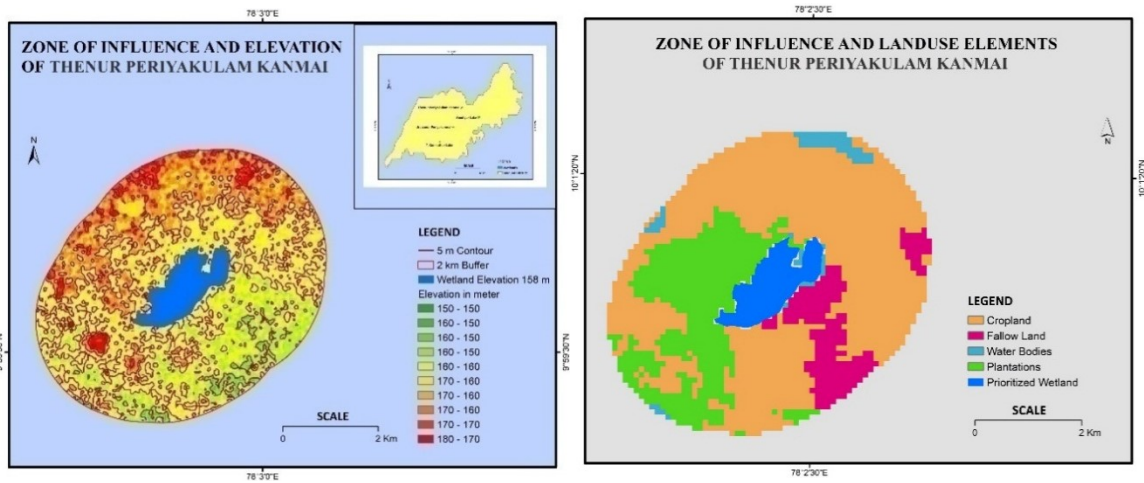
Table 13.9: List of Mammals recorded in Madurai District (A – ThenurPeriyakulam Kanmai, B - T.Kunnathur Lake, C – UrapanurPeriyakanmai, D - Vandiyur Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C	D
1	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	-	+	+	-
2	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	-	+	+	-
3	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	-	-	-	+
Total					1	3	3	2

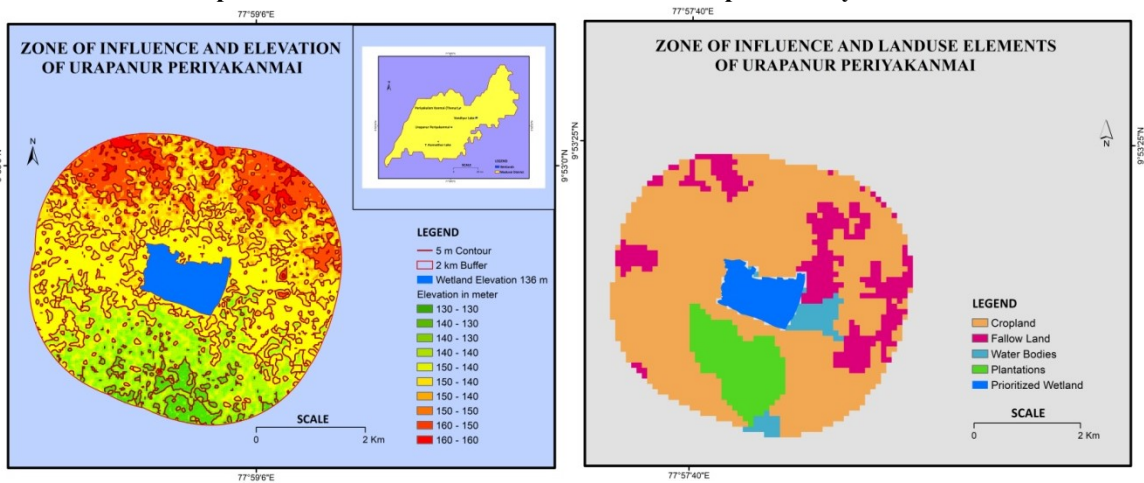
Map 13.2: The zone of influence around the T. Kunnathur Lake.



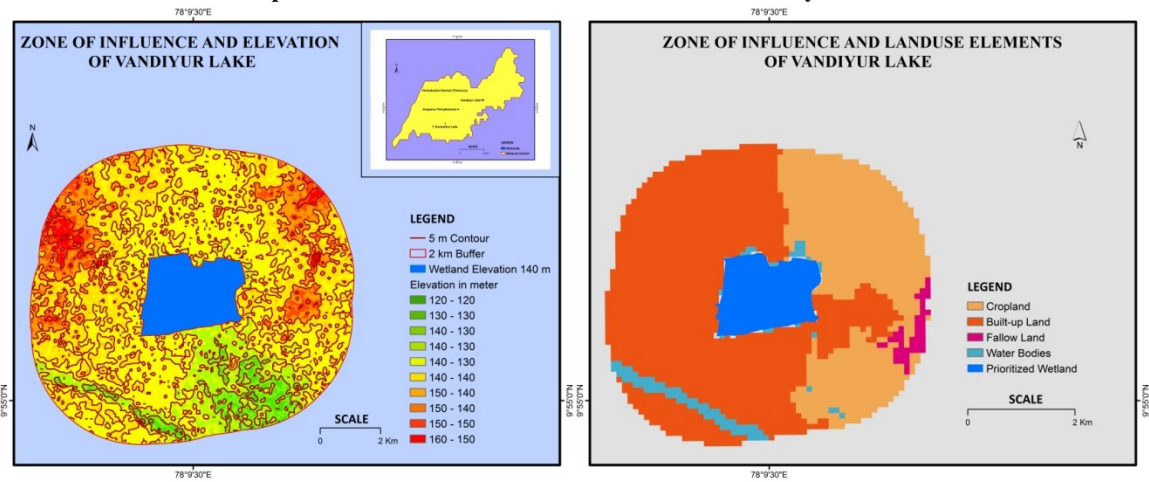
Map 13.3: The zone of influence around the ThenurPeriyakulamKanmai.



Map 13.4: The zone of influence around the UrapanurPeriyakanmai.



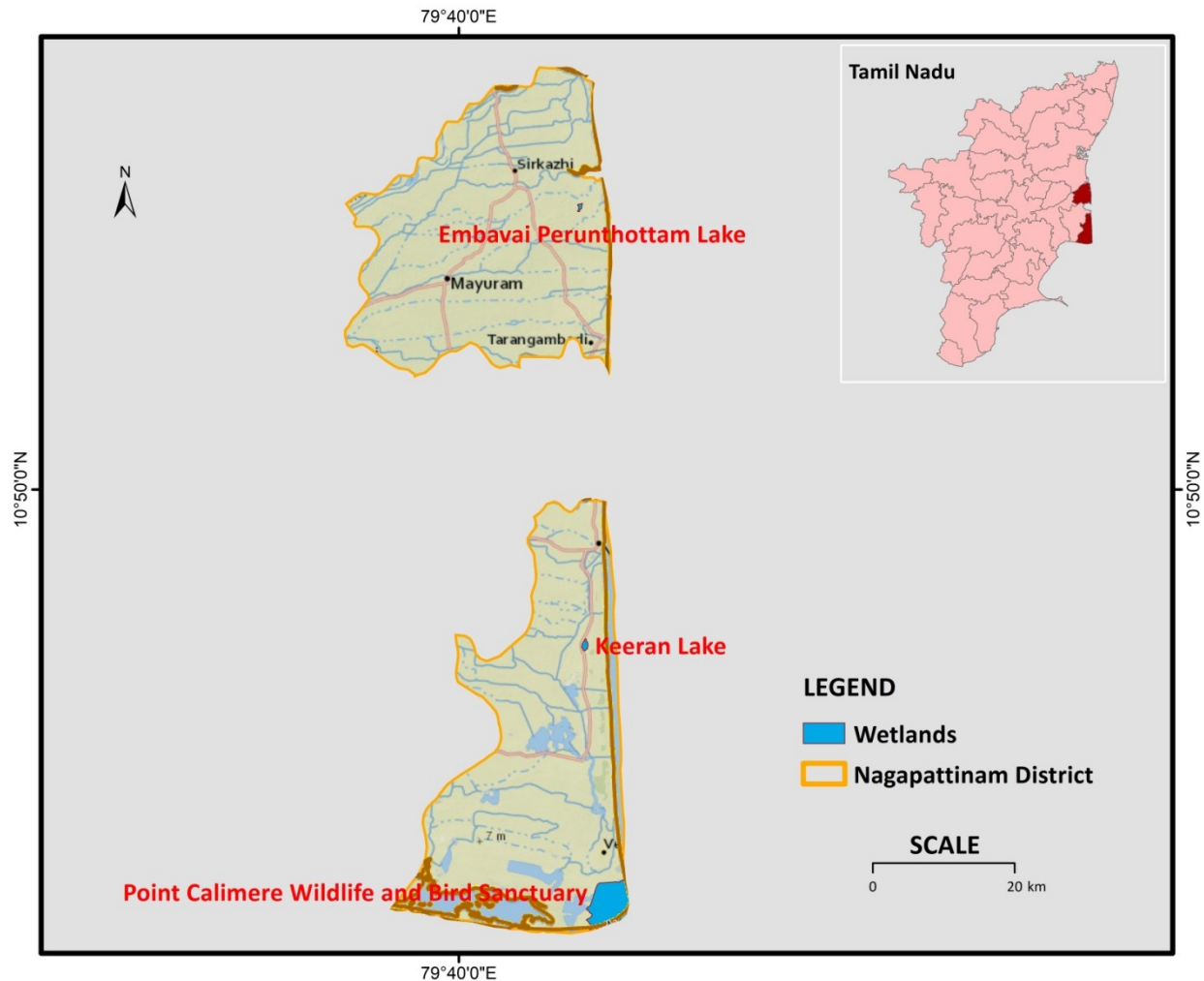
Map 13.5: The zone of influence around the Vandiyur Lake.



14. Nagapattinam District

Nagapattinam is a coastal district carved out of the composite Thanjavur district in 1991. It has a coastline that is 187 kms long. The district shares common boundary with Cuddalore district on the North, Thanjavur district on the west, Tiruvarur district on the south and Bay of Bengal on the East. The district is also an important pilgrimage centre for the Hindus, Muslims and Christians.

Total geographic area of Nagapattinam is 2715.83 km². Total area under wetland is 47833 ha, which includes 376 small wetland (<2.25 ha). Major wetland types of the district are; Inter-tidal mudflats (11868 ha), Lagoons (6362 ha), Man-made waterlogged (8499 ha), River/Stream (4646 ha). Other important wetland areas are Mangroves (2813 ha) and aquaculture ponds (4129 ha). Of the three wetlands selected in the district, Point Calimere Wildlife & Bird Sanctuary is the largest while Embavai Perunthottam lake is the smaller of the three wetlands (Map 14.1).



Map 14.1: Wetlands of Nagapattinam district assessed for Prioritization

Embavi Perunthottam Lake

Embavi-Perunthottam Lake (Plate 15) also known as Perunthottam Lake is based in Sirkali taluka in Nagapattinam district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Triuvankadu, Embavi, Perunthottam, Chinna-Perunthottam.

The geographic coordinates are Latitude: 11° 11'39.3" N; 11° 11'42.7" N; 11° 11'46.7" N; and Longitude: 079° 49'01.6" E; 079° 49'04.9" E; 079° 49'20.5" E.

Embavi-Perunthottam Lake is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and Cauvery water. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields and some to the Bay of Bengal. The lake has an area of 45.4 hectares with an average depth of 4.5 meters. The wetland surrounded by 30% Rural Settlements and 70% Agriculture. It has an area of 1915.43 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 14.2).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.6, salinity measuring 0.149 ppt, the TDS was recorded high at 334 ppm. The vegetation comprised of 59 plant species (Table 14.1) including eight invasive species including *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 42 animal species were recorded during the survey (Table 14.2 to 14.9). There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The Local Panchayat provides drinking water from the borewell water at regular intervals and Koildam water that is used by the locals to fulfill their daily requirements. There are farmlands where agriculture is undertaken around the wetland that use the wetland waters. The wetland was desilted two years ago that has increased the water retention capacity of the wetland. The site is majorly used by the locals for grazing their cattle and goats. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There are temples or religious structures around the wetland bank. There are high tension wires passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the agriculture practices and its location besides the state highway.

The wetland is not included in any of the protection and conservation categories. The wetland faces a severe threat from encroachment and land use change gradually changing the wetland character.

Unplanned road development and increasing agriculture needs to be regulated. These activities although have spread all around the wetland should remain limited as it can adversely affect the wetland functions as well as disturb the habitat of the birds.

Keeran Lake

Keeran Lake also known as Thirumpoondi Lake (Plate 16) in Nagapattinam district comes under the jurisdiction of PWD, is not a Protected Area. Villages that surround the wetland include Thirumpoondi, Kameshwaram, Prathamaramapuram.

The geographic coordinates are Latitude: 10° 37'55.0" N; 10° 38'00.5" N; 10° 38'15.3" N; 10° 38'15.5" N; and Longitude: 079° 49'26.6" E; 079° 49'20.7" E; 079° 49'22.9" E; 079° 49'26.7" E.

Keeran Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields and some to the Bay of Bengal. The lake has an area of 96.9 hectares with an average depth of 1.5 meters. The wetland surrounded by 15% Grassland/Scrubland, 5% Rural Settlements and 80% Agriculture. It has an area of 2098.9 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 14.3).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.2, salinity measuring 0.461 ppt, the TDS was recorded high at 456 ppm. The vegetation comprised of 36 plant species (Table 14.1) including 10 invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, *Accacia nilotica indica*, and *Ipomoea sp.* The fauna comprised of 51 animal species including one domestic species were recorded during the survey (Table 14.2 to 14.9). Two Threatened species of birds and fish were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The Local Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. There are farmlands where agriculture is undertaken around the wetland that use the wetland waters. Grazing by the cattle is undertaken, fishery is not undertaken, Bird hunting was observed during the visit. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There are no temples or religious structures around the wetland bank. There is high tension wires' passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the agriculture practices and its location besides the state highway. Unplanned road development and increasing agriculture needs to be regulated. These activities although have spread all around the wetland should remain limited as it can adversely affect the wetland functions as well as disturb the habitat of the birds.

The wetland is not included in any of the protection and conservation categories. The wetland faces a severe threat from encroachment and land use change gradually changing the wetland character.

Point Calimere Wildlife and Bird Sanctuary

The Point Calimere Wildlife and Bird Sanctuary (Plate 16), with an area of 24.17 km², was created on June 13, 1967. The sanctuary includes the cape and its three natural habitat types: dry evergreen forests, mangrove forests, and wetlands. In 1988, the sanctuary was enlarged to include the Great Vedaranyam Swamp and the Talaigaynar Reserve Forest, and renamed the Point Calimere Wildlife and Bird Sanctuary, with a total area of 377 km². Villages that surround the wetland include Kodyakadu and Kodyakarai. The wetland is a Protected Area and a Ramsar Site.

The geographic coordinates are Latitude: 10° 17'06.7" N; 10° 17'20.8" N; 10° 17'24.9" N; 10° 17'34.3" N; 10° 17'07.0" N; 10° 18'27.5" N; and Longitude: 079° 50'17.3" E; 079° 51'35.7" E; 079° 52'06.9" E; 079° 52'01.6" E; 079° 51'01.4" E; 079° 50'00.9" E.

Point Calimere Wildlife and Bird Sanctuary is a wetland that belongs to the Natural (inland) tank category in the sub category permanent wetland. The main source of water for the wetland is the tidal waters from the Bay of Bengal, rainfall, groundwater, the surrounding runoff from the catchment area. The water in the wetland is mostly of intermittent nature, as the wetland is mostly dependant on the tidal waters, rainfall and runoff waters. The water from the wetland helps in replenishing the groundwater. The lake has an area of 2968 hectares with an average depth of 1.5 meters. The wetland surrounded by 30 % Mangrove forest, 55% Grassland/Scrubland, 5% Rural Settlements and 10% Agriculture. It has an area of 5745.34 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 14.4).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.5, salinity measuring 7.207 ppt, the TDS was recorded high at 2750 ppm. The vegetation comprised of 22 plant species (Table 14.1) including five invasive species including *Parthenium hysterophorus* and *Prosopis juliflora*. The fauna comprised of 84 animal species including two domestic species were recorded during the survey (Table 14.2 to 14.9). Three near Threatened species of birds were observed during the survey.

The water from the wetland is not used for drinking purpose as the water is marine. The wetland supports a vast diversity of fishery and the commercial fishery is practiced by the local community as there is also a fishers union. There is organized fishing activity and a proper fishers union exists. Grazing by the cattle is undertaken. The wetland attracts a large number of tourist, it being a Bird sanctuary, a Ramsar site as well as a wetland of National Importance. The wetland provides a suitable habitat for birds as we also recorded the local and migratory bird species during our survey. The wetland is used for bathing by livestock as well as the wild animals including the feral horses. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The wetland does not have any several temples and other religious institutions along its bank, except for recreation no other cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The pollution in the form of aquaculture and salt pans waste water is seen but it is low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland has some amount of solid waste dumping and encroachment activities.

The wetland is a bird sanctuary, a Ramsar site and a wetland of National importance and protected for conservation. The wetland faces a major threat from reclamation and encroachment, solid waste dumping although it is observed outside the sanctuary. The tourism activities need to be regulated and educated on the behavior in the sanctuary area.

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Table 14.1: List of Plants recorded along in Nagapattinam District (A - EbavaiPerunthottam Lake, B - Keeran Lake, C - Point Calimere Wildlife and Bird Sanctuary)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	Tapering-Leaf Tiliacora	<i>Tiliacora acuminata</i>	Menispermaceae	Native		+	-	-
2	Wild Spider Flower	<i>Gynandropsis gynandra</i>	Cleomaceae	Native	NA	+	-	-
3	---	<i>Abelmoschus angulosus</i>	Malvaceae	Native	NA	+	-	-
4	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	-	-
5	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	+	-
6	Long-stalk Sida	<i>Sida cordata</i>	Malvaceae	Native	NA	+	-	-
7	Cuban jute, Jelly leaf,	<i>Sida rhombifolia</i>	Malvaceae	Native		+	-	-
8	Indian tulip tree	<i>Thespesia populnea</i>	Malvaceae	Native	LC	+	-	-
9	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	-	-
10	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	+
11	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	-	-
12	Mango	<i>Mangifera indica</i>	Anacardiaceae	Native	DD	+	-	-
13	crab's eye, Jequirity	<i>Abrus precatorius</i>	Fabaceae	Native	NA	+	-	-
14	Siris Tree, Women's tongue	<i>Albizia lebbek</i>	Fabaceae	Native	NA	+	-	-
15	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	+	-	-
16	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	+	-	+
17	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	+	-
18	Three lobe leaf cowpea	<i>Vigna trilobata</i>	Fabaceae	Native	NA	+	-	-
19	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	+	-	-
20	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	+	-	-
21	Cucumber	<i>Cucumis sativus</i>	Cucurbitaceae	Native	NA	+	-	-
22	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	+	+	-
23	Indian Mulberry	<i>Morinda coreia</i>	Rubiaceae	Native		+	+	-
24	Chay Root, Indian madder	<i>Oldenlandia umbellata</i>	Rubiaceae	Native		+	+	-
25	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	+	-	-
26	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	+	+
27	South Indian Mahua	<i>Madhuca longifolia</i> var. <i>latifolia</i>	Sapotaceae	Native	NA	+	-	-
28	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+
29	Periwinkle, Vinca	<i>Catharanthus roseus</i>	Apocynaceae	Introduced	NA	+	-	-
30	Oleander	<i>Nerium oleander</i>	Apocynaceae	Native	LC	+	-	-
31	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	+	-	-
32	Indian Heliotrope	<i>Heliotropium indicum</i>	Heliotropiaceae	Native	NA	+	-	-
33	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	-	-
34	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	-	-
35	Black nightshade, Poison berry	<i>Solanum nigrum</i>	Solanaceae	Native	NA	+	-	-
36	Large caltrops	<i>Pedaliium murex</i>	Pedaliaceae	Native	NA	+	-	-
37	Devil's Claws	<i>Martynia annua</i>	Martyniaceae	Native	NA	+	-	-
38	Long-flower Barleria	<i>Barleria acuminata</i>	Acanthaceae	Native	NA	+	-	-
39	Hoary Basil,	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	+	-	-
40	Teak	<i>Tectona grandis</i>	Lamiaceae	Native	NA	+	-	-
41	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	+	-
42	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	+	-
43	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	+	-	-
44	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	-
45	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	+	-	+
46	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	-
47	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	+	+	-
48	Glandular Jatropa	<i>Jatropa glandulifera</i>	Euphorbiaceae	Native	NA	+	-	-
49	Stone Breaker, Seed Under Leaf	<i>Phyllanthus niruri</i>	Phyllanthaceae	Native	NA	+	-	-
50	Yellow barked fig	<i>Ficus amplissima</i>	Moraceae	Native	NA	+	-	-
51	Banyan tree	<i>Ficus benghalensis</i>	Moraceae	Native	NA	+	-	-
52	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	-
53	Coconut Tree	<i>Cocos nucifera</i>	Arecaceae	Native	NA	+	-	-
54	Flatsedge	<i>Cyperus eleusinoides</i>	Cyperaceae	Native	NA	+	-	-

55		<i>Fimbristylis dichotoma</i>	Cyperaceae	Native	LC	+	-	-
56	Giant Reed	<i>Arundo donax</i>	Poaceae	Invasive	LC	+	-	-
57	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	-
58	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	+	-
59	Kans grass	<i>Saccharum spontaneum</i>	Poaceae	Native	LC	+	-	-
Total						59	16	4

Table 14.2: List of Insects recorded along in Nagapattinam District (A - EbavaiPerunthottam Lake, B - Keeran Lake, C - Point Calimere Wildlife and Bird Sanctuary)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Water Strider	<i>Gerris sp.</i>	Gerridae	+	-	-
2	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	+	-	-
3	Golden backed Ant (Red Marph)	<i>Camponotus sericeus</i>	Formicidae	+	+	+
4	Spider Wasp	<i>Pompilidae sp.</i>	Pompilidae	+	-	-
1	Toothpick Grasshopper	<i>Leptysma marginicollis</i>	Acrididae	-	+	-
1	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	-	-	+
3	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	-	-	+
4	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	-	+
Total				4	2	4

Table 14.3: List of Butterflies recorded along in Nagapattinam District (A - EbavaiPerunthottam Lake, B - Keeran Lake, C - Point Calimere Wildlife and Bird Sanctuary)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	-	+	+
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	-	+	+
3	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+
4	Common Cerulean	<i>Jamides celeno</i>	Polyommatainae	Common	-	-	+
5	Pea Blue	<i>Lampides boeticus</i>	Polyommatainae	Common	-	-	+
6	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	-	-	+
7	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	-	+	+
8	Common Crow	<i>Euploea core</i>	Danainae	Common	-	-	+
9	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	-	+	+
10	Heliotrope Moth	<i>Utetheisa pulchelloides</i>	Erebidae	Common	-	-	+
Total					1	5	10

Table 14.4: List of Odonates recorded along in Nagapattinam District (A - EbavaiPerunthottam Lake, B - Keeran Lake, C - Point Calimere Wildlife and Bird Sanctuary)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	+	-	-
2	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	-	-
3	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+
4	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+
5	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	-	+
6	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	+	-
7	Black Marsh Trotter	<i>Tramea limbata</i>	Libellulidae	Common	-	-	+
Total					5	3	4

Table 14.5: List of Arachnida recorded along in Nagapattinam District (A - EbavaiPerunthottam Lake, B - Keeran Lake, C - Point Calimere Wildlife and Bird Sanctuary)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	-	+	+
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	+	+
3	Spiny orb-weaver	<i>Gasteracantha sp.</i>		-	-	+
Total				0	2	3

Table 14.6: List of Fishes recorded along in Nagapattinam District (A - EbavaiPerunthottam Lake, B - Keeran Lake, C - Point Calimere Wildlife and Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	+	+
2	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	-	+	+
3	Spiny eel	<i>Macrognathus pancalus</i>	Mastacembelidae	LC	+	-	+
4	Pool barb, Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	+	-	+
5	Climbing erch	<i>Anabas testudineus</i>	Anabantidae	DD	-	-	+
6	Bloch's Gizzard Shad	<i>Nematalosa nasus</i>	Clupeidae	LC	-	-	+
7	Long whiskers catfish	<i>Mystus gulio</i>	Bagridae	LC	-	-	+
8	White sardinella	<i>Sardinella albella</i>	Clupeidae	LC	-	-	+
9	Commerson's anchovy	<i>Stolephorus commersonii</i>	Engraulidae	NE	-	-	+
10	Dussumier's halfbeak	<i>Hyporhamphus dussumieri</i>	Hemiramphidae	NE	-	-	+
11	Thread fin	<i>Polynemus plebeius</i>	Polynemidae	NE	-	-	+
12	Featherback	<i>Notopterus notopterus</i>	Notopteridae	LC	-	-	+
13	Indian mackerel	<i>Rastrelliger kanagurta</i>	Scombridae	DD	-	-	+
14	King soldier bream	<i>Argyrops spinifer</i>	Sparidae	LC	-	-	+
15	Great barracuda	<i>Sphyraena barracuda</i>	Sphyraenidae	LC	-	-	+
16	Long snouted barb	<i>Puntius dorsalis</i>	Cyprinidae	LC	-	-	+
17	Tenpounder	<i>Elops machnata</i>	Elopidae	LC	-	-	+
18	Fiddler crab	<i>Uca annulipes</i>	Ocypodidae		-	-	+
19	Mudskipper	<i>Periophthalmus argentilineatus</i>	Oxudercidae		-	-	+
Total					2	2	19

Table 14.7: List of Reptiles recorded along in Nagapattinam District (A - EbavaiPerunthottam Lake, B - Keeran Lake, C - Point Calimere Wildlife and Bird Sanctuary)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	-	+	+
Total					0	1	1

Table 14.8: List of Birds recorded along in Nagapattinam District (A - EbavaiPerunthottam Lake, B - Keeran Lake, C - Point Calimere Wildlife and Bird Sanctuary)

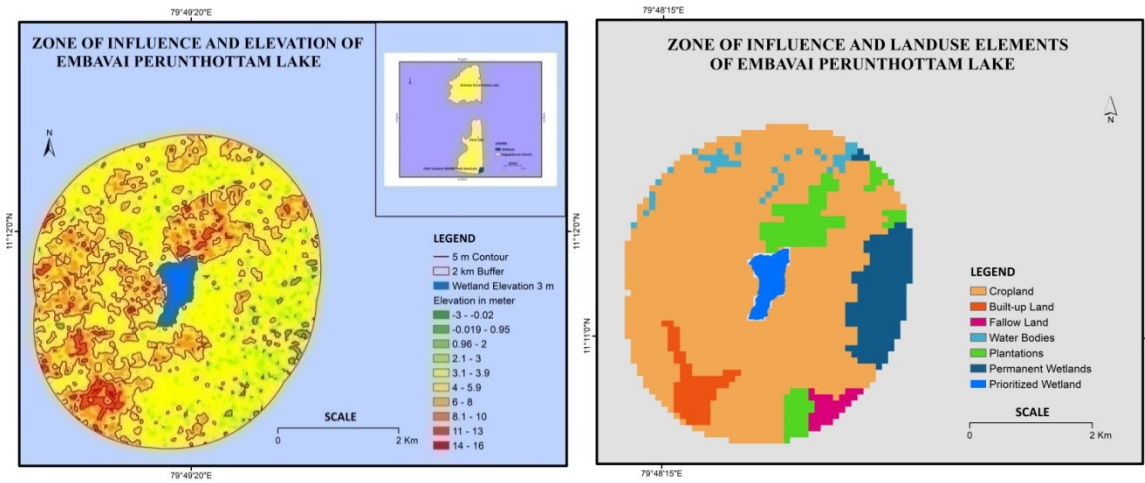
S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	Near Threatened	-	-	+
2	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	Near Threatened	-	+	+
3	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	-	+	+
4	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	-	+	+
5	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	-	+	+
6	Great Egret	<i>Casmerodius albus</i>	Ardeidae	Least Concern	-	+	+
7	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	-	+	+
8	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	-	+	+
9	Darter	<i>Anhinga melanogaster</i>	Anhingidae	Near Threatened	-	+	+
10	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	+	+
11	Peregrine Falcon	<i>Falco peregrinus</i>	Falconidae	Least Concern	-	-	+
12	Brahminy Kite	<i>Haliastur indus</i>	Accipitridae	Least Concern	+	+	+
13	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	Least Concern	-	-	+
14	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	-	-	+
15	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	+
16	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	Least Concern	-	-	+
17	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae	Least Concern	-	+	+
18	Gull-billed Tern	<i>Gelochelidon nilotica</i>	Laridae	Least Concern	-	-	+
19	Caspian Tern	<i>Hydroprogne caspia</i>	Laridae	Least Concern	-	+	+
20	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	Least Concern	-	+	+
21	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	-	+
22	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	-	-	+
23	Asian Palm Swift	<i>Cypsiurus balasienis</i>	Apodidae	Least Concern	+	+	+
24	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	+	+	+
25	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	Least Concern	+	+	+

26	Blue-tailed Bee eater	<i>Merops philippinus</i>	Meropidae	Least Concern	-	-	+
27	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	-	-	+
28	Ashy-crowned Sparrow-lark	<i>Eremopterix griseus</i>	Alaudidae	Least Concern	-	-	+
29	Oriental skylark	<i>Alauda gulgula</i>	Alaudidae	Least Concern	-	-	+
30	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	-	-	+
31	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
32	Rosy Starling	<i>Pastor roseus</i>	Sturnidae	Least Concern	-	-	+
33	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	-	-	+
34	Indian Silverbill	<i>Euodice malabarica</i>	Estrildidae	Least Concern	-	-	+
35	Black-headed Munia	<i>Lonchura malacca</i>	Estrildidae	Least Concern	-	-	+
Total					8	18	35

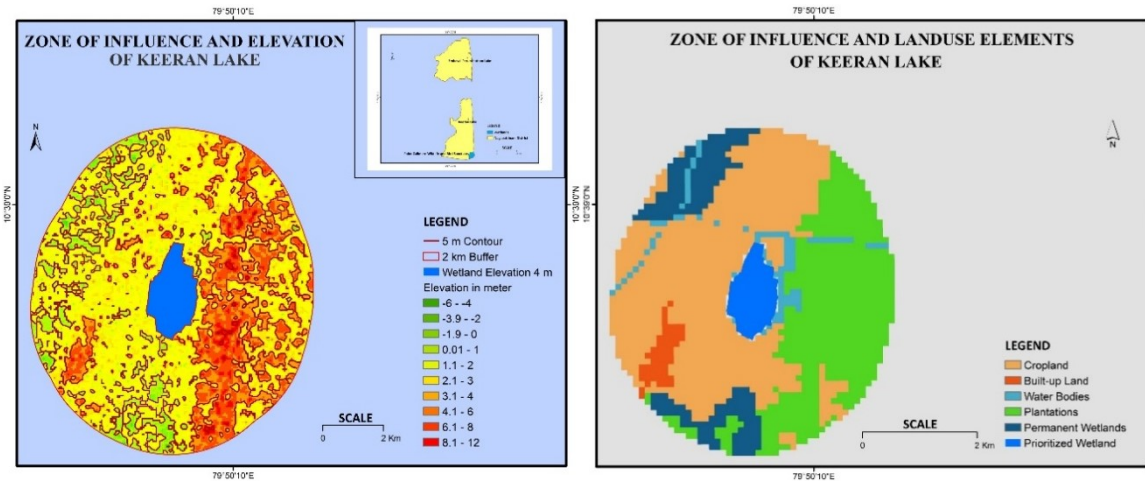
Table 14.9: List of Mammals recorded along in Nagapattinam District (A - EbavaiPerunthottam Lake, B - Keeran Lake, C - Point Calimere Wildlife and Bird Sanctuary)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	-	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	-	-	+
3	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	-	-	+
4	Horse	<i>Equus ferus caballus</i>	Equidae	Feral	-	-	+
5	Indian grey Mongoose	<i>Herpestes edwardsi</i>	Herpestidae	Least Concern	-	-	+
6	Blackbuck	<i>Antilope cervicapra</i>	Bovidae	Least Concern	-	-	+
7	Bonnet Macaque	<i>Macaca radiata</i>	Cercopithecidae	Least Concern	-	-	+
8	Wild Boar	<i>Sus scrofa</i>	Suidae	Least Concern	-	-	+
Total					0	1	8

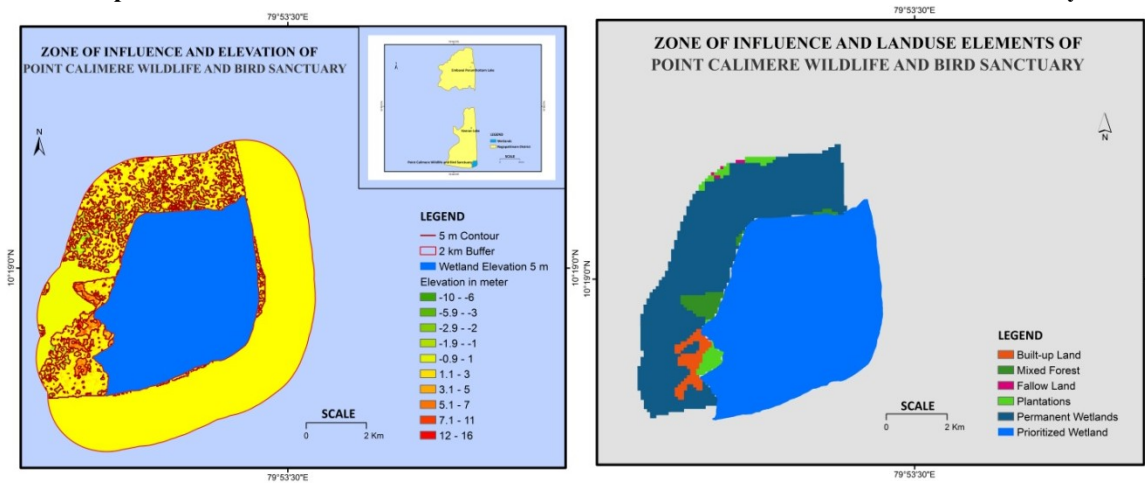
Map 14.2: The zone of influence around the Embavai Perunthottam Lake.



Map 14.3: The zone of influence around the Keeran Lake.



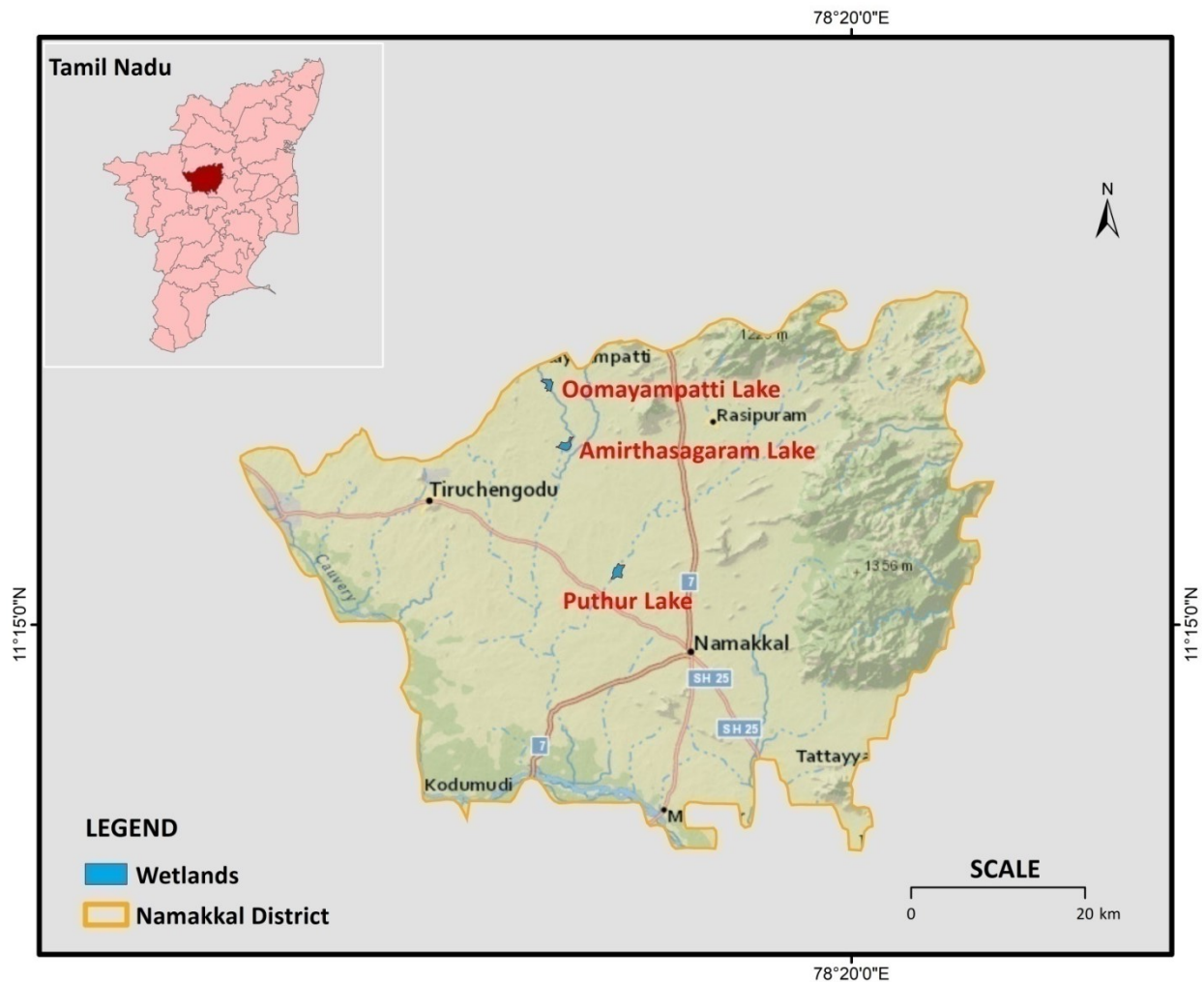
Map 14.4: The zone of influence around the Point Calimere Wildlife and Bird Sanctuary.



15. Namakkal District

Namakkal is bounded on the north by Salem district, on the east by Attur taluk of Salem district, Perambalur and Tiruchirapalli districts, on the south by Karur district and on the west by Erode district. The district is extensively covered with hilly ranges and rocks with undulatory plains. The Kollimalai range with peaks 1219 metres runs along the east of Namakkal and Rasipuram taluks. Namakkal district comes under the North Western Agro climatic zone of Tamil Nadu. It is situated in the dividing portion of two watersheds between Cauvery and the Vellar System. The main source of revenue from the forests is from the Sandalwood trees which occur naturally in abundance in the plateau and hilly ranges.

Total geographic area of Namakkal is 3363 km². Total area under wetland is 7687 ha which includes 163 small wetland (<2.25 ha). Major wetland types of the district are Tanks/ponds, Rivers/stream and Lakes/ponds. Of the three wetlands selected in the district, Puthur is the largest while Oomayampatti is the smaller of the three wetlands (Map 15.1).



Map 15.1: Wetlands of Namakkal district assessed for Prioritization

Amrithasagaram Lake

Amrithasagaram Lake also known as Amritavelli eri (Plate 16) is based in Trichingode taluka in Namakal district comes under the jurisdiction of PWD and is not a Protected Area.

The geographic coordinates are Latitude: 11° 25'57.4" N; 11° 26'00.3" N; 11° 25'59.3" N; 11° 25'59.5" N; 11° 25'52.4" N; and Longitude: 078° 01'52.9" E; 078° 01'40.8" E; 078° 01'45.6" E; 078° 01'47.7" E; 078° 02'07.6" E.

Amrithasagaram Lake is a wetland that belongs to the Natural (inland) tank category in the sub category permanent wetland. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, and overflow of Tirummanimudhuru eri. The water from the wetland helps in replenishing the groundwater and the overflow joins the agriculture fields and the Kundinyidaleri and Konniyareri. The lake has an area of 115 hectares with an average depth of 1.5 meters. The wetland is surrounded by 15% Rural Settlements and 85% Agriculture. It has an area of 2401.77 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 15.2).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.8, salinity measuring 0.151 ppt, the TDS was recorded high at 2090 ppm. The vegetation comprised of 19 plant species (Table 15.1) including three invasive species including *Prosopis juliflora*, *Typha sp.* and *Ipomoea sp.* The fauna comprised of 54 animal species including two domestic species were recorded during the survey (Table 15.2 to 15.9). One Threatened species of birds was observed during the survey. Tilapia and common carps were recorded. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. Fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The commercial fishery is under the contract of the PWD, who introduces the fish seeds. There is mining for sand or silt undertaken with the permission of the PWD in the absence of water. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has major temples along its vicinity and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure, encroachment and garbage dumping. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not is not a Protected Area. The wetland faces a severe threat from the sewage and effluent release by the Salem city municipal corporation that is making the water more saline.

Oomayampatti Lake

Oomayampatti Lake also known as Mallasamudhiram lake, Erikkadu Lake (Plate 16) based in Namakal district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Ooomyampatty, Mangalam, Pudur, Nathammedu, Uppupalayam, Suriyagoundampalayam and Mallasamundram.

The geographic coordinates are Latitude: 11°30'16.3" N; 11° 30'07.7" N; 11°30'05.6" N; 11°29'43.2" N; 11° 29'44.8"N; and Longitude: 078°01'22.6" E; 078°00'52.0" E; 078°00'57.1" E; 078°00'53.9" E; 078°00'59.9" E

Oomayampatti Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, and overflow of Mallasamudhiramchinnari. The water from the wetland helps in replenishing the groundwater and the overflow joins the agriculture fields. The lake has an area of 102 hectares with an average depth of 1.5

meters. The wetland is surrounded by 20% Rural Settlements, 40% Grassland / scrubland and 40% Agriculture. It has an area of 2224.32 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 15.3).

The wetland was Eutrophic during the visit, with the pH of the water being 8.4, salinity measuring 1.178 ppt, the TDS was recorded high at 1277 ppm. The vegetation comprised of 43 plant species (Table 15.1) including three invasive species including *Prosopis juliflora*, *Accacia indica*, *Lantana camara* and *Ipomoea sp.* The fauna comprised of 55 animal species including four domestic species were recorded during the survey (Table 15.2 to 15.9). Threatened species of birds were not observed but two threatened fish species were recorded during the survey. Tilapia and common carps were recorded. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. Fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The commercial fishery is under the contract of the PWD, who introduces the fish seeds. There is mining for sand or silt undertaken with the permission of the PWD. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has major temples along its vicinity and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure, encroachment and garbage dumping. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not a Protected Area. The wetland faces a severe threat from land use change mainly due to solid waste dumping, sewage and effluents.

Puthur Lake

Puthur Lake (Plate 17), also known as Velakondampatti based in Trichingode taluka in Namakkal district is not a Protected Area and comes under the jurisdiction of PWD.

The geographic coordinates are Latitude: 11° 18'27.8" N; 11° 18'32.3" N; 11° 18'35.8" N; and Longitude: 078° 05'29.2" E; 078° 05'21.1" E; 078° 05'23.2" E.

Puthur Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, and overflow of Kollimalai stream. The overflow water feeds the agricultural lands and the Cauvery river, however there has been no adequate rains for the past 10 years. The wetland is surrounded by 15% Rural Settlements and 85% Agriculture. It has an area of 2389.79 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 15.4).

The wetland water characteristic was not known as during the visit the wetland was completely dry. The vegetation comprised of 16 plant species (Table 15.1) including two invasive species including *Prosopis juliflora* and *Accacia indica*. The fauna comprised of 11 animal species including five domestic species were recorded during the survey (Table 15.2 to 15.9). Tilapia and common carps were recorded. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. The wetland is used for agriculture and serves as a ground water recharge as long as the water is present. There is mining for sand or silt undertaken with the permission of the PWD

in the absence of water. The wetland has major temples along its vicinity and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures. The wetland has been facing land use change pressure.

The wetland is not is not a Protected Area. Sand and silt mining should be regulated.

Table 15.1: List of Plants recorded in Namakkal District (A - Amrithasagaram Lake, B - Oomayampatti Lake, C - Puthur Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	-	+	-
2	Field Milkwort	<i>Polygala arvensis</i>	Polygalaceae	Native	NA	-	+	-
3	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	+	+
4	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	+	-
5	Long-stalk Sida	<i>Sida cordata</i>	Malvaceae	Native	NA	-	+	-
6	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	-	+	-
7	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	+
8	Indian Plum	<i>Ziziphus mauritiana</i>	Rhamnaceae	Native	NA	-	+	-
9	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	-	+	-
10	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	-	+	-
11	White Gulmohar, White Poincian	<i>Delonix elata</i>	Fabaceae	Native	LC	-	+	-
12	True indigo	<i>Indigofera tinctoria</i>	Fabaceae	Native	NA	-	+	-
13	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
14	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	-	+	-
15	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	-
16	Papaya Tree	<i>Carica papaya</i>	Caricaceae	Native	DD	-	+	-
17	Erect Prickly Pear	<i>Opuntia stricta</i>	Cactaceae	Invasive	LC	-	+	-
18	Desert Horse Purslane	<i>Trianthema portulacastrum</i>	Aizoaceae	Native	NA	-	+	-
19	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	-	+	+
20	Siam Weed	<i>Chromolaena odorata</i>	Asteraceae	Invasive	NA	-	+	-
21	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	-	+	-
22	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	-	+	-
23	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	-	+	-
24	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	-	+	-
25	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	-	+	-
26	Common Thorn apple	<i>Datura stramonium</i>	Solanaceae	Native	NA	-	+	-
27	African Tulip Tree	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	LC	-	+	-
28	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	-	+	-
29	Hoary Basil,	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	-	+	-
30	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	-	+	-
31	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	+	+
32	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	-	+	-
33	Sessile Joyweed	<i>Alternanthera sessilis</i>	Amaranthaceae	Native	LC	-	+	-
34	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	-	+	-
35	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	-	+	+
36	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	-
37	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	-	+	-
38	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	+	+	+
39	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	-
40	Para Grass	<i>Brachiaria mutica</i>	Poaceae	Invasive	LC	-	+	-
41	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	-	+	-
42	Finger grass	<i>Enteropogon dolichos tachyus</i>	Poaceae	Native	NA	-	+	-
43	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	+	+	-
Total						10	43	7

Table 15.2: List of Insects recorded in Namakkal District (A - Amrithasagaram Lake, B - Oomayampatti Lake, C - Puthur Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	-	-
2	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	+	-	-
3	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	-	-

4	Bicolour Ant	<i>Meranoplus bicolor</i>	Formicidae	+	-	-
5	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	+	-
6	Water Strider	<i>Gerris sp.</i>	Gerridae	-	+	-
7	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	-	+	-
8	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	-	+	-
9	Carpenter Ants	<i>Camponotus sp.</i>	Formicidae	-	+	-
Total				4	5	0

Table 15.3: List of Butterflies recorded in Namakkal District (A - Amrithasagaram Lake, B - Oomayampatti Lake, C - Puthur Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Lime Butterfly	<i>Papilio demoleus</i>	Papilioninae	Common	+	-	-
2	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+
3	Small Orange Tip	<i>Colotis etrida</i>	Pierinae	Common	+	-	-
4	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	-	-
5	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	-
6	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	+	-	-
7	Joker	<i>Byblia lithyia</i>	Biblidinae	Common	+	-	-
8	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	+	-	-
9	Blue Pansy	<i>Junonia orithiya</i>	Nymphalinae	Common	+	-	-
10	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	+	+	-
Total					10	3	1

Table 15.4: List of Odonates recorded in Namakkal District (A - Amrithasagaram Lake, B - Oomayampatti Lake, C - Puthur Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Commom	+	-	-
2	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Commom	+	-	-
3	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Commom	+	-	+
4	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Commom	+	-	+
5	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Commom	+	-	-
6	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Commom	+	-	-
7	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Commom	+	-	-
8	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Commom	+	-	-
Total					8	0	2

Table 15.5: List of Arachnida recorded in Namakkal District (A - Amrithasagaram Lake, B - Oomayampatti Lake, C - Puthur Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	-
Total				1	0	0

Table 15.6: List of Fishes recorded in Namakkal District (A - Amrithasagaram Lake, B - Oomayampatti Lake, C - Puthur Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	+	-
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	-	+	-
3	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	+	-
4	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	+	-
5	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	-	+	-
6	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	+	+	-
7	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	-	+	-
8	Spiny eel	<i>Macrogynathus pancalus</i>	Mastacembelidae	LC	-	+	-
9	Pool barb, Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	-	+	-
10	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	+	+	-

11	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	-	+	-
12	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	+	-	-
Total					5	11	0

Table 15.7: List of Reptiles recorded in Namakkal District (A - Amrithasagaram Lake, B - Oomayampatti Lake, C - Puthur Lake)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C
1	Fan-throated Lizard	<i>Sitana ponticeriana</i>	Agamidae	Least Concern	-	+	-
2	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	-	+	+
Total					0	2	1

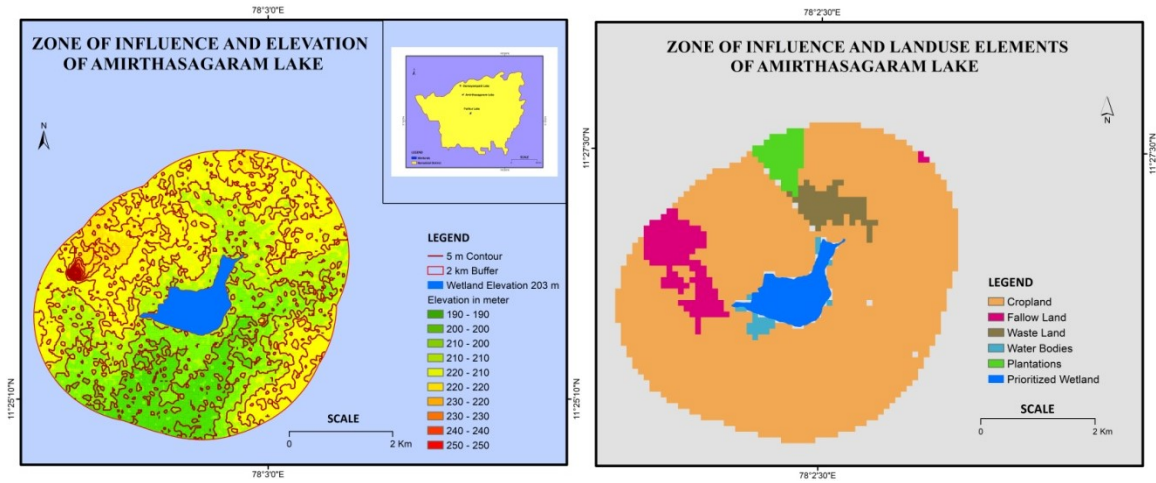
Table 15.8: List of Birds recorded in Namakkal District (A - Amrithasagaram Lake, B - Oomayampatti Lake, C - Puthur Lake)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C
1	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	+	+	-
2	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	+	-	-
3	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Ardeidae	Least Concern	+	-	-
4	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	-
5	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	Least Concern	+	-	-
6	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	-	-
7	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	+	-	-
8	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	+	-
9	Darter	<i>Anhinga melanogaster</i>	Anhingidae	Near Threatened	+	-	-
10	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	-	-
11	Purple Swampphen	<i>Porphyrio porphyrio</i>	Rallidae	Least Concern	+	-	-
12	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	+	-	-
13	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	-	-
14	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	+	-
15	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	-	-
16	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Least Concern	+	-	+
17	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	+	+	-
18	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+
19	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
20	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	Least Concern	+	-	-
21	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	+	+	-
22	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
23	Indian Robin	<i>Saxicoloides fulicatus</i>	Muscicapidae	Least Concern	+	-	+
24	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	Least Concern	+	+	-
Total					24	10	5

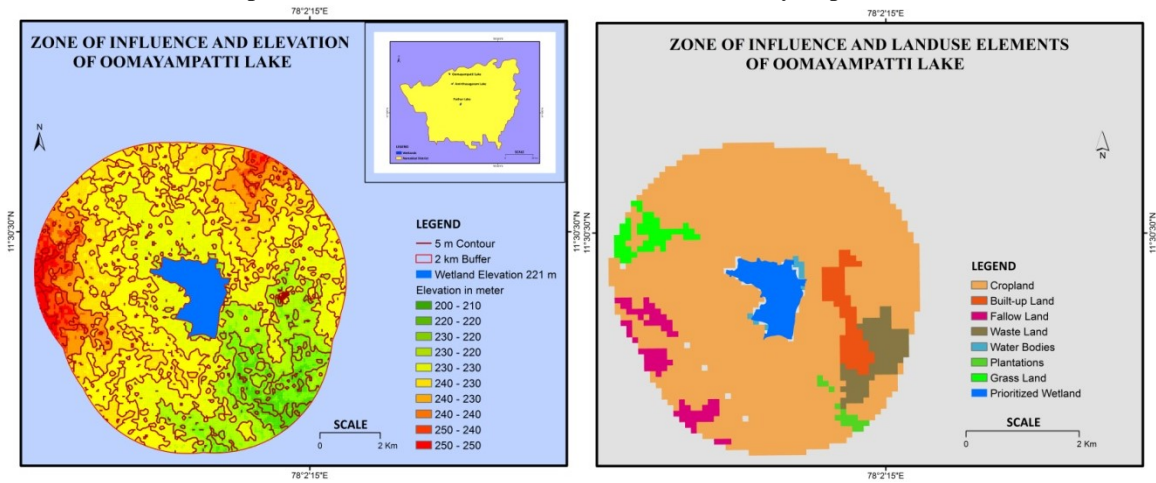
Table 15.9: List of Mammals recorded in Namakkal District (A - Amrithasagaram Lake, B - Oomayampatti Lake, C - Puthur Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	-
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	-
3	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	-
4	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	-	+	-
5	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	-	+	-
Total					3	5	0

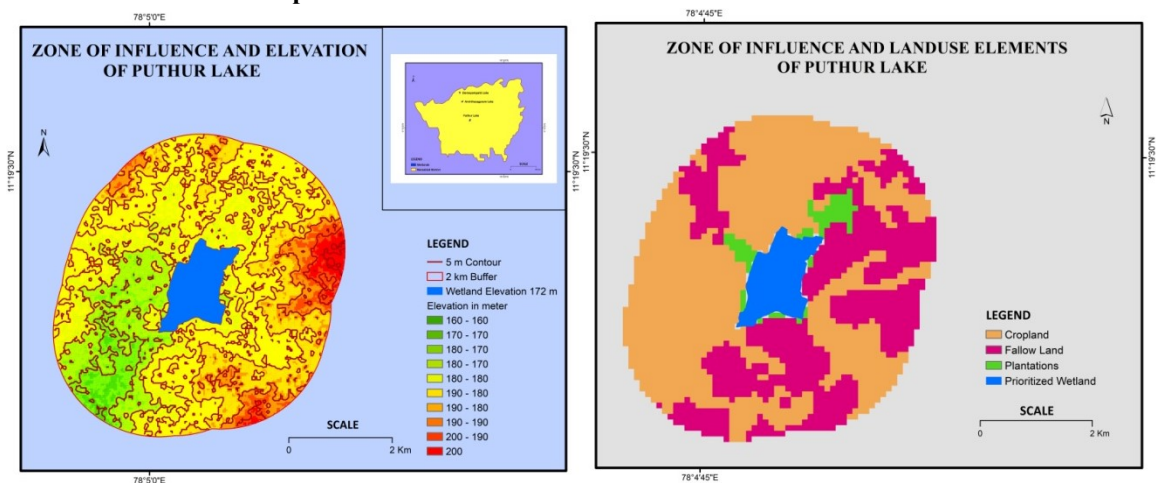
Map 15.2: The zone of influence around the Amrithasagaram Lake.



Map 15.3: The zone of influence around the Oomayampatti Lake.



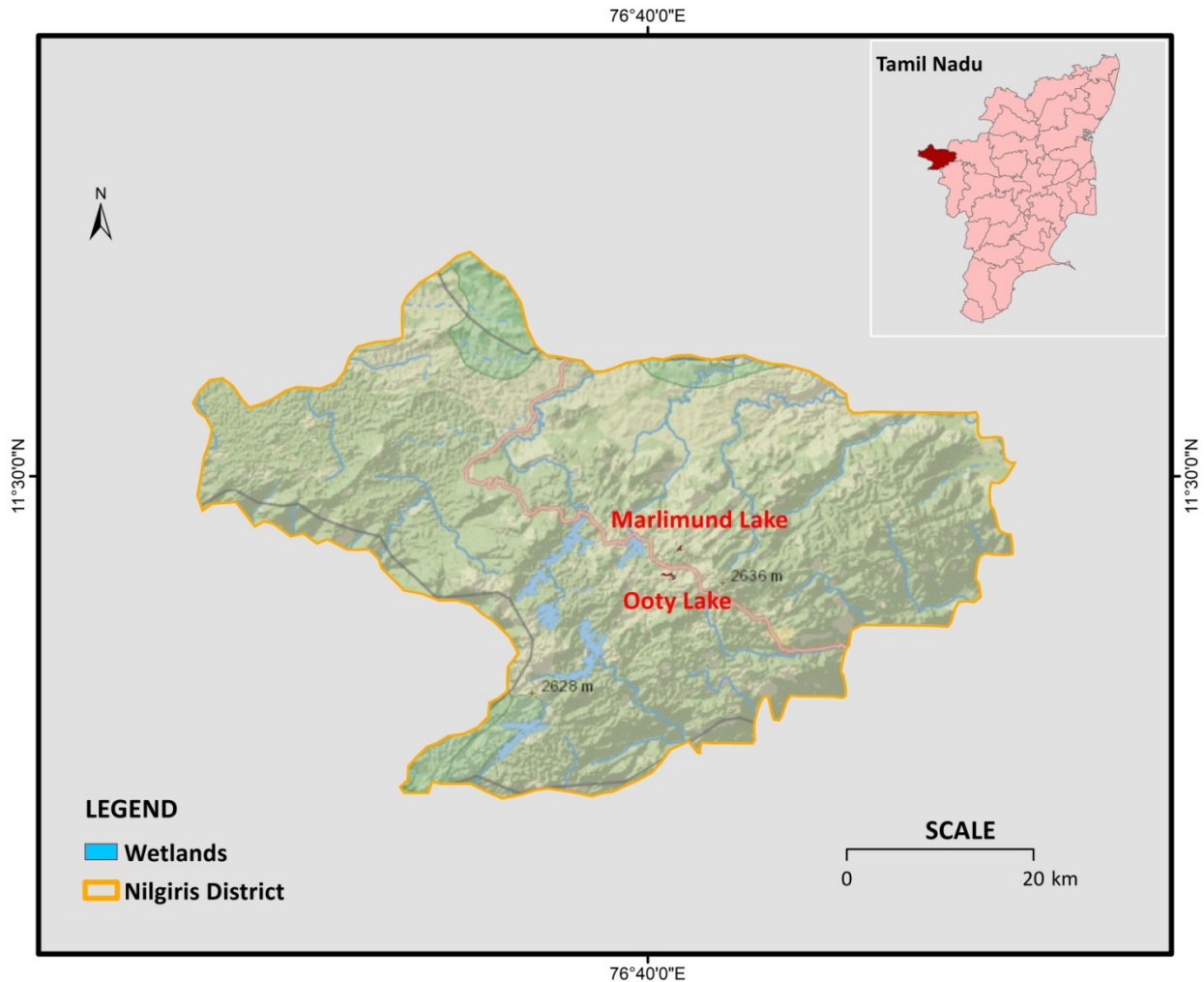
Map 15.4: The zone of influence around the Puthur Lake.



16. Nilgiris District

Nilgiris is a mountainous district of Tamil Nadu bounded on North by Karnataka State, on the West by Coimbatore district, Erode district, South by Coimbatore district and Kerala State and on the East by Kerala State. Nilgiris is India's first biosphere. It has been declared as one of the 14 'hotspots' of the world because of its unique biodiversity. Nilgiris, one of the oldest mountain ranges, located at the tri-junction of Tamil Nadu, Kerala and Karnataka. Nilgiris is a part of the Western Ghats. Ooty the "Queen of Hill Stations", Coonoor 19 kms from Ooty and Kotagiri 31 kms from Ooty, are the three hill stations of this district.

Total geographic area of Nilgiris is 2452.50 km². Total area under wetland is 3127 ha, which includes 17 small wetland (<2.25 ha). Major wetland types of the district are; Reservoirs (88.68 %) and Tanks/ponds (6.94 %). Of the two wetlands selected in the district, Ooty lake is the larger of the two (Map 16.1).



Map 16.1: Wetlands of Nilgiris district assessed for Prioritization

Marlimund Lake

Marlimund Lake (Plate 17) based in Ooty, Nilgiris district comes under the jurisdiction of Ooty Municipality, it is not a Protected Area but is adjoining the forest. Villages that surround the wetland include Kozhipannai, Kavdasholai, Tony Bungalow, Kuzhi shola and Father Line.

The geographic coordinates are Latitude: 11° 26'16.0" N; 11° 25'93.7" N; 11° 25'91.3" N; and Longitude: 076° 41'57.0" E; 076° 41'94.8" E; 076° 41'86.1" E

Marlimund Lake is a wetland that belongs to the Natural (inland) tank category in the sub category Permanent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. There is significant runoff from the surrounding area during the monsoon because of the terrain. The water from the wetland helps in replenishing the groundwater and the overflow feeds the Mayar river. The lake has an area of 7.94 hectares with an average depth of 1.5 meters. The wetland is surrounded by 85 % Forest, 02% Rural Settlements, 10% Agricultural lands, 03% Industrial and 100% Agriculture. It has an area of 1588.88hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 16.2).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.29, salinity measuring 0.266 ppt, the TDS was recorded high at 30.8 ppm. The vegetation comprised of 26 plant species (Table 16.1) including two invasive species including *Lantana camara* and *Ipomoea sp.* The fauna comprised of 42 animal species including one domestic species were recorded during the survey (Table 16.2 to 16.9). One Threatened species of birds species were recorded during the survey. Tilapia and common carps were recorded.

The water from the wetland is used for drinking purpose and it is also pumped to the Governors bungalow. The wetland is not used for any purpose but serves as a ground water recharge and drinking. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a temple along its bank but no cultural and religious activities are performed in the wetland due to restrictions.

The wetland has no potential of change in the outflow of the water. The wetland water quality and the ecological character is not changing and is well conserved. The wetland has no land use change pressure. Tourism should be regulated.

The wetland is not notified under any conservation categories. The wetland has some threat from the potential of increasing tourism from the nature enthusiast and should be regulated.

Ooty Lake

Ooty lake (Plate 17) is an artificial lake constructed by John Sullivan, in 1824. The water flowing down mountain streams in the Ooty valley was dammed to form the lake. The lake became empty on three occasions when it breached its bund. The lake was originally intended to be used for fishing with ferries being used to travel across the lake. It gradually shrunk from its original size giving place to the current bus stand race course, and the lake park. The Tamil Nadu Tourism Development Corporation on behalf of the Tourism Department took the possession of the lake in 1973, for providing boating facilities as a tourist attraction. The wetland comes under the jurisdiction of Department of Tourism Government of Tamil Nadu. Villages that surround the wetland include Kasturibai colony, Kandhal, Ooty town, Fernal.

The geographic coordinates are Latitude: 11° 24'21.9" N; 11° 24'18.4" N; 11° 24'14.7" N; and Longitude: 076° 40'56.1" E; 076° 40'55.9" E; 076° 41'02.7" E.

Ooty Lake is a wetland that belongs to the Natural (inland) tank category in the sub category Permanent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and the sewage outflow. The water from the wetland helps in replenishing the groundwater and the overflow feeds the Sandinalardam. The lake has an area of 22.7 hectares with an average depth of 3 meters. The wetland is surrounded by 40 % Forest, 45% Urban Settlements, 10% Agricultural lands and 05% Industrial. It has an area of 1994.18 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 16.3).

The wetland was Eutrophic during the visit, with the pH of the water being 7.7, salinity measuring 0.138 ppt, the TDS was recorded high at 300 ppm. The vegetation comprised of 24 plant species (Table 16.1) including four invasive species including *Lanana camara*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 53 animal species were recorded during the survey (Table 16.2 to 16.9). One Threatened species of birds and two fish species were recorded during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose or agriculture. The municipal corporation provides drinking water from the Parcinsolai dam and Borewell water at regular intervals that is used by the locals to fulfill their daily requirements. The wetland is completely sewage fed. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are not performed in the wetland due to the sewage and contamination.

The wetland has a little potential of change in the outflow of the water. The wetland water quality and the ecological character is changing rapidly. The site adjoining the wetland is majorly used by the locals for dumping garbage and as toilet.

The wetland is notified under the National lake Conservation Plan and is also protected by the Tourism department. The polluting practices around the wetland should be taken care and it should be seen that it does not encroach into the wetland area any further. Moreover the sewage treatment plant is not efficient enough to treat the volume of the sewage and effluent released into the wetland.

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Table 16.1: List of Plant species recorded in Nilgiris District (A - Marlimund Lake, B - Ooty Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B
1	Indian Parselane	<i>Portulaca oleracea</i>	Portulacaceae	Native	NA	+	-
2	Painted Mallow, Parlor maple	<i>Callianthe picta</i>	Malvaceae	Naturalized		+	+
3	Entire-Leaf Wild Grape	<i>Cissus adnata</i>	Vitaceae	Native		+	-
4	Scotch Broom, Common broom	<i>Cytisus scoparius</i>	Fabaceae	Naturalized		+	+
5	Common Gorse, Gorse, Furze	<i>Ulex europaeus</i>	Fabaceae	Introduced	LC	+	-
6	Himalayan Strawberry	<i>Fragaria vesca</i>	Rosaceae	Native		+	+
7		<i>Eucalyptus globulus</i>	Myrtaceae	Introduced		+	+
8		<i>Oenothera odorata</i>	Onagraceae	Introduced		+	+
9	Passion Fruit	<i>Passiflora edulis</i>	Passifloraceae	Introduced		+	+
10	Banana Passion Flower,	<i>Passiflora mollissima</i>	Passifloraceae	Introduced		+	-
11	Common Morning Glory	<i>Ipomoea purpurea</i>	Convolvulaceae	Naturalized		+	+
12	Angel's trumpet	<i>Brugmansia suaveolens</i>	Solanaceae	Naturalized	EW	+	+
13	Tree Tobacco, Woolly Nightshade,	<i>Solanum mauritianum</i>	Solanaceae	Naturalized		+	-
14	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	+	+
15	Hill Glory Bower	<i>Clerodendrum villosum</i>	Lamiaceae	Native		+	+
16	Pale Java Tea	<i>Orthosiphon pallidus</i>	Lamiaceae	Native		+	+
17	Diffuse Hogweed	<i>Commicarpus chinensis</i>	Nyctaginaceae	Native	NA	+	+
18	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	-
19	Wight's Litsea	<i>Litsea wightiana</i>	Lauraceae	Native		+	+
20		<i>Commelina diffusa</i> subsp. <i>diffusa</i>	Commelinaceae	Native		+	-
21	Devdar, Himalayan Cedar	<i>Cedrus deodara</i>	Pinaceae	Native	LC	+	+
22	Mexican Weeping Pine	<i>Pinus patula</i>	Pinaceae	Introduced		+	+
23	Christmas Tree	<i>Araucaria columnaris</i>	Araucariaceae	Introduced	LC	+	+
24		<i>Nephrolepis cordifolia</i>	Nephrolepidaceae	Introduced		+	+
25		<i>Bryumarch angelicum</i>	Bryaceae			+	-
26		<i>Rhodobryum giganteum</i>	Bryaceae			+	+
Total						26	18

Table 16.2: List of Insects recorded in Nilgiris District (A - Marlimund Lake, B - Ooty Lake)

S. No	Common English Name	Scientific Name	Family	A	B
1	Water Strider	<i>Gerris sp.</i>	Gerridae	+	-
2	Blue Banded Honeybee	<i>Amegilla cingulata</i>	Apidae	+	-
3	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	-
7	Giant Honey Bee	<i>Apis dorsata</i>	Apidae	+	-
5	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	+	-
6	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	-
7	Black Ant	<i>Myrmecaria brunnea</i>	Formicidae	+	-
8	Flesh Fly	<i>Sarcophagidae sp.</i>	Sarcophagidae	+	-
Total				8	0

Table 16.3: List of Butterflies recorded in Nilgiris District (A - Marlimund Lake, B - Ooty Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B
1	Red Helen	<i>Papilio helenus</i>	Papilioninae	Common	+	-
2	Blue Mormon	<i>Papilio polymnestor</i>	Papilioninae	Common	+	-
3	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	+	-
4	Common Grass Yellow	<i>Eurema hecabe</i>	Coliadinae	Common	+	-
5	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+
6	Pioneer	<i>Belenois aurota</i>	Pierinae	Common	+	-
7	Common Rose	<i>Pachliopta aristolochiae</i>	Nymphalidae		-	+
8	Crimson Rose	<i>Pachliopta hector</i>	Nymphalidae		-	+
9	Plain Tiger	<i>Danaus chrysippus</i>	Danaidae		-	+

10	Common Crow	<i>Euploea core</i>	Danaidae		-	+
11	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalidae		-	+
Total					6	6

Table 16.4: List of Crustacean recorded in Nilgiris District (A - Marlimund Lake, B - Ooty Lake)

S. No	Common English Name	Scientific Name	Family	A	B
1	Daphnia	<i>Daphnia sp.</i>	Daphniidae	-	+
Total				0	1

Table 16.5: List of Odonates recorded in Nilgiris District (A - Marlimund Lake, B - Ooty Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B
1	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	+	-
2	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	+	-
3	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	-
4	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	-
5	Crimson Tailed Marsh Hawk	<i>Orthetrum pruinosum</i>	Libellulidae	Common	+	-
6	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	-
7	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	-
Total					7	0

Table 16.6: List of Arachnida recorded in Nilgiris District (A - Marlimund Lake, B - Ooty Lake)

S. No	Common English Name	Scientific Name	Family	A	B
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-
Total				1	0

Table 16.7: List of Fishes recorded in Nilgiris District (A - Marlimund Lake, B - Ooty Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	-	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	-	+
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	+
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	-	+
5	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	+
6	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	-	+
7	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	+	+
8	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	-	+
9	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	-	+
10	Spiny eel	<i>Macrognathus pancalus</i>	Mastacembelidae	LC	-	+
11	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	-	+
12	Pool barb, Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	-	+
13	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	-	+
14	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	-	+
15	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	-	+
Total					1	15

Table 16.8: List of Birds recorded in Nilgiris District (A - Marlimund Lake, B - Ooty Lake)

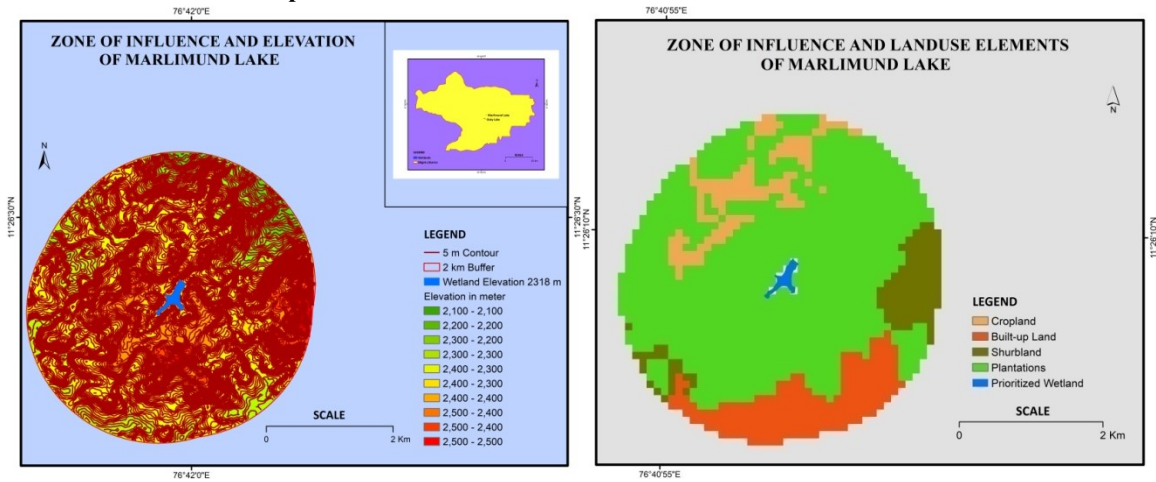
S. No	Common English Name	Scientific Name	Family	Category	A	B
1	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Least Concern	-	+
2	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	+	+
3	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	-	+
4	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	-	+
5	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	Least Concern	-	+
6	Common Moorhen	<i>Gallinula chloropus</i>	Rallidae	Least Concern	-	+
7	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	-	+
8	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae	Least Concern	-	+
9	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	-	+

10	White-spotted Fantail	<i>Rhipidura (albicollis) albogularis</i>	Rhipiduridae	Least Concern	+	+
11	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	+	+
12	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	-	+
13	Cinereous Tit	<i>Parus cinereus</i>	Paridae	Least Concern	-	+
14	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	-	+
15	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	Pycnonotidae	Least Concern	+	+
16	Square-tailed Bulbul	<i>Hypsipetes (leucocephalus) ganeesa</i>	Pycnonotidae	Least Concern	-	+
17	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	Least Concern	-	+
18	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	Least Concern	-	+
19	Greenish Warbler	<i>Phylloscopus trochiloides</i>	Phylloscopidae	Least Concern	+	+
20	Oriental White-eye	<i>Zosterops palpebrosus</i>	Zosteropidae	Least Concern	+	+
21	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	-	+
22	Indian Robin	<i>Saxicoloides fulicatus</i>	Muscicapidae	Least Concern	-	+
23	Nilgiri Flycatcher	<i>Eumyias albicaudatus</i>	Muscicapidae	Near Threatened	+	+
24	Grey-headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	Stenostiridae	Least Concern	+	+
25	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	-	+
26	House Sparrow	<i>Passer domesticus</i>	Passeridae	Least Concern	+	+
27	Yellow Wagtail	<i>Motacilla flava</i>	Motacillidae	Least Concern	-	+
Total					9	27

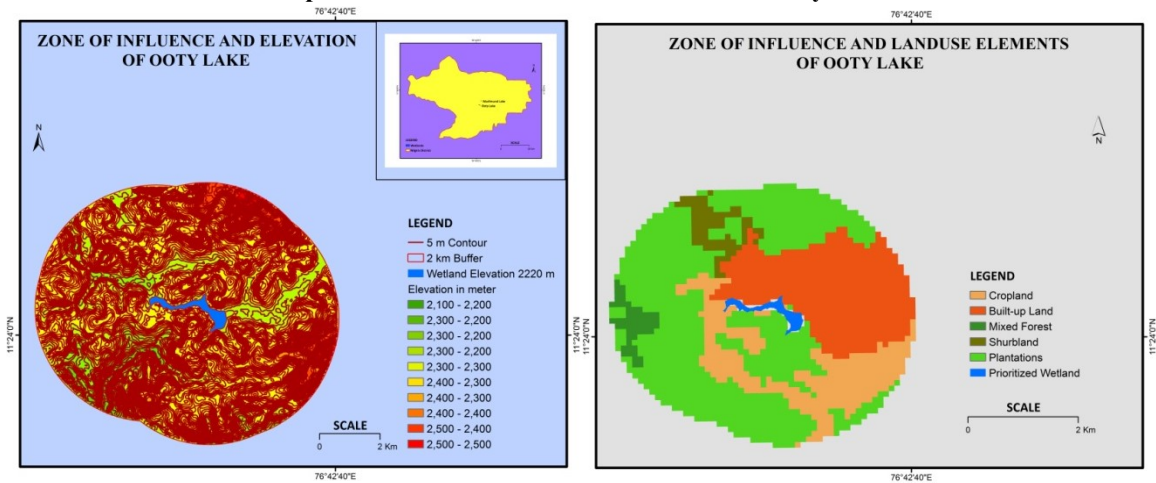
Table 16.9: List of Mammals recorded in Nilgiris District (A - Marlimund Lake, B - Ooty Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	-
2	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+
3	Bonnet Macaque	<i>Macaca radiata</i>	Cercopithecidae	Least Concern	-	+
Total					2	2

Map 16.2: Zone of Influence around the Marlimund Lake.



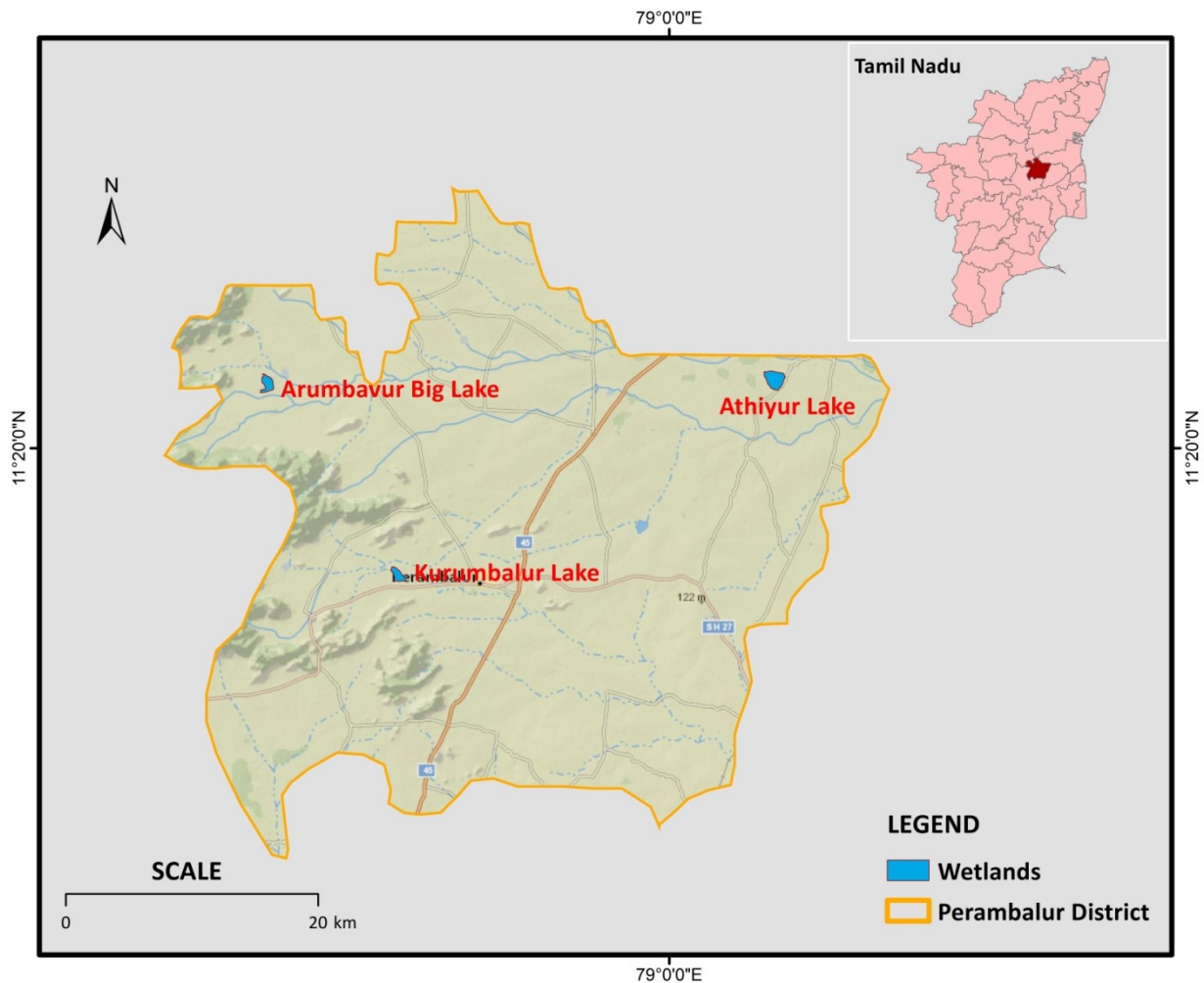
Map 16.3: The zone of influence around the Ooty Lake.



17. Perambalur District

Perambalur district is located at the centre of the state. The district is bounded by Cuddalore district in the north, Tiruchirappalli district in the south, Ariyalur in the east and Namakkal and Tiruchirappalli districts in the west. The district was initially carved out of Tiruchirappalli district during 1995 and again divided into Perambalur and Ariyalur in 2007. The district lies in the Southern plateau & hill zone of Agro-climate regional planning with characteristics of semi arid climate. The soil is predominantly red loamy and black soil. It is an inland district without coastal line. The district has Vellar river in the North and it has well marked natural divisions. The Pachamalai hill situated on the North boundary of Perambalur is the most important hill in the district.

The district has an area of 1,757 Sq.Km. The district has Vellar river in the North and it has well marked natural divisions. Of the three wetlands selected in the district, Athiyur is the largest while Kurumbalur is the smaller of the three wetlands (Map 17.1).



Map 17.1: Wetlands of Perambalur district assessed for Prioritization

Arumbavur Big Lake

Arumbavur Big Lake (Plate 17) is based in Veppanthattai taluka in Perambalur district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Arumbavur.

The geographic coordinates are Latitude: 11° 22'27.8" N; 11° 22'27.1" N; 11° 22'26.8" N; 11° 22'26.2" N; and Longitude: 078° 42'54.4" E; 078° 42'46.3" E; 078° 42'41.9" E; 078° 42'50.3" E

Arumbavur Big Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, and overflow of Sengatpatti Dam. The water from the wetland helps in replenishing the groundwater and the overflow joins the agriculture fields and Sittheri lake and Tolatur lake. The lake has an area of 92.5 hectares with an average depth of 2.5 meters. The wetland is surrounded by 5 % Forest, 15% Rural Settlements, 75% Agricultural lands and 05% Grasslands/scrublands. It has an area of 2130.34 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 17.2).

The wetland water characteristics was not known as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 36 plant species (Table 17.1) including eight invasive species including *Prosopis juliflora*, *Accacia indica*, and *Ipomoea sp.* The fauna comprised of 42 animal species including three domestic species were recorded during the survey (Table 17.2 to 17.10). Tilapia and common carps were reported to exist by the locals. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. Whenever the water is present, fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The commercial fishery is under the contract of the PWD, who introduces the fish seeds. There is mining for sand or silt undertaken with the permission of the PWD. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure, water scarcity, encroachment and garbage dumping. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not is not a Protected Area and faces a severe threat from landuse change.

AthiyurLake

Athiyur lake (Plate 18) is based in Perambalur district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Athiyur, Ovalur, Pudhupetai, Kudikkadu, Agaramsegur.

The geographic coordinates are Latitude: 11° 23'10.9" N; 11° 23'13.6" N; 11° 23'14.6" N; 11° 23'15.4" N; and Longitude: 079° 04'53.9" E; 079° 04'45.2" E; 079° 04'40.1" E; 079° 04'36.6" E.

Athiyur Lake is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, and overflow of Vellar river system. The water from the wetland helps in replenishing the groundwater and the overflow joins the agriculture fields and Kapparanur lake, Keelmuthur lake and Vayalur lake. The lake has an area of 173 hectares with an average depth of 2 meters. The wetland is surrounded by 15% Rural Settlements, 75%

Agricultural lands and 10% Grasslands/scrublands. It has an area of 2183.5 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 17.3).

The wetland was Eutrophic during the visit, with the pH of the water being 8.7, salinity measuring 1.178 ppt, the TDS was recorded high at 316 ppm. The vegetation comprised of 41 plant species (Table 17.1) including 12 invasive species including *Prosopis juliflora*, *Lantana camara* and *Ipomoea sp.* The fauna comprised of 47 animal species were recorded during the survey (Table 17.2 to 17.10). Threatened species of birds were not observed but two threatened species of fish were reported during the survey. Tilapia and common carps were reported by the locals. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. Whenever the water is present, fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The commercial fishery is under the contract of the PWD, who introduces the fish seeds. There is mining for sand or silt undertaken with the permission of the PWD. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has major temples along its vicinity and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure, water scarcity, encroachment and garbage dumping. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not is not a Protected Area and faces a severe threat from landuse change mainly due to solid waste dumping.

Kurumbalur Lake

Kurumbalur Lake (Plate 18) is based in Peramburtaluka in Perambur district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Kurumballor.

The geographic coordinates are Latitude: 11° 14'46.5" N; 11° 14'52.8" N; 11° 14'55.3" N; and Longitude: 078° 48'04.4" E; 078° 48'06.8" E; 078° 48'08.9" E.

Kurumbalur Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, and overflow of Ladapurameri. The water from the wetland helps in replenishing the groundwater and the overflow joins the agriculture fields and Senjerieri. The lake has an area of 74.2 hectares with an average depth of 2 meters. The wetland is surrounded by 10% Rural Settlements and 90% Agricultural lands. It has an area of 2015 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 17.4).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 36 plant species (Table 17.1) including seven invasive species including *Prosopis juliflora*, *Parthenium hysterophorus* and *Lantana camara*. The fauna comprised of 21 animal species including three domestic species were recorded during the survey (Table 17.2 to 17.10). Tilapia and common carps were reported to exist by the locals. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. Whenever the water is present, fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The commercial fishery is under the

contract of the PWD, who introduces the fish seeds. There is mining for sand or silt undertaken with the permission of the PWD. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has major temples along its vicinity and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure, water scarcity, encroachment and garbage dumping. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not is not a Protected Area and faces a severe threat from landuse change mainly due to solid waste dumping.

Table 17.1: List of Plants recorded in Perambalur District (A - Arumbavur Big Lake, B - Athiyur Lake, C - Kurumbalur Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	Mexican Prickly Poppy	<i>Argemone mexicana</i>	Papaveraceae	Invasive	NA	-	+	-
2	---	<i>Abelmoschus angulosus</i>	Malvaceae	Native	NA	-	+	-
3	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	+	-
4	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	-	+	+
5	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	+
6	Indian Plum	<i>Ziziphus mauritiana</i>	Rhamnaceae	Native	NA	-	+	-
7	Siris Tree, Women's tongue	<i>Albizia lebbbeck</i>	Fabaceae	Native	NA	+	+	-
8	Wild Tamarind	<i>Leucaena leucocephala</i>	Fabaceae	Invasive	NA	-	+	-
9	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	-	+	+
10	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
11	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	-	+	-
12	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	+
13	Bitter Apple, Colocynth,	<i>Citrullus colocynthis</i>	Cucurbitaceae	Native		-	+	-
14	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	-	+	+
15	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	+	+	-
16	Chay Root, Indian madder	<i>Oldenlandia umbellata</i>	Rubiaceae	Native		-	+	-
17	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	-	+	+
18	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	+	-
19	Needle Bush	<i>Azima tetracantha</i>	Salvadoraceae	Native	NA	+	+	-
20	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+
21	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	-	+	+
22	Kidney leaf morning glory	<i>Merremia emarginata</i>	Convolvulaceae	Native	LC	+	+	-
23	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	-	+	-
24	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	-	+	-
25	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	-	+	-
26	Hoary Basil,	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	-	+	-
27	Teak	<i>Tectona grandis</i>	Lamiaceae	Native	NA	-	+	-
28	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	-	+	+
29	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	-	+	+
30	Calico Plant	<i>Alternanthera ficoidea</i>	Amaranthaceae	Introduced		-	+	-
31	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	+	+	+
32	Sessile Joyweed	<i>Alternanthera sessilis</i>	Amaranthaceae	Native	LC	+	+	+
33	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	-	+	-
34	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	-	+	-
35	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+
36	Psychic Nut	<i>Jatropha curcas</i>	Euphorbiaceae	Invasive	NA	-	+	-
37	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	-
38	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	+	+	+
39	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	-	+	-
40	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	-	+	-
41	Water Clover	<i>Marsilea quadrifolia</i>	Marsileaceae	Native	LC	-	+	-
Total						15	41	15

Table 17.2: List of Insects recorded in Perambalur District (A - Arumbavur Big Lake, B - Athiyur Lake, C - Kurumbalur Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Blister Beetle	<i>Hycleus sp.</i>	Meloidae	+	-	-
2	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	-	-
3	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	+	+	-
1	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	+	-
2	Whirligig Beetle	<i>Gyrinus sp.</i>	Gyrinidae	-	+	-

4	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	-	+	-
5	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	-	+	-
Total				3	5	0

Table 17.3: List of Butterflies recorded in Perambalur District (A - Arumbavur Big Lake, B - Athiyur Lake, C - Kurumbalur Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Lime Butterfly	<i>Papilio demoleus</i>	Papilioninae	Common	-	-	+
2	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	-	-	+
3	Common Emigrant	<i>Catopsilia pomona</i>	Coliadinae	Common	-	-	+
4	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	-	+	+
5	Small Salmon Arab	<i>Colotis amata</i>	Pierinae	Common	-	-	+
6	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	-	-	+
7	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+
Total					1	2	7

Table 17.4: List of Odonates recorded in Perambalur District (A - Arumbavur Big Lake, B - Athiyur Lake, C - Kurumbalur Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	-	+	-
2	Pigmy Dartlet	<i>Agriocnemis pygmaea</i>	Coenagrionidae	Common	-	+	-
3	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	+	-
4	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+
5	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+
6	Coral-Tailed Cloud Wing	<i>Tholymis tillarga</i>	Libellulidae	Common	-	+	-
Total					2	6	2

Table 17.5: List of Arachnida recorded in Perambalur District (A - Arumbavur Big Lake, B - Athiyur Lake, C - Kurumbalur Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	-	+	-
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	+	-
Total				0	2	0

Table 17.6: List of Fishes recorded in Perambalur District (A - Arumbavur Big Lake, B - Athiyur Lake, C - Kurumbalur Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	-	+	-
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	-	+	-
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	+	-
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	-	+	-
5	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	+	-
6	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	-	+	-
7	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	-	+	-
8	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	-	+	-
9	Catla	<i>Catla catla</i>	Cyprinidae	LC	-	+	-
10	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	-	+	-
11	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	-	+	-
Total					0	11	0

Table 17.7: List of Amphibians recorded in Perambalur District(A - Arumbavur Big Lake, B - Athiyur Lake, C - Kurumbalur Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	LC	-	+	-
Total					0	1	0

Table 17.8: List of Reptiles recorded in Perambalur District (A - Arumbavur Big Lake, B - Athiyur Lake, C - Kurumbalur Lake)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	+	+	-
3	Snake Skink	<i>Lygosoma punctatus</i>	Scincidae	Least Concern	+	-	-
Total					3	2	1

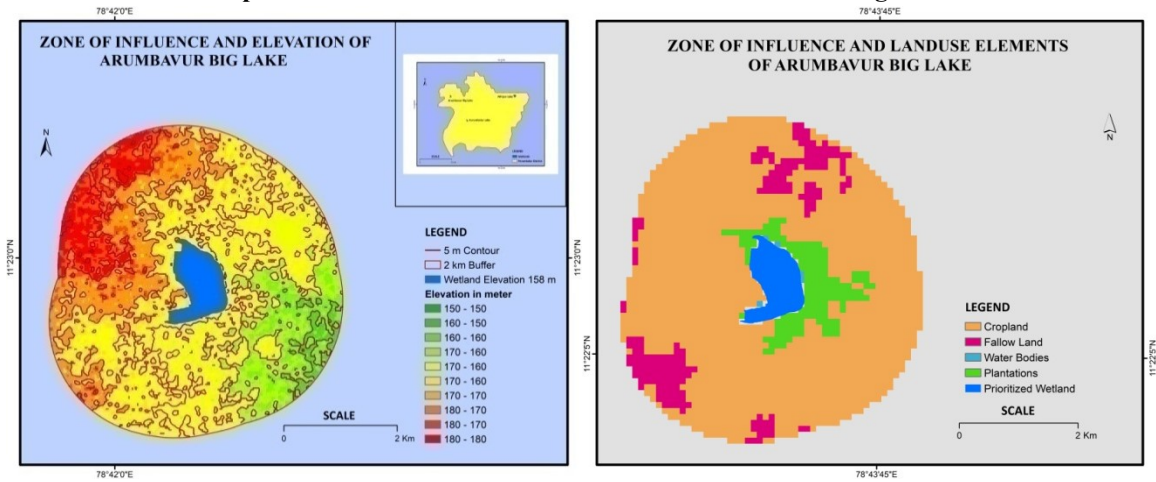
Table 17.9: List of Birds recorded in Perambalur District (A - Arumbavur Big Lake, B - Athiyur Lake, C - Kurumbalur Lake)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C
1	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Least Concern	+	-	+
2	White-eyed Buzzard	<i>Butastur teesa</i>	Accipitridae	Least Concern	+	-	-
3	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	-	-
4	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	+	-	-
5	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Columbidae	Least Concern	+	-	-
6	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	-	-
7	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	+	-
8	Jacobin Cuckoo	<i>Clamator jacobinus</i>	Cuculidae	Least Concern	+	+	-
9	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	Least Concern	+	-	-
10	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	-	+
11	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Least Concern	+	-	-
12	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	+	-	-
13	Black Drongo	<i>Dicrurus macrocerus</i>	Dicruridae	Least Concern	+	+	+
14	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
15	White-browed Bulbul	<i>Pycnonotus luteolus</i>	Pycnonotidae	Least Concern	+	-	-
16	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	Least Concern	+	-	-
17	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	+	-	-
18	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	Least Concern	+	-	-
19	Tawny-bellied Babbler	<i>Dumetia hyperythra</i>	Timaliinae	Least Concern	+	-	-
20	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
21	Indian Robin	<i>Saxicoloides fulicatus</i>	Muscicapidae	Least Concern	+	-	-
22	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	Least Concern	+	-	-
23	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	+	-	+
24	Loten's Sunbird	<i>Cinnyris lotenia</i>	Nectariniidae	Least Concern	+	-	-
Total					24	5	6

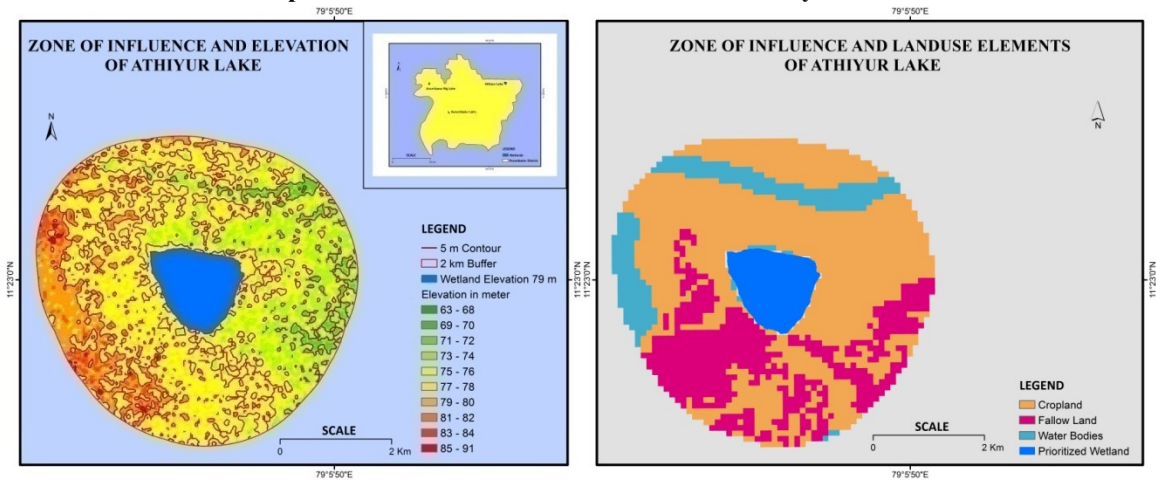
Table 17.10: List of Mammals recorded in Perambalur District

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	-
5	Spotted Deer	<i>Axis axis</i>	Cervidae	Least Concern	-	-	+
Total					4	4	4

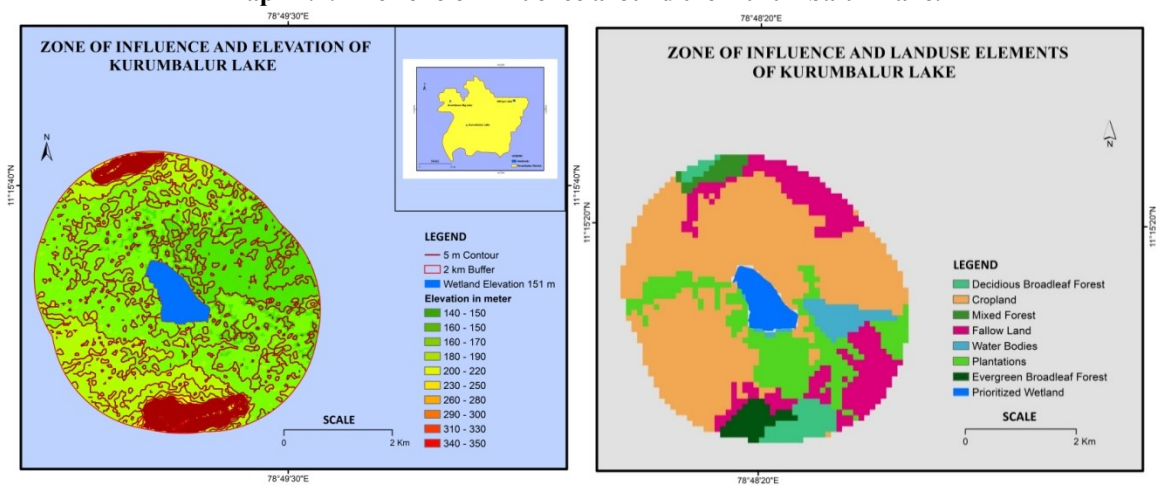
Map 17.2: The zone of influence around the Arumbavur Big Lake.



Map 17.3: The zone of influence around the Athiyur Lake.



Map 17.4: The zone of influence around the Kurumbalur Lake.

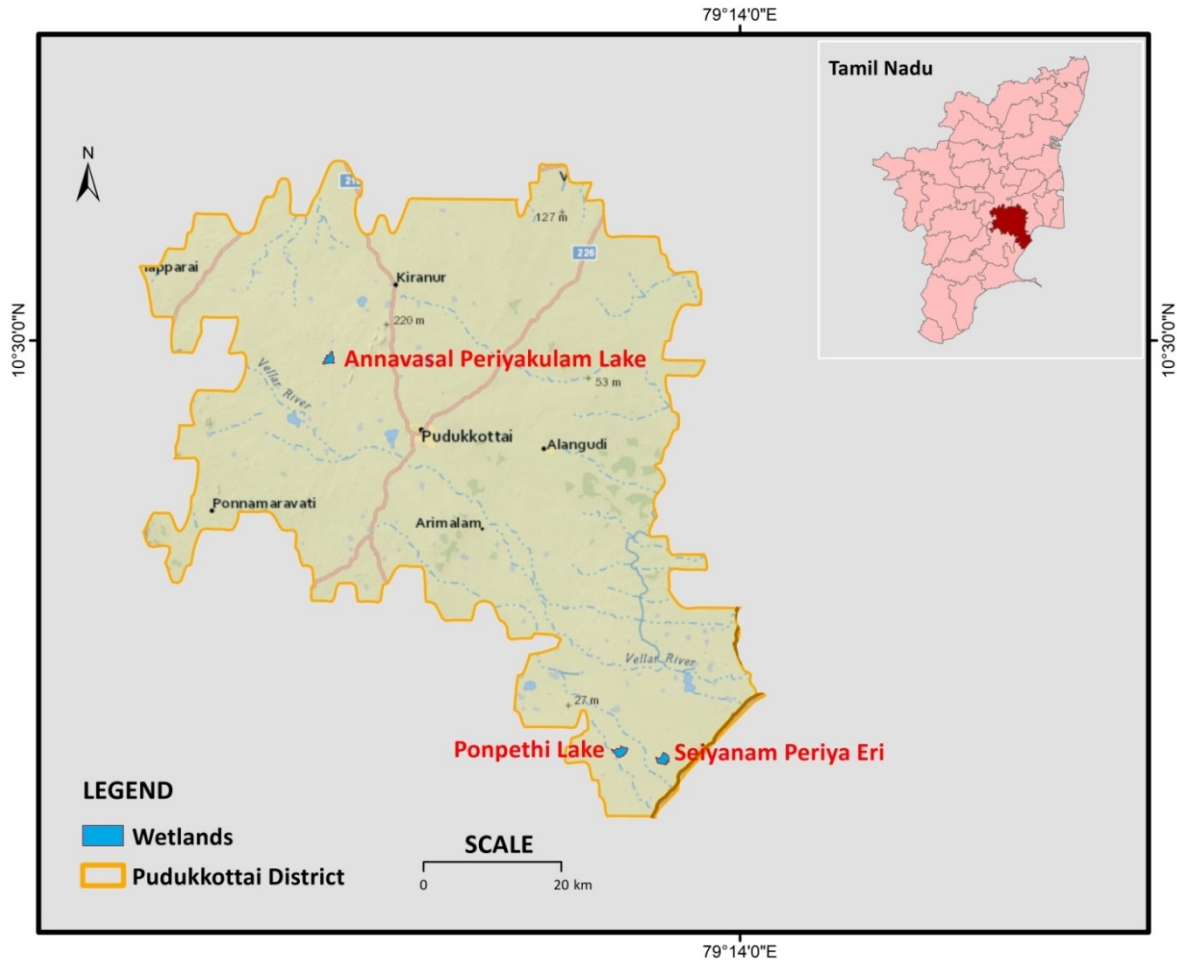


18. Pudukkottai District

Pudukkottai district is bounded by Tiruchirappalli district in the North and West, Sivaganga district in the South, Bay of Bengal in the East and Thanjavur district in the North East. Most of the part of this district lies in the coastal region. The coastal area extends 39 kms. The Western portion is 600 feet above mean sea level tapers towards the East and reaches the Sea level.

Pudukkottai district as one of the princely states of Tamil Nadu holds rich cultural heritage with Fortresses, Palaces, Temples, Cave Paintings and many other historical monuments. The Palaces, Fortress, Canals and Tanks built during the reign of ancient Tamil Kings are the place of interest. Besides, Temple in Avudayarkovil, Kudumiyanmalai, Chitthannavasal are very much prominent. There is a sacred place for Muslims at pallivasal and a Christian monument at Avur. Peacock sanctuary at Viralimalai, cave temples, temples built on the mountains are major tourism destinations.

Total geographic area of Pudukkottai is 4663 km². Total area under wetland is 72402 ha, which includes 1681 small wetland (<2.25 ha). Lakes/Ponds occupies 53.82% of wetland area. The second major wetland type is Tanks/Ponds. There are 2628 Tanks/Ponds with 26419 ha area (36.49%). Of the three wetlands selected in the district, Ponpethi is the largest while Annavasal Periyakulam is the smaller of the three wetlands (Map 18.1).



Map 18.1: Wetlands of Pudukkottai district assessed for Prioritization

Annavasal Periyakulam Lake

Annavasal Periyakulam Lake or Big lake (Plate 18) is based in Pudukkottai district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Annavasal, Velanchar, Keelakuruchi.

The geographic coordinates are Latitude: 10° 28'14.9" N; 10° 28'27.1" N; 10° 28'22.7" N; 10° 28'15.0" N; and Longitude: 078° 42'11.9" E; 078° 41'59.4" E; 078° 41'48.5" E; 078° 41'32.4" E.

Annavasal Periyakulam Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the ThiruvappurKavanmadu Kanmai. The lake has an area of 171 hectares with an average depth of 2.5 meters. The wetland is surrounded by 10% Rural Settlements, 10% Grasslands and 80% Agricultural lands. It has an area of 2476.15 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 18.2).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 14 plant species (Table 18.1) including nine invasive species including *Prosopis juliflora*, *Parthenium hysterophorus* and *Ipomoea sp.* The fauna comprised of 39 animal species including three domestic species were recorded during the survey (Table 18.2 to 18.10).

The water from the wetland is not used for drinking purpose. The Village Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure, water scarcity, encroachment and garbage dumping. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not is not a Protected Area and faces a severe threat from land use change and compromise in the quality of the water.

Ponpethi Lake

Ponpethi Lake (Plate 18) is based in Avudaiarkovil taluka in Pudukkottai district comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Ponpeti, Eddicheri, Pandimannayarkovil.

The geographic coordinates are Latitude: 09° 57'25.1" N; 09° 57'23.4" N; 09° 57'21.6" N; 09° 57'19.5" N; 09° 57'14.9" N; and Longitude: 079° 04'56.2" E; 079° 04'53.7" E; 079° 04'49.4" E; 079° 04'38.2" E; 079° 04'44.8" E.

Ponpethi Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the Peranureri. The lake has an area of 212 hectares with an average depth of 2.5 meters. The wetland is surrounded by 20% Rural Settlements and 80% Agricultural lands. It has an area of 2565.15 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 18.3).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.2, salinity measuring 0.055 ppt, the TDS was recorded high at 180 ppm. The vegetation comprised of 32 plant species (Table 18.1) including four invasive species including *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 69 animal species including 2

domestic species were recorded during the survey (Table 18.2 to 18.10). One Threatened species of bird was observed during the survey.

The water from the wetland is not used for drinking purpose. The Village Panchayat provides drinking water from the borewell water and Cauvery water at regular intervals that is used by the locals to fulfill their daily requirements. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has some temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure, water scarcity, encroachment and garbage dumping. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not is not a Protected Area and faces a severe threat from landuse change and compromise in the quality of the water.

SeiyanamPeriya Eri

Seiyanam Kanmai (Plate 19) also known as Seiyanam periya eri is based in Manamel taluka in Pudukkottai district is not a Protected Area and comes under the jurisdiction of PWD and revenue division. Villages that surround the wetland include Sayakudi, Melaendhal, keezhaembal.

The geographic coordinates are Latitude: 09° 56'44.1" N; 09° 56'45.0" N; 09° 56'44.9" N; 09° 56'42.2" N; 09° 56'51.1" N; and Longitude: 079° 07'48.3" E; 079° 07'49.8" E; 079° 07'52.3" E; 079° 07'58.2" E; 079° 07'81.3" E

Seiyanam Kanmai is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining ponds and goes into the sea. The lake has an area of 205 hectares with an average depth of 2.5 meters. The wetland is surrounded by 25% Forests and 75% Agricultural lands. It has an area of 2585.95 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 18.4).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.25, salinity measuring 0.123 ppt, the TDS was recorded high at 180 ppm. The vegetation comprised of 25 plant species (Table 18.1) including three invasive species including *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 57 animal species including 2 domestic species were recorded during the survey (Table 18.2 to 18.10).

The water from the wetland is not used for drinking purpose. The Village Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. Fishery is undertaken on tender basis as the wetland has water only for around 4 months. The wetland has one temple along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure with increasing agriculture activities. The wetland is used for agriculture by individuals from outside the villages around the wetland. The wetland water quality and the ecological character is changing rapidly.

The wetland is not is a bird sanctuary and not protected. The wetland faces a severe threat from landuse change and compromise in the quality of the water.

Table 18.1: List of Plants recorded in Pudukottai District (A - AnnavasalPeriyakulam Lake, B - Ponpethi Lake, C - SeiyanamPeriya Eri)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	East Indian Mallow, Jute,	<i>Corchorus aestuans</i>	Malvaceae	Native		-	+	-
2	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	-	+	-
3	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	-	+	-
4	Jackal Jujube	<i>Ziziphus oenopolia</i>	Rhamnaceae	Native	LC	-	+	-
5	Bush Grape	<i>Cayratia trifolia</i>	Vitaceae	Native	NA	-	+	-
6	Spherical Rattlepod	<i>Crotalaria globosa</i>	Fabaceae	Native		-	+	-
7	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
8	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	-	+	-
9	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	-	+	+
10	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	-	+	-
11	Blistering Ammannia	<i>Ammannia baccifera</i>	Lythraceae	Native	LC	-	+	-
12	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	-	+	-
13	Red fruit creeper	<i>Corallocarpus epigaeus</i>	Cucurbitaceae	Native	NA	-	+	-
14	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	-	+	-
15	East Indian Globe Thistle	<i>Sphaeranthus indicus</i>	Asteraceae	Native	LC	-	+	-
16	Needle Bush	<i>Azima tetracantha</i>	Salvadoraceae	Native	NA	-	+	-
17	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+
18	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	-	+	-
19	Indian cherry, Clammy cherry	<i>Cordia dichotoma</i>	Ehretiaceae	Native		-	+	-
20	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	+
21	Kidney leaf morning glory	<i>Merremia emarginata</i>	Convolvulaceae	Native	LC	-	+	+
22	Purple Fruited Pea Eggplant	<i>Solanum trilobatum</i>	Solanaceae	Native	NA	-	+	-
23	Large caltrops	<i>Pedalium murex</i>	Pedaliaceae	Native	NA	-	+	-
24	Long-flower Barleria	<i>Barleria acuminata</i>	Acanthaceae	Native	NA	-	+	-
25	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	-	+	-
26	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	-	+	-
27	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+
28	Glandular Jatropa	<i>Jatropha glandulifera</i>	Euphorbiaceae	Native	NA	-	+	-
29	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	-	+	-
30	Wild Date Palm	<i>Phoenix sylvestris</i>	Arecaceae	Native	NA	-	+	+
31	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	-	+	+
32	Water Clover	<i>Marsilea quadrifolia</i>	Marsileaceae	Native	LC	-	+	+
Total						4	32	9

Table 18.2: List of Insects recorded in Pudukottai District (A - AnnavasalPeriyakulam Lake, B - Ponpethi Lake, C - SeiyanamPeriya Eri)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	+	-
2	Cow bug	<i>Oxyrachis tarandus</i>	Membracidae	-	+	-
3	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	+	+	-
4	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	+	+
5	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	+	-
6	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	+	+
7	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	+
Total				4	7	3

Table 18.3: List of Butterflies recorded in Pudukottai District (A - AnnavasalPeriyakulam Lake, B - Ponpethi Lake, C - SeiyanamPeriya Eri)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Common Mormon	<i>Papilio polytes</i>	Papilioninae	Common	-	+	-
2	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	+	+	+
3	Common Emigrant	<i>Catopsilia pomona</i>	Coliadinae	Common	-	+	+

4	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+
5	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	-	+	+
6	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	-	+	+
7	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	+	-
8	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	+	+
9	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	+	+	-
10	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+
11	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	+	+	+
12	Peacock Pansy	<i>Junonia almana</i>	Nymphalinae	Common	-	+	+
13	Common Rose	<i>Pachliopta aristolochiae</i>	Nymphalidae	Common	+	-	-
14	Crimson Rose	<i>Pachliopta hector</i>	Nymphalidae	Common	+	-	+
15	Dark Grass Blue	<i>Zizeeriakar sandra</i>	Polyommatainae	Common	-	-	+
16	Yellow Pansy	<i>Junonia hierta</i>	Nymphalinae	Common	-	-	+
Total					9	12	12

Table 18.4: List of Odonates recorded in Pudukottai District (A - AnnavasalPeriyakulam Lake, B - Ponpethi Lake, C - SeiyannamPeriya Eri)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Coromandel Marsh Dart	<i>Ceriagrion coromandelianum</i>	Coenagrionidae	Common	-	+	-
2	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	+	-
3	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	-	+	+
4	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+
5	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	-	+	+
6	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+
7	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	-	-	+
8	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	-	-	+
Total					2	6	6

Table 18.5: List of Arachnida recorded in Pudukottai District (A - AnnavasalPeriyakulam Lake, B - Ponpethi Lake, C - SeiyannamPeriya Eri)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	-
Total				1	0	0

Table 18.6: List of Fishes recorded in Pudukottai District (A - AnnavasalPeriyakulam Lake, B - Ponpethi Lake, C - SeiyannamPeriya Eri)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	+	+
2	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	-	+	+
3	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	-	+	+
4	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	-	+	-
5	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	-	+	-
6	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	-	+	-
7	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	-	-	+
8	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	-	-	+
9	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	-	+
10	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	-	-	+
Total					0	6	7

Table 18.7: List of Amphibians recorded in Pudukottai District (A - AnnavasalPeriyakulam Lake, B - Ponpethi Lake, C - SeiyannamPeriya Eri)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Indian Pond Frog	<i>Euphlyctis hexadactylus</i>	Dicroglossidae	LC	-	+	-
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	LC	-	-	+
Total					0	1	1

Table 18.8: List of Reptiles recorded in Pudukottai District (A - AnnavasalPeriyakulam Lake, B - Ponpethi Lake, C - SeiyanamPeriya Eri)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	-	+	-
Total					1	2	1

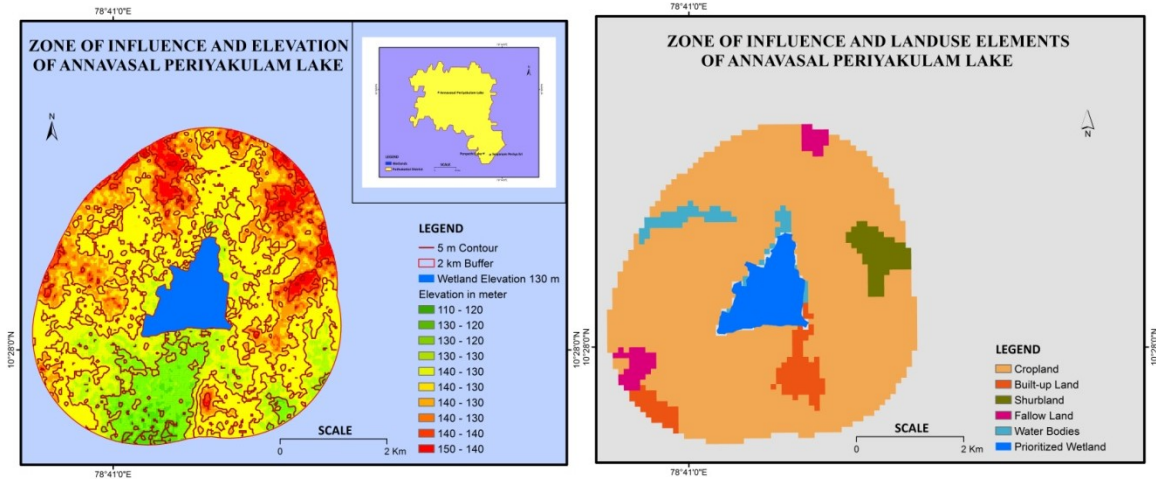
Table 18.9: List of Birds recorded in Pudukottai District (A - AnnavasalPeriyakulam Lake, B - Ponpethi Lake, C - SeiyanamPeriya Eri)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C
1	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Least Concern	-	+	+
2	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	-	+	+
3	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	-	+	-
4	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	Near Threatened	-	+	-
5	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	-	+	+
6	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	-	+	-
7	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	Least Concern	-	+	+
8	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	+	-
9	Great Egret	<i>Casmerodius albus</i>	Ardeidae	Least Concern	-	+	-
10	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	-	+	-
11	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	-	+	+
12	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	-	+	+
13	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	-	+	-
14	Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>	Charadriidae	Least Concern	+	+	-
15	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	+
16	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Columbidae	Least Concern	+	+	+
17	Spotted Dove	<i>Streptopelia chinensis</i>	Columbidae	Least Concern	+	+	+
18	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	-	+	-
19	Jacobin Cuckoo	<i>Clamator jacobinus</i>	Cuculidae	Least Concern	-	+	-
20	Asian Koel	<i>Eudynamis scolopaceus</i>	Cuculidae	Least Concern	-	+	+
21	Blue-faced Malkoha	<i>Rhopodytes viridirostris</i>	Cuculidae	Least Concern	-	+	-
22	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	Least Concern	-	+	+
23	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	-	+	+
24	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	Least Concern	-	+	-
25	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	Least Concern	-	+	-
26	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+
27	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
28	Jerdon's Bushlark	<i>Mirafra affinis</i>	Alaudidae	Least Concern	-	+	-
29	Ashy-crowned Sparrow-lark	<i>Eremopterix griseus</i>	Alaudidae	Least Concern	+	+	-
30	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Least Concern	-	+	-
31	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	+	+	-
32	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
33	Chestnut-bellied Sandgrouse	<i>Pterocles exustus</i>	Pteroclididae	Least Concern	+	-	-
34	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	-	-
35	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Least Concern	+	-	-
36	Blue-tailed Bee eater	<i>Merops philippinus</i>	Meropidae	Least Concern	+	-	-
37	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	+	-	-
38	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	Least Concern	+	-	-
39	Paddyfield Pipit	<i>Anthus rufulus</i>	Motacillidae	Least Concern	+	-	-
40	Black Kite	<i>Milvus migrans</i>	Accipitridae	Least Concern	-	-	+
41	Laughing Dove	<i>Stigmatopelia senegalensis</i>	Columbidae	Least Concern	-	-	+
42	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae	Least Concern	-	-	+
43	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	-	-	+
44	Brahminy Starling	<i>Sturnia pagodarum</i>	Sturnidae	Least Concern	-	-	+
45	Oriental Magpie Robin	<i>Copsychus saularis</i>	Muscicapidae	Least Concern	-	-	+
46	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	-	-	+
Total					17	32	22

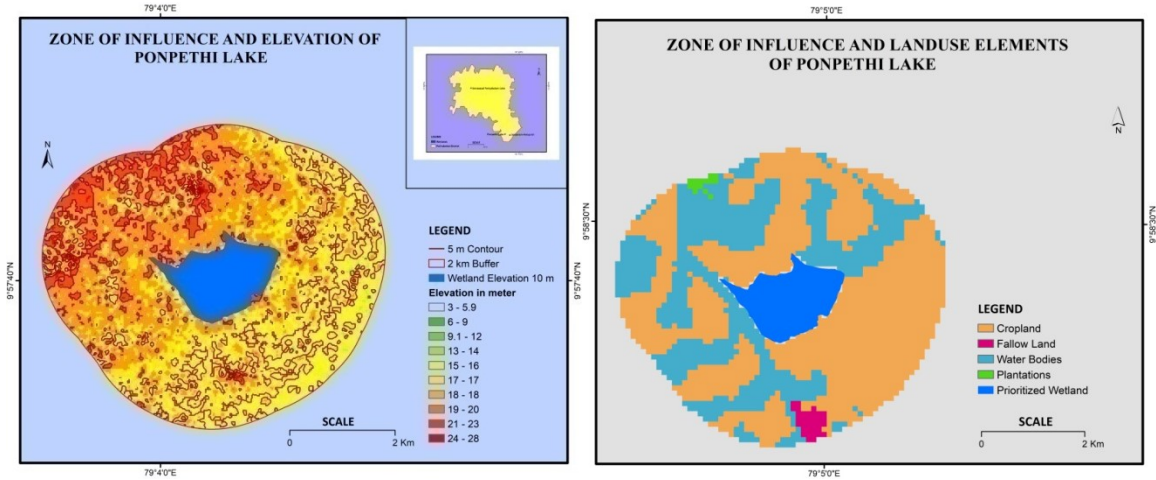
Table 18.10: List of Mammals recorded in Pudukottai District (A - AnnavasalPeriyakulam Lake, B - Ponpethi Lake, C - SeiyanamPeriya Eri)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	-	-
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+
4	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	+	-	-
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+
Total					5	3	3

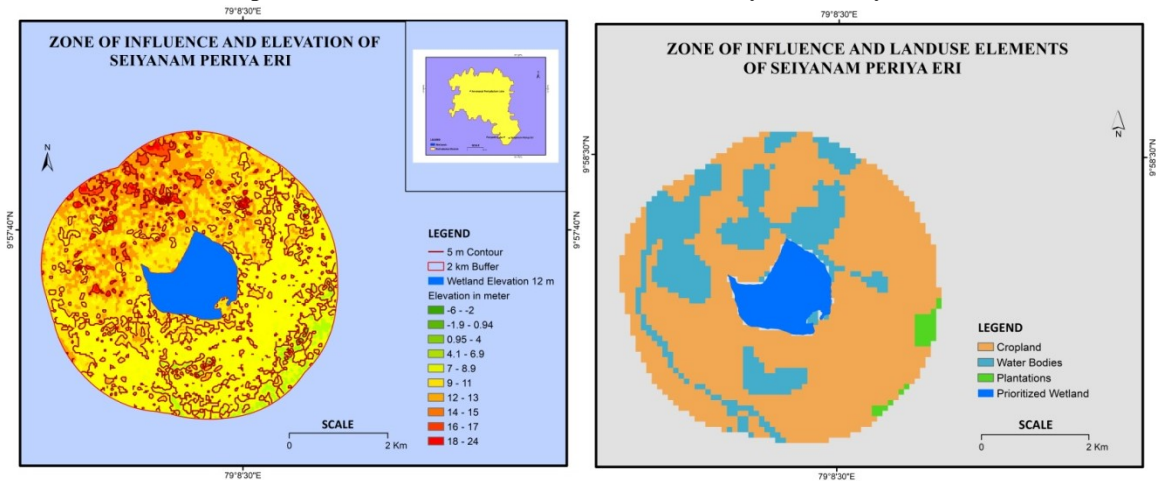
Map 18.2: The zone of influence around the Annavasal Periyakulam Lake.



Map 18.3: The zone of influence around the Ponpethi Lake.



Map 18.4: The zone of influence around the Seiyanam Periya Eri.

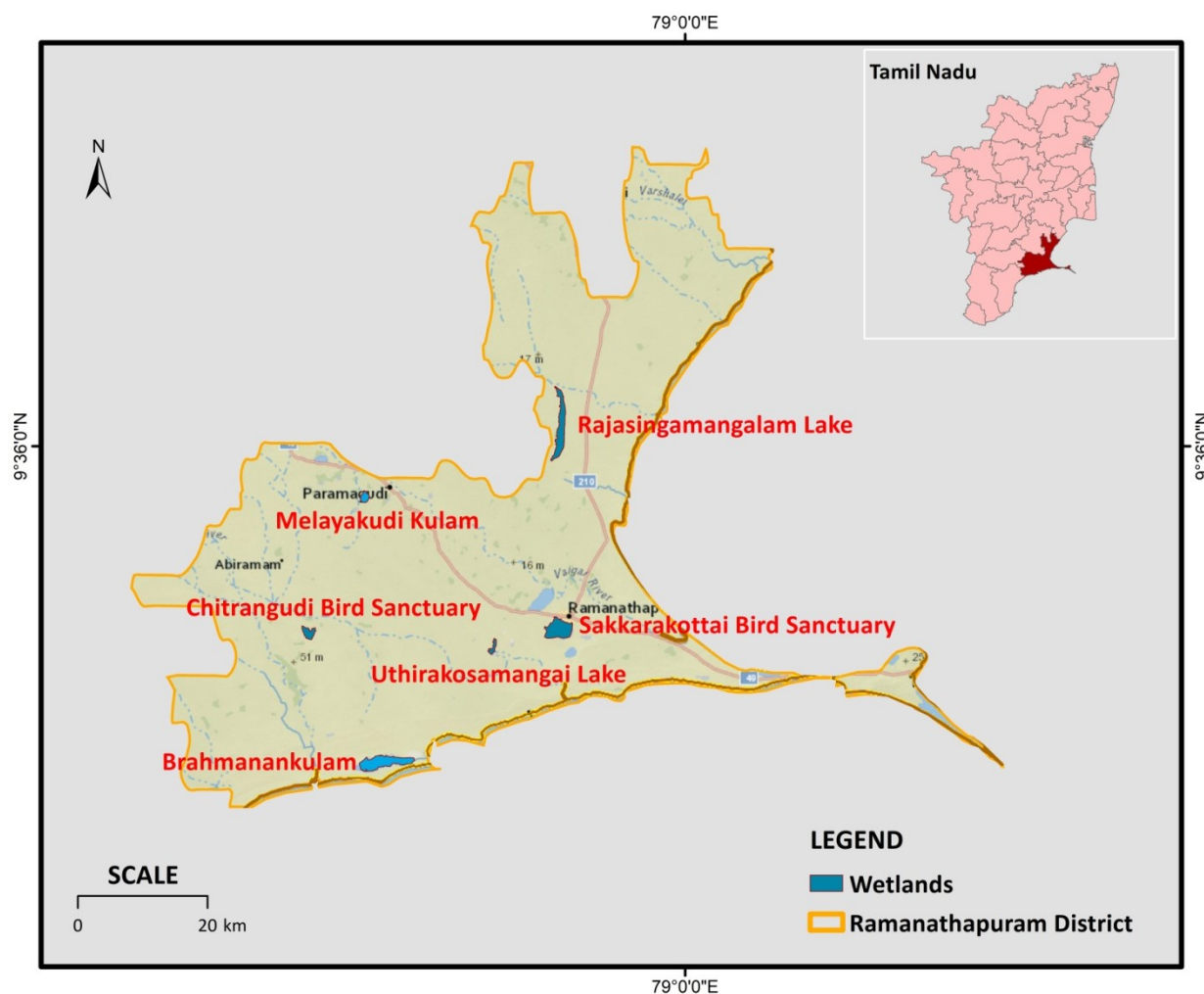


19. Ramanathapuram District

Ramanathapuram has been under the rule of the Nayakas, Pandiyan and Chola dynasties. It has also been ruled by the Marathas, the Mughals and the British until Independence. This district is bound by Virudunagar and Tuticorin districts in the West and Sivagangai and Pudukkottai districts in the North. On the East and South, the boundaries are Palk Bay and the Gulf of Mannar. The district contains the Indian portion of Rama's Bridge, an east-west chain of low islands and shallow reefs that extend between India and the island nation of Sri Lanka, and separate the Palk Strait from the Gulf of Mannar. Total geographic area of Ramanathapuram is 4089.57 km². This district lies between 9° 05' and 9° 50' Northern latitudes 78° 10' and 79° 27' Eastern longitudes.

Ramanathapuram is close to Rameswaram and Devipattinam, both important pilgrimage centres. The Ervadi dargah is a major Islamic pilgrimage centre located 27 km from Ramanathapuram where Muslims from across the world come. Rameswaram is a holy place known to Hindus as a centre of pilgrimage for Shiva and Rama.

Total area under wetland is 73808 ha, which includes 1232 small wetland (<2.25 ha). Lakes/Ponds occupies 56.99% of wetland area. The second major wetland type is Tanks/Ponds. There are 1030 Tanks/Ponds with 12036 ha area (16.31%). Six wetlands selected in the district of which, Brahmanankulam is the largest while Uthira kosamangai Lake is the smallest (Map 19.1).



Map 19.1: Wetlands of Ramanathapuram district assessed for Prioritization

Bramanan Kulam

Bramanan Kulam (Plate 19) is based in Kadaladi taluka in Ramanathapuram district. The wetland is a not a Protected Area, but it is under the control of the Salt pan board. Villages that surround the wetland include Melakadar, S. Mariyur.

The geographic coordinates are Latitude: 09° 09'12.0" N; 09° 09'55.0" N; 09° 10'17.3" N; 09° 10'29.0" N; and Longitude: 078° 32'14.0" E; 078° 38'11.4" E; 078° 38'02.7" E; 078° 38'11.7" E.

Bramanan Kulam is a wetland that belongs to the Manmade (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and from the Selvantur forest area and the adjoining sea (Gulf of Mannar). The water is used in the extraction of salt. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining ponds and goes into the sea. The lake has an area of 1161 hectares with an average depth of 1 meters. The wetland is surrounded by 10% Forests, 10 % Industries and 80% Saltpans. It has an area of 5165.33hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 19.2).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.2, salinity measuring 2.8 ppt, the TDS was recorded high at 3675 ppm. The vegetation comprised of 6 plant species (Table 19.1) including two invasive species including *Prosopis juliflora* and *Parthenium hysterophorus*. The fauna comprised of 39 animal species including 2 domestic species were recorded during the survey (Table 19.2 to 19.11). One Threatened bird specie of was observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The village has open dug wells and borewells for their regular needs. The salt pan is one of the livelihood for locals.Extraction of salt is under the government control and a private company. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland provides a suitable habitat for birds as we also recorded the local and migratory bird species during our survey.

The wetland does not show major change in the pattern of water inflow and outflow. There is no organized fishing activity.The change in the land use will affect the livelihood of the locals and the habitat for birds. The wetland is under the supervision of Salt Pans board.

Chitrangudi Bird Sanctuary

Chitrangudi Bird Sanctuary and Chitrangudi Lake (Plate 19) comes under the jurisdiction of Tamil Nadu Forest Department.Villages that surround the wetland include Chitrangudi, Poonghanpulli, ErachiKulam, KeelakanchanaKulam.

The geographic coordinates are Latitude: 09° 19'59.7" N; 09° 19'57.8" N; 09° 19'55.6" N; 09° 19'54.7" N; 09° 19'54.1"N and Longitude: 078°28'33.3"E; 078°28'36.7" E; 078°28'40.7" E; 078° 28'45.7" E; 078° 28'51.0" E

Chitrangudi Lake is a wetland that belongs to the Manmade (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and from the Vaigai river and Gundaru river.The water also helps in replenishing the groundwater. The lake has an area of 231 hectares with an average depth of 1.5 meters. The wetland is surrounded by 30%

Forests, 60 % Agriculture, 5% Rural Settlements and 5% Grasslands / Scrublands. It has an area of 2698.93 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 19.3).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.5, salinity measuring 0.174 ppt, the TDS was recorded high at 2060 ppm. The vegetation comprised of 35 plant species (Table 19.1) including ten invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 78 animal species including One domestic species were recorded during the survey (Table 19.2 to 19.11). One Near Threatened bird species of was observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The village has open dug wells and borewells for their regular needs. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Grazing by the cattle is undertaken. The wetlands receive good population of Nature enthusiast as tourist to the Bird Sanctuary. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The forest department undertakes regular desiltation activities during the summer season to maintain the depth of the lake.

The wetland does not show major change in the pattern of water inflow and outflow. There are a few invasive plant species that are changing the habitat of the wetland. There is no organized fishing activity. The wetland faces a major threat from lack of water availability due to scarcity of rains.

The wetland is declared as sanctuary and received protection and conservation from the forest department.

Melayakudi Kulam

Melayakudi Kulam is also known as Kattaparambukudi Kanmai (Plate 19) is based in Paramagudi taluka in Ramanathapuram district. The wetland is a not a Protected Area comes under the jurisdiction of PWD. Villages that surround the wetland include Melayakudi.

The geographic coordinates are Latitude: 09° 32'35.8" N; 09° 32'36.0" N; 09° 32'32.3" N; and Longitude: 078° 34'11.7" E; 078° 34'05.7" E; 078° 34'04.0" E.

Melayakudi Kulam is a wetland that belongs to the Manmade (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and from the Vaigai river. The water also helps in replenishing the groundwater. The lake has an area of 167 hectares with an average depth of 1.5 meters. The wetland is surrounded by 10% Forests, 85 % Agriculture and 5% Construction activities. It has an area of 2288.29 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 19.4).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 12 plant species (Table 19.1) including three invasive species including *Prosopis juliflora*. The fauna comprised of 21 animal species were recorded during the survey (Table 19.2 to 19.11).

The water from the wetland is not used for drinking purpose. The village has open dug wells and borewells for their regular needs. The municipality provides the Cauvery water for the regular needs. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall.

The wetland does not show major change in the pattern of water inflow and outflow. The change in the land use will affect the livelihood of the locals and the habitat for birds. The wetland has faced drought situation for the past three years and the land use pattern is changing.

The wetland is not a Protected Area and faces a severe threat from land use change and compromise in the quality of the water.

Rajasingamangalam Lake

Rajasingamangalam lake commonly known as R.S. Mangalam Lake (Plate 20), also known as Periya Kanamai and Varavani Lake. Rajasingamangalam Lake was conceived as a balancing reservoir to store the flood flows of the Vaigai. This tank connects both the Vaigai and Sarugani rivers and is capable of absorbing floods from both the rivers and designed to feed 72 smaller tanks. Villages that surround the wetland include Rajasingamangalam, Pullamadai, Potthar Devan Kottai, Varavani Alagu Devan Kottai, Thumbadaikakottai. The wetland is not a Protected area and comes under the jurisdiction of PWD.

The geographic coordinates are Latitude: 09° 38'13.6" N; 09° 38'13.2" N; 9° 38'05.4" N; 9° 38'14.7" N and Longitude: 078° 49'55.8" E; 078° 49'59.8" E; 078° 49'59.4" E; 078° 50'00.2" E

R.S. Mangalam Lake is a wetland that belongs to the Manmade (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and the channel connecting the Vaigai river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 1002 hectares with an average depth of 1.5 meters. The wetland is surrounded by 10% Grasslands, 70 % Agriculture and 20% Rural settlements. It has an area of 6345.39 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 19.5).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 31 plant species (Table 19.1) including nine invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 36 animal species including 3 domestic species were recorded during the survey (Table 19.2 to 19.11).

The water from the wetland is not used for drinking purpose as the water is present for brief period. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Grazing by the cattle and sheep is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There is high-tension wires passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment and excessive solid waste dumping. The wetland has been facing drought condition for the past 5 years.

The wetland is not included in any of the protection and conservation categories. Unplanned development and increasing sewage and effluents are a major threat that needs to be regulated. These activities although have spread all around the wetland should remain limited as it can adversely affect the wetland functions as well as disturb the habitat of the birds.

Sakkarakottai Bird Sanctuary

Sakkarakottai Bird Sanctuary also known as Sagarakottai Periyakanamai Lake (Plate 20) comes under the jurisdiction of PWD Ramanathapuram division but the bird sanctuary is with the forest department. The wetland is a Protected

Area as it has been declared a Bird Sanctuary during 2016. Villages that surround the wetland include Sagarakottai, Rajasurya Madai, Amman Kovil, Pasuvonnagar, DevarNagar, MSK Nagar, Pallkarai, Vannikudi.

The geographic coordinates are Latitude: 09° 20'12.5" N; 09° 20'05.3" N; 09° 20'02.8" N; 09° 20'01.0" N; and Longitude: 078° 50'25.7" E; 078° 50'17.8" E; 078° 50'03.2" E; 078° 49'53.9" E.

Sagarakottai Bird Sanctuary is a wetland that belongs to the Manmade (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area and from the Vaigai river. The water from the wetland helps in replenishing the groundwater. The lake has an area of 977 hectares with an average depth of 3 meters. The wetland is surrounded by 10 %Forest, 10% Grasslands, 70 % Agriculture and 10% Rural settlements. It has an area of 3926.26hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 19.6).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 63 plant species (Table 19.1) including nine invasive species including *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The forest department has permitted the locals to undertake agriculture activities to control the spread of invasives. The fauna comprised of 33 animal species including 3 domestic species were recorded during the survey (Table 19.2 to 19.11). One near Threatened specie of birds were observed during the survey.

The water from the wetland is not used for drinking purpose. However, three wells are dug in the wetland from which the drinking water is extracted. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Grazing by the cattle is undertaken. Fishery is undertaken without any permissions, recreational fishery is also practiced whenever water is available. But there has been a drought for nearly 5 years. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. Recently it has been declared as a sanctuary hence it is expected that the wetland will be used for tourism.

The wetland does not show major change in the pattern of water inflow and outflow. The pollution in the form of sewage, effluents, solid waste dumping and encroachment activities is seen but it is low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland.

The wetland is declared as sanctuary during 2016 and received protection and conservation from the forest department.

Uthirakosamangai Lake

Uthirakosamangai Kanmai (Plate 20) is based in Ramanathapuram district comes under the jurisdiction of PWD and is not a Protected area. Villages that surround the wetland include Uthirakosamangai.

The geographic coordinates are Latitude: 09° 19'03.6" N; 09° 18'57.9" N; 09° 18'55.0" N; 09° 18'53.6" N and Longitude: 078° 44'09.8" E; 078° 44'09.6" E; 078° 44'06.9" E; 078° 44'02.6" E

Uthirakosamangai Kanmai is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and the channel connecting the Vaigai river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the Kallari lake. The lake has an area of 128 hectares with an average depth of 2.5 meters. The wetland is surrounded by 90 % Agriculture and 10% Rural settlements. It has an area of 2489.19hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 19.7).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.4, salinity measuring 0.102 ppt, the TDS was recorded high at 115 ppm. The vegetation comprised of 49 plant species (Table 19.1) including nine invasive species including *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 53 animal species including two domestic species were recorded during the survey (Table 19.2 to 19.11).

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the Cauvery river water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland using the wetland water and borewell water. The site is majorly used by the locals for grazing their cattle and goats. Fishery is not undertaken however the fishery was undertaken in the past but due to scarcity of rains in the past two years it is no longer undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has the major Lord Siva and Parvathi temple as well as a few small temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There is high-tensionwires' passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The wetland has been facing drought condition for the past 2 years. There is a good population of tourist that visits the historic temple that is also exerting pressure on the local resources.

The wetland is not included in any of the protection and conservation categories. Unplanned tourism and increasing sewage and effluents are a major threat that needs to be regulated.

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Table 19.1: List of Plants species recorded along the Ramanathapuram District (A - Brahmanankulam, B - Chithirangudi Bird Sanctuary, C - MelayakudiKulam, D - Rajasingamangalam Lake, E - Sakkarakottai Bird Sanctuary, F - Uthirakosamangai Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D	E	F
1	Mexican Prickly Poppy	<i>Argemone mexicana</i>	Papaveraceae	Invasive	NA	-	+	-	-	-	-
2	Heart leaf sida	<i>Sida cordifolia</i>	Malvaceae	Native	NA	-	+	-	+	-	+
3	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	-	+	-	-	+	+
4	Indian Plum	<i>Ziziphus mauritiana</i>	Rhamnaceae	Native	NA	-	+	-	-	-	-
5	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	-	+	-	-	+	+
6	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	-	+	-	-	+	-
7	Birdsville Indigo	<i>Indigofera linnaei</i>	Fabaceae	Native	NA	-	+	-	-	-	+
8	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+	+	+	+
9	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	-	+	+	-	-	-
10	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	-	+	-	-	+	-
11	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	-	+	+	+	-	-
12	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	-	+	-	-	-	+
13	Bitter Apple, Colocynth,	<i>Citrullus colocynthis</i>	Cucurbitaceae	Native		-	+	-	-	+	-
14	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	-	+	-	-	+	-
15	Desert Horse Purslane	<i>Trianthema portulacastrum</i>	Aizoaceae	Native	NA	-	+	-	-	-	-
16	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	-	+	-	+	-	+
17	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+	+	+	+
18	East Indian Globe Thistle	<i>Sphaeranthus indicus</i>	Asteraceae	Native	LC	-	+	-	-	-	+
19	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	-	+	-	+	+	+
20	Chitrak	<i>Plumbago zeylanica</i>	Plumbaginaceae	Native	NA	-	+	-	-	-	-
21	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	-	+	-	-	+	+
22	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	-	+	-	+	+	-
23	Kidney leaf morning glory	<i>Merremia emarginata</i>	Convolvulaceae	Native	LC	-	+	-	-	-	-
24	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	-	+	-	+	+	+
25	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	-	+	-	+	+	+
26	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	-	+	-	+	+	+
27	Sessile Joyweed	<i>Alternanthera sessilis</i>	Amaranthaceae	Native	LC	-	+	-	-	-	-
28	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	-	+	-	-	-	-
29	False Amaranth	<i>Digera muricata</i>	Amaranthaceae	Native	NA	-	+	-	+	+	-
30	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	-	+	-	+	-	+
31	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	-	+	-	-	-	-
32	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	-	+	-	+	-	+
33	Taro, Cocoyam	<i>Colocasia esculenta</i>	Araceae	Native	LC	-	+	-	-	-	-
34	Bermuda grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	-	+	+	+	-	+
35	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	-	+	+	-	-	+
36	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	-	+	-	-	+	+
Total						0	36	6	14	16	19

Table 19.2: List of Diplopoda species recorded along the Ramanathapuram District (A - Brahmanankulam, B - Chithirangudi Bird Sanctuary, C - MelayakudiKulam, D - Rajasingamangalam Lake, E - Sakkarakottai Bird Sanctuary, F - Uthirakosamangai Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F
1	Yellow Spotted Millipede	<i>Harpaghe haydeniana</i>	Xystodesmidae	-	+	-	-	-	+
Total				0	1	0	0	0	1

Table 19.3: List of Insect species recorded along the Ramanathapuram District (A - Brahmanankulam, B - Chithirangudi Bird Sanctuary, C - MelayakudiKulam, D - Rajasingamangalam Lake, E - Sakkarakottai Bird Sanctuary, F - Uthirakosamangai Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F
1	Toothpick Grasshopper	<i>Leptysm marginicollis</i>	Acrididae	-	+	-	-	-	+

2	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	+	+	+	-	+
3	Colour Grasshopper	<i>Neorthacris acuticeps</i>	Pyrgomorphidae	-	+	-	-	-	+
4	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	-	+	-	-	-	+
5	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	-	+	-	+	+	+
6	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	-	+	+	+	-	-
7	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	-	+	+	+	-	+
8	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	+	-	-	-	-
Total				0	8	3	4	1	6

Table 19.4: List of Butterflies species recorded along the Ramanathapuram District (A - Brahmanankulam, B - Chithirangudi Bird Sanctuary, C - MelayakudiKulam, D - Rajasingamangalam Lake, E - Sakkarakottai Bird Sanctuary, F - Uthirakosamangai Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E	F
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	+	+	+	+	-	+
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	+	+	-	-	-
3	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	+	+	+
4	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+	+	+	+
Total					4	4	4	3	2	3

Table 19.5: List of Odonates species recorded along the Ramanathapuram District (A - Brahmanankulam, B - Chithirangudi Bird Sanctuary, C - MelayakudiKulam, D - Rajasingamangalam Lake, E - Sakkarakottai Bird Sanctuary, F - Uthirakosamangai Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E	F
1	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	+	-	+	-	+
2	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+	+	+
3	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	-	+	-	+	-	+
4	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+	+	+	+
Total					3	4	2	4	2	4

Table 19.6: List of Arachnida species recorded along the Ramanathapuram District (A - Brahmanankulam, B - Chithirangudi Bird Sanctuary, C - MelayakudiKulam, D - Rajasingamangalam Lake, E - Sakkarakottai Bird Sanctuary, F - Uthirakosamangai Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	-	+	-	+	+	+
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	+	-	+	-	-
Total				0	2	0	2	1	1

Table 19.7: List of Fish species recorded along the Ramanathapuram District (A - Brahmanankulam, B - Chithirangudi Bird Sanctuary, C - MelayakudiKulam, D - Rajasingamangalam Lake, E - Sakkarakottai Bird Sanctuary, F - Uthirakosamangai Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	-	+	-	-	-	+
2	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	+	-	-	-	+
3	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	-	+	-	-	-	+
4	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	+	-	-	-	-
5	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	-	+	-	-	-	+
					0	5	0	0	0	4

Table 19.8: List of Amphibian species recorded along the Ramanathapuram District (A - Brahmanankulam, B - Chithirangudi Bird Sanctuary, C - MelayakudiKulam, D - Rajasingamangalam Lake, E - Sakkarakottai Bird Sanctuary, F - Uthirakosamangai Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	LC	-	-	-	+	-	-
Total					0	0	0	1	0	0

Table 19.9: List of Reptile species recorded along the Ramanathapuram District (A - Brahmanankulam, B - Chithirangudi Bird Sanctuary, C - MelayakudiKulam, D - Rajasingamangalam Lake, E - Sakkarakottai Bird Sanctuary, F - Uthirakosamangai Lake)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D	E	F
1	Fan-throated Lizard	<i>Sitana ponticeriana</i>	Agamidae	Least Concern	+	+	-	-	-	-
2	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+	+	+
3	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	+	-	+	+	-	-
Total					3	2	2	2	1	1

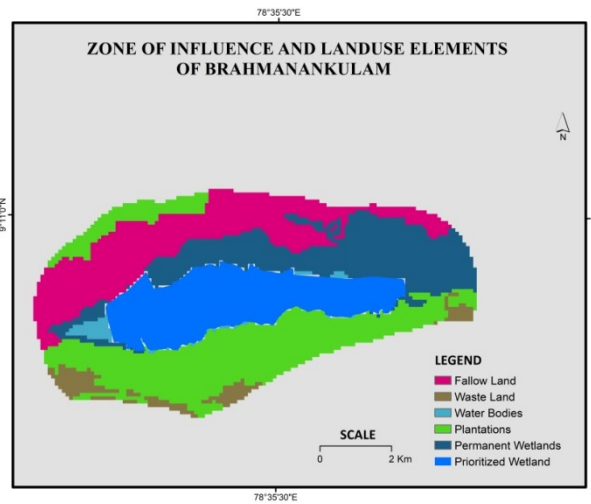
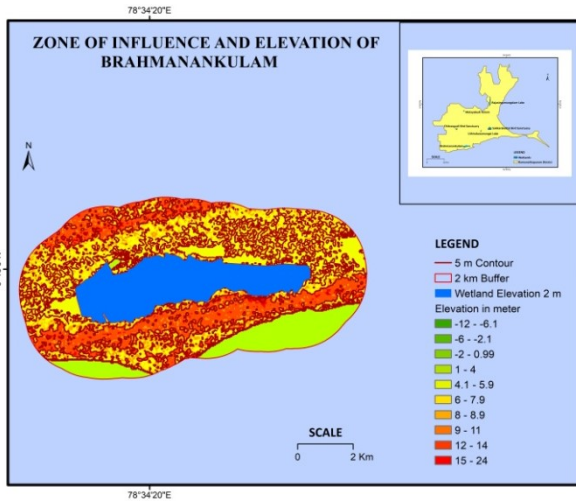
Table 19.10: List of Bird species recorded along the Ramanathapuram District (A - Brahmanankulam, B - Chithirangudi Bird Sanctuary, C - MelayakudiKulam, D - Rajasingamangalam Lake, E - Sakkarakottai Bird Sanctuary, F - Uthirakosamangai Lake)

S.No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D	E	F
1	Greater Flamingo	<i>Phoenicopterus roseus</i>	Phoenicopteridae	Least Concern	+	-	-	-	-	-
2	Eurasian Spoonbill	<i>Platalea leucorodia</i>	Threskiornithidae	Least Concern	+	-	-	-	-	-
3	Striated Heron	<i>Butorides striata</i>	Ardeidae	Least Concern	+	+	-	-	-	-
4	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	-	+	+	+
5	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	+	+	-	-	-	-
6	Great Egret	<i>Casmerodius albus</i>	Ardeidae	Least Concern	+	+	-	-	-	-
7	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	+	+	-	-	-	-
8	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	+	-	-	+	-
9	Spot-billed Pelican	<i>Pelecanus philippensis</i>	Pelecanidae	Near Threatened	+	-	-	-	-	-
10	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	-	-	-	-	-
11	Brahminy Kite	<i>Haliastur indus</i>	Accipitridae	Least Concern	+	+	-	-	+	-
12	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	+	-	-	-	-	-
13	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	Least Concern	+	-	-	-	-	+
14	Common Redshank	<i>Tringa totanus</i>	Scolopacidae	Least Concern	+	-	-	-	-	-
15	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Least Concern	+	-	-	-	-	-
16	Little Stint	<i>Calidris minuta</i>	Scolopacidae	Least Concern	+	-	-	-	-	-
17	Caspian Tern	<i>Hydroprogne caspia</i>	Laridae	Least Concern	+	-	-	-	-	-
18	Lesser Crested Tern	<i>Thalasseus bengalensis</i>	Laridae	Least Concern	+	-	-	-	-	-
19	Greater Crested Tern	<i>Thalasseus bergii</i>	Laridae	Least Concern	+	-	-	-	-	-
20	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	Least Concern	+	-	-	-	-	-
21	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	+	-	-	+	-	+
22	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	+	-	+	+	+
23	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+	+	+	+
24	Ashy-crowned Sparrow-lark	<i>Eremopterix griseus</i>	Alaudidae	Least Concern	+	-	-	-	-	-
25	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+	+	+	+
26	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	Least Concern	+	-	-	-	-	+
Total					26	10	2	5	6	7

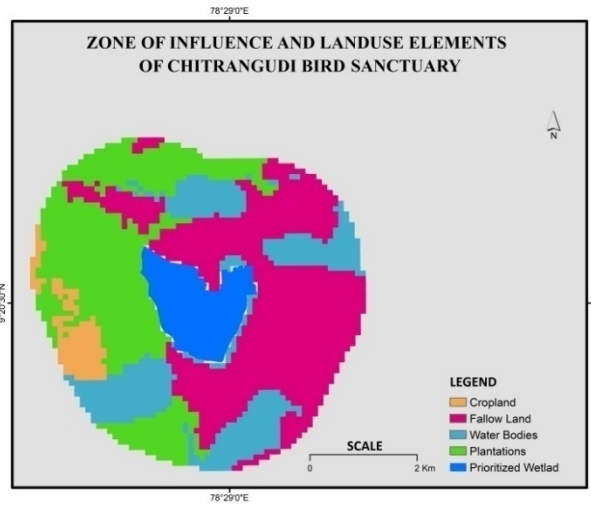
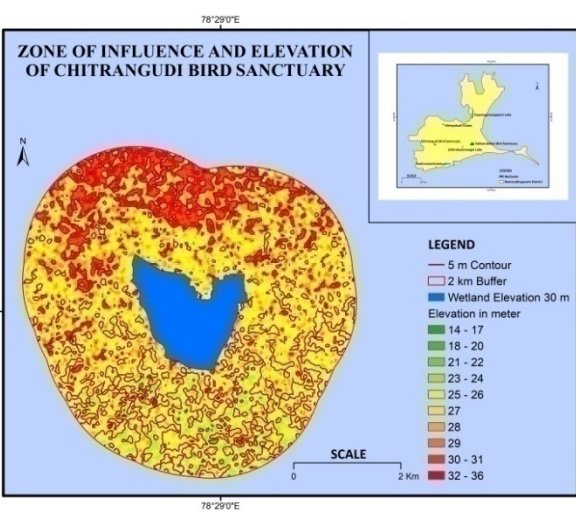
Table 19.11: List of Mammals species recorded along the Ramanathapuram District (A - Brahmanankulam, B - Chithirangudi Bird Sanctuary, C - MelayakudiKulam, D - Rajasingamangalam Lake, E - Sakkarakottai Bird Sanctuary, F - Uthirakosamangai Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	-	-	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	-	+	+	+
3	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	-	+	-	-
Total					3	2	0	3	2	2

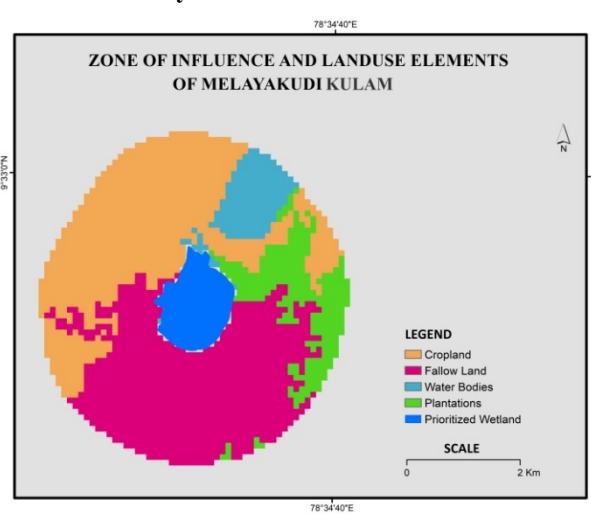
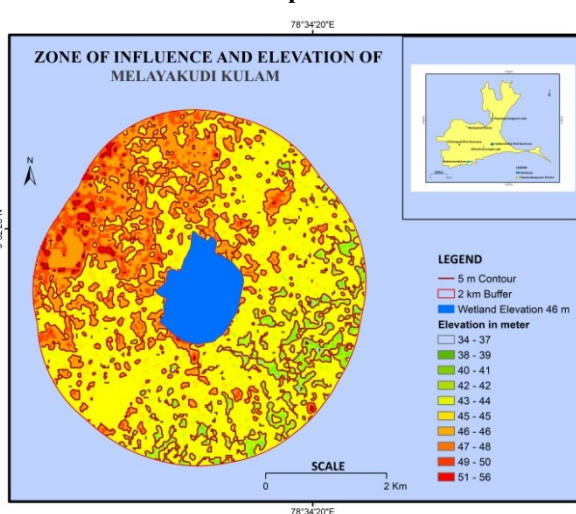
Map 19.2: The zone of influence around the Brahmanankulam.



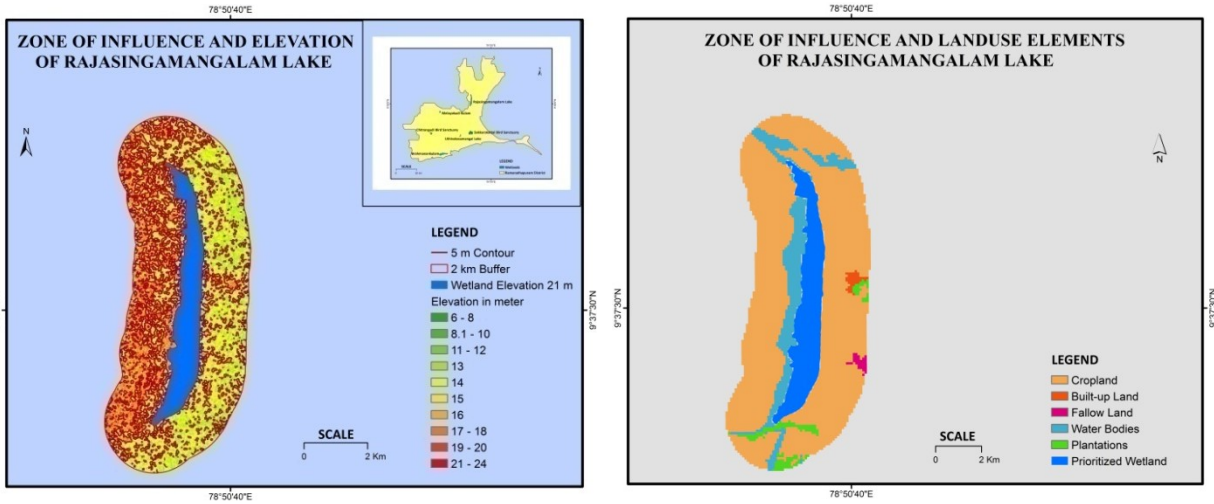
Map 19.3: The zone of influence around the Chithirangudi Bird Sanctuary.



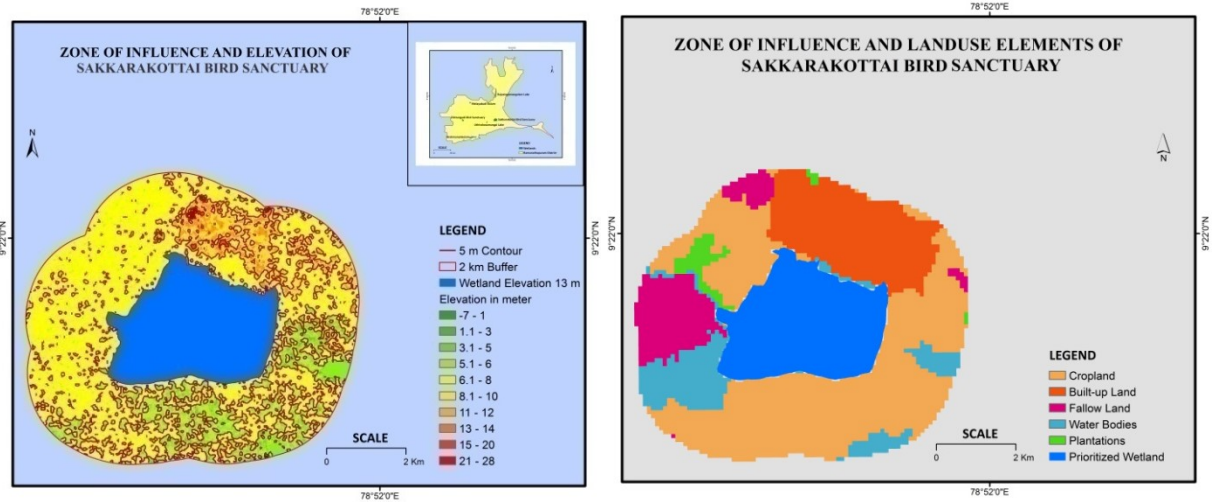
Map 19.4: The zone of influence around the MelayakudiKulam.



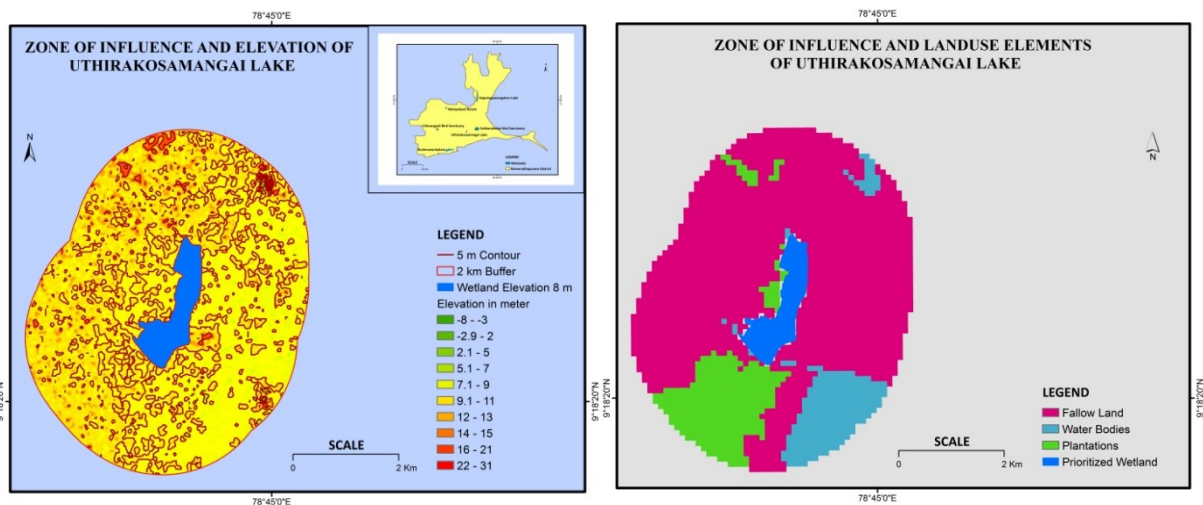
Map 19.5: The zone of influence around the Rajasingamangalam Lake.



Map 19.6: The zone of influence around the Sakkarakottai Bird Sanctuary.



Map 19.7: The zone of influence around the Uthirakosamangai Lake.

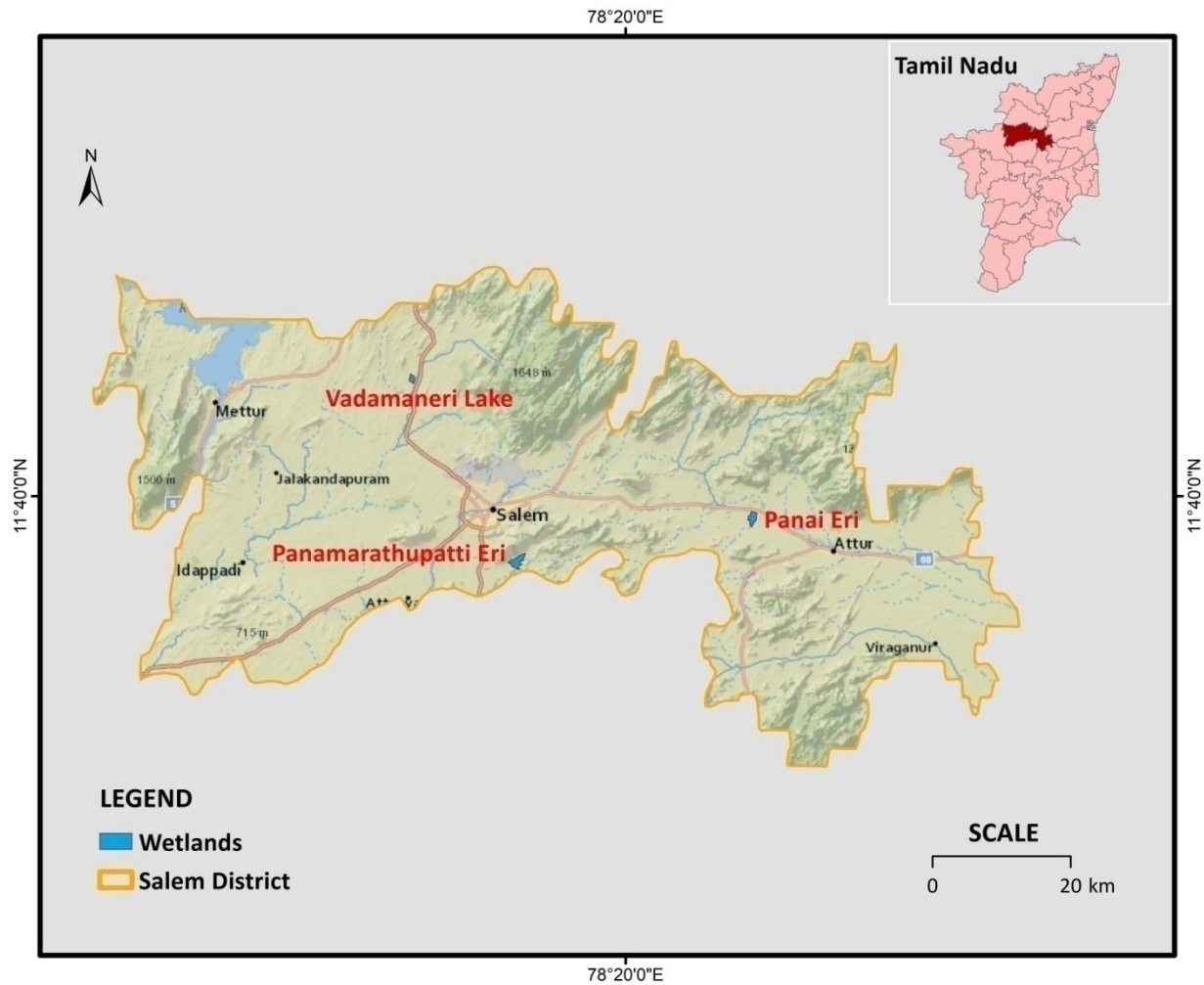


20. Salem District

Salem is a Geologist's paradise, surrounded by hills and the landscape dotted with hillocks. Salem has a vibrant culture dating back to the ancient Kongu Nadu. Salem is an important destination for travel and tourism. Salem was the largest district of Tamil Nadu before it was bifurcated into two administrative districts viz. Salem and Dharmapuri districts.

Total geographic area of Salem is 5205 km². Total area under wetland is 15270 ha, which includes 110 small wetland (<2.25 ha). Lakes/Ponds occupies 13.56% of wetland area. The major wetland types are Reservoirs and Tanks/Ponds. There are 204 Tanks/Ponds (2849 ha) and six reservoirs (8687 ha) exist in the district (Map20.1).

Of the three wetlands selected in the district, Panai eri is the largest while Vadaman eri is the smallest of the three wetlands (Map 20.1).



Map 20.1: Wetlands of Salem district assessed for Prioritization

Panai eri

Panai eri (Plate 20) is also called as Pethanaickenpalayan eri, comes under the jurisdiction of PWD and is not a Protected area. Villages that surround the wetland include Pethanaickenpalayan, Olapadi, Thennanbadi, Ottatthi, Veenagoundnur, Muthugoundnur.

The geographic coordinates are Latitude: 11° 37'38.1" N; 11° 38'06.0" N; 11° 38'30.3" N; 11° 38'38.0" N; 11° 38'16.7" N; 11° 38'29.3" N; and Longitude: 078° 29'53.5" E; 078° 30'11.2" E; 078° 30'12.6" E; 078° 30'15.4" E; 078° 30'06.2" E; 078° 30'10.3" E.

Panaieri is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank (till 10 years ago it was a permanent lake). The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area, Vasishata river and Kariyaoil Dam. The water from the wetland helps in replenishing the groundwater and the overflow joins the Thalavapatti Lake and the agriculture fields. The lake has an area of 162 hectares with an average depth of 2.5 meters. The wetland is surrounded by 85 % Agriculture and 15% Rural settlements. It has an area of 2394.54 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 20.2).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 27 plant species (Table 20.1) including seven invasive species including *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 23 animal species including 3 domestic species were recorded during the survey (Table 20.2 to 20.10). Invasive faunal species like Tilapia and common carps were recorded. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. The overflow water feeds the agricultural lands and Kariyakovil dam. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is mining for sand or silt on a large scale. The wetland does support local fish species. The wetland has major temples along its vicinity and major cultural and religious activities are performed in the wetland if and when water is available.

The wetland has a little potential of change in the outflow of the water. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures. The wetland has been facing land use change pressure, encroachment and garbage dumping. Increased sand and silt mining is affecting the wetland.

The wetland is not Protected and faces a severe threat from land use change mainly due to solid waste dumping and plastic pollution.

Panamarathupatti eri

Panamarathupatti eri (Plate 21) is also called as Govindapatti is based in Pethanaickenpalayan taluk in Salem district. The wetland is not a Protected Area and comes under the jurisdiction of PWD.

The geographic coordinates are Latitude: 11° 34'28.6" N; 11° 34'29.0" N; 11° 34'32.3" N; 11° 34'33.8" N; and Longitude: 078° 11'01.7" E; 078° 11'06.8" E; 078° 11'10.2" E; 078° 11'14.1" E

Panamarathupatti eri is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank (till 12 years ago it was a permanent lake). The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, Eracaud hills. The water from the wetland helps in replenishing the groundwater and the overflow joins the Mallureri and the agriculture fields and finally joins the Cauvery. The lake has an area of 149 hectares and based on the secondary information the average depth is 30 meters. The wetland is

surrounded by 40% Forest, 40 % Agriculture and 20% Rural settlements. It has an area of 2771.46 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 20.3).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 50 plant species (Table 20.1) including ten invasive species including *Prosopis juliflora*, *Parthenium histrophorus* and *Ipomoea sp.* The fauna comprised of 90 animal species including 3 domestic species were recorded during the survey (Table 20.2 to 20.10). Invasive faunal species like Tilapia and common carps were recorded. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. The wetland has open dug wells that are used for providing drinking water for the surrounding villages. The well is dug up to almost 100 feet. Fishery is not undertaken for the past 12 years. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is mining for sand or silt on a small scale. The wetland has major temples along its vicinity and major cultural and religious activities are performed in the wetland if and when water is available.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure, encroachment and garbage dumping. Increased sand and silt mining is affecting the wetland. The ecological character is changing rapidly due to lack of conservation measures.

The wetland is not a Protected Area under any categories. The wetland is a highly potential area that can be prone to land use change that can in the absence of water become a detrimental aspect in conservation.

Vadamneri Lake

Vadamneri lake (Plate 21) is not a Protected area and comes under the jurisdiction of PWD. Villages that surround the wetland include Dharapuram, VadamneriVaiyakadu, Kallarakadu, Oattamedu, Sengamaniyarkottai, Nallkannankottai, Palpadiyankottai, Neermaraikoil, School guard, Saikottai.

The geographic coordinates are Latitude: 11° 49'44.0" N; 11° 49'13.5" N; 11° 49'04.4" N; 11° 48'55.3" N; 11° 48'48.9" N; 11°48'59.9" N; and Longitude: 078°03'32.5" E; 078°03'32.9" E; 078°03'32.1" E; 078°03'31.2" E; 078° 03'22.9" E; 078° 03'10.1" E.

Vadamneri is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area, Servarayan hills and sewage. The water from the wetland helps in replenishing the groundwater and the overflow joins the Sarabanga river canal and the agriculture fields. The lake has an area of 75.1 hectares and based on the secondary information the average depth is 4.5 meters. The wetland is surrounded by 10% Grasslands/scrublands, 80 % Agriculture and 10% Rural settlements. It has an area of 1986.26 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 20.4).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.8, salinity measuring 0.245 ppt, the TDS was recorded high at 247 ppm. The vegetation comprised of 40 plant species (Table 20.1) including nine invasive species including *Prosopis juliflora*, *Lantana camara* and *Ipomoea sp.* The fauna comprised of 77 animal species including three domestic species were recorded during the survey (Table 20.2 to 20.10). Threatened species of birds were not observed but two species of threatened fish were reported during the survey. Tilapia and common carps were invasive faunal species recorded. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. The *Borassus* plant sap is also collected for local consumption and sale in the local market. Fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The commercial fishery is under the contract of the PWD, who introduces the fish seeds. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has major temples along its vicinity and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure, encroachment and garbage dumping. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not is not a Protected Area and faces a severe threat from land use change mainly due to solid waste dumping and plastic pollution. The dumping of waste, sewage and effluents within the wetland should be taken care and it should be seen that it does not encroach into the wetland area any further.

Literature available for Salem District

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Sathya J. (2007) Economics of pollution control in Sago industry in Salem district Tamil Nadu. Bharathidasan University, Tiruchirappalli. Ph. D Thesis.

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VasenSuli (Aug. 23, 2018), Sankar V (Mar. 11, 2018) ebirdchecklist. (ebird.org/hotspot /L4747493?yr=all&m =&rank=mrec)

Table 20.1: List of Plant species recorded along the Salem District (A - Panaieri, B - Panamarathupatti eri, C - Vadammeri Lake)

S. No	Common Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	Wild Spider Flower	<i>Gynandropsis gynandra</i>	Cleomaceae	Native	NA	-	+	-
2	Spade Flower	<i>Afrohybanthus enneaspermus</i>	Violaceae	Native	NA	-	+	-
3	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	-	+	-
4	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	-	+	+
5	Long-stalk Sida	<i>Sida cordata</i>	Malvaceae	Native	NA	-	+	-
6	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	-	+	-
7	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	-	+	+
8	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	-	+	+
9	Indian Ash Tree	<i>Lannea coromandelica</i>	Anacardiaceae	Native	NA	-	+	-
10	Touch Me Not	<i>Mimosa pudica</i>	Fabaceae	Native	LC	-	+	-
11	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
12	Stinking Cassia,	<i>Senna tora</i>	Fabaceae	Native	NA	-	+	-
13	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	+	+	-
14	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	-	+	+
15	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	+
16	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	+	+	-
17	Chay Root, Indian madder	<i>Oldenlandia umbellata</i>	Rubiaceae	Native		-	+	-
18	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+
19	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	-	+	+
20	Periwinkle, Vinca	<i>Catharanthus roseus</i>	Apocynaceae	Introduced	NA	-	+	-
21	Oleander	<i>Nerium oleander</i>	Apocynaceae	Native	LC	-	+	-
22	Sweet indrajao	<i>Wrightia tinctoria</i>	Apocynaceae	Native	LC	-	+	+
23	Dwarf morning glory	<i>Evolvulus alsinoides</i>	Convolvulaceae	Naturalized	NA	-	+	-
24	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	-	+	-
25	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	+
26	Purple Heart Glory	<i>Ipomoea sagittifolia</i>	Convolvulaceae	Native	NA	-	+	-
27	African Tulip Tree	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	LC	-	+	-
28	Large caltrops	<i>Pedaliium murex</i>	Pedaliaceae	Native	NA	-	+	-
29	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	-	+	+
30	American mint	<i>Mesosphaerum suaveolens</i>	Lamiaceae	Naturalized	NA	-	+	-
31	Hoary Basil,	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	+	+	+
32	Erect Spiderling	<i>Boerhavia repens</i>	Nyctaginaceae	Invasive	NA	-	+	-
33	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	-	+	+
34	Smooth Chaff Flower	<i>Alternanthera paronychioides</i>	Amaranthaceae	Naturalized	NA	-	+	-
35	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	-	+	+
36	Sessile Joyweed	<i>Alternanthera sessilis</i>	Amaranthaceae	Native	LC	+	+	+
37	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	-	+	-
38	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+
39	Fleshy spurge	<i>Euphorbia antiquorum</i>	Euphorbiaceae	Native		-	+	+
40	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	-	+	-
41	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	-	+	+
42	Stone Breaker, Seed Under Leaf	<i>Phyllanthus niruri</i>	Phyllanthaceae	Native	NA	-	+	-
43	Peepal	<i>Ficus religiosa</i>	Moraceae	Native	NA	-	+	+
44	Bengal Dayflower	<i>Commelina benghalensis</i>	Commelinaceae	Native	LC	-	+	-
45	White Water Sedge	<i>Cyperus dubius</i>	Cyperaceae	Native	LC	-	+	-
46	Indian Thorny Bamboo	<i>Bambusa bambos</i>	Poaceae	Native	NA	-	+	-
47	Bermuda grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	+
48	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	+	+
49	---	<i>Oropetium thomaeum</i>	Poaceae	Native	NA	-	+	-
50	Indian comet grass	<i>Perotis indica</i>	Poaceae	Native	NA	-	+	-
Total						11	50	21

Table 20.2: List of Insect species recorded along the Salem District (A - Panaieri, B - Panamarathupatti eri, C - Vadamneri Lake)

S.No	Common Name	Scientific Name	Family	A	B	C
1	Hooded Grasshopper	<i>Teratodes monticollis</i>	Acrididae	-	+	-
2	Grasshopper 1	<i>Diabolocatantops pinguis</i>	Acrididae	-	+	-
3	Grasshopper 3	<i>Chrotogonus trachypterus</i>	Pyrgomorphidae	-	+	-
4	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	-	+	-
5	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	-	+	-
6	Transverse lady beetle	<i>Coccinella transversalis</i>	Coccinellidae	-	+	-
7	Blister Beetle	<i>Hycleus sp.</i>	Meloidae	-	+	-
8	Small Dung Beetle	<i>Onthophagus sp.</i>	Scarabaeidae	-	+	-
9	Blue Banded Honeybee	<i>Amegilla cingulata</i>	Apidae	-	+	+
10	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	+	+
11	ArborealBicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	+	-
12	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	+	+
13	Bicolour Ant	<i>Meranoplus bicolor</i>	Formicidae	-	+	+
14	Black Ant	<i>Myrmecaria brunnea</i>	Formicidae	-	+	-
15	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	+
16	Pharaoh Ant	<i>Monomorium pharaonis</i>	Formicidae	-	+	-
17	Orange Spider Wasp	<i>Cryptocheilus bicolor</i>	Pompilidae	-	+	-
18	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	+	-
19	Indian Robber fly	<i>Asilidae sp.</i>	Asilidae	-	+	-
Total				3	19	5

Table 20.3: List of Butterflies species recorded along the Salem District (A - Panaieri, B - Panamarathupatti eri, C - Vadamneri Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	African Marbled Skipper	<i>Gomalia elma</i>	Pyrginae	Uncommon	-	+	-
2	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	-	+	+
3	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	+	+
4	Common Mormon	<i>Papilio polytes</i>	Papilioninae	Common	-	+	-
5	Lime Butterfly	<i>Papilio demoleus</i>	Papilioninae	Common	-	+	-
6	Paris Peacock	<i>Papilio paristamilana</i>	Papilioninae	Uncommon	-	+	-
7	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	-	+	-
8	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+
9	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	-	+	-
10	Small Orange Tip	<i>Colotis etrida</i>	Pierinae	Common	-	+	-
11	Yellow Orange Tip	<i>Ixias pyrene</i>	Pierinae	Common	-	+	-
12	Great Orange Tip	<i>Hebomoia glaucippe</i>	Pierinae	Common	-	+	-
13	Indian Cabbage White	<i>Pieris canidia</i>	Pierinae	Common	-	+	-
14	Common Gull	<i>Cepora nerissa</i>	Pierinae	Common	-	+	-
15	Common Jezebel	<i>Delias eucharis</i>	Pierinae	Common	-	+	-
16	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	-	+	-
17	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	+	-
18	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	+	+
19	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+
20	Common Nawab	<i>Polyura athamas</i>	Danainae	Common	-	+	-
21	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	-	+	+
22	Common Leopard	<i>Phalanta phalantha</i>	Heliconiinae	Common	-	+	-
23	Common Sailer	<i>Neptis hylas</i>	Limenitinae	Common	-	+	-
24	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	+	+	+
25	Blue Pansy	<i>Junonia orithiya</i>	Nymphalinae	Common	-	+	-
26	Peacock Pansy	<i>Junonia almana</i>	Nymphalinae	Common	-	+	-
27	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	-	+	+
28	Danaid Eggfly	<i>Hypolimnas misippus</i>	Nymphalinae	Common	-	+	-
29	Crimson-Banded Handmaiden	<i>Amata passalis</i>	Erebidae	Common	-	+	-
Total					6	29	8

Table 20.4: List of Odonata species recorded along the Salem District (A - Panaieri, B - Panamarathupatti eri, C - Vadamneri Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	Emerald Spreadwing	<i>Lestes elatus</i>	Lestidae	Common	-	+	-
2	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	-	-	+
3	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	-	-	+
4	Pigmy Dartlet	<i>Agriocnemis pygmaea</i>	Coenagrionidae	Common	-	-	+
5	Coromandel Marsh Dart	<i>Ceriagrion coromandelianum</i>	Coenagrionidae	Common	-	+	+
6	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	-	-	+
7	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	-	+
8	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	-	+	-
9	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	-	+	+
10	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+
11	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+
12	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	-
13	Yellow-Tailed Ashy Skimmer	<i>Potamarcha congener</i>	Libellulidae	Common	-	+	-
14	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	-	+	-
15	Coral-Tailed Cloud Wing	<i>Tholymis tillarga</i>	Libellulidae	Common	-	+	-
16	Red Marsh Trotter	<i>Tramea basilaris</i>	Libellulidae	Common	-	+	-
17	Black Marsh Trotter	<i>Tramea limbata</i>	Libellulidae	Common	-	+	-
18	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	-	+	+
Total					3	13	10

Table 20.5: List of Arachnida species recorded along the Salem District (A - Panaieri, B - Panamarathupatti eri, C - Vadamneri Lake)

S. No	Common Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	+
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	-	+
3	Long Jawed Orb-weaver	<i>Tetragnatha sp.</i>	Tetragnathidae	-	-	+
Total				1	0	3

Table 20.6: List of Fish species recorded along the Salem District (A - Panaieri, B - Panamarathupatti eri, C - Vadamneri Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	-	-	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	-	-	+
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	-	+
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	-	-	+
5	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	-	+
6	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	-	-	+
7	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	-	-	+
8	Catla	<i>Catla catla</i>	Cyprinidae	LC	-	-	+
9	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	-	-	+
10	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	-	-	+
11	Climbing erch	<i>Anabas testudineus</i>	Anabantidae	DD	-	-	+
12	Spiny loach	<i>Lepidocephalichthys thermalis</i>	Cobitidae	LC	-	-	+
13	Long snouted barb	<i>Puntius dorsalis</i>	Cyprinidae	LC	-	-	+
Total					0	0	13

Table 20.7: List of Amphibians species recorded along the Salem District (A - Panaieri, B - Panamarathupatti eri, C - Vadamneri Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	LC	-	-	+
Total					0	0	1

Table 20.8: List of Reptiles species recorded along the Salem District (A - Panaieri, B - Panamarathupatti eri, C - Vadamneri Lake)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C
1	Peninsular Rock Agama	<i>Psammophilus dorsalis</i>	Agamidae	Least Concern	-	+	-
2	Fan-throated Lizard	<i>Sitana ponticeriana</i>	Agamidae	Least Concern	-	+	-
3	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+
4	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	-	+	+
Total					1	4	2

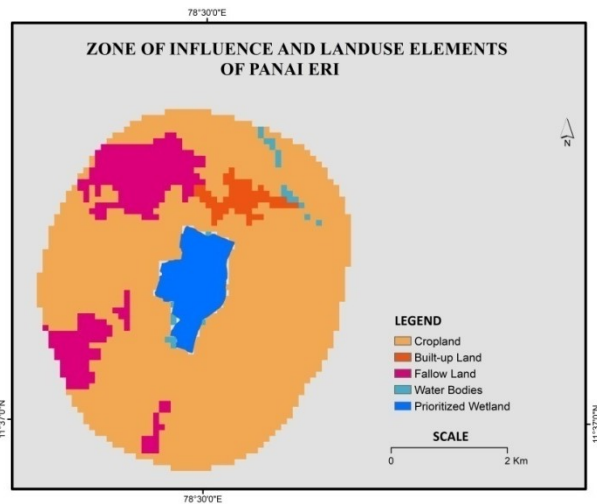
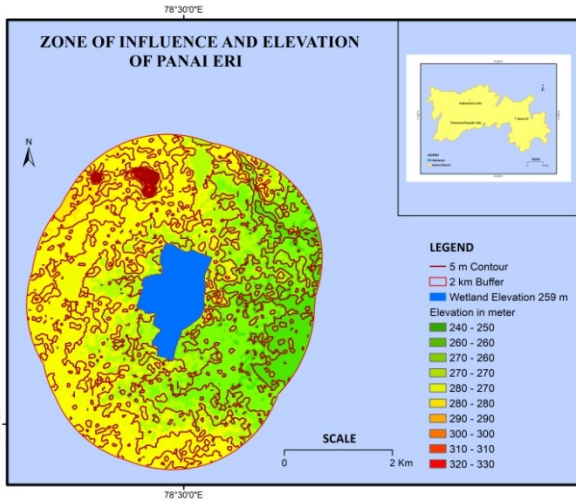
Table 20.9: List of Birds species recorded along the Salem District (A - Panaieri, B - Panamarathupatti eri, C - Vadamneri Lake)

S.No	Common Name	Scientific Name	Family	IUCN Status	A	B	C
1	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Least Concern	-	+	-
2	Common Kestrel	<i>Falco tinnunculus</i>	Accipitridae	Least Concern	-	+	-
3	Shikra	<i>Accipiter badius</i>	Accipitridae	Least Concern	-	+	-
4	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	-	+	-
5	Asian Koel	<i>Eudynamys scolopaceus</i>	Cuculidae	Least Concern	-	+	-
6	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	+	+
7	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	Least Concern	-	+	-
8	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	-	+	+
9	Rufous Treepie	<i>Dendrocitta vagabunda</i>	Corvidae	Least Concern	+	+	-
10	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
11	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Least Concern	-	+	-
12	White-browed Bulbul	<i>Pycnonotus luteolus</i>	Pycnonotidae	Least Concern	-	+	-
13	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	Least Concern	-	+	-
14	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	-	+	-
15	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	Least Concern	-	+	-
16	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	-	+	-
17	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
18	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	Least Concern	-	+	+
19	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	-	+	-
Total					4	19	5

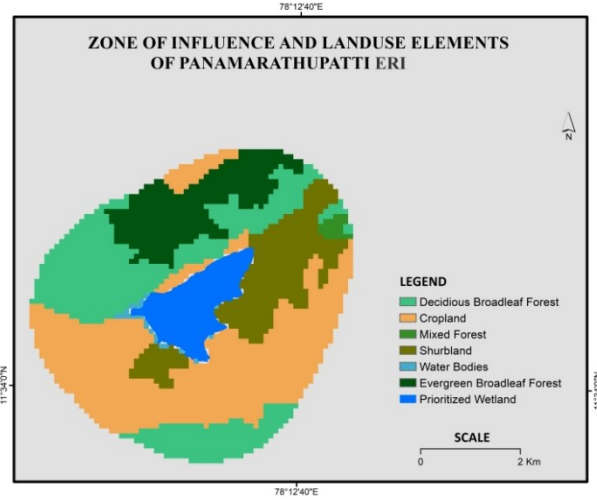
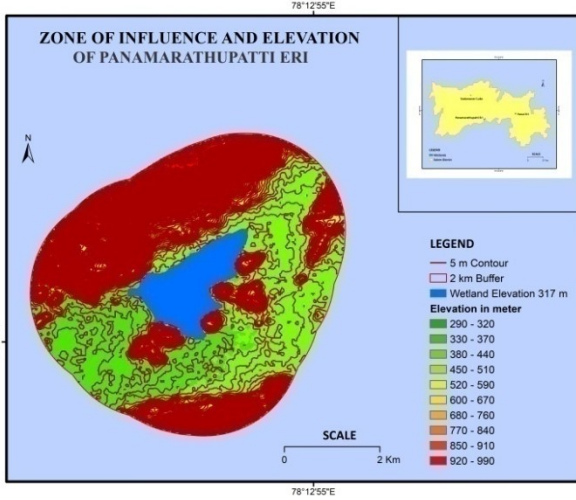
Table 20.10: List of Mammal species recorded along the Salem District (A - Panaieri, B - Panamarathupatti eri, C - Vadamneri Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	-	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	-	+	+
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+
Total					2	4	4

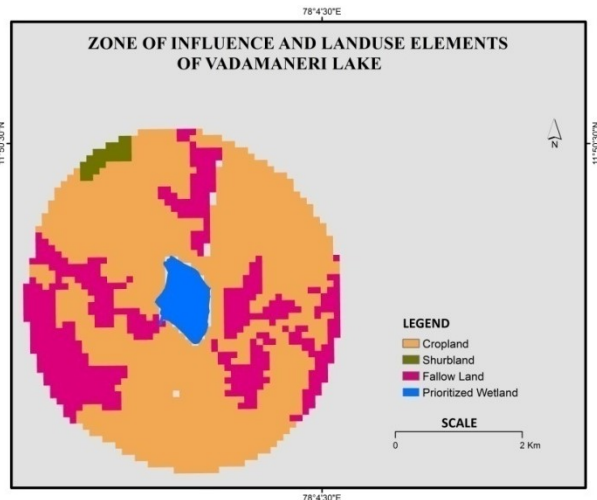
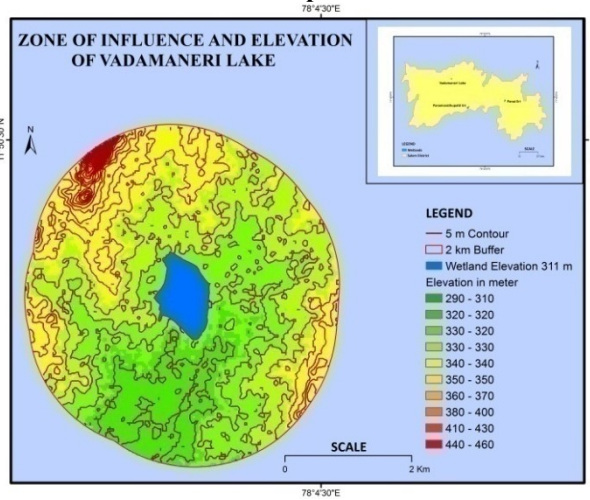
Map 20.2: The zone of influence around the Panai Eri.



Map 20.3: The zone of influence around the Panamarathupatti Eri.



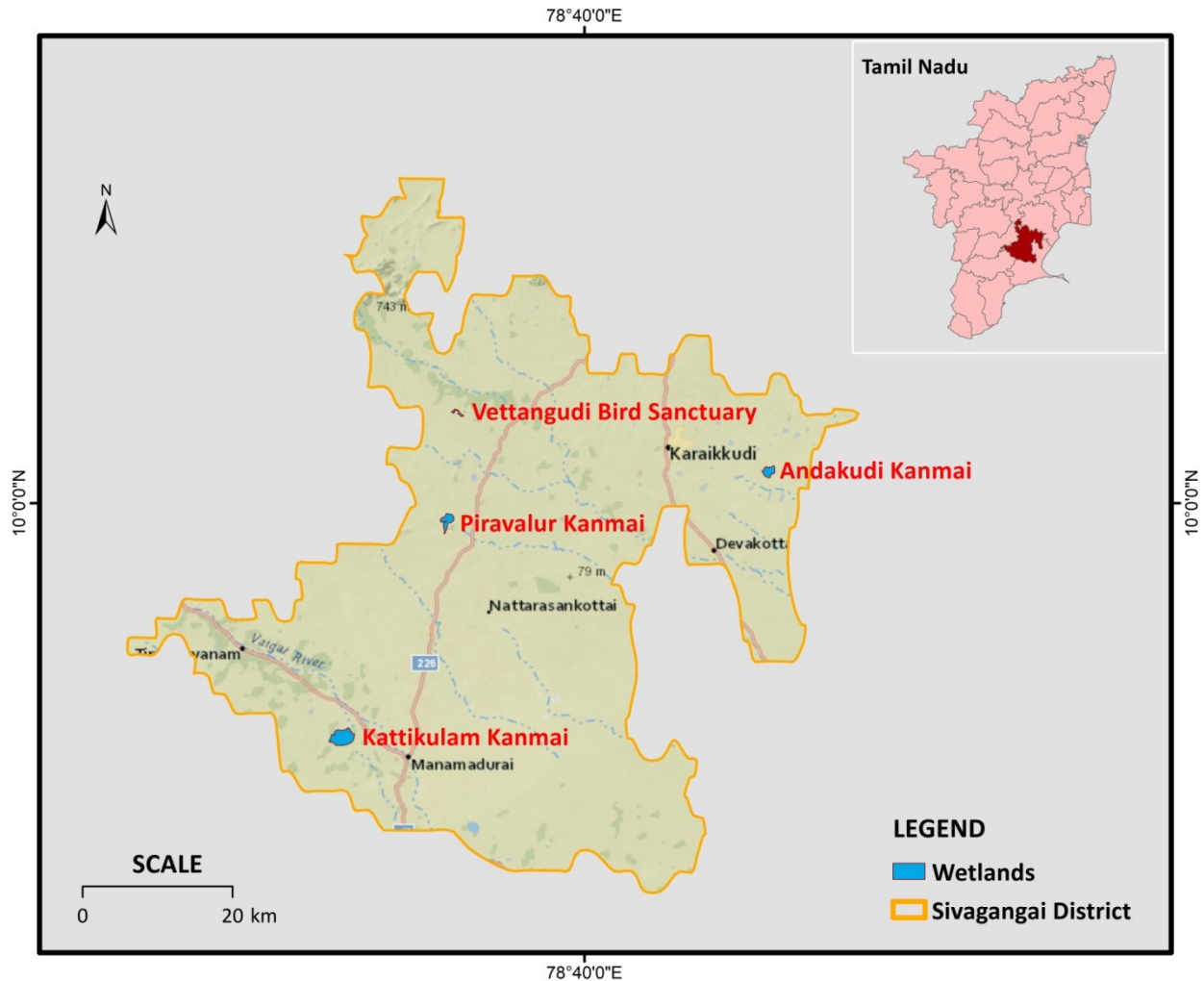
Map 20.4: The zone of influence around the Vadamaneri Lake.



21. Sivagangai District

Sivagangai kingdom was founded by Sasivarna Periya Oodaya Thevar in 1730. The town was subsequently ruled by his successors and ultimately by VeluNachiyar under the stewardship of MaruthuPandiyar. Sivaganga with a geographical area of 4189 km² is bounded by Pudukkottai district on the Northeast, Tiruchirapalli district on the North, Ramanathapuram district on South East, Virudhunagar district on South West and Madurai district on the West. Shivaganga is known for agriculture, metal working and weaving. The region around Sivaganga has considerable mineral deposits. Sivagangai has an average elevation of 102 metres (334 feet). The city has a tropical wet and dry climate. The town gets major rainfall during the North East monsoon period. The Annual normal rainfall varies from 336.2 mm. The average Rainfall being received in the town is 931 mm.

Total area under wetland is 67172 ha, which includes 1474 small wetland (<2.25 ha). Lakes/Ponds occupies 53.25 % of wetland area. The second major wetland type is Tanks/Ponds. There are 2230 Tanks/Ponds with 24972 ha area (37.18%). Of the four wetlands selected in the district, KattiKulam Kanmai is the largest while Vettangudi Bird Sanctuary is the smallest wetland (Map 21.1).



Map 21.1: Wetlands of Sivagangai district assessed for Prioritization

Andakudi Kanmai

Andakudi kanmai (Plate 21) is based in Karaikudi taluka in Sivagangai district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Vadakkukudiruppu, Thekkukudiruppu, Nadukudiruppu, Andakupi.

The geographic coordinates are Latitude: 10° 02'16.5" N; 10° 02'11.7" N; 10° 02'07.4" N; 10° 02'07.6" N; and Longitude: 078° 53'41.4" E; 078° 53'40.1" E; 078° 53'36.5" E; 078° 53'34.8" E.

Andakudi kanmai is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The wetland faces regular occasions of drying, as the wetland is mostly dependant on the rainfall and runoff waters. The water during the rains last for just up to two months. The water helps in replenishing the groundwater. The lake has an area of 172 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 90 % Agriculture and 10% rural settlements. It has an area of 2327.51 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 21.2).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.08, salinity measuring 0.096 ppt, the TDS was recorded high at 60.6 ppm. The vegetation comprised of 21 plant species (Table 21.1) including two invasive species i.e. *Parthenium hysterophorus* and *Prosopis juliflora*. The fauna comprised of 45 animal species including four domestic species were recorded during the survey (Table 21.2 to 21.9). One near Threatened species of birds were observed during the survey.

The water from the wetland is used for drinking purpose when the wetland is full capacity as it is rainfall dependent. Agriculture is undertaken around the wetland and the ground water is used for irrigation. Grazing by the cattle is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has three temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow as it is dependent on rainfall only. Scarcity of water can change the land use pattern of the wetland. There are invasive plant species that is changing the habitat of the wetland.

The wetland is not included in any of the protection and conservation categories.

KattiKulam Kanmai

KattiKulam kanmai (Plate 21) is based in Manamadurai taluka in Sivagangai district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include KattiKulam, Mettumadai, Perumechari, Kumbhakaranendra.

The geographic coordinates are Latitude: 09° 42'51.3" N; 09° 42'55.4" N; 09° 42'56.7" N; 09° 42'34.6" N; 09° 43'31.9" N; and Longitude: 078° 23'18.6" E; 078° 23'18.5" E; 078° 23'17.7" E; 078° 22'41.5" E; 078° 23'28.6" E

KattiKulam kanmai is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area and the Vaigai river. The water helps in replenishing the groundwater. The lake has an area of 537 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 85 % Agriculture and 15% rural settlements. It has an area of 3129.63 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 21.3).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.3, salinity measuring 0.141 ppt, the TDS was recorded high at 355 ppm. The vegetation comprised of 31 plant species (Table 21.1) including five invasive species that also include *Parthenium hysterophorus* and *Prosopis juliflora*. The fauna comprised of 49 animal species including two domestic species were recorded during the survey (Table 21.2 to 21.9).

The water from the wetland is not used for drinking purpose, as it is rainfall dependent. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Grazing by the cattle is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There are high-tension wires' passing through the wetland.

The wetland does not show major change in the pattern of water inflow and outflow as it is dependent on rainfall only. There are invasive plant species that is changing the habitat of the wetland. Scarcity of water can change the land use pattern of the wetland.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland. However the major problem of the wetland is less amount of water.

Piravalur Kanmai

Piravallur Kanmai also called as Piravallur Lake (Plate 22) is based in Sivagangai district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Piravallur, Chignipatty and Keelapoongudi.

The geographic coordinates are Latitude: 09° 59'07.7" N; 09° 57'59.8" N; and Longitude: 078° 30'29.4" E; 078° 29'47.8" E.

Piravallur Kanmai is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area. The water helps in replenishing the groundwater. The lake has an area of 211 hectares and based on the secondary information the average depth is 2 meters. The wetland is surrounded by 30% Grassland / Scrubland, 45 % Agriculture and 10% rural settlements. It has an area of 2701.46 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 21.4).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 25 plant species (Table 21.1) including seven invasive species that include *Prosopis juliflora*, *Parthenium hysterophorus* and *Ipomoea sp.* The fauna comprised of 27 animal species including 3 domestic species were recorded during the survey (Table 21.2 to 21.9). One near Threatened birds species was observed during the survey.

The water from the wetland is not used for drinking purpose as it is rainfall dependent. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Grazing by the cattle is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall.

The wetland does not show major change in the pattern of water inflow and outflow as it is dependant on rainfall only. There are invasive plant species that is changing the habitat of the wetland.

The wetland is not included in any of the protection and conservation categories. The revive of the feeder channel should be undertaken, that provided water to the villagers around the wetland until about 10 years ago.

Vettangudi Bird Sanctuary

Vettangudi Bird Sanctuary commonly known as Vetanguddipatty Lake (Plate 22) and Periya Kollukudipatty pond. The wetland comprises of three village ponds, viz. Periya and ChinnaKollukudipatti and Vettangudipatti in Sivagangai district. This sanctuary is protected by the Forest Department and by the local community informally. The wetlands receive water during the rainy season that dries down during the winter and remains dessicated throughout the summer. Villages that surround the wetland include Vetanguddipatty, Periyakullukudipatty, Chinnakullukudipatty, Krishnampuram, Ayyapatty, Muthyanagar, Krishnampatty, Pudhupatty, Chitrapatty and Kottaipatty.

The geographic coordinates are Latitude: 10°06'30.0" N; 10°06'32.6" N; 10°06'34.7" N; 10°06'37.3" N; 10°06'38.7"N; and Longitude: 078°30'36.3" E; 078°30'37.6" E; 078°30'39.5"E; 078°30'40.4" E; 078°30'51.0" E.

Vettangudi Bird Sanctuary is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 39.3 hectares and based on the secondary information the average depth is 3.5 meters. The wetland is surrounded by 20% Forest, 75 % Agriculture and 5% Rural Settlements. It has an area of 2077.7 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 21.5).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.8, salinity measuring 0.532 ppt, the TDS was recorded high at 612 ppm. The vegetation comprised of 53 plant species (Table 21.1) including 13 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 95 animal species including three domestic species were recorded during the survey (Table 21.2 to 21.9). Two Near-Threatened species of birds were and one near threatened species of fish were observed during the survey.

The water from the wetland is not used for drinking purpose. However, the water is used for agricultural activities. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken when the water is available. The wetland supports local fish species when water is present and there is no commercial fishery. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing drought condition for the past 5 years.

The wetland is a Bird Sanctuary and faces a severe threat from drought and water scarcity gradually changing the wetland character.

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Table 21.1: List of Plant species recorded along the Sivagangai District (A - Andakudi Kanmai, B - Kattikulam Kanmai, C - PiravalurKanmai, D - Vettangudi Bird Sanctuary)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D
1	Sacred Water Lotus	<i>Nelumbo nucifera</i>	Nelumbonaceae	Native	NA	+	-	-	-
2	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	+	+	+
3	Heart leaf sida	<i>Sida cordifolia</i>	Malvaceae	Native	NA	+	-	-	-
4	Touch Me Not	<i>Mimosa pudica</i>	Fabaceae	Native	LC	+	-	-	-
5	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+	+
6	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	-	-	+
7	Lotus Sweetjuice, damascisa	<i>Glinus lotoides</i>	Molluginaceae	Native		+	+	-	-
8	Diamond flower, Wild chayroot	<i>Oldenlandia corymbosa</i>	Rubiaceae	Native	NA	+	-	-	-
9	East Indian Globe Thistle	<i>Sphaeranthus indicus</i>	Asteraceae	Native	LC	+	-	-	+
10	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+	+
11	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	-	+	+
12	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	+	+	+	-
13	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	+	-	-	-
14	Sessile Joyweed	<i>Alternanthera sessilis</i>	Amaranthaceae	Native	LC	+	-	-	+
15	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+	+
16	Stone Breaker	<i>Phyllanthus niruri</i>	Phyllanthaceae	Native	NA	+	-	-	-
17	Grass of the Dew	<i>Cyanotis arachnoidea</i>	Commelinaceae	Native	NA	+	-	-	-
18	Floating Lace Plant	<i>Aponogeton natans</i>	Aponogetonaceae	Native	LC	+	-	-	-
19	Indian Thorny Bamboo	<i>Bambusa bambos</i>	Poaceae	Native	NA	+	-	-	-
20	Kans grass	<i>Saccharum spontaneum</i>	Poaceae	Native	LC	+	-	-	-
21	Water Clover	<i>Marsilea quadrifolia</i>	Marsileaceae	Native	LC	+	-	-	-
Total						21	6	6	8

Table 21.2: List of Insect species recorded along the Sivagangai District (A - Andakudi Kanmai, B - Kattikulam Kanmai, C - PiravalurKanmai, D - Vettangudi Bird Sanctuary)

S.No	Common Name	Scientific Name	Family	A	B	C	D
1	Grasshopper species	<i>Diabolocatanops pinguis</i>	Acrididae	-	+	-	+
2	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	+	-	+
3	Short horned Grasshopper	<i>Acrida exaltata</i>	Acrididae	-	+	-	-
4	Colour Grasshopper	<i>Neorthacris acuticeps</i>	Pyrgomorphidae	-	+	-	-
5	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	-	+	-	-
6	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	+	+	+
Total				1	6	1	3

Table 21.3: List of Butterfly species recorded along the Sivagangai District (A - Andakudi Kanmai, B - Kattikulam Kanmai, C - PiravalurKanmai, D - Vettangudi Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	-	+	+	+
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	-	+	-	+
3	Common Mormon	<i>Papilio polytes</i>	Papilioninae	Common	-	-	-	+
4	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	+	+	-	+
5	Common Grass Yellow	<i>Eurema hecabe</i>	Coliadinae	Common	-	-	-	+
6	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	-	+	+
7	Small Salmon Arab	<i>Colotis amata</i>	Pierinae	Common	-	-	-	+
8	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	-	-	+	+
9	Small Orange Tip	<i>Colotis etrida</i>	Pierinae	Common	-	-	-	+
10	Yellow Orange Tip	<i>Ixias pyrene</i>	Pierinae	Common	-	-	-	+
11	Common Gull	<i>Cepora nerissa</i>	Pierinae	Common	-	-	-	+
12	Common Jezebel	<i>Delias eucharis</i>	Pierinae	Common	+	-	-	+
13	Psyche	<i>Leptosia nina</i>	Pierinae	Common	-	-	-	+
14	Zebra Blue	<i>Leptotes plinius</i>	Polyommatainae	Common	-	-	-	+
15	Common Pierrot	<i>Castalius rosimon</i>	Polyommatainae	Common	-	-	-	+

16	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	+	+	+
17	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	-	-	+	+
18	Guava Blue	<i>Virachola isocrates</i>	Theclinae	Common	-	-	-	+
19	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	-	-	-	+
20	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+	+
21	Common Crow	<i>Euploea core</i>	Danainae	Common	-	-	-	+
22	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	+	-	+	+
23	Joker	<i>Byblia lithyia</i>	Biblidinae	Common	-	+	-	+
24	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	-	+	-	+
25	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	-	-	-	+
Total					6	7	7	25

Table 21.4: List of Odonate species recorded along the Sivagangai District (A - Andakudi Kanmai, B - Kattikulam Kanmai, C - PiravalurKanmai, D - Vettangudi Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D
1	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	+	+	-	-
	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	-	-	+	-
2	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	+	-	-	-
3	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	-	-	-
4	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+
5	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	-	-	+	+
Total					4	2	0	0

Table 21.5: List of Arachnida species recorded along the Sivagangai District (A - Andakudi Kanmai, B - Kattikulam Kanmai, C - PiravalurKanmai, D - Vettangudi Bird Sanctuary)

S.No	Common Name	Scientific Name	Family	A	B	C	D
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	-	+	-	+
Total				0	1	0	1

Table 21.6: List of Fish species recorded along the Sivagangai District (A - Andakudi Kanmai, B - Kattikulam Kanmai, C - PiravalurKanmai, D - Vettangudi Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	-	-	+
2	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	+	-	-	+
3	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	+	-	-	-
4	Spiny eel	<i>Macrognathus pancalus</i>	Mastacembelidae	LC	+	-	-	-
5	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	+	-	-
Total					5	1	0	2

Table 21.7: List of Reptile species recorded along the Sivagangai District (A - Andakudi Kanmai, B - Kattikulam Kanmai, C - PiravalurKanmai, D - Vettangudi Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	-	+
Total					1	1	0	1

Table 21.8: List of Bird species recorded along the Sivagangai District (A - Andakudi Kanmai, B - Kattikulam Kanmai, C - PiravalurKanmai, D - Vettangudi Bird Sanctuary)

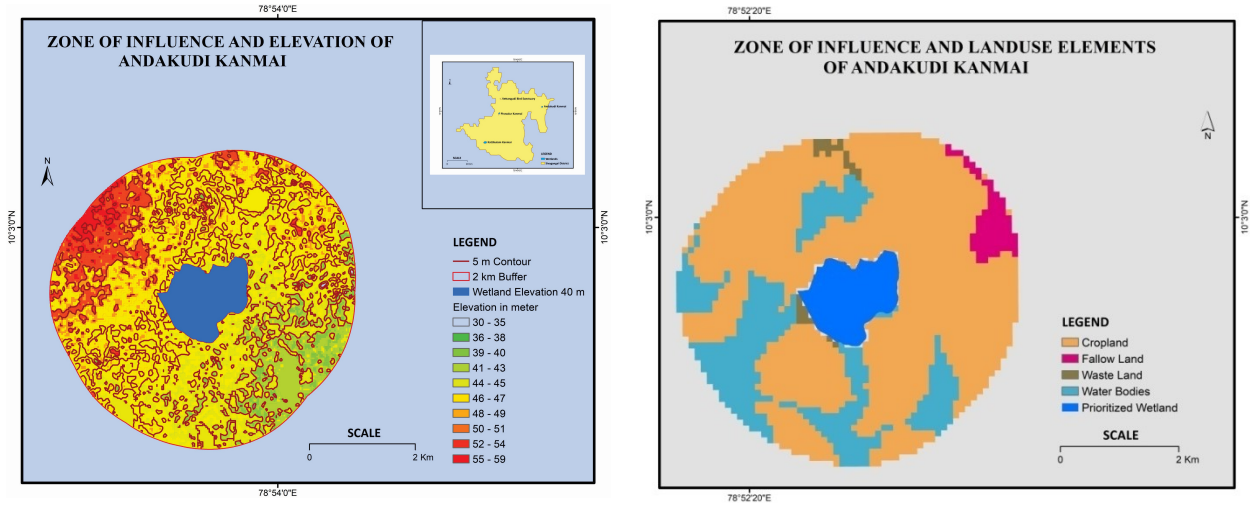
S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	-	-	-	+
2	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	Near Threatened	+	-	-	+
3	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	-	+	-	+
4	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	-	+	-	+

5	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	-	-	-	+
6	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	-	+	-	+
7	Oriental Honey-buzzard	<i>Pernis ptilorhynchus</i>	Accipitridae	Least Concern	-	-	-	+
8	White-eyed Buzzard	<i>Butastur teesa</i>	Accipitridae	Least Concern	-	-	-	+
9	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	-	+
10	Green Sandpiper	<i>Tringa ochropus</i>	Scolopacidae	Least Concern	-	-	-	+
11	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	-	-	-	+
12	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	+	-	+
13	Laughing Dove	<i>Stigmatopelia senegalensis</i>	Columbidae	Least Concern	-	-	-	+
14	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	-	-	+	+
15	Asian Koel	<i>Eudynamys scolopaceus</i>	Cuculidae	Least Concern	-	+	+	+
16	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	Least Concern	-	+	-	+
17	Asian Palm Swift	<i>Cypsiurus balasensis</i>	Apodidae	Least Concern	+	-	+	+
18	Common Hoopoe	<i>Upupa epops</i>	Upupidae	Least Concern	-	-	-	+
19	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Least Concern	-	-	-	+
20	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	+	-	-	+
21	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae	Least Concern	-	-	-	+
22	Blue-tailed Bee eater	<i>Merops philippinus</i>	Meropidae	Least Concern	-	-	-	+
23	Coppersmith Barbet	<i>Megalaima haemacephala</i>	Megalaimidae	Least Concern	-	-	-	+
24	Common Woodshrike	<i>Tephrodornis pondicerianus</i>	Tephrodornithidae	Least Concern	-	-	-	+
25	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+	+
26	Indian Paradise-flycatcher	<i>Terpsiphone paradisi</i>	Monarchidae	Least Concern	-	-	-	+
27	Rufous Treepie	<i>Dendrocitta vagabunda</i>	Corvidae	Least Concern	-	-	-	+
28	Indian Jungle Crow	<i>Corvus (macrorhynchus) culminatus</i>	Corvidae	Least Concern	-	-	-	+
29	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+	+
30	Jerdon's Bushlark	<i>Mirafra affinis</i>	Alaudidae	Least Concern	-	-	-	+
31	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	-	-	+	+
32	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	Least Concern	+	-	+	+
33	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	Least Concern	-	-	-	+
34	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	-	+	-	+
35	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+	+
36	Oriental Magpie Robin	<i>Copsychus saularis</i>	Muscicapidae	Least Concern	-	+	-	+
37	Indian Robin	<i>Saxicoloides fulicatus</i>	Muscicapidae	Least Concern	-	-	-	+
38	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	Least Concern	-	-	-	+
39	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	+	+	+	+
40	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	Least Concern	-	-	+	+
41	Indian Silverbill	<i>Euodice malabarica</i>	Estrildidae	Least Concern	-	-	-	+
42	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	Least Concern	-	-	-	+
Total					10	13	10	42

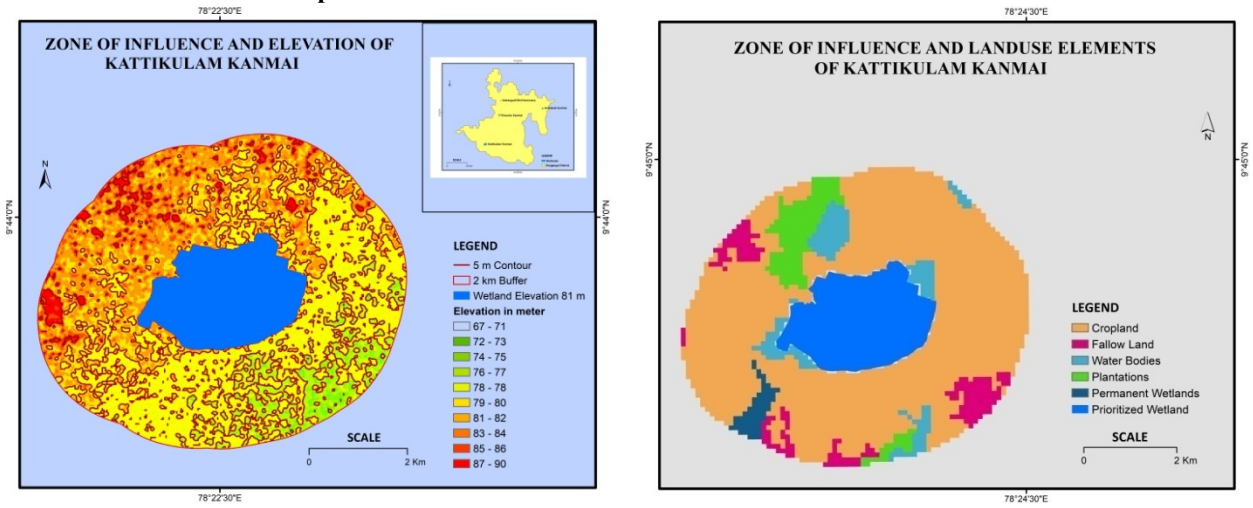
Table 21.9: List of Mammal species recorded along the Sivagangai District (A - Andakudi Kanmai, B - Kattikulam Kanmai, C - Piravalur Kanmai, D - Vettangudi Bird Sanctuary)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	-	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+	+
4	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	+	-	-	-
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+	+
Total					5	3	4	4

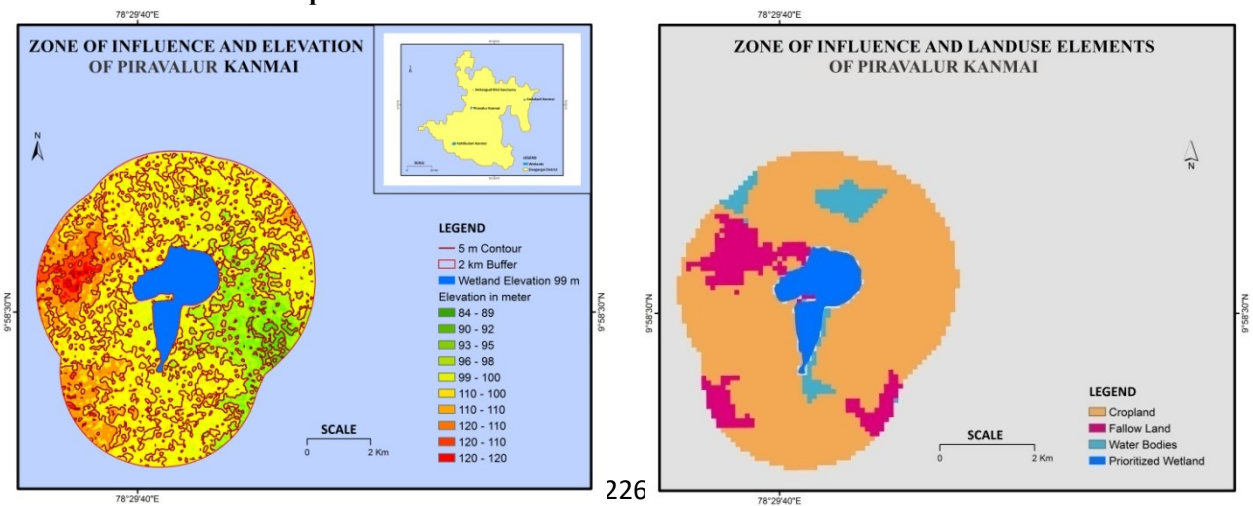
Map 21.2: Zone of influence around the Andakudi Kanmai.



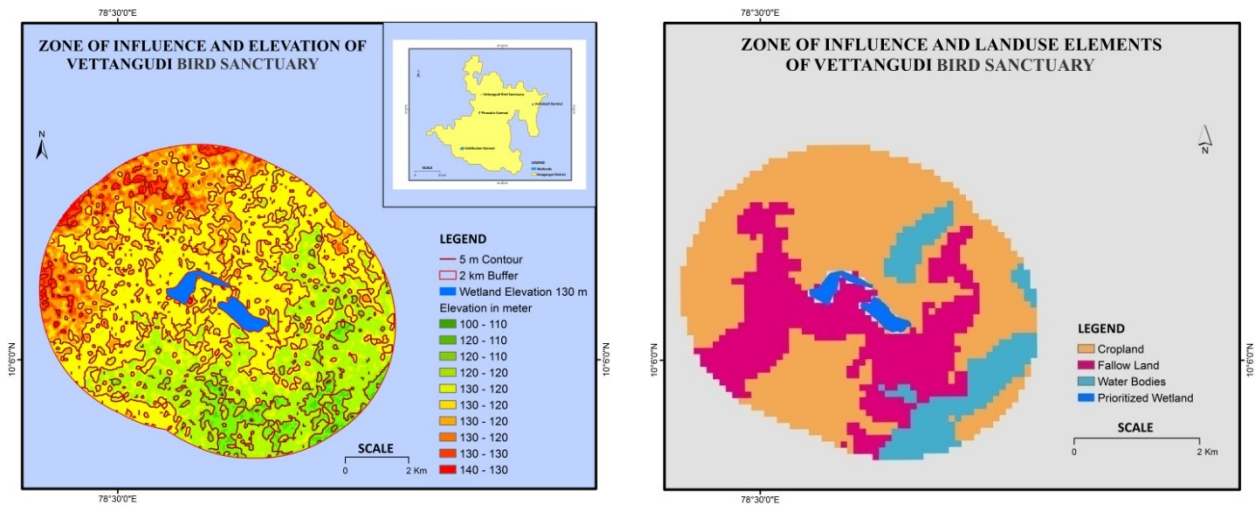
Map 21.3: Zone of influence around the KattiKulam Kanmai.



Map 21.4: The zone of influence around the Piravalur Kanmai.



Map 21.5: The zone of influence around the Vettangudi Bird Sanctuary.

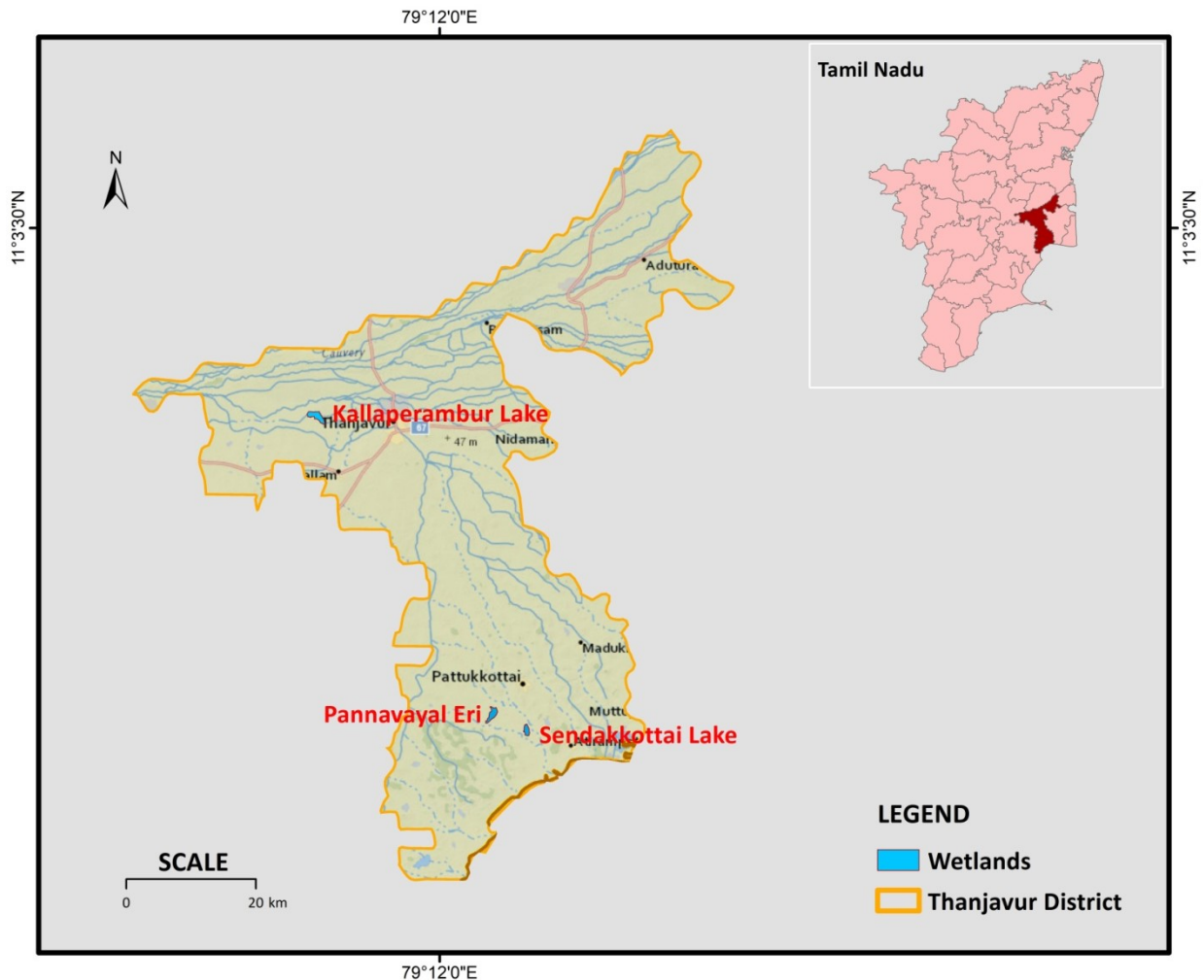


22. Thanjavur District

Thanjavur district is in the east coast of Tamil Nadu. The district is bound by Coloroon on the North which separates it from Ariyalur and Tiruchirapalli district; Thiruvarur and Nagapattinam districts on the east; Palk Strait and Pudukottai on the South and Pudukottai and Tiruchirapalli on the West.

Thanjavur district is the Rice Bowl of Tamil Nadu. It was the cultural capital of the country in 1790. Thanjavur gained prominence during the period of Chola Kings, who made it as their capital. Thereafter, it was ruled by Nayaks and Maratta Kings, who nurtured art and culture.

Total geographic area of Thanjavur is 3348.45 km². Total area under wetland is 34184 ha, which includes 893 small wetland (<2.25 ha). Lakes/Ponds occupy 17.89% of wetland area. The second major wetland type is Tanks/Ponds. There are 575 Tanks/Ponds with 5555 ha area (16.25%). The other wetland types are lagoons (3935 ha), and River/Stream (12738 ha). Of the three wetlands selected in the district, Kallaperambur is the largest while Sendakkottai is the smallest of the three wetlands (Map 22.1).



Map 22.1: Wetlands of Thanjavur district assessed for Prioritization

Kallaperambur Lake

The Kallaperambur lake is situated 15 km west of Thanjavur (Plate 22). It is an important migratory waterbird habitat of Tamil Nadu, Southern India. On one side of the lake is the road connecting Thanjavur and Budalur and on the other sides of the lake are bunds. Pollution by the use of organochlorine and organophosphorous pesticides such as Monocrotophos, BHC and Karatae and fertilizers such as DAP (Di-Ammonium Phosphate), Potash and Urea in the surrounding villages, irrational exploitation of fishery resources of the lake and poaching of birds by people during night hours are some of the major conservatory issues of the lake. There is also a conflict between the local villagers who use this lake water for irrigation and the Forest Department regarding the maintenance of water level. Villages that surround the wetland include Kallaperambur, Rayanthur, Gunamangalam, Melakarampet, Keelakarampet, Aalagudi.

The geographic coordinates are Latitude: 10° 48'11.2" N; 10° 48'06.0" N; 10° 48'10.4" N; 10° 48'09.4" N; and Longitude: 079° 01'57.2" E; 079° 01'57.6" E; 079° 01'48.4" E; 079° 01'32.0" E.

Kallaperambur lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and river Vennar. The water from the wetland helps in replenishing the groundwater and the overflow feeds the agriculture. The lake has an area of 246 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 40% Grasslands/scrublands, 50 % Agriculture and 10% Rural settlements. It has an area of 2815.12 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 22.2).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 37 plant species (Table 22.1) including nine invasive species that include *Prosopis juliflora*, *Parthenium hysterophorus* and *Ipomoea sp.* The fauna comprised of 73 animal species including 3 domestic species were recorded during the survey (Table 22.2 to 22.10).

The water from the wetland is not used for drinking purpose. The Village Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is not undertaken as the wetland has water only for around 6 months. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure with increasing encroachment and agriculture activities. The wetland water quality and the ecological character is changing rapidly. The wetland is an ideal bird habitat however; there is regular hunting of birds that is affecting the birds safety. Moreover, the wetland was promoted to be designated as a Bird Sanctuary however the efforts of the forest department were discouraged by the village panchayat.

The wetland is not is a Bird Sanctuary and faces a severe threat from land use change and compromise in the quality of the water. The polluting practices around the wetland should be taken care and it should be seen that it does not encroach into the wetland area any further.

Pannavayal Eri

Pannavial eri (Plate 22) based in Thanjavur district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Pannavial.

The geographic coordinates are Latitude: 10° 22'24.7" N; 10° 22'30.9" N; 10° 22'40.2" N; 10° 22'56.0" N; 10° 23'05.0" N and Longitude: 079° 16'00.2" E; 079° 16'17.1" E; 079° 16'31.9" E; 079° 16'43.8" E; 079° 16'49.9" E

Pannavialeri is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and river Cauvery. The water from the wetland helps in replenishing the groundwater and the overflow feeds the agriculture and Cauvery river. The lake has an area of 197 hectares and based on the secondary information the average depth is 3 meters. The wetland is surrounded by 85 % Agriculture, 10% Rural settlements and 5% Industrial. It has an area of 2691.28 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 22.3).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 35 plant species (Table 22.1) including nine invasive species that include *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 29 animal species including one domestic species were recorded during the survey (Table 22.2 to 22.10).

The water from the wetland is not used for drinking purpose. The Village Panchayat provides drinking water from the borewell water and Cauvery at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken as the wetland has water only for around 6 months and given tenders are by PWD. There is mining for sand or silt undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure with increasing encroachment and agriculture activities. The wetland is an ideal bird habitat however there is regular hunting of birds that is affecting the birds safety. Sand mining is becoming a threat. The wetland water quality and the ecological character is changing rapidly.

The wetland is not not protected under any category and faces a severe threat from land use change and compromise in the quality of the water.

Sendakkottai Lake

Senthakottai eri (Plate 23) based in Pattukotai taluka in Thanjavur district is not a Protected Area and comes under the jurisdiction of PWD.

The geographic coordinates are Latitude: 10° 21'30.9" N; 10° 21'29.4" N; 10° 21'31.4" N; 10° 21'35.6" N; 10° 21'29.3" N; and Longitude: 079° 18'59.8" E; 079° 19'07.3" E; 079° 19'18.0" E; 079° 19'23.6" E; 079° 19'27.2" E.

Senthakottaieri is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall and surrounding catchment area overflow of Agniara river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the agriculture and Maharasamutharam river. The lake has an area of 113 hectares and based on the secondary information the average depth is 3 meters. The wetland is surrounded by 85 % Agriculture and 15% Rural settlements. It has an area of 2170.26 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 22.4).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 20 plant species (Table 22.1) including four invasive species that include *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of nine animal species were recorded during the survey (Table 22.2 to 22.10).

The water from the wetland is not used for drinking purpose. The Village Panchayat provides drinking water from the borewell water and Cauvery at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken as the wetland has water only for around 3 months and given tenders are by PWD if the water is present. There is mining for sand or silt undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure with increasing encroachment, sand mining and agriculture activities. The wetland water quality and the ecological character is changing rapidly.

The wetland is not a protected area and faces a severe threat from land use change and compromise in the quality of the water.

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- Vachanth M.C. (2014) Studies on the ecology of water birds in the Kallaperambur Lake, Thanjavur district South India, *Ph.D., Thesis*, Bharathidasan University, Tiruchirappalli, Tamil Nadu.
- Vijayan V.S., Narendra Prasad S., Lalitha V. and Muralidharan S. (2004) Inland wetlands of India: Conservation Priorities. SACON, Pp. 532.

Table 22.1: List of plant species recorded along the Thanjavur District (A - Kallaperambur Lake, B - Pannavayal Eri, C - Sendakkottai Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	---	<i>Abelmoschus angulosus</i>	Malvaceae	Native	NA	+	-	-
2	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	-	-
3	Heart leaf sida	<i>Sida cordifolia</i>	Malvaceae	Native	NA	+	-	-
4	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	+	-
5	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	+
6	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	-	-
7	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	+	-	-
8	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
9	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	+	+	-
10	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	+	-
11	Blistering Ammannia	<i>Ammannia baccifera</i>	Lythraceae	Native	LC	+	-	-
12	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	-
13	Ribbed Sponge Gourd	<i>Luffa acutangula</i>	Cucurbitaceae	Native	NA	+	-	-
14	Erect Prickly Pear	<i>Opuntia stricta</i>	Cactaceae	Invasive	LC	+	+	-
15	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	+	-	-
16	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	-	-
17	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	+	-
18	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+
19	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	+	-	-
20	Silky Morning Glory	<i>Argyreia sericea</i>	Convolvulaceae	Native	NA	+	-	-
21	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	+
22	Kidney leaf morning glory	<i>Merremia emarginata</i>	Convolvulaceae	Native	LC	+	-	-
23	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	-	-
24	Black nightshade	<i>Solanum nigrum</i>	Solanaceae	Native	NA	+	-	-
25	Long-flower Barleria	<i>Barleria acuminata</i>	Acanthaceae	Native	NA	+	-	-
26	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	+	-	-
27	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	-	-
28	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	+	-
29	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	-
30	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	-
31	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	+	+	-
32	Glandular Jatropa	<i>Jatropha glandulifera</i>	Euphorbiaceae	Native	NA	+	-	-
33	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	+	-
34	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	+
35	Coconut Tree	<i>Cocos nucifera</i>	Arecaceae	Native	NA	+	-	-
36	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	+	-
37	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	+	-	+
Total						37	17	6

Table 22.2: List of Insect species recorded along the Thanjavur District (A - Kallaperambur Lake, B - Pannavayal Eri, C - Sendakkottai Lake)

S. No	Common Name	Scientific Name	Family	A	B	C
1	Toothpick Grasshopper	<i>Leptysmia marginicollis</i>	Acrididae	+	-	-
2	Mantis Egg (<i>Ootheca</i>)		Mantodae	+	-	-
3	Spittle bug	<i>Clovio sp.</i>	Aphrophoridae	+	-	-
4	Water Strider	<i>Gerris sp.</i>	Gerridae	+	-	-
5	Jewel bug	<i>Chrysocoris stollia</i>	Scutelleridae	+	-	-
6	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	-	-
7	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	-
Total				7	1	0

Table 22.3: List of Butterfly species recorded along the Thanjavur District (A - Kallaperambur Lake, B - Pannavayal Eri, C - Sendakkottai Lake)

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	Common Rose	<i>Pachliopta aristolochiae</i>	Nymphalidae	Common	+	-	-
2	Crimson Rose	<i>Pachliopta hector</i>	Nymphalidae	Common	+	+	+
3	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Papilionidae	Common	+	+	+
4	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	-	-
5	Gram Blue	<i>Euchrysops cnejus</i>	Polyommatainae	Common	+	-	-
6	Plain Tiger	<i>Danaus chrysippus</i>	Danaidae	Common	+	+	-
7	Common Crow	<i>Euploea core</i>	Danaidae	Common	+	-	-
8	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	+	-	-
9	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalidae	Common	+	-	-
Total					9	3	2

Table 22.4: List of Odonates recorded along the Thanjavur District (A - Kallaperambur Lake, B - Pannavayal Eri, C - Sendakkottai Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	+	-	-
2	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	-	-
3	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	-
4	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	-
5	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	-	+	-
Total					4	0	0

Table 22.5: List of Arachnida species recorded along the Thanjavur District (A - Kallaperambur Lake, B - Pannavayal Eri, C - Sendakkottai Lake)

S. No	Common Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	+	-
2	Wolf Spider	<i>Lycosidae sp.</i>	Lycosidae	+	-	-
Total				2	1	0

Table 22.6: List of Fish species recorded along the Thanjavur District (A - Kallaperambur Lake, B - Pannavayal Eri, C - Sendakkottai Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	-	-
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	-	-
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	+	-	-
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	-	-
5	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	+	-	-
6	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	-	-
7	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	+	-	-
8	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	+	-	-
9	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	+	-	-
10	Catla	<i>Catla catla</i>	Cyprinidae	LC	+	-	-
11	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	-	-
Total					11	0	0

Table 22.7: List of Amphibian species recorded along the Thanjavur District (A - Kallaperambur Lake, B - Pannavayal Eri, C - Sendakkottai Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	LC	+	-	-
Total					1	0	0

Table 22.8: List of Reptiles species recorded along the Thanjavur District (A - Kallaperambur Lake, B - Pannavayal Eri, C - Sendakkottai Lake)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	+	-	-
3	Snake	<i>Xenochrophis sp.</i>	Colubridae	-	+	-	-
Total					3	1	1

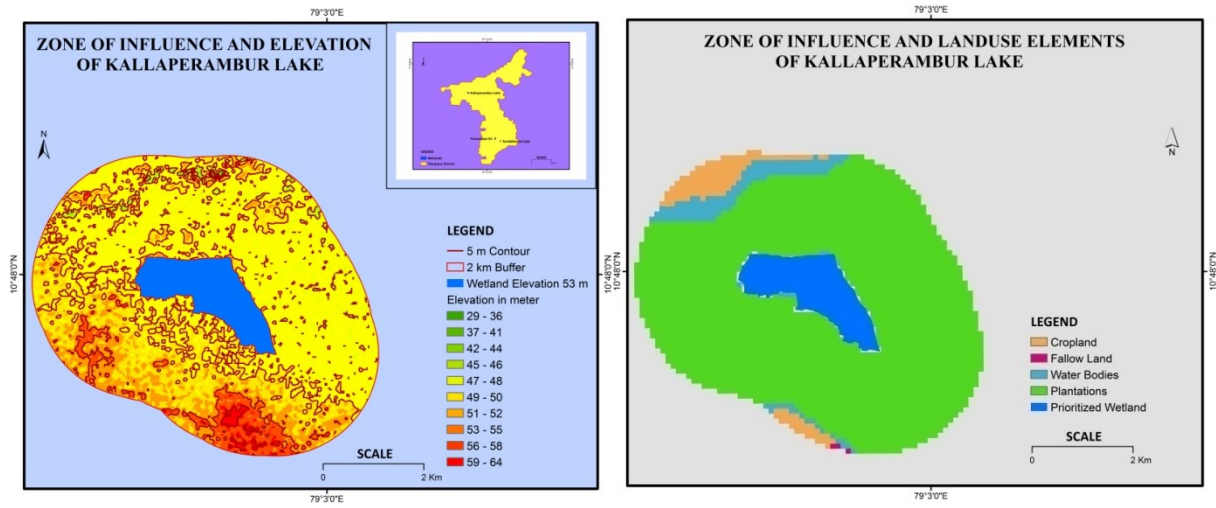
Table 22.9: List of Bird species recorded along the Thanjavur District (A - Kallaperambur Lake, B - Pannavayal Eri, C - Sendakkottai Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Least Concern	+	+	-
2	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	+	+	-
3	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	Near Threatened	+	-	-
4	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	-	-
5	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	-	-
6	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	-	-
7	Shikra	<i>Accipiter badius</i>	Accipitridae	Least Concern	+	-	-
8	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	-	-
9	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	Least Concern	+	-	-
10	Common Snipe	<i>Gallinago gallinago</i>	Scolopacidae	Least Concern	+	-	-
11	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae	Least Concern	+	-	-
12	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Columbidae	Least Concern	+	-	-
13	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	+	-
14	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	-	-
15	Asian Koel	<i>Eudynamis scolopacea</i>	Cuculidae	Least Concern	+	+	-
16	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	+	-
17	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Least Concern	+	-	-
18	Rufous Treepie	<i>Dendrocitta vagabunda</i>	Corvidae	Least Concern	+	-	-
19	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	+	-	-
20	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
21	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	+	-	-
22	Red-rumped Swallow	<i>Cecropis daurica</i>	Hirundinidae	Least Concern	+	-	-
23	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Least Concern	+	+	-
24	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	Least Concern	+	-	-
25	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	+	-	-
26	Zitting Cisticola	<i>Cisticola juncidis</i>	Cisticolidae	Least Concern	+	-	-
27	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	+	+	-
28	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
29	Brahminy Starling	<i>Sturnia pagodarum</i>	Sturnidae	Least Concern	+	+	-
30	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	+	-	+
31	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	Least Concern	+	+	-
32	Yellow Wagtail	<i>Motacilla flava</i>	Motacillidae	Least Concern	+	-	-
Total					32	11	3

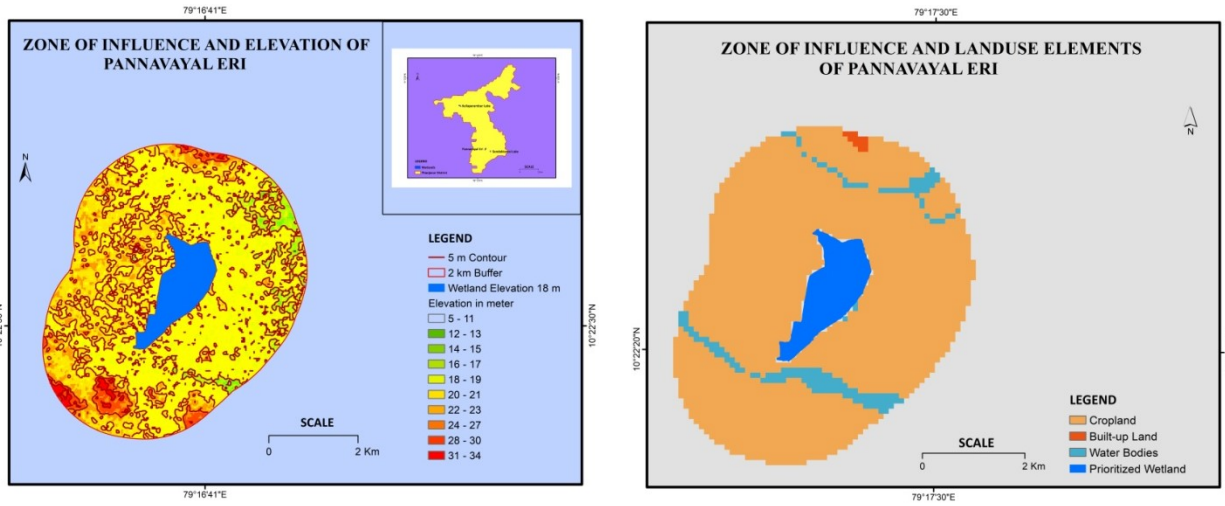
Table 22.10: List of Mammals species recorded along the Thanjavur District (A - Kallaperambur Lake, B - Pannavayal Eri, C - Sendakkottai Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	-	-
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	-
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	-	-
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	-
Total					4	2	0

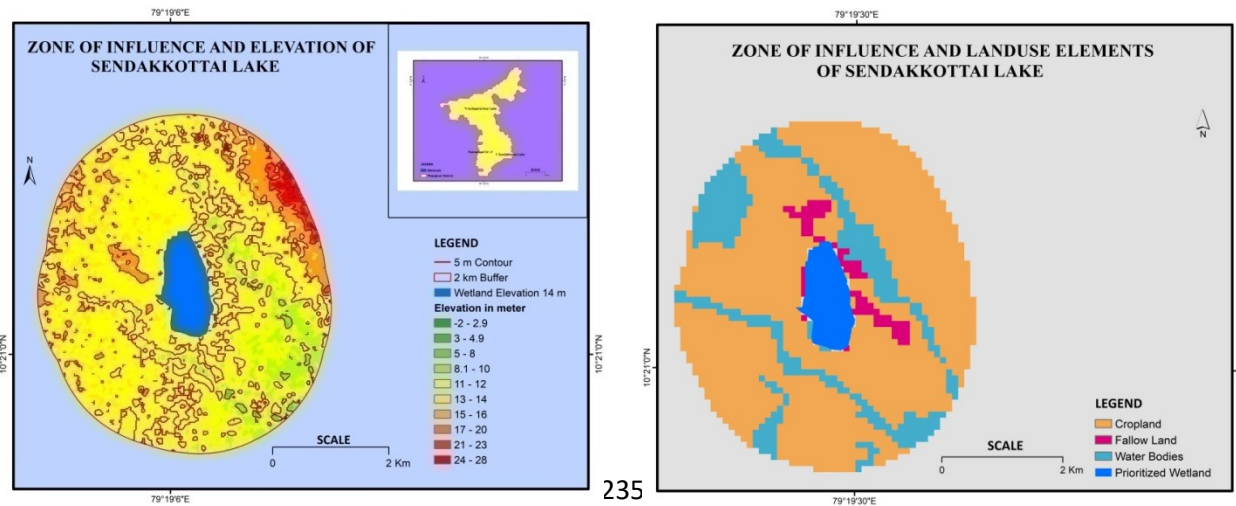
Map 22.2: The zone of influence around the Kallaperambur Lake.



Map 22.3: Zone of Influence around the Pannavayal Eri.



Map 22.4: Zone of influence around the Sendakkottai Lake.

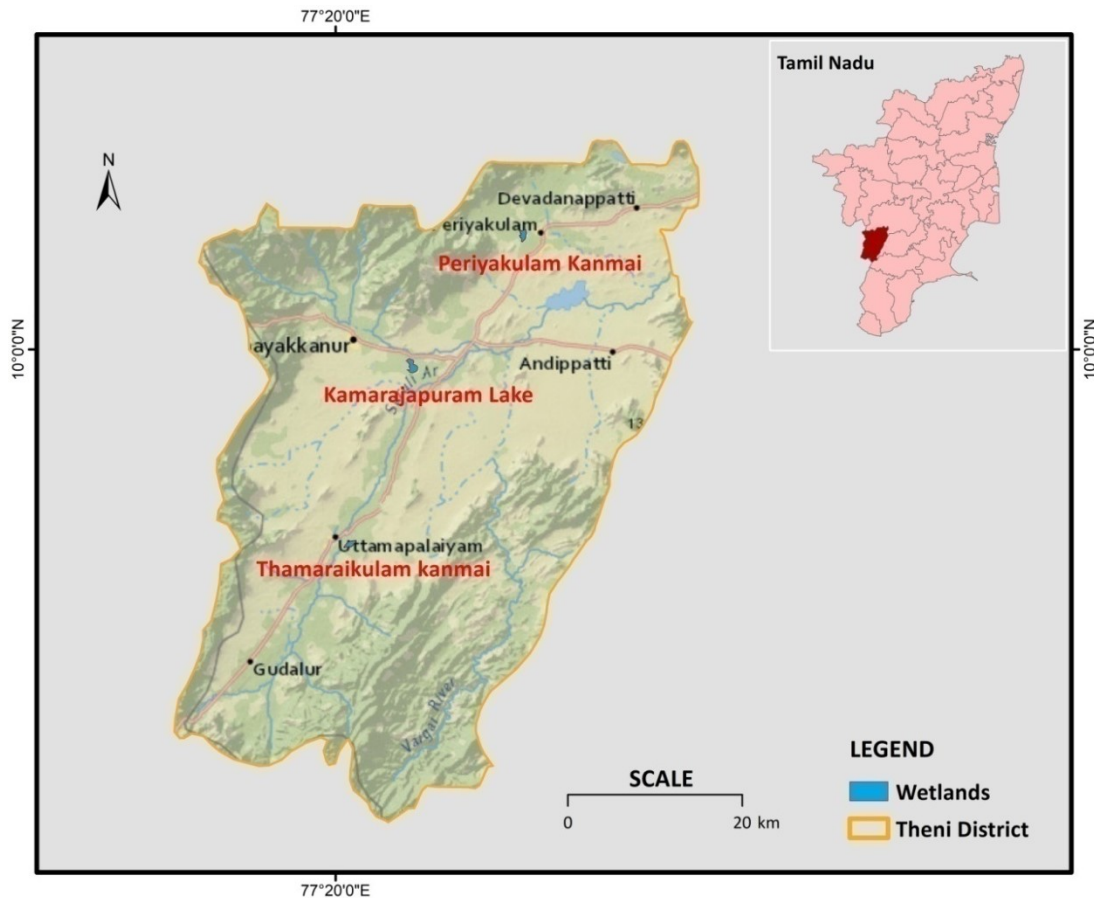


23. Theni District

Theni district is bounded by Dindigul district to the north, Madurai district to the east, Virudhunagar district to the southwest, and Kerala state to the west. The district is known for its salubrious climate, hills and lakes. Its economy is mostly agricultural. Silk, cotton, coffee seeds, cardamom and mango are the main product of the district.

Theni district was formed by the bifurcation from the former Madurai district during 1996. Theni district is a district is divided into two natural divisions: The hilly areas are constituted by parts of the three taluks Periyakulam, Uthamapalayam and Andipatti with thick vegetation and perennial streams from the hills on the western side and Cumbum valley, which lies in Uthamapalayam taluk. The Mullai Periyar river, Vaigai river, Kottagudi river, Suruliyar river, Varaganathi river, Manjalar river and Varattaru river flow through the district. The important reservoirs in the district are Mullai Periyar Dam, Vaigai Dam, Manjalaru Dam, Sothuparai Dam, Sanmughanathi Dam, Manalaru Dam and Melmanalaru Dam. Its economy is mostly agricultural. Utilisation of land area for cultivation in Theni district is 40.33%. The forest area in Theni district is about 33.70%. There are 27 forest areas in Theni district constituting a total area of 795.81 km² (307.26 sq mi).

Total area under wetland is 5293 ha, which includes 83 small wetland (<2.25 ha). Lakes/Ponds occupy 21.46% of wetland area. The other wetland types of the district are Tanks/Ponds (994 ha) and Reservoir (1957 ha). Of the three wetlands selected in the district, Kamarajapuram is the largest while Thamarai Kulam is the smallest of the three wetlands (Map 23.1).



Map 23.1: Wetlands of Theni district assessed for Prioritization

Kamarajapuram Lake

Kamarajapuram Lake (Plate 23), also called as Sodhanai kanmai is based in Theni district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Kodangipatty, Pannaithoppu and Kamarajapuram.

The geographic coordinates are Latitude: 9° 58'41.6" N; 9° 58'53.8" N; 9° 59'03.4" N; and Longitude: 077°25'01.1" E; 077° 25'04.0" E; 077° 24'51.5" E.

Kamarajapuram Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area. It receives water from Kottakudi river canal. The water from the wetland helps in replenishing the groundwater and the overflow feeds the agricultural lands around the wetland. The lake has an area of 116 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 85 % Agriculture, 10 % Grasslands/Scrublands and 5% Rural settlements. It has an area of 2213.94 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 23.2).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 28 plant species (Table 23.1) including 12 invasive species that include *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 30 animal species including three domestic species were recorded during the survey (Table 23.2 to 23.10).

The water from the wetland is not used for drinking purpose or agriculture. The municipal corporation provides drinking water from the borewell water and Mullaperiyar Dam at regular intervals that is used by the locals to fulfill their daily requirements. There was mining for sand or silt undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure. The wetland water quality and the ecological character is changing rapidly due to lack of water.

The wetland is not a Protected Area and faces a severe threat from land use change and compromise in the quality of the water.

Periya Kulam Kanmai

Periya Kulam kanmai (Plate 23) also called as Periya Kulam Lake is based in Periya Kulam taluka in Theni district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Thenkarai.

The geographic coordinates are Latitude: 10° 07'24.7" N; 10° 07'23.6" N; 10° 07'19.0" N; and Longitude: 077° 31'43.7" E; 077° 31'41.4" E; 077° 31'46.8" E

Periya Kulam kanmai is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area. It receives water from Sothuparai river canal. The water from the wetland helps in replenishing the groundwater and the overflow feeds the agricultural lands around the wetland. The lake has an area of 71 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 70 % Agriculture, 10 % Urban Settlements and 20% Rural settlements. It has an area of 2005.92 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 23.3).

The wetland was Mesotrophic during the visit, with the pH of the water being 9.1, salinity measuring 0.114 ppt, the TDS was recorded high at 150 ppm. The vegetation comprised of 38 plant species (Table 23.1) including eight invasive species that also include *Prosopis juliflora*, *Lantana camara* and *Ipomoea aquatica*. The fauna comprised of 62 animal species including three domestic species were recorded during the survey (Table 23.2 to 23.10). One Threatened species of bird and one fish were observed during the survey.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the Sothuparai Dam at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for commercial purpose seasonally. There was mining for sand or silt undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The site adjoining the wetland is majorly used by the locals as toilet. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure. The wetland water quality and the ecological character is changing rapidly due to lack of water.

The wetland is not a Protected Area and faces a severe threat from land use change and compromise in the quality of the water.

Thamarai Kulam Kanmai

Thamarai Kulam Lake (Plate 23), also called as Ramasami Naiken lake is based in Uthamapalayam taluka in Theni district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Vaikapatty, Ramasamyanaicken patty and Gokilapuram.

The geographic coordinates are Latitude: 09° 48'04.6" N; 09° 48'07.5" N; 09° 48'09.1" N; 09° 48'08.6" N; 09° 48'09.3" N; and Longitude: 077° 20'46.3" E; 077° 20'52.1" E; 077° 20'58.7" E; 077° 21'07.2" E; 077° 21'16.4" E.

Thamarai Kulam Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area. It receives water from Mullaperiyar river canal overflow feeds Vaigai river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the agricultural lands around the wetland. The lake has an area of 59.7 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 80 % Agriculture and 20% Rural settlements. It has an area of 1959.63 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland(Map 23.4).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.6, salinity measuring 0.043 ppt, the TDS was recorded high at 49.6 ppm. The vegetation comprised of 55 plant species (Table 23.1) including 12 invasive species that also include *Prosopis juliflora*, *Lantana camara* and *Ipomoea aquatica*. The fauna comprised of 60 animal species including four domestic species were recorded during the survey (Table 23.2 to 23.10). Three Threatened species of birds and one fish specie were observed during the survey.

The water from the wetland is used for drinking purpose. The municipal corporation provides drinking water from the Mullaperiyar river at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for commercial purpose and recreational purpose. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure. The wetland water quality and the ecological character is changing rapidly due to lack of water. The wetland is not a Protected Area and faces a severe threat from landuse change and compromise in the quality of the water.

Table 23.1: List of Plant species recorded along the Theni District (A - Kamarajapuram Lake, B - Periyakulam Kanmai, C - Thamaraikulam Kanmai)

S. No	Common Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	Mexican Prickly Poppy	<i>Argemone mexicana</i>	Papaveraceae	Invasive	NA	+	-	+
2	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	+	+
3	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	+	+
4	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	-
5	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	-	+
6	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
7	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	+	+	+
8	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	-	-
9	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	+
10	Erect Prickly Pear	<i>Opuntia stricta</i>	Cactaceae	Invasive	LC	+	-	-
11	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	+	-	-
12	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+
13	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	-	-
14	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+
15	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	+
16	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	-	+
17	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	+	-	-
18	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	-	+
19	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	+	+
20	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	-	+
21	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	+	+	-
22	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	-
23	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+
24	Glandular Jatropha	<i>Jatropha glandulifera</i>	Euphorbiaceae	Native	NA	+	-	-
25	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	-	+
26	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	-	-
27	Bermuda grass,	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	+
28	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	+	-	-
Total						28	14	17

Table 23.2: List of Insect species recorded along the Theni District

S. No	Common Name	Scientific Name	Family	A	B	C
1	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	-	+
2	Grasshopper 1	<i>Diabolocatantops pinguis</i>	Acrididae	-	-	+
3	Grasshopper 2	<i>Spathosternum prasiniferum</i>	Acrididae	-	-	+
4	Water Strider	<i>Gerris sp.</i>	Gerridae	-	+	+
5	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	-	-	+
6	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	+	-	+
7	Transverse lady beetle	<i>Coccinella transversalis</i>	Coccinellidae	-	-	+
8	Blister Beetle	<i>Hycleus sp.</i>	Meloidae	+	+	+
9	Blue Banded Honeybee	<i>Amegilla cingulata</i>	Apidae	-	-	+
10	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	+	+
11	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	+	+
12	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	-	+	+
13	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	+
14	Pharaoh Ant	<i>Monomorium pharaonis</i>	Formicidae	-	+	+
15	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	+	+
Total				4	8	15

Table 23.3: List of Butterfly species recorded along the Theni District

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	-	+	-
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	-	+	-
3	Common Emigrant	<i>Catopsilia pomona</i>	Coliadinae	Common	-	+	+
4	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	-	+	+
5	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	-	+	-
6	Lime Butterfly	<i>Papilio demoleus</i>	Papilioninae	Common	-	+	-
7	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	+	-
8	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+
Total					2	8	3

Table 23.4: List of Odonata species recorded along the Theni District

S. No	Common Name	Scientific Name	Family	Status	A	B	C
1	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	-	+	-
2	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	-	+	-
3	Coromandel Marsh Dart	<i>Ceragrion coromandelianum</i>	Coenagrionidae	Common	-	+	-
4	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	-	+	-
5	Trumpet Tail	<i>Acisoma panorpoides</i>	Libellulidae	Common	-	+	-
6	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	+	+
7	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	-	+	+
8	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	-
9	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	-
10	Wandering Glider	<i>Pantala flavesceus</i>	Libellulidae	Common	+	+	+
11	Yellow-Tailed Ashy Skimmer	<i>Potamarcha congener</i>	Libellulidae	Common	-	+	+
12	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	-	+	-
13	Red Marsh Trotter	<i>Tramea basilaris</i>	Libellulidae	Common	-	+	-
Total					3	13	4

Table 23.5: List of Arachnida species recorded along the Theni District

S. No	Common Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	+	-
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	+	-	-
Total				2	1	0

Table 23.6: List of Fish species recorded along the Theni District

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	-	+	+
2	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	-	+	-
3	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	-	+	-
4	Catla	<i>Catla catla</i>	Cyprinidae	LC	-	+	-
5	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	-	+	+
6	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	-	+	+
7	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	+	+
8	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	+	-
Total					0	8	4

Table 23.7: List of Amphibian species recorded along the Theni District

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Indian Bull Frog	<i>Hoplobatrachus tigerinus</i>	Dicroglossidae	Least Concern	-	+	-
2	Indian Pond Frog	<i>Euphlyctis hexadactylus</i>	Dicroglossidae	Least Concern	-	+	-
Total					0	2	0

Table 23.8: List of Reptiles species recorded along the Theni District

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+
2	Russell's Viper	<i>Daboia russelii</i>	Viperidae	Least Concern	+	-	-
Total					2	1	1

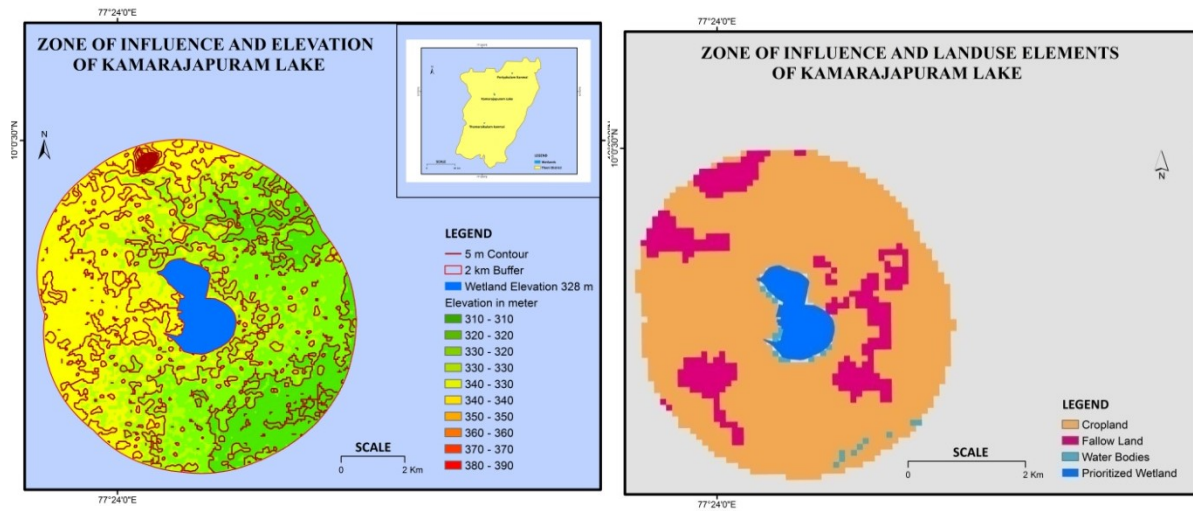
Table 23.9: List of Bird species recorded along the Theni District

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	-	-
2	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	+
3	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	+	-	-
4	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	-	-
5	Asian Koel	<i>Eudynamis scolopacea</i>	Cuculidae	Least Concern	+	-	-
6	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Least Concern	+	-	-
7	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	-	+
8	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
9	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
10	Purple rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	+	-	-
11	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	Least Concern	+	-	-
Total					11	3	4

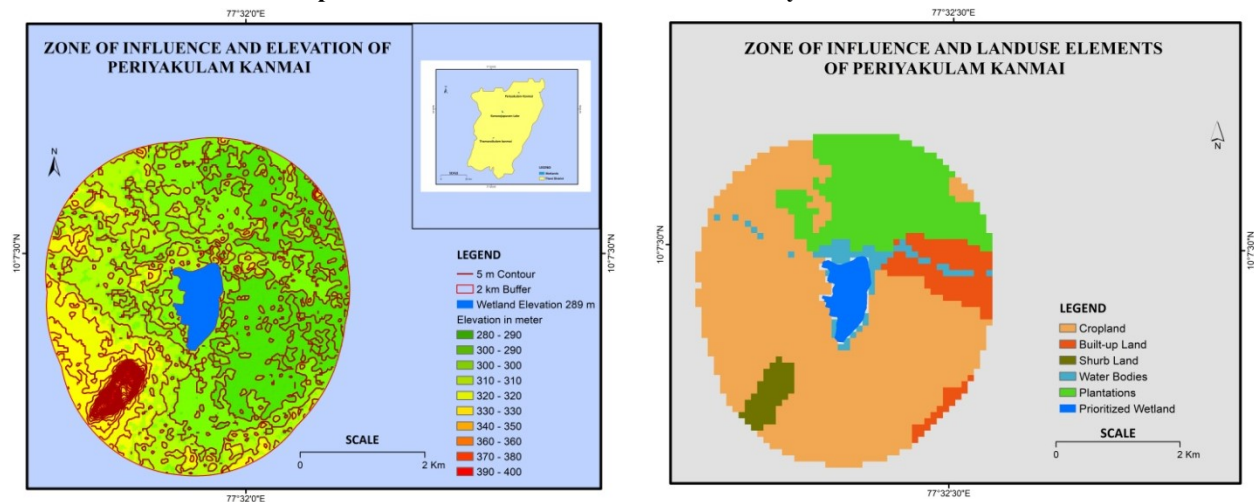
Table 23.10: List of Mammals species recorded along the Theni District

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+
2	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+
3	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	-	+
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	-	-
Total					4	2	3

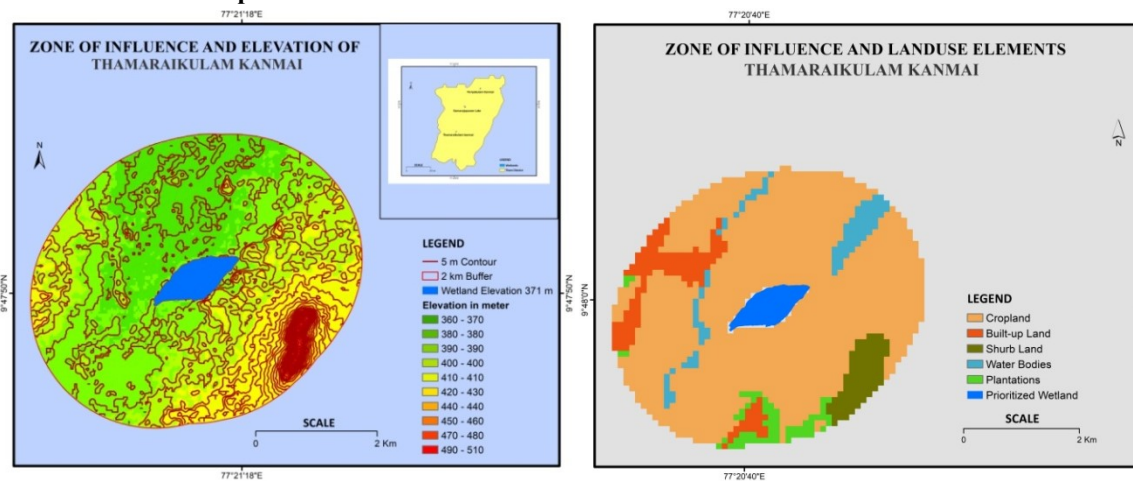
Map 23.2: The zone of influence around the Kamarajapuram Lake.



Map 23.3: Zone of Influence around the PeriyakulamKanmai.



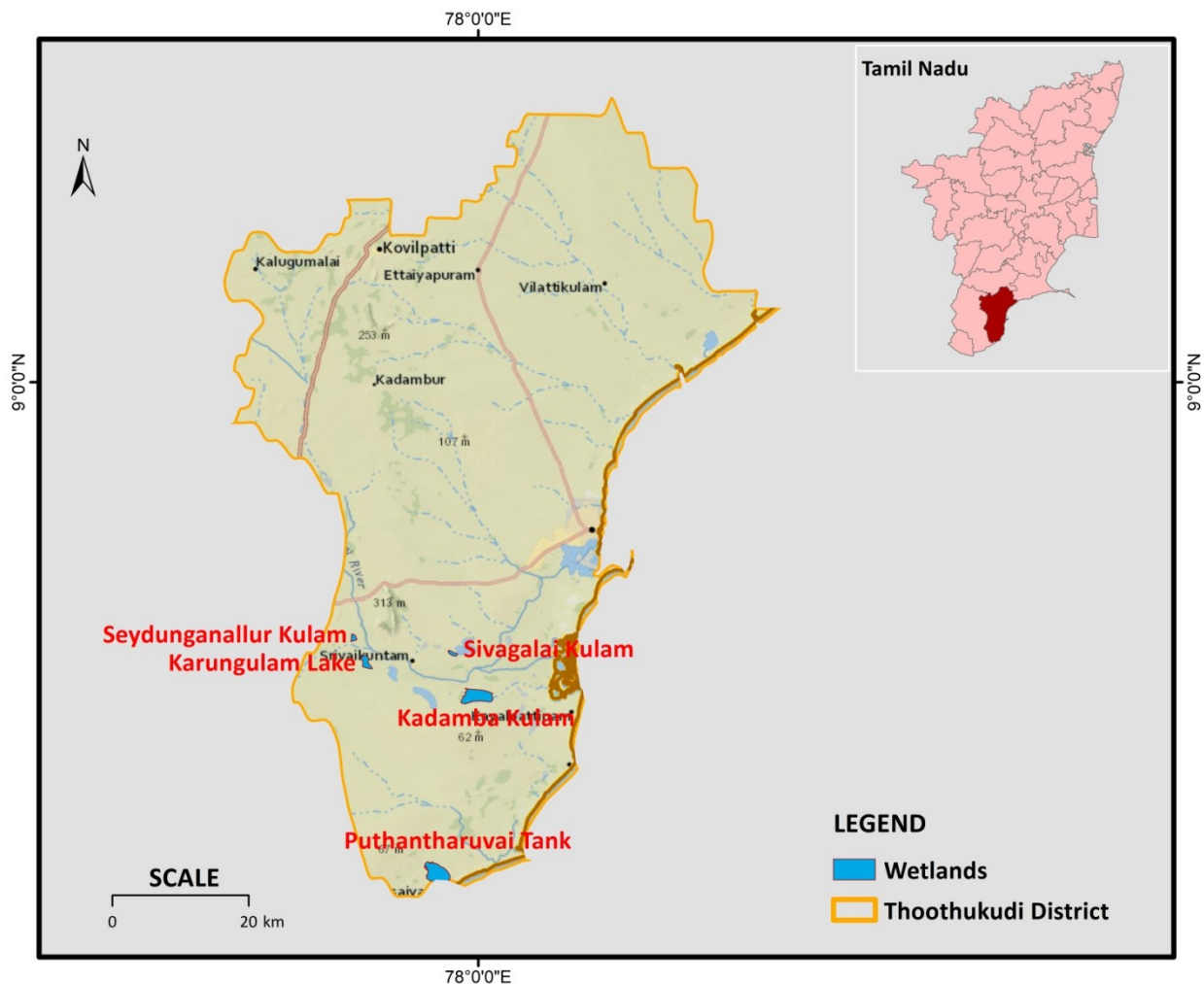
Map 23.4: Zone of Influence around the ThamaraiKulamKanmai.



24. Thoothukudi District

The district of Thoothukudi is situated in the extreme south-eastern corner of Tamil Nadu state. It is bounded on the north by the districts of Tirunelveli, Virudhunagar and Ramanathapuram, on the east and south-east by Gulf of Mannar and on the west and south-west by the district of Tirunelveli. Thoothukudi district, also known as Tuticorin district was formed by dividing Tirunelveli district in 1986. It was formerly ruled by one of the oldest kingdoms in India, the Pandyan Dynasty with the port of Korkai through which trade with Rome happened. Thoothukudi is a seaport, which serves southern Tamil Nadu including the inland cities of Coimbatore, Madurai and Tirunelveli.

Total geographic area of Thoothukudi is 4621 km². Total area under wetland is 37810 ha, which includes 576 small wetland (<2.25 ha). Lakes/Ponds occupy 28.07% of wetland area. The second major wetland type is Salt pans (6635 ha). The other wetland types Tanks/ponds, Rivers/stream, Salt marsh and Aquaculture ponds. Of the five wetlands selected in the district, Puthantharuvai Tank is the largest while Sivagalai Kulam is the smaller of the five wetlands (Map 24.1).



Map 24.1: Wetlands of Thoothukudi district assessed for Prioritization

KadambaKulam

Kadamba Kulam (Plate 24) is based in Tirchendur taluka in Toothukudi district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Mookuperi, Melakadambai.

The geographic coordinates are Latitude: 08°35'17.6" N; 08°35'26.6" N; 08°35'30.3" N; 08°35'37.0" N; 08°35'23.7" N; and Longitude: 078°01'04.2" E; 078°00'42.8" E; 078°00'37.8" E; 077°59'28.0" E; 077°59'52.7" E; 077°00'52.5" E.

KadambaKulam is a wetland that belongs to the Natural (inland) tank category in the sub category Permanentlake. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area and from the Tambraparani river. The water from the wetland helps in replenishing the groundwater. The lake has an area of 706 hectares and based on the secondary information the average depth is 5 meters. The wetland is surrounded by 95 % Agriculture and 5% Rural settlements. It has an area of 3717.85 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 24.2).

The wetland was Mesotrophic during the visit, with the pH of the water being 8, salinity measuring 1.07 ppt, the TDS was recorded high at 155 ppm. The vegetation comprised of 45 plant species (Table 24.1) including 10 invasive species that also include *Eichornia crassipes*, *Ipomoea sp.* and *Prosopis juliflora*. The fauna comprised of 71 animal species including one domestic species were recorded during the survey (Table 24.2 to 24.10). One Threatened species of bird was observed during the survey.

The water from the wetland is used for drinking purpose. Agriculture is undertaken around the wetland and the ground water is used for irrigation. Fishery is undertaken with permission from PWD in the lake, recreational fishery is also practiced. Grazing by the cattle is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time.

The wetland does not show major change in the pattern of water inflow and outflow. There are invasive plant species that is changing the habitat of the wetland.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from solid waste dumping although it is observed around the wetland.

KarunKulam Lake

KarunKulam Lake is commonly also known as Marthandaesuurm Kulum (Plate 24). The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include KarunKulam, Thatan Kulam, Kira Kulam and Pulliyan Kulam.

The geographic coordinates are Latitude: 08° 38'11.4" N; 08° 38'05.8" N; 08° 37'54.4" N; 08° 37'43.9" N; and Longitude: 077° 51'12.4" E; 077° 51'17.6" E; 077° 51'17.7" E; 077° 51'14.0" E.

KarunKulam Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area and from the Tambraparani river and Maruthur river canal. The water from the wetland helps in replenishing the groundwater. The lake has an area of 181 hectares and based on the secondary information the average depth is 3 meters. The wetland is surrounded by 85 % Agriculture, 10% Grassland/scrubland and 5% Rural

settlements. It has an area of 2483.41 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 24.3).

The wetland was Mesotrophic during the visit, with the pH of the water being 8, salinity measuring 0.138 ppt, the TDS was recorded high at 95 ppm. The vegetation comprised of 51 plant species (Table 24.1) including 11 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 97 animal species including three domestic species were recorded during the survey (Table 24.2 to 24.10). Two Near Threatened species of fish were recorded during the survey. *Tilapia sp* is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Fishery is undertaken without any permission in the lake, recreational fishery is also practiced. Grazing by the cattle is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has several temples and other religious institutions along its bank, except for recreation no other cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The pollution in the form of sewage, effluents and solid waste dumping is seen but it is low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities. The siltation is also observed near the inlet as well as the outlet of the wetland.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland.

Puthantharuvai Tank

Puthantharuvai tank also called as Periyatharuvai kanmai (Plate 24) is based in Sathankulam taluka in Toothukudi district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Settivalai, Osathukudiiruppu, Kommudikotti, Thattanmadam.

The geographic coordinates are Latitude: 08° 21'17.3" N; 08° 21'21.0" N; 08° 21'10.8" N; and Longitude: 077° 56'09.9" E; 077° 55'55.3" E; 077° 56'13.5" E.

Puthantharuvai tank is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and from the Manimuthuru river and Vijayanarayanam tank. The water from the wetland helps in replenishing the groundwater. The lake has an area of 769 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 85 % Agriculture and 15% Rural settlements. It has an area of 3518.27 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 24.4).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 12 plant species (Table 24.1) including four invasive species that include *Prosopis juliflora*. The fauna comprised of 20 animal species including two domestic species were recorded during the survey (Table 24.2 to 24.10). *Tilapia* is a very common invasive

species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Fishery is undertaken with permission from PWD in the lake, recreational fishery is also practiced. Grazing by the cattle is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time.

The wetland does not show major change in the pattern of water inflow and outflow. There are invasive plant species that is changing the habitat of the wetland.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from solid waste dumping although it is observed around the wetland.

Seydunganallur Kulam

Seydunganallur Kulam (Plate 24) is located in Seydunganallur village, under the taluk of Srivaikundam. Villages that surround the wetland include Seydunganallur, Karaiyadiyur, Melathuthikuzhi, Keelathuthikuzhi, Santhankarapatty, Ayyanarkulampatty and Santhaiyadiyur. The wetland is not a Protected Area and comes under the jurisdiction of PWD.

The geographic coordinates are Latitude: 08° 38'25.3" N; 08° 38'26.4" N; 8° 39'28.2" N; 8° 39'33.5" N; and Longitude: 077° 49'52.8" E; 077° 49'59.2" E; 077° 50'07.8" E; 077° 50'20.3" E

Seydunganallur Kulam is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and the influence of Tambraparani river. Water supply is regulated from Marudur Anicut and the water comes from the Melakal canal. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining Allankaluvalcannal. The lake has an area of 63.1 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 70 % Agriculture, 10% Grassland/scrubland and 20% Rural settlements. It has an area of 1916.05 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 24.5).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.4, salinity measuring 0.174 ppt, the TDS was recorded high at 126 ppm. The vegetation comprised of 43 plant species (Table 24.1) including seven invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 95 animal species including three domestic species were recorded during the survey (Table 24.2 to 24.10). One Threatened bird species of and Two fish species were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose as the water is present for brief period. The municipal corporation and Panchayat provide drinking water from the borewell and Tambraparani water at regular intervals that is used by the locals to fulfill their daily requirements. The agriculture is undertaken around the wetland using borewell and Tambraparani water. Fishery is not undertaken. Only recreational fishing is undertaken. Grazing by the cattle is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There is high-tension wires' passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. Unplanned development and increasing sewage and effluents are a major threat that needs to be regulated. The locals are well aware of the importance of the wetland with the presence of the civil society group that undertakes regular cleaning and awareness activities around the lake.

The wetland is not included in any of the protection and conservation categories. The wetland faces a severe threat from solidwaste dumping changing the wetland character.

Sivagalai Kulam

Sivakalai Kulam (Plate 25) is located in Sivakalai village is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Sivagalai, Mangattapuram, Perunkulam, Vadmanngaran.

The geographic coordinates are Latitude: 08° 38'23.9" N; 08° 38'24.4" N; 08° 38'34.2" N; 08° 38'40.3" N; and Longitude: 077° 58'31.9" E; 077° 58'19.0" E; 077° 57'37.2" E; 077° 57'36.8" E.

Sivakalai Kulam is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and from the Tambraparani river and Maruthur river canal. The water also helps in the replenishing the groundwater. The lake has an area of 59.6 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 80 % Agriculture, 10% Grassland/scrubland and 10% Rural settlements. It has an area of 1961.12 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 24.6).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.5, salinity measuring 0.102 ppt, the TDS was recorded high at 98 ppm. The vegetation comprised of 34 plant species (Table 24.1) including nine invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 78 animal species including two domestic species were recorded during the survey (Table 24.2 to 24.10). Two near Threatened species of birds and fish were observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Fishery is undertaken without any permission in the lake, recreational fishery is also practiced. The wetland is used for bathing and grazing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has several temples and other religious institutions along its bank, except for recreation no other cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The pollution in the form of sewage, effluents and solidwaste dumping is seen but it is low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities. The siltation is also observed near the inlet as well as the outlet of the wetland.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland.

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Table 24.1: List of Plant species recorded along the Thoothukudi District (A - Kadamba Kulam, B - Karungulam Lake, C - Puthantharuvai Tank, D - Seydunganallur Kulam, E - Sivagalai Kulam)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D	E
1	Sacred Water Lotus	<i>Nelumbo nucifera</i>	Nelumbonaceae	Native	NA	+	+	-	+	+
2	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	+	-	-	-	-
3	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	+	-	-	-	-
4	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	+	-	+	+
5	Horn-Fruited Jute	<i>Corchorus tridens</i>	Malvaceae	Native	NA	+	-	-	+	-
6	Burr bush, chinese burr	<i>Triumfetta rhomboidea</i>	Malvaceae	Native	NA	+	-	-	-	-
7	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	+	-	-	+
8	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	-	-	-
9	Devil's Backbone	<i>Cissus quadrangularis</i>	Vitaceae	Native	NA	+	-	-	-	-
10	Wild Tamarind	<i>Leucaena leucocephala</i>	Fabaceae	Invasive	NA	+	-	-	-	-
11	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	+	+	-	-	+
12	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	-	+	+	-
13	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+	+	+
14	Arjun	<i>Terminalia arjuna</i>	Combretaceae	Native	NA	+	-	-	-	-
15	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	-	-	+
16	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	+	-	-	+	-
17	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	+	-	-	-	-
18	Ribbed Sponge Gourd	<i>Luffa acutangula</i>	Cucurbitaceae	Native	NA	+	-	-	-	-
19	Desert Horse Purslane	<i>Trianthema portulacastrum</i>	Aizoaceae	Native	NA	+	-	-	-	-
20	Indian Mulberry	<i>Morinda coreia</i>	Rubiaceae	Native		+	-	-	-	-
21	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	+	+	-	+
22	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	-	-	+	+
23	Periwinkle, Vinca	<i>Catharanthus roseus</i>	Apocynaceae	Introduced	NA	+	-	-	-	-
24	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	+	+	-	-	-
25	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	+	-	-	-	-
26	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	-	+	+
27	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	-	-	-	-
28	Greater Bladderwort	<i>Utricularia vulgaris</i>	Lentibulariaceae	Introduced	LC	+	-	-	+	-
29	Large caltrops	<i>Pedaliium murex</i>	Pedaliaceae	Native	NA	+	-	-	-	-
30	Malabar Catmint	<i>Anisomeles malabarica</i>	Lamiaceae	Native	NA	+	+	-	-	-
31	Chaste Tree	<i>Vitex negundo</i>	Lamiaceae	Native	NA	+	-	-	-	-
32	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	+	-	+	+
33	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	+	-	-	+
34	Sessile Joyweed	<i>Alternanthera sessilis</i>	Amaranthaceae	Native	LC	+	-	-	-	-
35	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	+	+	-	+	-
36	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	-	+	+
37	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	+	-	+	-
38	Stone Breaker	<i>Phyllanthus niruri</i>	Phyllanthaceae	Native	NA	+	-	-	-	-
39	Mysore Fig,	<i>Ficus drupacea</i>	Moraceae	Native	NA	+	-	-	-	-
40	Peepal	<i>Ficus religiosa</i>	Moraceae	Native	NA	+	-	-	-	-
41	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	+	+	-	+	-
42	Water cabbage, Nile cabbage	<i>Pistia stratiotes</i>	Araceae	Native	LC	+	-	-	-	-
43	Water Garss	<i>Bulbostylis barbata</i>	Cyperaceae	Native	NA	+	-	-	-	-
44	Peri peri	<i>Cyperus corymbosus</i>	Cyperaceae	Native	NA	+	-	-	-	-
45	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	+	+	+
Total						45	18	4	15	13

Table 24.2: List of Diplopoda species recorded along the Thoothukudi District (A - Kadamba Kulam, B - Karungulam Lake, C - Puthantharuvai Tank, D - Seydunganallur Kulam, E - Sivagalai Kulam)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E
1	Yellow Spotted Millipede	<i>Harpaphe haydeniana</i>	Xystodesmidae	-	-	-	+	+
Total				0	0	0	1	1

Table 24.3: List of Insect species recorded along the Thoothukudi District (A - Kadamba Kulam, B - Karungulam Lake, C - Puthantharuvai Tank, D - Seydunganallur Kulam, E - Sivagalai Kulam)

S.No	Common Name	Scientific Name	Family	A	B	C	D	E
1	Water Strider	<i>Gerris sp.</i>	Gerridae	+	+	-	+	+
2	Blister Beetle	<i>Hycleus sp.</i>	Meloidae	+	-	-	+	-
3	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	+	+	+	-
4	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	+	-	+	+
5	Black Ant	<i>Myrmecaria brunnea</i>	Formicidae	+	-	-	-	-
6	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	-	+	+	-
Total				6	3	2	5	2

Table 24.4: List of Butterfly species recorded along the Thoothukudi District (A - Kadamba Kulam, B - Karungulam Lake, C - Puthantharuvai Tank, D - Seydunganallur Kulam, E - Sivagalai Kulam)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E
1	Continental Swift	<i>Parnara ganga</i>	Hesperiinae	Common	+	-	-	-	-
2	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	+	+	+	+	+
3	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	+	-	+	+
4	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	+	+
5	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	+	+	-	+	-
6	Common Jezebel	<i>Delias eucharis</i>	Pierinae	Common	+	+	-	+	-
7	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	+	-	-	-	-
8	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	+	-	+	+
9	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+	+	+
10	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	+	+	-	+	+
Total					10	8	3	8	6

Table 24.5: List of Odonate species recorded along the Thoothukudi District (A - Kadamba Kulam, B - Karungulam Lake, C - Puthantharuvai Tank, D - Seydunganallur Kulam, E - Sivagalai Kulam)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E
1	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	+	-	-	-	-
2	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	-	+	-	-	-
3	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	-	+	-	+	-
4	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	-	+	-	-	-
5	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	+	-	+	-
6	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	+	-	+	+
7	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+	+
8	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	-	+	+
9	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+	+	+
10	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	+	+	-	-	-
11	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	+	+	-	+	-
12	Greater Crimson Glider	<i>Urothemis signata</i>	Libellulidae	Common	+	-	-	-	-
13	Red Marsh Trotter	<i>Tramea basilaris</i>	Libellulidae	Common	-	+	-	+	-
Total					9	11	2	8	4

Table 24.6: List of Arachnida species recorded along the Thoothukudi District (A - Kadamba Kulam, B - Karungulam Lake, C - Puthantharuvai Tank, D - Seydunganallur Kulam, E - Sivagalai Kulam)

S.No	Common Name	Scientific Name	Family	A	B	C	D	E
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	+	-	+	+
Total				1	1	0	1	1

Table 24.7: List of Fish species recorded along the Thoothukudi District (A - Kadamba Kulam, B - Karungulam Lake, C - Puthantharuvai Tank, D - Seydunganallur Kulam, E - Sivagalai Kulam)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	+	-	+	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	+	-	+	+
3	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	+	-	+	+
4	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	+	+	-	+	+
5	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	+	-	+	+
Total					5	5	0	5	5

Table 24.8: List of Reptiles species recorded along the Thoothukudi District (A - Kadamba Kulam, B - Karungulam Lake, C - Puthantharuvai Tank, D - Seydunganallur Kulam, E - Sivagalai Kulam)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D	E
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	+	-	-	-	-
Total					2	1	1	1	1

Table 24.9: List of Bird species recorded along the Thoothukudi District (A - Kadamba Kulam, B - Karungulam Lake, C - Puthantharuvai Tank, D - Seydunganallur Kulam, E - Sivagalai Kulam)

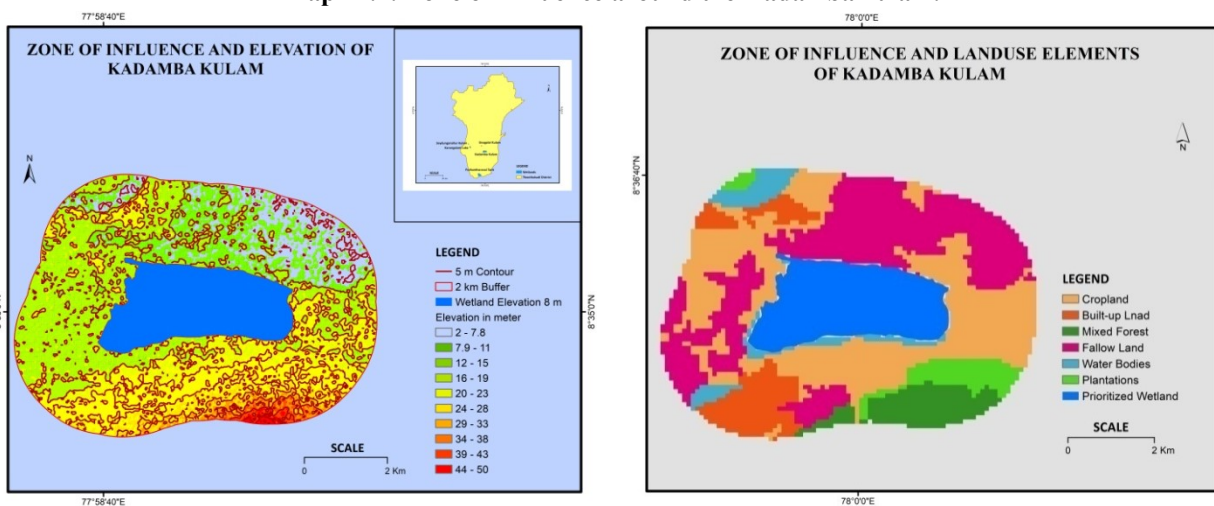
S.No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D	E
1	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Least Concern	+	-	-	-	-
2	Knob-billed Duck	<i>Sarkidiornis melanotos</i>	Anatidae	Least Concern	-	-	+	-	-
3	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Least Concern	+	-	-	-	+
4	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	+	+	-	-	-
5	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	Near Threatened	+	-	-	-	+
6	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae	Least Concern	+	+	-	+	+
7	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	-	+	+
8	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	+	-	-	+	-
9	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	Least Concern	+	+	-	+	+
10	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	+	-	+	+
11	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	+	-	-	-	-
12	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	+	-	+	+
13	Darter	<i>Anhinga melanogaster</i>	Anhingidae	Near Threatened	+	-	-	+	-
14	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	+	-	+	+
15	Brahminy Kite	<i>Haliastur indus</i>	Accipitridae	Least Concern	+	+	-	+	+
16	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	Least Concern	+	-	-	-	-
17	Purple Swampphen	<i>Porphyrio porphyrio</i>	Rallidae	Least Concern	+	+	-	+	+
18	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	+	+	-	+	+
19	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	+	-	-	-	-
20	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	-	+	+
21	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	Least Concern	+	-	-	-	+
22	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	-	-	-	-
23	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	+	+	+	+
24	Jacobin Cuckoo	<i>Clamator jacobinus</i>	Cuculidae	Least Concern	+	-	-	-	-
25	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	Least Concern	+	+	-	-	+
26	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	+	+	+	+
27	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	+	-	-	-	+
28	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae	Least Concern	+	-	-	-	-

29	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	Least Concern	+	-	-	-	-
30	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+	+	+
31	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	+	-	-	-	-
32	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+	+	+
33	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Least Concern	+	+	-	-	-
34	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	+	+	-	-	+
35	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+	+	+
36	Indian Robin	<i>Saxicoloides fulicatus</i>	Muscicapidae	Least Concern	+	-	-	-	-
Total					36	19	6	17	21

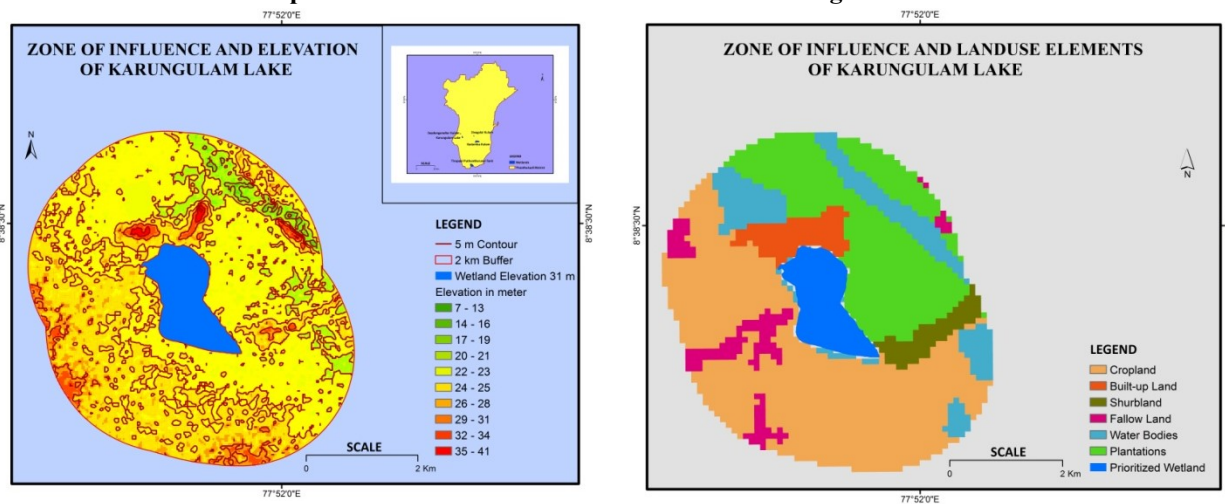
Table 24.10: List of Mammal species recorded along the Thoothukudi District (A - Kadamba Kulam, B - Karungulam Lake, C - Puthantharuvai Tank, D - Seydunganallur Kulam, E - Sivagalai Kulam)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E
1	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+	+
2	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	-	+	-	+	-
3	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	-	+	+	+	+
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+	+	+
Total					2	4	3	4	3

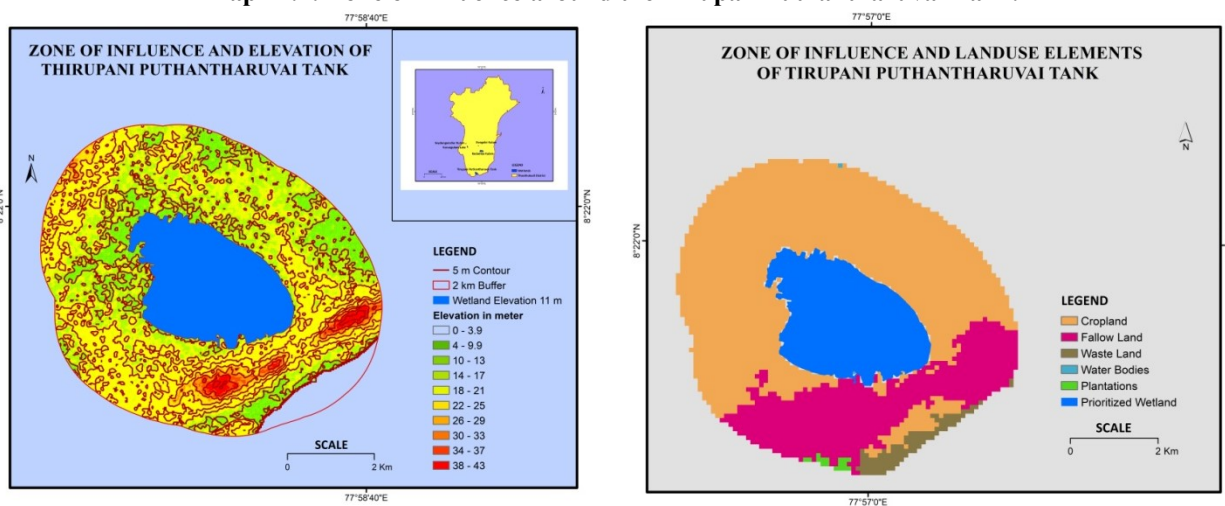
Map 24.2: Zone of Influence around the KadambaKulam.



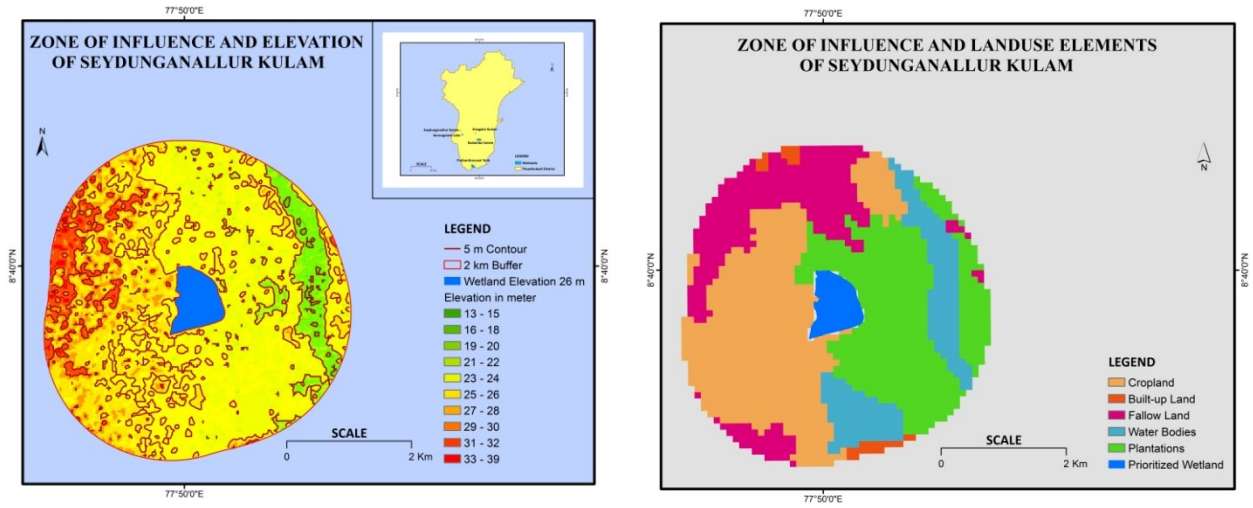
Map 24.3: The zone of influence around the Karungulam Lake.



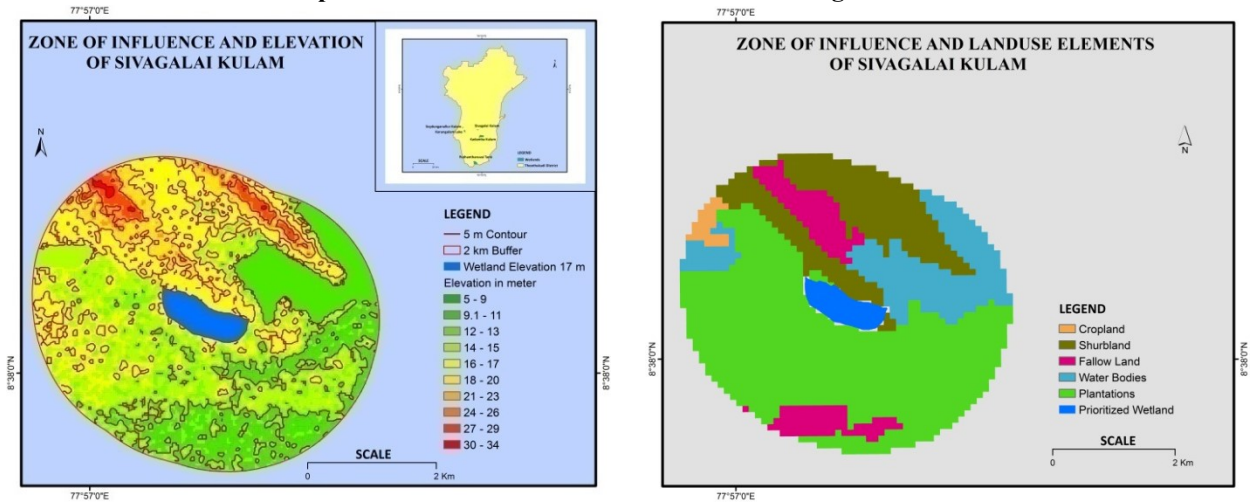
Map 24.4: Zone of influence around the TirupaniPuthantharuvai Tank.



Map 24.5: The zone of influence around the SeydunganallurKulam.



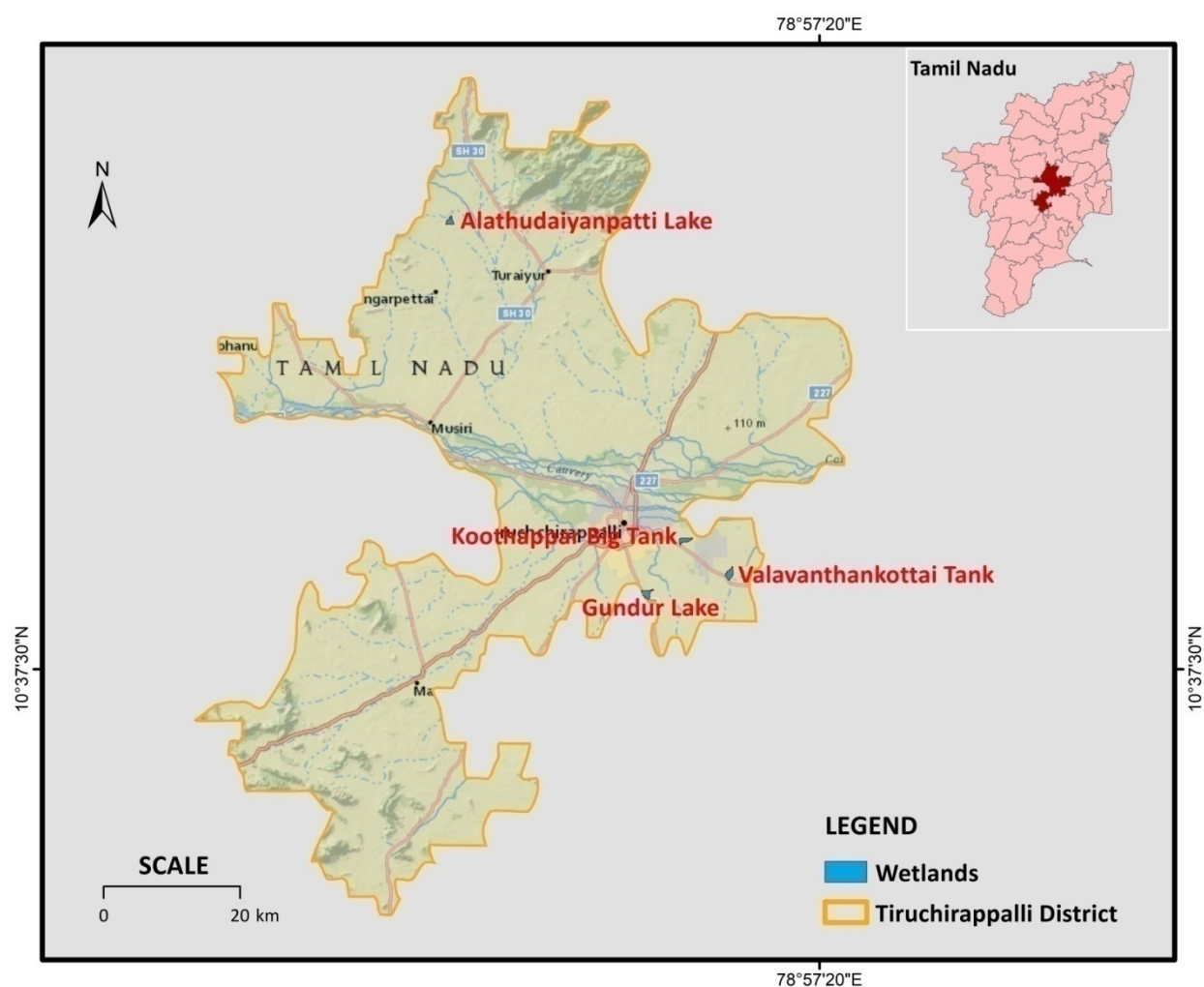
Map 24.6: The zone of influence around the SivagalaiKulam.



25. Tiruchirappalli District

Tiruchirappalli district (also known as Tiruchchirappalli district) is located along the Cauveri river in Tamil Nadu state of India. The main town in Tiruchirappalli district is the city of Tiruchirappalli. It is bounded on the north by Salem district, on the northeast by Perambalur district, on the east by Thanjavur district, on the southeast by Pudukkottai district, on the south by Sivaganga and Madurai districts, on the southwest by Dindigul district, on the west by Karur district, and on the northwest by Namakkal district. The major rivers are the river Kaveri and the river Kollidam.

Total geographic area of Tiruchirappalli is 4403.83 km². Total area under wetland is 18626 ha, which includes 790 small wetland (<2.25 ha). Tanks/Ponds occupy 28.96% of wetland area. The other wetland types are; River/Stream (7848 ha) and Lakes/ponds (4247 ha). Of the four wetlands selected in the district, Gundur Lake is the largest while Alathudayanpatti Lake is the smallest of the wetlands (Map 25.1).



Map 25.1: Wetlands of Tiruchirappalli district assessed for Prioritization

Alathudaiyanpatti Lake

Alathudaiyanpatti lake (Plate 25) is based in Truyur taluka in Trichuripalli district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Alathudaiyanpatti, Aallankuthu, Karuppampatti, S.N. Pudur.

The geographic coordinates are Latitude: 11° 12'45.8" N; 11° 12'51.4" N; 11° 12'56.5" N; 11° 12'58.8" N; and Longitude: 078° 28'24.9" E; 078° 28'18.3" E; 078° 28'21.4" E; 78° 28'20.7" N

Alathudaiyanpattilake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Puliyanchoilai river, rainfall, the surrounding runoff from the catchment area. The water also helps in the replenishing the groundwater. The lake has an area of 79.6 hectares and based on the secondary information the average depth is 2 meters. The wetland is surrounded by 70 % Agriculture and 30% Rural settlements. It has an area of 2060.62 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 25.2).

The wetland was Oligotrophic during the visit, with the pH of the water being 9.6, salinity measuring 0.196 ppt, the TDS was recorded high at 286 ppm. The vegetation comprised of 34 plant species (Table 25.1) including 10 invasive species that also include *Parthenium hysterophorous*, *Lantana camara*, *Eichornia crassipes*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 28 animal species including three domestic species were recorded during the survey (Table 25.2 to 25.11). One near Threatened specie of fish was observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around the wetland and ground water is used for irrigation. Fishery is undertaken with permission from village panchayat and PWD in the lake, recreational fishery is practiced. Grazing by the cattle, Mining for sand or silt is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland does have few temples and other religious institutions along its bank, cultural activity is also organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The pollution in the form of sewage, effluents and solidwaste dumping is seen but it is low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland.

Gundur Lake

Gundur Lake (Plate 25) is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Gundur, Ayyampatty, Thiruvalarchipatty, Ayyamputhur, Burma Colony and Maduraiveeran Nagar.

The geographic coordinates are Latitude: 10° 43'43.6" N; 10° 43'43.7" N; 10° 43'43.2" N; 10° 43'22.8" N; and Longitude: 078° 43'34.1" E; 078° 43'41.2" E; 078° 43'23.8" E; 078° 43'30.0" E.

Gundur lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Cauvery river, rainfall, the surrounding runoff from the catchment

area. The water also helps in the replenishing the groundwater. The lake has an area of 128 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 60 % Agriculture, 25% Rural settlements, 5% Urban settlements, 5% Grassland/scrubland and 5% Industries. It has an area of 2355.98 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 25.3).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.5, salinity measuring 0.245 ppt, the TDS was recorded high at 264 ppm. The vegetation comprised of 47 plant species (Table 25.1) including 10 invasive species that also include *Parthenium hysterophorous*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 96 animal species including three domestic species were recorded during the survey (Table 25.2 to 25.11). Two Near Threatened species of fish was observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around and within the wetland and the wetland and ground water is used for irrigation. The wetland is used for grazing and bathing by livestock. Fishery is undertaken with permission from PWD in the lake, recreational fishery is also practiced. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland does have several temples and other religious institutions along its bank, cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There are invasive plant species that is changing the habitat of the wetland. The pollution in the form of sewage, effluents and solidwaste dumping is seen but it is low threat in its present condition. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland.

Koothappar Big Tank

Koothapar big tank (Plate 25) is also known as Thiruverumbur Big Tank comes under the jurisdiction of PWD and is not a Protected Area. Villages that surround the wetland include Koothapar, Thiruverumbur, Murukur and Natarajapuram, Krishnasangumuthanur.

The geographic coordinates are Latitude: 10° 47'27.6" N; 10° 47'51.4" N; 10° 47'52.1" N; 10° 47'52.6" N; 10° 47'53.3" N; and Longitude: 078°46'17.0"E; 078°46'16.0"E; 078°46'36.7"E; 078°46'42.4" E; 078°47'16.9" E.

Koothapar big tank is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is the Cauvery river and Rainfall, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds Killiyur lake and the adjoining agriculture fields. The lake has an area of 97.4 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 60 % Agriculture, 10% Rural settlements, 20% Urban settlements and 10% Grassland/scrubland. It has an area of 2290.28 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 25.4).

The wetland was Eutrophic during the visit, with the pH of the water being 8.1, salinity measuring 0.461 ppt, the TDS was recorded high at 680 ppm. The vegetation comprised of 61 plant species (Table 25.1) including 11 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea*

sp. The fauna comprised of 106 animal species including three domestic species were recorded during the survey (Table 25.2 to 25.11). One Threatened species of bird was observed during the survey.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water, Cauvery river and Kollidam river at regular intervals that is used by the locals to fulfill their daily requirements. There are farmlands where agriculture is undertaken around the wetland using wetland and the borewell water. The wetland is used for fishery purpose and also serves as a ground water recharge as long as the water is present. The wetland supports local fish species when water is present and there is commercial fishery. The fishing activity is based on the tenders given by the local panchayat. Grazing by the cattle is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There is high-tension wires' passing through the wetland.

The wetland has a high potential of change in the outflow of the water. The wetland faces a severe threat from aquatic weeds that is changing the wetland character. Solid waste dumping, encroachment and changes in land use pattern are the other concerns. The wetland birds are facing the threat of poaching.

The wetland is not included in any of the protection and conservation categories. Unplanned development and increasing sewage and effluents are a major threat that needs to be regulated.

Valavanthankottai Tank

Valavandankotai tank also known as NathiKulam and Thuvakudi Pond (Plate 26) is based in Triuvembarur taluka in Trichuripalli district. The wetland is not a Protected Area and comes under the jurisdiction of PWD.

The geographic coordinates are Latitude: 10° 44'32.7" N; 10° 44'35.7" N; 10° 44'40.6" N; 10° 44'41.7" N; 10° 45'14.8" N; and Longitude: 078° 50'09.6" E; 10° 44'41.7" N; 078° 50'11.7" E; 78° 50'17.0" N; 78° 50'30.1" N.

Valavandankotai tank is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is the Cauvery river, the surrounding runoff from the catchment area and rainfall. The water from the wetland helps in replenishing the groundwater. The lake has an area of 123 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 60 % Agriculture and 40% Rural settlements. It has an area of 2270.23 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 25.5).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 28 plant species (Table 25.1) including five invasive species that include several unidentified grass species, *Eichornea crassipes*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 33 animal species including two domestic species were recorded during the survey (Table 25.2 to 25.11). One near Threatened specie of fish were observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around and within the wetland and the wetland and ground water is used for irrigation. Fishery is undertaken with permission from village panchayat and PWD in the lake, recreational fishery is practiced. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland

does have few temples and other religious institutions along its bank, cultural activity is also organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The pollution in the form of sewage, effluents and solidwaste dumping is seen but it is low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities.

The wetland is not included in any of the protection and conservation categories. The wetland faces a major threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland.

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Table 25.1: List of Plant species recorded along the Tiruchirappalli District (A - Alathudaiyanpatti Lake, B - Gundur Lake, C - Koothappar Big Tank, D - Valavanthankottai Tank)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D
1	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	+	-	+	-
2	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	-	+	-
3	Jackal Jujube	<i>Ziziphus oenopolia</i>	Rhamnaceae	Native	LC	+	-	-	-
4	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	-	+	-
5	Purple orchid tree	<i>Bauhinia purpurea</i>	Fabaceae	Native	LC	+	-	-	-
6	Birdsville Indigo	<i>Indigofera linnaei</i>	Fabaceae	Native	NA	+	-	-	-
7	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+	+
8	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	+	-	+	-
9	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	+	-	+
10	Java plum	<i>Syzygium cumini</i>	Myrtaceae	Native	NA	+	-	-	-
11	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	+	-
12	Lotus Sweetjuice, Damascisa	<i>Glinus lotoides</i>	Molluginaceae	Native		+	-	-	-
13	Daisy-leaved Chickweed	<i>Paramollugo nudicaulis</i>	Molluginaceae	Native	NA	+	-	-	+
14	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	+	+	-	-
15	Bristly Starbur, Goat's Head	<i>Acanthospermum hispidum</i>	Asteraceae	Native	NA	+	-	-	-
16	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+	-
17	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	+	+	-
18	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	-	+	+
19	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+	+
20	Indian Ipecac,	<i>Tylophora indica</i>	Apocynaceae	Native		+	-	-	-
21	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	+	-	+	+
22	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	-	+	+
23	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	-	+	-
24	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	+	-	+	+
25	Large caltrops	<i>Pedaliium murex</i>	Pedaliaceae	Native	NA	+	+	-	-
26	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	+	+	+
27	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	+	+	+
28	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	-	-
29	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	+	+	-	-
30	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	-	+	+
31	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	+	-	+	+
32	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	-	+	-
33	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	+	-	-	-
34	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	-	+	-
Total						34	12	20	12

Table 25.2: List of Diplopoda species recorded along the Tiruchirappalli District (A - Alathudaiyanpatti Lake, B - Gundur Lake, C - Koothappar Big Tank, D - Valavanthankottai Tank)

S. No	Common Name	Scientific Name	Family	A	B	C	D
1	Yellow Spotted Millipede	<i>Harpaphe haydeniana</i>	Xystodesmidae	-	+	-	-
Total				0	1	0	0

Table 25.3: List of Insects species recorded along the Tiruchirappalli District (A - Alathudaiyanpatti Lake, B - Gundur Lake, C - Koothappar Big Tank, D - Valavanthankottai Tank)

S. No	Common Name	Scientific Name	Family	A	B	C	D
1	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	+	-	-
2	Water Strider	<i>Gerris sp.</i>	Gerridae	-	+	+	-
3	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	-	+	-	-
4	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	-	+	+	-
5	Small Dung Beetle	<i>Onthophagus sp.</i>	Scarabaeidae	-	+	-	-

6	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	+	+	-
7	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	+	+	+
8	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	+	+	+
9	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	-	+	+	+
10	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	+	-	-
Total				2	10	6	3

Table 25.4: List of Butterfly species recorded along the Tiruchirappalli District (A - Alathudaiyanpatti Lake, B - Gundur Lake, C - Koothappar Big Tank, D - Valavanthankottai Tank)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	-	+	+	-
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	-	+	+	-
3	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	-	-	+	-
4	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	+
5	Small Salmon Arab	<i>Colotis amata</i>	Pierinae	Common	-	-	+	-
6	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	-	-	+	+
7	Yellow Orange Tip	<i>Ixias pyrene</i>	Pierinae	Common	-	-	+	-
8	Common Gull	<i>Cepora nerissa</i>	Pierinae	Common	-	-	+	-
9	Common Jezebel	<i>Delias eucharis</i>	Pierinae	Common	-	-	+	-
10	Psyche	<i>Leptosia nina</i>	Pierinae	Common	-	-	+	-
11	Common Cerulean	<i>Jamides celeno</i>	Polyommatainae	Common	-	-	+	-
12	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	-	-	+	-
13	Zebra Blue	<i>Leptotes plinius</i>	Polyommatainae	Common	-	-	+	-
14	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	+	+	+
15	Tiny Grass Blue	<i>Zizula hylax</i>	Polyommatainae	Common	-	-	+	-
16	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	-	+	+	-
17	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	-	+	+	-
18	Striped Tiger	<i>Danaus genutia</i>	Danainae	Common	-	-	+	-
19	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+	+
20	Common Crow	<i>Euploeacore</i>	Danainae	Common	-	+	+	-
21	Common Evening Brown	<i>Melanitis leda</i>	Satyrinae	Common	-	-	+	-
22	Dark Evening Brown	<i>Melanitis phedima varaha</i>	Satyrinae	Uncommon	-	-	+	-
23	Dark-Brand Bushbrown	<i>Mycalesis mineus</i>	Satyrinae	Common	-	-	+	-
24	Long-Brand Bushbrown	<i>Mycalesis visala</i>	Satyrinae	Common	-	-	+	-
25	Joker	<i>Byblia lithyia</i>	Biblidinae	Common	-	-	+	-
26	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	-	+	+	-
27	Chocolate Pansy	<i>Junonia iphita</i>	Nymphalinae	Common	-	-	+	-
28	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	-	+	+	-
Total					3	10	28	4

Table 25.5: List of Odonata species recorded along the Tiruchirappalli District (A - Alathudaiyanpatti Lake, B - Gundur Lake, C - Koothappar Big Tank, D - Valavanthankottai Tank)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	-	+	+	-
2	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	-	+	+	-
3	Pigmy Dartlet	<i>Agriocnemis pygmaea</i>	Coenagrionidae	Common	-	+	-	-
4	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	-	+	-	-
5	Coromandel Marsh Dart	<i>Ceragrion coromandelianum</i>	Coenagrionidae	Common	-	+	+	-
6	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	+	+	-
7	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+
8	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+	+
9	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	-	-	+
10	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	-	+	+	-
Total					3	9	7	3

Table 25.6: List of Arachnida species recorded along the Tiruchirappalli District (A - Alathudaiyanpatti Lake, B - Gundur Lake, C - Koothappar Big Tank, D - Valavanthankottai Tank)

S. No	Common Name	Scientific Name	Family	A	B	C	D
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	-	+	+	-
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	+	+	-
Total				0	2	2	0

Table 25.7: List of Fish species recorded along the Tiruchirappalli District (A - Alathudaiyanpatti Lake, B - Gundur Lake, C - Koothappar Big Tank, D - Valavanthankottai Tank)

S. No	Common Name	Scientific Name	Family	Category	IASI	A	B	C	D
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU		-	+	+	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA		-	+	-	-
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT		-	+	+	-
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC		-	+	+	+
5	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC		-	+	+	+
6	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC		-	-	-	+
7	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC		-	+	+	-
8	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC		-	+	-	-
9	Catla	<i>Catla catla</i>	Cyprinidae	LC		-	+	+	-
10	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC		-	+	+	-
11	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC		-	+	+	-
Total						0	11	8	4

Table 25.8: List of Amphibian species recorded along the Tiruchirappalli District (A - Alathudaiyanpatti Lake, B - Gundur Lake, C - Koothappar Big Tank, D - Valavanthankottai Tank)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	Least Concern	-	+	-	-
2	Indian Cricket Frog	<i>Fejervarya limnocharis</i>	Dicroglossidae	Least Concern	+	+	-	-
Total					1	2	0	0

Table 25.9: List of Reptiles species recorded along the Tiruchirappalli District (A - Alathudaiyanpatti Lake, B - Gundur Lake, C - Koothappar Big Tank, D - Valavanthankottai Tank)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	-	+	+	-
Total					1	2	2	1

Table 25.10: List of Bird species recorded along the Tiruchirappalli District (A - Alathudaiyanpatti Lake, B - Gundur Lake, C - Koothappar Big Tank, D - Valavanthankottai Tank)

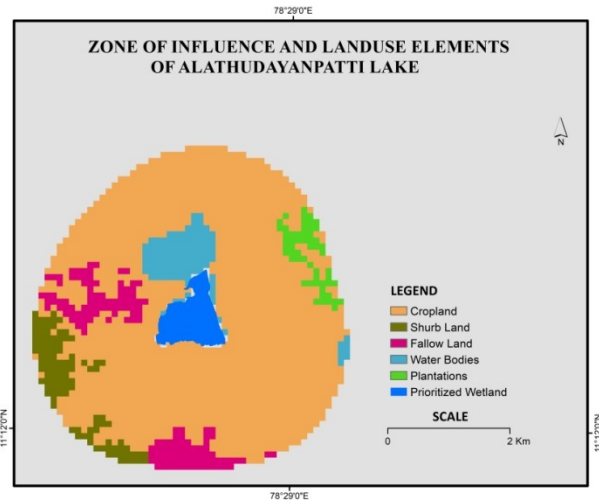
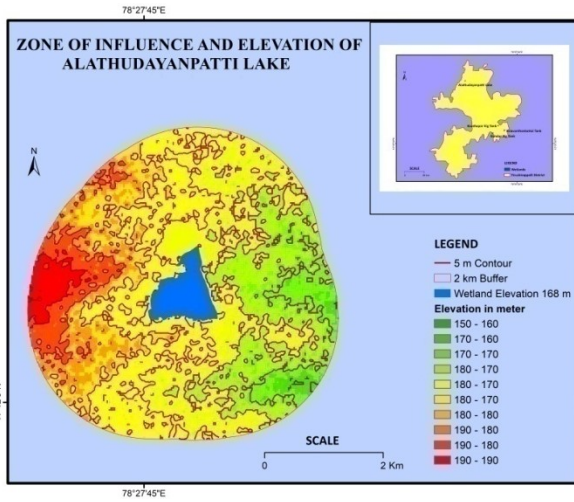
S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae	Least Concern	-	+	+	-
2	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Least Concern	-	+	+	-
3	Northern Shoveler	<i>Anas clypeata</i>	Anatidae	Least Concern	-	+	-	-
4	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	-	+	+	-
5	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae	Least Concern	-	+	+	-
6	Yellow Bittern	<i>Ixobrychus sinensis</i>	Ardeidae	Least Concern	-	+	-	-
7	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	+	-
8	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	Least Concern	-	+	+	-
9	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	-	+	+	-
10	Great Egret	<i>Casmerodius albus</i>	Ardeidae	Least Concern	-	+	-	-
11	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	-	+	+	-
12	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	-	+	+	-

13	Brahminy Kite	<i>Haliastur indus</i>	Accipitridae	Least Concern	+	+	+	-
14	Osprey	<i>Pandion haliaetus</i>	Pandionidae	Least Concern	-	+	-	-
15	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	-	+	+	-
16	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	-	+	+	-
17	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	+	-
18	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	Least Concern	-	+	-	-
19	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	Least Concern	-	+	-	-
20	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	-	+	-	-
21	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	-	+	-	-
22	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	-	+	+	-
23	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	+	+	-
24	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	-	+	+	+
25	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	Least Concern	-	+	-	-
26	Blue-tailed Bee eater	<i>Merops philippinus</i>	Meropidae	Least Concern	-	+	-	-
27	Brown Shrike	<i>Lanius cristatus</i>	Laniidae	Least Concern	-	+	-	-
28	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	-	+
29	Indian Golden Oriole	<i>Oriolus kundoo</i>	Oriolidae	Least Concern	-	+	-	-
30	Indian Jungle Crow	<i>Corvus (macrorhynchus) culminatus</i>	Corvidae	Least Concern	+	+	-	-
31	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+	+
32	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	-	+	+	-
33	Jerdon's Bushlark	<i>Mirafra affinis</i>	Alaudidae	Least Concern	-	+	-	+
34	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	Least Concern	-	+	+	-
35	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	-	+	-	-
36	Clamorous Reed Warbler	<i>Acrocephalus stentoreus</i>	Acrocephalidae	Least Concern	-	+	-	-
37	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	-	+	+	+
38	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	-	+	+	+
39	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	-	+	+	-
40	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	Least Concern	-	+	-	+
41	Streaked Weaver	<i>Ploceus manyar</i>	Ploceidae	Least Concern	-	+	-	-
42	Indian Silverbill	<i>Euodice malabarica</i>	Estrildidae	Least Concern	-	+	-	+
43	Black-headed Munia	<i>Lonchura malacca</i>	Estrildidae	Least Concern	-	+	-	-
44	Yellow Wagtail	<i>Motacilla flava</i>	Motacillidae	Least Concern	-	+	-	-
45	Paddyfield Pipit	<i>Anthus rufulus</i>	Motacillidae	Least Concern	-	+	-	+
Total					7	45	22	9

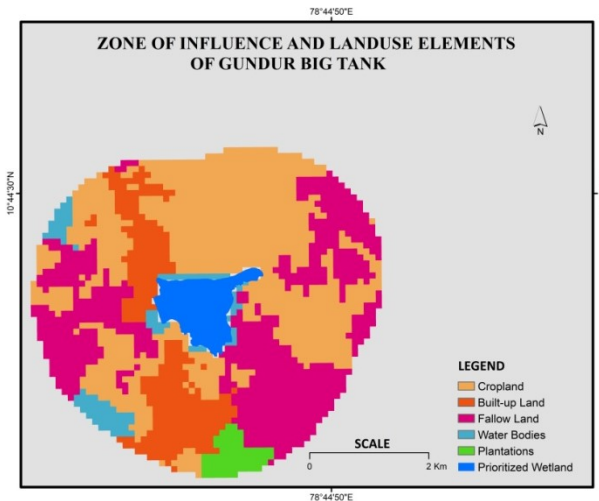
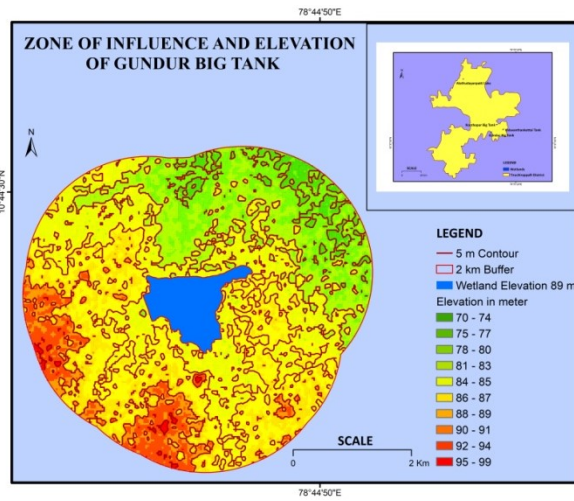
Table 25.11: List of Mammals species recorded along the Tiruchirappalli District (A - Alathudaiyanpatti Lake, B - Gundur Lake, C - Koothappar Big Tank, D - Valavanthankottai Tank)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+	-
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+	-
Total					4	4	4	2

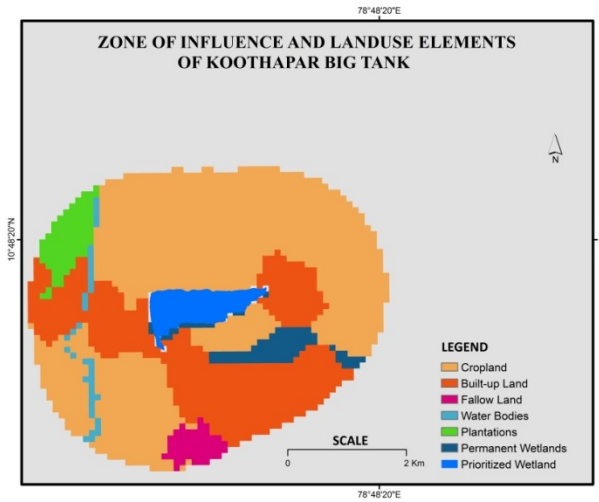
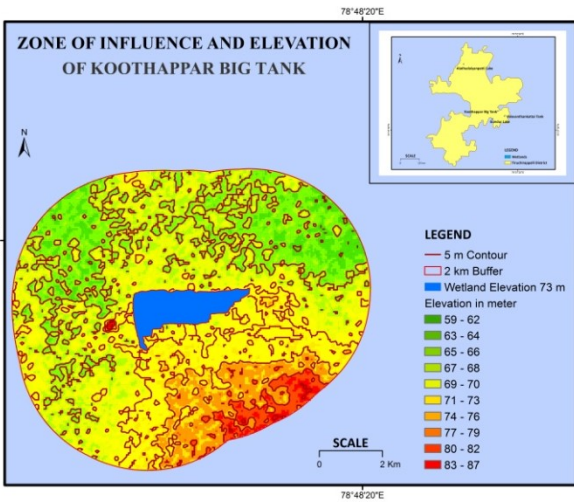
Map 25.2: Zone of influence around the Alathudayanpatti Lake.



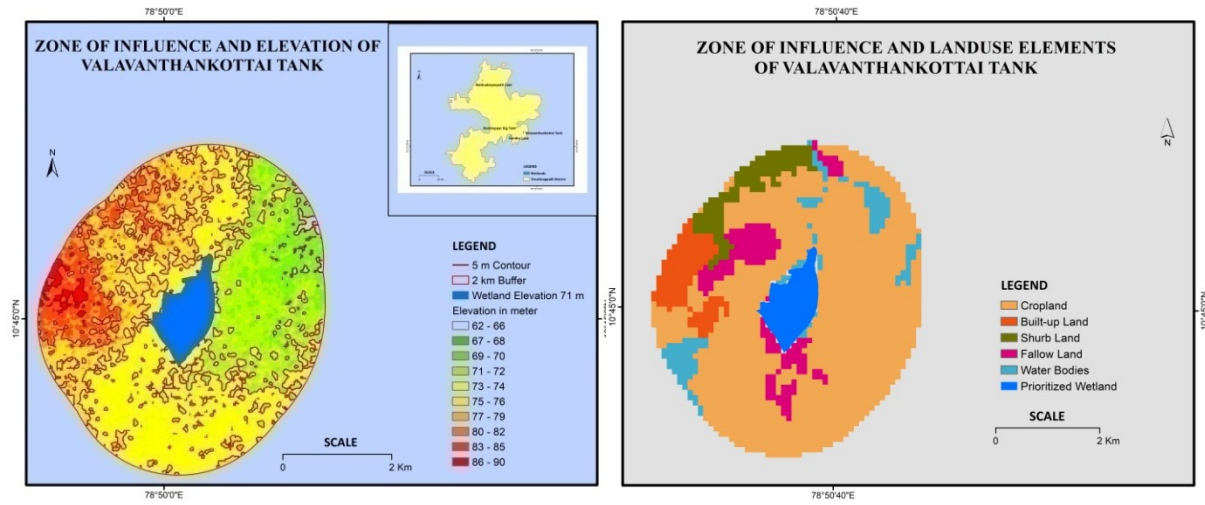
Map 25.3: The zone of influence around the Gundur Lake.



Map 25.4: The zone of influence around the Koothappar Big Tank.



Map 25.5: Zone of influence around the Valavanthankottai Tank.



26. Tirunelveli District

Tirunelveli is a southern most district of Tamil Nadu bordered by the State of Kerala, Gulf of Mannar and the districts of Virudhunagar, Thoothukudi and Kanniyakumari from different directions. Tirunelveli district was formed by the East India Company (on behalf of the British government), and comprised the present Tirunelveli and Thoothukudi districts and parts of Virudhunagar and Ramanathapuram districts. It is the second-largest district (as of October 2008), after Villupuram district. Under the rule of the Pandyan Dynasty, the district was known as *Thenpandiyanadu*. The Chola dynasty then named it *Mudikonda Cholamandalam*. The Madurai Nayaks called it *Tirunelveli Seemai*. Under the British East India Company, it was *Tinnevelly district*.

The district contains mountains (a stretch of the Western Ghats) and lowland plains, including sandy soil and fertile alluvium, and a variety of flora, fauna and protected wildlife. The district also has inland and mountainous forests. Tirunelveli is said to be the only district of Tamil Nadu to have all the five types of ecological zones as described in the ancient Tamil Literature Kurunji (hilly), Mullai (Forest), Marutham (Flat fertile land), Neithal (area forming the seashore) and Palai (Dry desert lands). The district is irrigated by several rivers originating in the Western Ghats, such as the Pachaiyar river, which flows into the perennial Tambaraparani river. The Tambaraparani and Manimuthar rivers have many dams, with reservoirs providing water for irrigation and power generation. The Tamiraparani river provides consistent irrigation to a large agricultural area. The Chittar river also originates in this district. The district is known for its paddy fields.

Total geographic area of Tirunelveli is 6823 km². Total area under wetland is 36998 ha, which includes 1042 small wetland (<2.25 ha). Lakes/Ponds occupy 40.68% of wetland area. The second major wetland type is Tanks/Ponds. There are 1368 Tanks/Ponds with 14509 ha area (39.22%). Of the six wetlands selected in the district, Vijayanarayanam tank is the largest while V M Chatram is the smallest of the wetlands (Map 26.1).



Map 26.1: Wetlands of Tirunelveli district assessed for Prioritization

Chetruthamarai Kulam

Chetruthamarai Kulam (Plate 26) is also known as Nanguneri Periya Kulam is based in Nanguneri taluk in Tirunelveli district. Villages that surround the wetland include Marugalkurichi, Nanguneri town. The wetland is not a Protected Area and comes under the jurisdiction of PWD.

The geographic coordinates are Latitude: 08° 31'08.7" N; 08° 29'37.4" N; 08° 49'32." N; 08° 29'35.0" N; and Longitude: 077° 39'21.0" E; 077° 39'10.8" E; 077° 39'04.5" E 077° 39'30.8" E.

Chetruthamarai Kulam is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and the Manimudhara dam on the Thambraparani river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the Thambraparani river. The lake has an area of 291 hectares and based on the secondary information the average depth is 4 meters. The wetland is surrounded by 20 % Agriculture 30% Rural Settlements and 50% Urban settlements. It has an area of 2835.64 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 26.2).

The wetland was Oligotrophic during the visit, with the pH of the water being 9.2, salinity measuring 0.061 ppt, the TDS was recorded high at 840 ppm. The vegetation comprised of 37 plant species (Table 26.1) including seven invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 71 animal species including three domestic species were recorded during the survey (Table 26.2 to 26.10). Three Threatened species of birds and one fish specie were observed during the survey.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland using the wetland water and borewell water. Fishery is not undertaken on a regular basis only when the water is present. The site is used majorly by the locals for grazing their cattle and goats. There was mining for sand or silt undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has the some large temples as well as a few small temples along its bank and major cultural and religious activities are performed in the wetland when water is present.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. There is a good incursion of invasive species that is changing the wetland structure. The wetland has been facing the sewage problems with the growing number of industries.

The wetland is not included in any of the protection and conservation categories. The wetland faces a severe threat from drought and water scarcity gradually changing the wetland character. Increase in effluents and sewage is disturbing.

Koonthan Kulam Bird Sanctuary

Koontha Kulam Bird Sanctuary Lake (Plate 26) is based in Tirunelveli district. The wetland is a Protected Area as it has been declared a Bird Sanctuary. Villages that surround the wetland include Koonthan Kulam, Kodan Kulam, KadanKulam, Silayam, Arumuganera, KadambanKulam.

The geographic coordinates are Latitude: 08° 29'42.5" N; 08° 29'37.4" N; 08° 29'33.4" N; and Longitude: 077° 45'29.7" E; 077° 45'28.6" E; 077° 45'22.5" E

Koontha Kulam Bird Sanctuary Lake is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, groundwater, the

surrounding runoff from the catchment area and from the Manimuthuru Dam. The water from the wetland helps in replenishing the groundwater. The lake has an area of 72.3 hectares and based on the secondary information the average depth is 2 meters. The wetland is surrounded by 80 % Agriculture 10% Forest, 5% Grassland /Scrubland and 5% rural settlements. It has an area of 2256.37 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 26.3).

The wetland was Oligotrophic during the visit, with the pH of the water being 6.7, salinity measuring 1.102 ppt, the TDS was recorded high at 60 ppm. The vegetation comprised of 54 plant species (Table 26.1) including 11 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 100 animal species including three domestic species were recorded during the survey (Table 26.2 to 26.10). Three Threatened species of birds and one fish specie were observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The village has open dug wells and borewells for their regular needs. Agriculture is undertaken around and the wetland and the ground water is used for irrigation. Fishery is not undertaken in the lake, but the fish is cultured to provide for the birds in the sanctuary. The wetland is frequented by nature enthusiast to observe birds in the sanctuary. The wetland is not used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The forest department undertakes regular desiltation activities during the summer season to maintain the depth of the lake. The wetland does have three temples religious institutions along its bank, a few cultural activities are organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There are few invasive plant species that is changing the habitat of the wetland. The wetland faces a major threat from lack of water availability due to scarcity of rains.

The wetland is declared as sanctuary and received protection and conservation from the forest department. It is also known as a community conservation reserve as it was established by the local community.

Melakulam Lake

Melakulam Lake also known as either Ariya Kulam lake or AriyaKulam Kanmai (Plate 26) is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Ariys Kulam, Melakulam, Uttharamapandiyan Kulam, Tharkkariya Kulam.

The geographic coordinates are Latitude: 08° 43'20.7" N; 08° 48'26.0" N; 08° 43'44.0" N; and Longitude: 077° 47'54.4" E; 077° 47'56.4" E; 077° 48'02.7" E.

Melakulam Lake is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and the Palayankalvai channel connecting the Thambraparani river. However, the locals informed about the periodic release of water into the tank making the wetland a more permanent feature. The water from the wetland helps in replenishing the groundwater and the overflow feeds the Nachi Kulam pond. The lake has an area of 34.3 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 90 % Agriculture and 10% rural settlements. It has an area of 1790.75 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 26.4).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.2, salinity measuring 0.138 ppt, the TDS was recorded high at 80 ppm. The vegetation comprised of 38 plant species (Table 26.1) including six invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 78 animal species including three domestic species were recorded during the survey (Table 26.2 to 26.10). Three Threatened species of birds and one fish specie were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland using the wetland water and borewell water. Grazing by the cattle and sheep is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has the some large temples as well as a few small temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There is high-tension wire passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The wetland has been facing drought conditon for the past 5 years. Unplanned development and increasing sewage and effluents are a major threat that needs to be regulated. There is incursion of invasive species that is changing the wetland structure.

The wetland is not included in any of the protection and conservation categories. The wetland faces a severe threat from drought and water scarcity gradually changing the wetland character.

PuthuKulam Lake

PuthuKulam Lake also called as PuthaKulam kanmai (Plate 27) is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Puthu Kulam, Konganthanparai, MalaKulam.

The geographic coordinates are Latitude: 08° 38'20.1" N; 08° 38'09.9" N; 08° 38'05.5" N; 8° 37'50.4" N and Longitude: 077° 43'23.8" E; 077° 43'19.3" E; 077° 43'18.3" E; 077° 43'14.3" E

PuthuKulam Lake is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and the channel connecting the Manimuthar Dam and the Pachara river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 63.9 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 75 % Agriculture, 10% Grassland/scrubland and 15% rural settlements. It has an area of 2110.02hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 26.5).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.2, salinity measuring 0.120 ppt, the TDS was recorded high at 66 ppm. The vegetation comprised of 49 plant species (Table 26.1) including 12 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 98 animal species including three domestic species were recorded during the survey (Table 26.2 to 26.10). Four Threatened species of birds and one fish specie were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose as the water is present for brief period. The municipal corporation provides drinking water from the Tambraparani river as well as borewell water at regular intervals that is used by the locals to fulfill their daily requirements. There are farmlands where agriculture is undertaken around the wetland using borewell as well as wetland water. Fishery is controlled by the PWD during the monsoon

season. Grazing by the cattle and sheep is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples and churches along its bank and major cultural and religious activities are performed in the wetland when water is present. There is high-tension wires' passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The wetland has been facing a water scarcity condition for the past 5 years, gradually changing the wetland character, solid waste dumping and sewage release is also impacting the wetland.

The wetland is not included in any of the protection and conservation categories. Unplanned development and increasing sewage and effluents are a major threat that needs to be regulated.

V. M. Chatram Lake

V M Chatram lake was adjacent to the National Highway this wetland that was suggested for conservation during 2005, has experienced major land use changes and degradation. The wetland is now divided by the four lane Highway and dumping of solid waste and rubble used in the construction of the highway and flyover. Commonly known as V M Chatram Lake (Plate 27) is not a Protected Area and comes under the jurisdiction of Village Panchayat. Villages that surround the wetland include V M Chatram, Maharaja Nagar, Srinivasa Nagar.

The geographic coordinates are Latitude: 08° 42'17.2" N; 08° 42'13.6" N; 08° 42'14.9" N; 08° 42'17.4" N; and Longitude: 077° 45'57.3" E; 077° 45'57.9" E; 077° 47'59.40" E; 077° 45'59.0" E.

V M Chatram lake is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area. The water also helps in the replenishing the groundwater, the outflow replenishes the nearby ponds and pools. The lake has an area of 32.6 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 10 % Agriculture, 10% Grassland/scrubland and 80% rural settlements. It has an area of 1842.57 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 26.6).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.2, salinity measuring 0.317 ppt, the TDS was recorded high at 266 ppm. The vegetation comprised of 34 plant species (Table 26.1) including nine invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 76 animal species including three domestic species were recorded during the survey (Table 26.2 to 26.10). One Threatened species of birds and one fish specie were observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is very minimal and undertaken around the wetland and the wetland and ground water is used for irrigation. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland does not have temples and other religious institutions along its bank, no other cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The pollution in the form of sewage, effluents and solid waste dumping is seen but it is low threat in its present condition. There are invasive

plant species that is changing the habitat of the wetland. The siltation is also observed near the inlet as well as the outlet of the wetland.

The wetland does not receive any protection and conservation and faces a major threat from reclamation and encroachment, solid waste dumping.

Vijayanarayanan Tank

Vijayanarayanan tank (Plate 27) is based in Nanguneri taluk in Tirunelveli district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include South Vijayanarayanan Puram, Sevandhiyapuram, Rajagopalapuram, Ezhangal and North Vijayanarayananapuram.

The geographic coordinates are Latitude: 08° 24'25.7" N; 08° 24'28.7" N; 08° 24'51.0" N; 08° 24'59.9" N; and Longitude: 077° 45'26.2" E; 077° 46'08.2" E; 077° 46'46.2" E 077° 46'53.7" E.

Vijayanarayanan tank is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and the Manimudhara dam on the Thambraparani river and the Karumaniyar. The water from the wetland helps in replenishing the groundwater and the overflow feeds the Thambraparani river. The lake has an area of 512 hectares and based on the secondary information the average depth is 5.5 meters. The wetland is surrounded by 80 % Agriculture and 20% rural settlements. It has an area of 3842.57 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 26.7).

The wetland was Oligotrophic during the visit, with the pH of the water being 9.2, salinity measuring 0.141 ppt, the TDS was recorded high at 208 ppm. The vegetation comprised of 52 plant species (Table 26.1) including nine invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, *Accacia nilotica indica* and *Ipomoea sp.* The fauna comprised of 55 animal species including three domestic species were recorded during the survey (Table 26.2 to 26.10). Two Threatened species of birds and one fish specie were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The locals use the borewells and the municipal corporation provides drinking water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland using the wetland water and borewell water. Fishery is not undertaken on a regular basis only when the water is present. The PWD adds the fish seeds. The fishing is done on tender basis. Grazing by the cattle and sheep is undertaken. There was mining for sand or silt undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has the some large temples as well as a few small temples along its bank and major cultural and religious activities are performed in the wetland when water is present.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The wetland has been facing the sewage problems with the growing number of industries. There is a good incursion of invasive species that is changing the wetland structure. Periodic hunting of birds is undertaken in the wetland, we witnessed two individuals firing gunshots on the opposite bank during our survey.

The wetland is not included in any of the protection and conservation categories. The wetland faces a severe threat from bird hunting. Overgrazing inside the wetland needs to be regulated.

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Table 26.1: List of Plant species recorded along the Tirunelveli District (A – Chetruthamarai Kulam, B - Koonthankulam Bird Sanctuary, C - Melakulam Lake, D - Puthukulam Lake, E - V. M. Chatram Lake, F - Vijayanarayanan Tank)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D	E	F
1	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	+	-	-	+	-	+
2	Wild Spider Flower	<i>Gynandropsis gynandra</i>	Cleomaceae	Native	NA	+	-	-	+	-	-
3	Musk Mallow	<i>Abelmoschus moschatus</i>	Malvaceae	Native	NA	+	-	-	-	+	-
4	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	-	-	-	+
5	crab's eye, Jequirity	<i>Abrus precatorius</i>	Fabaceae	Native	NA	+	-	+	-	-	+
6	Birdsville Indigo	<i>Indigofera linnaei</i>	Fabaceae	Native	NA	+	-	-	-	-	+
7	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+	+	+	+
8	Blistering Ammannia	<i>Ammannia baccifera</i>	Lythraceae	Native	LC	+	+	-	-	+	+
9	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	-	+	-	+
10	Bitter Apple, Colocynth,	<i>Citrullus colocynthis</i>	Cucurbitaceae	Native		+	+	-	+	-	+
11	Pumpkin, Field pumpkin	<i>Cucurbita pepo</i>	Cucurbitaceae	Native	NA	+	-	-	-	-	-
12	Lotus Sweetjuice, damascisa	<i>Glinus lotoides</i>	Molluginaceae	Native		+	-	-	-	-	-
13	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	+	+	+	-	-	-
14	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	+	-	+	-	-	-
15	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+	+	+	+
16	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	+	-	+	+	+
17	South Indian Mahua	<i>Madhuca longifolia</i> var. <i>latifolia</i>	Sapotaceae	Native	NA	+	-	-	-	+	-
18	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	-	-	-	+
19	Sweet indrajao	<i>Wrightia tinctoria</i>	Apocynaceae	Native	LC	+	-	-	-	-	-
20	Indian Heliotrope	<i>Heliotropium indicum</i>	Heliotropiaceae	Native	NA	+	-	-	+	-	-
21	Dwarf morning glory	<i>Evolvulus sinoides</i>	Convolvulaceae	Naturalized	NA	+	-	+	-	-	-
22	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	-	-	+	+	+
23	Golden Bladderwort	<i>Utricularia aurea</i>	Lentibulariaceae	Native	LC	+	-	-	-	-	-
24	Wedge-Leaf Foldwing	<i>Dicliptera paniculata</i>	Acanthaceae	Native	NA	+	-	-	-	-	+
25	Hoary Basil,	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	+	-	-	+	+	-
26	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	+	+	+	-	+
27	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	+	-	+	+	+
28	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	+	+	-	-	+	-
29	False Amaranth	<i>Digera muricata</i>	Amaranthaceae	Native	NA	+	-	-	+	-	-
30	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	-	+	+	-
31	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	-	+	+	+
32	Banyan tree	<i>Ficus benghalensis</i>	Moraceae	Native	NA	+	-	-	-	-	+
33	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	+	+	-	-
34	Peri peri	<i>Cyperus corymbosus</i>	Cyperaceae	Native	NA	+	-	-	-	-	-
35	Flatsedge	<i>Cyperus eleusinoides</i>	Cyperaceae	Native	NA	+	-	-	-	-	+
36	Common nut sedge,	<i>Cyperus rotundus</i>	Cyperaceae	Native	LC	+	-	-	-	-	-
37	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	+	-	+	+
Total						37	16	9	16	13	19

Table 26.2: List of Insect species recorded along the Tirunelveli District (A – Chetruthamarai Kulam, B - Koonthankulam Bird Sanctuary, C - Melakulam Lake, D - Puthukulam Lake, E - V. M. Chatram Lake, F - Vijayanarayanan Tank)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F
1	Grasshopper species	<i>Chrotogonus trachypterus</i>	Pyrgomorphidae	+	-	-	-	+	-
2	Water Strider	<i>Gerris sp.</i>	Gerridae	+	+	+	+	+	-
3	Whirligig Beetle	<i>Gyrinus sp.</i>	Gyrinidae	+	-	-	-	-	-
4	Blister Beetle	<i>Hycleus sp.</i>	Meloidae	+	-	-	+	-	-
5	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	-	-	-	-	+
6	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	-	+	-	-

7	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	+	+	-	-	+	-
Total				7	3	1	3	3	1

Table 26.3: List of Butterfly species recorded along the Tirunelveli District (A – Chetruthamarai Kulam, B - Koonthankulam Bird Sanctuary, C - Melakulam Lake, D - Puthukulam Lake, E - V. M. Chatram Lake, F - Vijayanarayanan Tank)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E	F
1	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	+	+	+	+	-
2	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	+	+	+
3	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	+	-	-	-	-	-
4	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	+	+	+	+	-
5	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+	+	+	+
Total					5	4	4	4	4	2

Table 26.4: List of Odonate species recorded along the Tirunelveli District (A – Chetruthamarai Kulam, B - Koonthankulam Bird Sanctuary, C - Melakulam Lake, D - Puthukulam Lake, E - V. M. Chatram Lake, F - Vijayanarayanan Tank)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E	F
1	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	-	-	-	-	+
2	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	-	-	-	-	-
3	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+	+	+
4	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+	+	+	+
5	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+	+	+	+
6	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	-	+	-	-	-	-
7	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	+	+	-	-	-	-
Total					6	0	0	0	0	4

Table 26.5: List of Arachnida species recorded along the Tirunelveli District (A – Chetruthamarai Kulam, B - Koonthankulam Bird Sanctuary, C - Melakulam Lake, D - Puthukulam Lake, E - V. M. Chatram Lake, F - Vijayanarayanan Tank)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	+	+	+	+	-
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	+	+	+	+	-
3	Short horned Grasshopper	<i>Acrida exaltata</i>	Acrididae	-	-	+	-	-	-
4	Water Strider	<i>Gerris sp.</i>	Gerridae	-	-	+	-	-	-
5	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	-	-	+	-	-	-
Total				1	2	5	2	2	0

Table 26.6: List of Fish species recorded along the Tirunelveli District (A – Chetruthamarai Kulam, B - Koonthankulam Bird Sanctuary, C - Melakulam Lake, D - Puthukulam Lake, E - V. M. Chatram Lake, F - Vijayanarayanan Tank)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	+	+	+	+	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	-	+	+	-	+
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	+	+	+	+	+	-
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	+	+	+	+	-
5	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	+	-	-	-	+
6	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	+	+	+	+	-	-

7	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	+	-	-	-	-	+
8	Spiny eel	<i>Macrognathus pancalus</i>	Mastacembelidae	LC	+	-	-	-	-	+
9	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	+	-	-	-	-	+
10	Pool barb, Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	+	-	-	-	-	-
11	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	+	-	-	-	-	+
12	Catla	<i>Catla catla</i>	Cyprinidae	LC	+	-	+	+	+	-
13	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	-	+	+	+	+
14	Climbing erch	<i>Anabas testudineus</i>	Anabantidae	DD	+	-	-	-	-	-
15	Spiny loach	<i>Lepidocephalichthys thermalis</i>	Cobitidae	LC	+	-	-	-	+	-
Total					15	5	7	7	6	8

Table 26.7: List of Amphibian species recorded along the Tirunelveli District (A – Chetruthamarai Kulam, B - Koonthankulam Bird Sanctuary, C - Melakulam Lake, D - Puthukulam Lake, E - V. M. Chatram Lake, F - Vijayanarayanan Tank)

S. No	Common Name	Scientific Name	Family	Status	A	B	C	D	E	F
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	Least Concern	+	-	-	-	-	-
Total					1	0	0	0	0	0

Table 26.8: List of Reptile species recorded along the Tirunelveli District (A – Chetruthamarai Kulam, B - Koonthankulam Bird Sanctuary, C - Melakulam Lake, D - Puthukulam Lake, E - V. M. Chatram Lake, F - Vijayanarayanan Tank)

S. No	Common Name	Scientific Name	Family	IUCN Status	A	B	C	D	E	F
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	-	+	-	+	-	-
3	Snake Skink	<i>Lygosoma punctatus</i>	Scincidae	Least Concern	-	+	-	+	-	-
Total					1	3	1	3	1	1

Table 26.9: List of Bird species recorded along the Tirunelveli District (A – Chetruthamarai Kulam, B - Koonthankulam Bird Sanctuary, C - Melakulam Lake, D - Puthukulam Lake, E - V. M. Chatram Lake, F - Vijayanarayanan Tank)

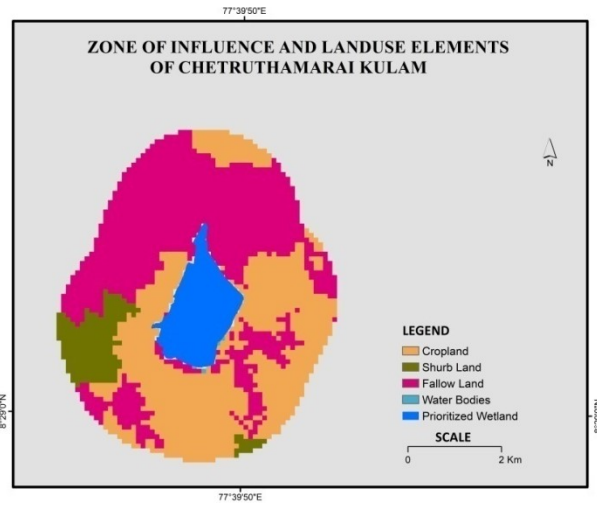
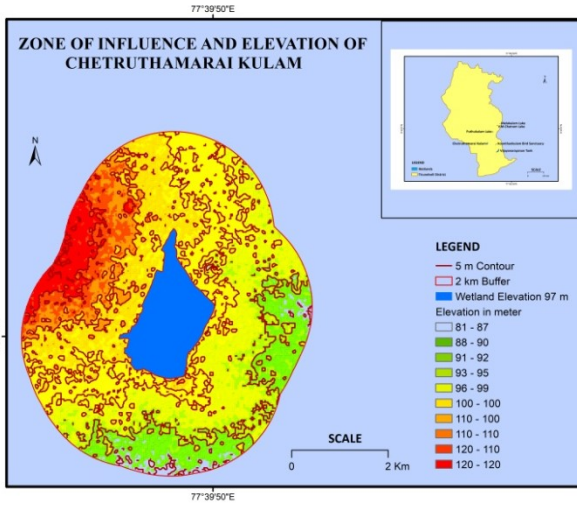
S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Knob-billed Duck	<i>Sarkidiornis melanotos</i>	Anatidae	Least Concern	+	+	-	+	-	+
2	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Least Concern	-	-	-	-	-	-
3	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	+	+	-	+	-	-
4	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	Near Threatened	+	+	+	+	-	-
5	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	+	+	+	+	-	-
6	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	Near Threatened	+	+	+	+	+	+
7	Red-naped Ibis	<i>Pseudibis papillosa</i>	Threskiornithidae	Least Concern	+	-	-	+	-	-
8	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae	Least Concern	+	+	+	+	+	-
9	Eurasian Spoonbill	<i>Platalea leucorodia</i>	Threskiornithidae	Least Concern	+	+	-	-	-	+
10	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	+	+	+	+
11	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	+	+	+	+	+	+
12	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	+	+	-	+	-	-
13	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	+	+	+	+	+
14	Spot-billed Pelican	<i>Pelecanus philippensis</i>	Pelecanidae	Near Threatened	+	+	-	+	-	+
15	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	+	+	+	+	+
16	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	+	+	+	-	-	+
17	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	+	+	+	+
18	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Least Concern	+	+	-	-	-	+
19	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	+	+	+	+	+	+
20	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	+	+	-	-	+
21	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	+	+	+	+	+
22	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	Least Concern	+	-	-	-	-	-

23	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	Least Concern	+	-	-	-	-	+
24	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+	+	+	-
25	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	+	-	-	+	-	+
26	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+	+	+	+
27	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	+	+	+	+	-	+
28	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+	+	+	+
29	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	+	+	+	+	+	-
30	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	Least Concern	+	+	-	+	-	+
31	Paddyfield Pipit	<i>Anthus rufulus</i>	Motacillidae	Least Concern	+	-	-	-	-	+
	Total				30	25	18	23	12	21

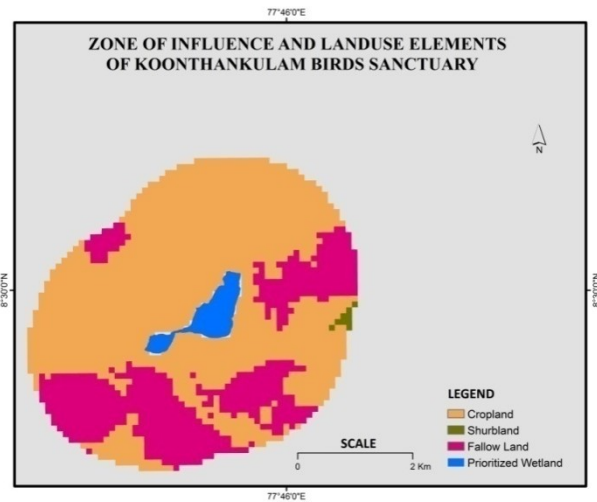
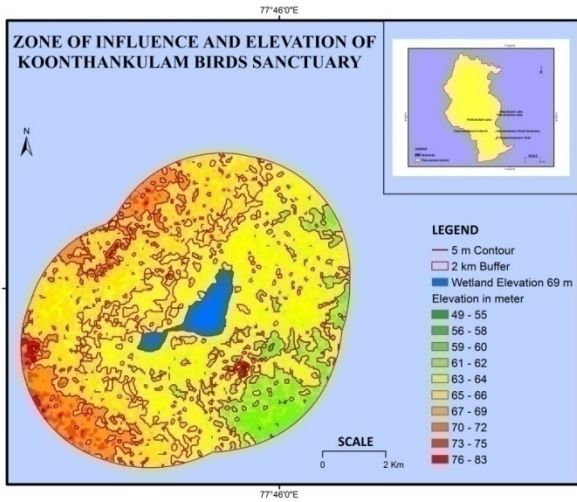
Table 26.10: List of Mammal species recorded along the Tirunelveli District (A – Chetruthamarai Kulam, B - Koonthankulam Bird Sanctuary, C - Melakulam Lake, D - Puthukulam Lake, E - V. M. Chatram Lake, F - Vijayanarayanan Tank)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F
1	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+	+	+
2	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+	+	+	+
3	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+	+	+
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+	+	+	+
Total					4	4	4	4	4	4

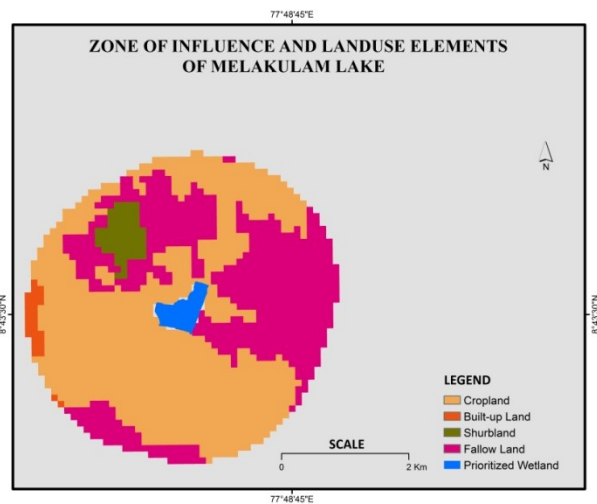
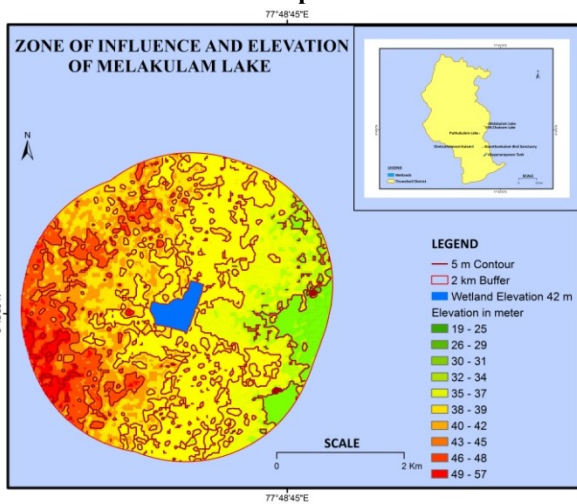
Map 26.2: Zone of Influence around the ChetruthamaraiKulam.



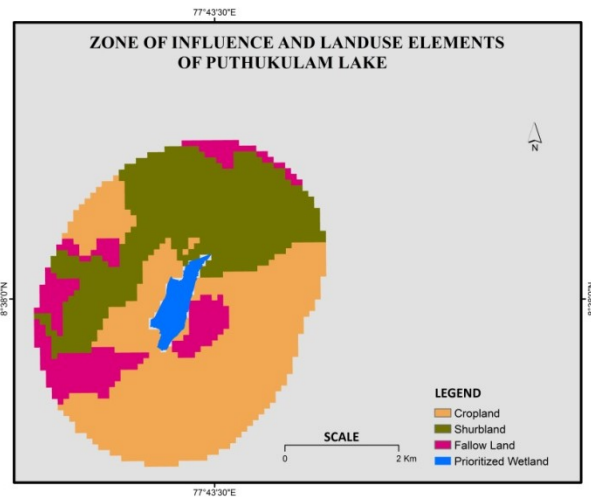
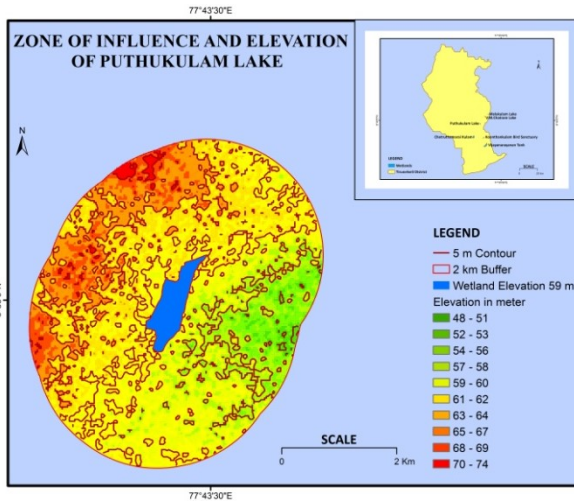
Map 26.3: The zone of influence around the KoonthanKulam Bird Sanctuary.



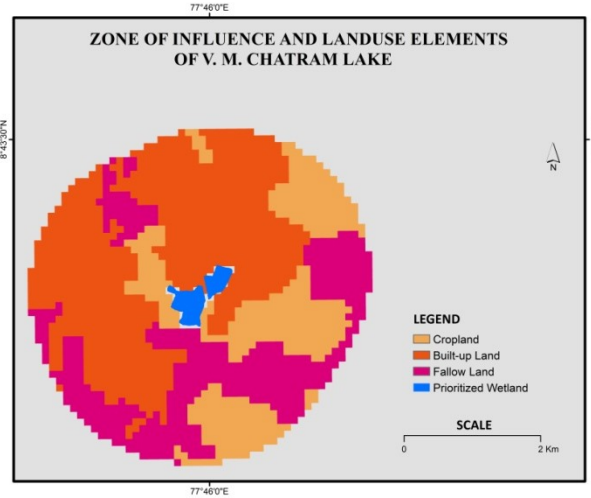
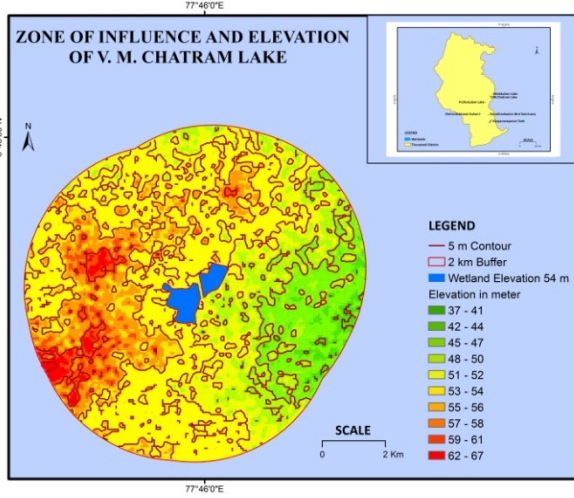
Map 26.4: The zone of influence around the Melakulam Lake.



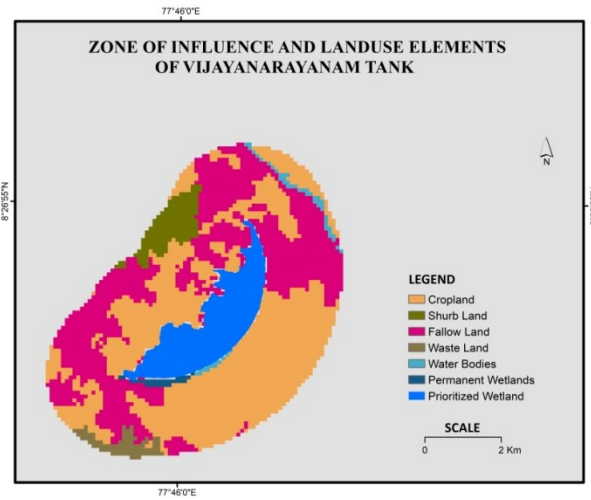
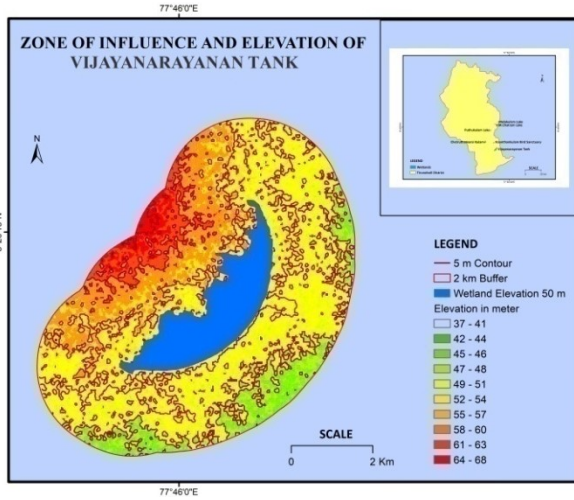
Map 26.5: The zone of influence around the Puthukulam Lake.



Map 26.6: The zone of influence around the V.M. Chatram Lake.



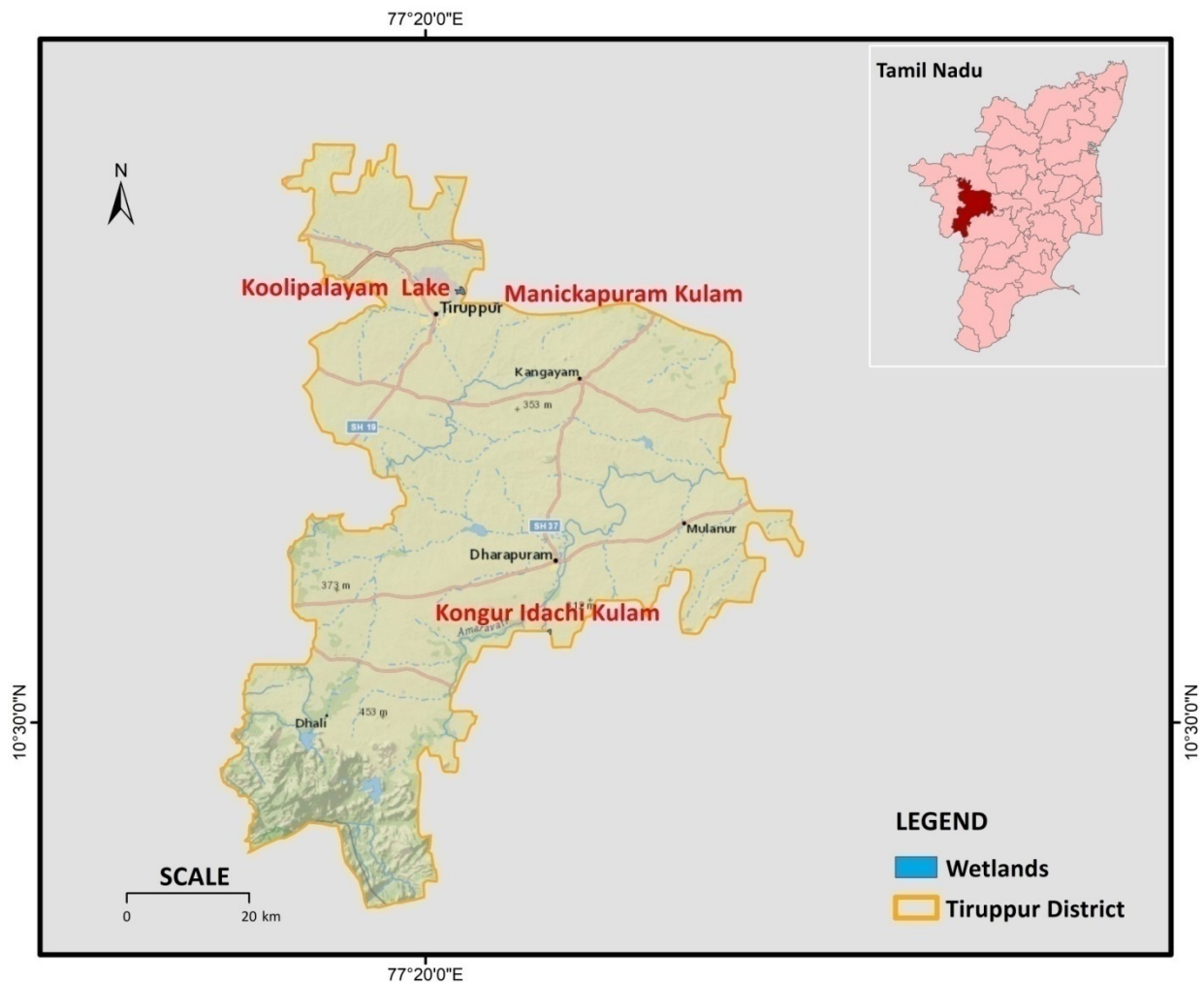
Map 26.7: Zone of Influence around the Vijayanarayanam Tank.



27. Tiruppur District

Tiruppur district was formed in February 2009. The district is well-developed and industrialized. Tiruppur district lies on the western part of Tamil Nadu bordering the Western Ghats and hence the district enjoys a moderate climate. The district is surrounded by Coimbatore district in the west, Erode district to the North and NorthEast and Karur district in the east and Dindigul district in the south east. To the south the district is surrounded by Kerala state (Idukki district). The district has an area of 516.12 square kilometers.

The major rivers flowing through the district are Noyyal and Amaravathi. The Amaravathi river is the main source of irrigation in the district. Amaravathi Dam, which created Amaravathi reservoir, is located at Amaravathinagar. Thirumurthy dam, which is created by the PAP project, is situated in this district. Both Amaravathi dam and Thirumurthy dam are the prime source of irrigation in the district, whereas Uppaar dam is another dam which receives water from seasonal rains. Of the three wetlands selected in the district, Koolipalayam reservoir is the largest while Manickapuram Kulam is the smaller of the three wetlands (Map 27.1).



Map 27.1: Wetlands of Tiruppur district assessed for Prioritization

KongurIdachi Kulam

KongurIdachi Kulam (Plate 27) is based in Dharapuram taluka in Tirupur district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Kuppannavalsu, Karuppaiyavalasu and Pommayanallur.

The geographic coordinates are Latitude: 10° 37'44.7" N; 10° 37'41.0" N; and Longitude: 077° 30'39.8" E; 077° 30'41.4" E.

KongurIdachi Kulam is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. It receives water from Sanmuganathi river canal and the overflow joins the Noyyal river. The water from the wetland helps in replenishing the groundwater. The lake has an area of 56.7 hectares and based on the secondary information the average depth is 2 meters. The wetland is surrounded by 95 % Agriculture and 5% rural settlements. It has an area of 1876.92 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 27.2).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 45 plant species (Table 27.1) including ten invasive species that include *Parthenium hysterophorus* and *Lantana camara*. The fauna comprised of 38 animal species including three domestic species were recorded during the survey (Table 27.2 to 27.9).

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the Amravathi river and Umbbar Dam. Fishery is not undertaken for commercial purpose, but some amount of recreational fishery is undertaken when water is available. There is mining for sand or silt undertaken. The wetland is not used for any purpose but serves as a ground water recharge and the agriculture fields as long as the water is present. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland only when water is present.

The wetland has a little potential of change in the outflow of the water. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not is not a Protected Area and faces a severe threat from landuse change and compromise in the quality of the water.

Koolipalayam Lake

Koolipalayam Lake is also known as Sarkaraperipalayam Lake, Nanjaranayakkam kulam (Plate 28) is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Koolipalayam, kulathupalayam, Parapalayam, Sarkara periyapalayam.

The geographic coordinates are Latitude: 11° 08'26.5" N; 11° 08'17.8" N; 11° 08'15.2" N; 11° 07'47.7" N; 11° 07'47.3" N; 11° 07'50.1" N; 11° 07'47.6" N; and Longitude: 077° 23'08.9" E; 077° 23'19.8" E; 077° 23'21.9" E; 077° 23'30.6" E; 077° 23'27.0" E; 077° 23'13.3" E; 077° 22'47.8" E.

Koolipalayam Lake is a wetland that belongs to the Manmade (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area. It receives water from Nalar river canal and the overflow joins the Noyyal river. The water from the wetland helps in replenishing the groundwater and the overflow joins the Noyyal river. The lake has an area of 112 hectares and based on the secondary information the average depth is 4 meters. The wetland is surrounded by 70 %

Agriculture, 10% Grasslands/scrublands, 10% rural settlements, 5% Urban settlements and 5% Industries. It has an area of 2259.52 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 27.3).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.6, salinity measuring 0.89 ppt, the TDS was recorded high at 1194 ppm. The vegetation comprised of 49 plant species (Table 27.1) including eight invasive species that also include *Prosopis juliflora*, *Eichorinea carcipect* and *Ipomoea sp.* The fauna comprised of 110 animal species including four domestic species were recorded during the survey (Table 27.2 to 27.9). Three Threatened species of birds and two fishes were observed during the survey.

The water from the wetland is not used for drinking purpose or agriculture. The municipal corporation provides drinking water from the borewell water and Bhavani Dam at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is not undertaken for commercial purpose, but some amount of recreational fishery is undertaken. There is mining for sand or silt undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The site adjoining the wetland is majorly used by the locals for dumping garbage, release of sewage and effluents and as toilet. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures. The dyeing industry is greatly influencing the ecological character of the wetland and the dyeing industry has to be monitored.

The wetland is not is not a Protected Area and faces a severe threat from landuse change and compromise in the quality of the water.

ManickapuramKulam

Manickapuram Lake (Plate 28) also known as Muthalipalayam is based in Tirupur taluka in Tirupur district. Villages that surround the wetland include Muthalipalayam and Manikyapuram. The wetland is not a Protected Area and comes under the jurisdiction of PWD.

The geographic coordinates are Latitude: 11° 07'15.7" N; 11° 07'16.4" N; 11° 07'17.3" N; 11° 07'06.3" N; 11° 07'02.1" N; and Longitude: 077° 26'00.9" E; 077° 26'05.0" E; 077° 26'17.5" E; 077° 26'24.1" E; 077° 26'25.7" E

Manickapuram Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area. It receives water from Noyyal river canal and the overflow joins the Noyyal river. The water from the wetland helps in replenishing the groundwater. The lake has an area of 35 hectares and based on the secondary information the average depth is 3 meters. The wetland is surrounded by 75 % Agriculture and 25% rural settlements. It has an area of 1737.25 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 27.4).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.6, salinity measuring 1.41 ppt, the TDS was recorded high at 1940 ppm. The vegetation comprised of 50 plant species (Table 27.1) including 10 invasive species that also include *Ipomoea aquatica*, *Acacia nilotica*, *Prosopis juliflora*, *Parthenium hysterophorus*, and *Lantana camara*. The fauna comprised of 95 animal species including three domestic species were recorded during the survey (Table 27.2 to 27.9). Three Threatened species of birds were observed during the survey.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water. The overflow water feeds the agricultural fields. Fishery is undertaken for commercial purpose, but some amount of recreational fishery is undertaken when water is available. Mining for sand or silt is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland only when water is present.

The wetland has a little potential of change in the outflow of the water. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures. Sewage release and garbage dumping are the other major threats. The excess grazing in the wetland and the extraction of ground water needs to be regulated. Horticulture practices using the ground water can be a threat to the health of the wetland.

The wetland is not is not a Protected Area and faces a severe threat from land use change and compromise in the quality of the water.

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Table 27.1: List of Plants recorded in Tiruppur District (A – KongurIdachiKulam, B - Koolipalayam Lake, C – ManickapuramKulam)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C
1	Tapering-Leaf Tiliacora	<i>Tiliacora acuminata</i>	Menispermaceae	Native		-	-	+
2	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	-	+	+
3	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	-	+	+
4	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	-	+	+
5	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	-	+	+
6	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	+
7	Indian Plum	<i>Ziziphus mauritiana</i>	Rhamnaceae	Native	NA	+	-	+
8	Devil's Backbone	<i>Cissus quadrangularis</i>	Vitaceae	Native	NA	-	+	+
9	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	-	+
10	Alysiclover	<i>Alysicarpus vaginalis</i>	Fabaceae	Native	NA	-	-	+
11	Peacock Flower	<i>Caesalpinia pulcherrima</i>	Fabaceae	Native		-	-	+
12	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	-	+	+
13	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
14	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	-	+	+
15	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	+	-	+
16	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	+
17	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	-	-	+
18	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	-	+	+
19	Ribbed Sponge Gourd	<i>Luffa acutangula</i>	Cucurbitaceae	Native	NA	-	-	+
20	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	-	+	+
21	Diamond flower	<i>Oldenlandia corymbosa</i>	Rubiaceae	Native	NA	-	-	+
22	Bristly Starbur, Goat's Head	<i>Acanthospermum hispidum</i>	Asteraceae	Native	NA	+	-	+
23	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+
24	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	-	+
25	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+
26	Cowplant	<i>Gymnema sylvestre</i>	Apocynaceae	Native	NA	-	-	+
27	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	+	-	+
28	Sweet indrajao, Palaindigo plant,	<i>Wrightia tinctoria</i>	Apocynaceae	Native	LC	-	-	+
29	Dwarf morning glory	<i>Evolvulus alsinoides</i>	Convolvulaceae	Naturalized	NA	-	-	+
30	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	-	+	+
31	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	-	+
32	Large caltrops	<i>Pedaliium murex</i>	Pedaliaceae	Native	NA	-	-	+
33	Box-Leaved Barleria	<i>Barleria buxifolia</i>	Acanthaceae	Native	NA	-	-	+
34	Hoary Basil,	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	+	+	+
35	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	-	+	+
36	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	+	+
37	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	-	-	+
38	Kapok bush	<i>Aerva javanica</i>	Amaranthaceae	Native	NA	-	-	+
39	Calico Plant	<i>Alternanthera ficoidea</i>	Amaranthaceae	Introduced		-	-	+
40	Smooth Chaff Flower	<i>Alternanthera paronychioides</i>	Amaranthaceae	Naturalized	NA	+	+	+
41	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	+	-	+
42	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+
43	Triangular Spurge	<i>Euphorbia antiquorum</i>	Euphorbiaceae	Native		-	-	+
44	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	-	+
45	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	+
46	Narrow-Leaved Cattail	<i>Typha angustifolia</i>	Typhaceae	Native	LC	-	-	+
47	Common nut sedge, coco grass,	<i>Cyperus rotundus</i>	Cyperaceae	Native	LC	-	-	+
48	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	+	-	+
49	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	-	+	+
50	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	+	+
Total						21	23	50

Table 27.2: List of Insects recorded in Tiruppur District (A – KongurIdachiKulam, B - Koolipalayam Lake, C – ManickapuramKulam)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Cow bug	<i>Oxyrachis tarandus</i>	Membracidae	+	+	-
2	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	+	+
3	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	+
4	Toothpick Grasshopper	<i>Leptysma marginicollis</i>		-	+	-
5	Common Field Grasshopper	<i>Chorthippus brunneus</i>		-	+	-
6	Spittle bug	<i>Clovio sp.</i>		-	+	-
7	Water Strider	<i>Gerris sp.</i>		-	+	+
8	Red Cotton Stainer	<i>Dysdercus cingulatus</i>		-	+	-
9	Jewel bug	<i>Chrysocoris stollii</i>		-	+	+
10	Blister Beetle	<i>Hycleus sp.</i>		-	+	+
11	Carpenter Bee	<i>Xylocopa latipes</i>		-	+	+
12	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>		-	+	+
13	Small Dung Beetle	<i>Onthophagus sp.</i>	Scarabaeidae	-	-	+
14	Blue Banded Honeybee	<i>Amegilla cingulata</i>	Apidae	-	-	+
15	Bicolour Ant	<i>Meranoplus bicolor</i>	Formicidae	-	-	+
16	Orange Spider Wasp	<i>Cryptocheilus bicolor</i>	Pompilidae	-	-	+
17	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	-	+
Total				3	12	12

Table 27.3: List of Butterflies recorded in Tiruppur District (A – KongurIdachiKulam, B - Koolipalayam Lake, C – ManickapuramKulam)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Common Grass Yellow	<i>Eurema hecabe</i>	Coliadinae	Common	+	+	-
2	Common Emigrant	<i>Catopsilia pomona</i>	Coliadinae	Common	+	-	-
3	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+
4	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	+	-	+
5	Common Cerulean	<i>Jamides celeno</i>	Polyommatainae	Common	+	-	-
6	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	+	+	+
7	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	+	+
8	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+
9	Danaid Eggfly	<i>Hypolimnas misippus</i>	Nymphalinae	Common	+	+	-
10	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	-	+	+
11	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	-	+	+
12	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	-	+	-
13	Small Orange Tip	<i>Colotis etrida</i>	Pierinae	Common	-	+	-
14	Dark Grass Blue	<i>Zizeeria sandra</i>	Polyommatainae	Common	-	+	-
15	Gram Blue	<i>Euchrysops cnejus</i>	Polyommatainae	Common	-	+	-
16	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	-	+	+
17	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	-	+	+
18	Common Crow	<i>Euploea core</i>	Danainae	Common	-	+	-
19	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	-	+	-
20	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	-	+	+
21	Common Castor	<i>Ariadne merione</i>	Biblidinae	Common	-	+	-
22	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	-	+	-
23	Common Mormon	<i>Papilio polytes</i>	Papilioninae	Common	-	-	+
24	Lime Butterfly	<i>Papilio demoleus</i>	Papilioninae	Common	-	-	+
25	Common Gull	<i>Cepora nerissa</i>	Pierinae	Common	-	-	+
26	Common Jezebel	<i>Delias eucharis</i>	Pierinae	Common	-	-	+
27	Dark Blue Tiger	<i>Tirumala septentrionis</i>	Danainae	Common	-	-	+
28	Joker	<i>Byblia ilithyia</i>	Biblidinae	Common	-	-	+
Total					9	19	16

Table 27.4: List of Odonates recorded in Tiruppur District (A – KongurIdachiKulam, B - Koolipalayam Lake, C – ManickapuramKulam)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+
2	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+
3	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	-	+	-
4	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	-	+	-
5	Pigmy Dartlet	<i>Agriocnemis pygmaea</i>	Coenagrionidae	Common	-	+	-
6	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	-	+	-
7	Coromandel Marsh Dart	<i>Ceriagrion coromandelianum</i>	Coenagrionidae	Common	-	+	-
8	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	+	+
9	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	-	+	+
10	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	-	+	+
11	Red Marsh Trotter	<i>Tramea basilaris</i>	Libellulidae	Common	-	+	-
12	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	-	-	+
13	Granite Ghost	<i>Bradinopyga geminata</i>	Libellulidae	Common	-	-	+
14	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	-	-	+
Total					2	11	8

Table 27.5: List of Arachnida recorded in Tiruppur District (A – KongurIdachiKulam, B - Koolipalayam Lake, C – ManickapuramKulam)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	+	+
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	+	-
Total				1	2	1

Table 27.6: List of Fishes recorded in Tiruppur District (A – KongurIdachiKulam, B - Koolipalayam Lake, C – ManickapuramKulam)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	-	-
2	Catla	<i>Catla catla</i>	Cyprinidae	LC	+	+	-
3	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	-	-
4	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	-	+	-
5	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	+	-
6	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	+	-
7	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	-	+	-
8	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	-	+	-
9	Spiny eel	<i>Macrognathus pancalus</i>	Mastacembelidae	LC	-	+	-
10	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	-	+	-
11	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	-	+	-
12	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	-	+	-
Total					3	10	0

Table 27.7: List of Reptiles recorded in Tiruppur District (A – KongurIdachiKulam, B - Koolipalayam Lake, C – ManickapuramKulam)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	-	+	+
3	Snake Skink	<i>Lygosoma punctatus</i>	Scincidae	Least Concern	-	-	+
Total					1	2	3

Table 27.8: List of Birds recorded in Tiruppur District (A – KongurIdachiKulam, B - Koolipalayam Lake, C – ManickapuramKulam)

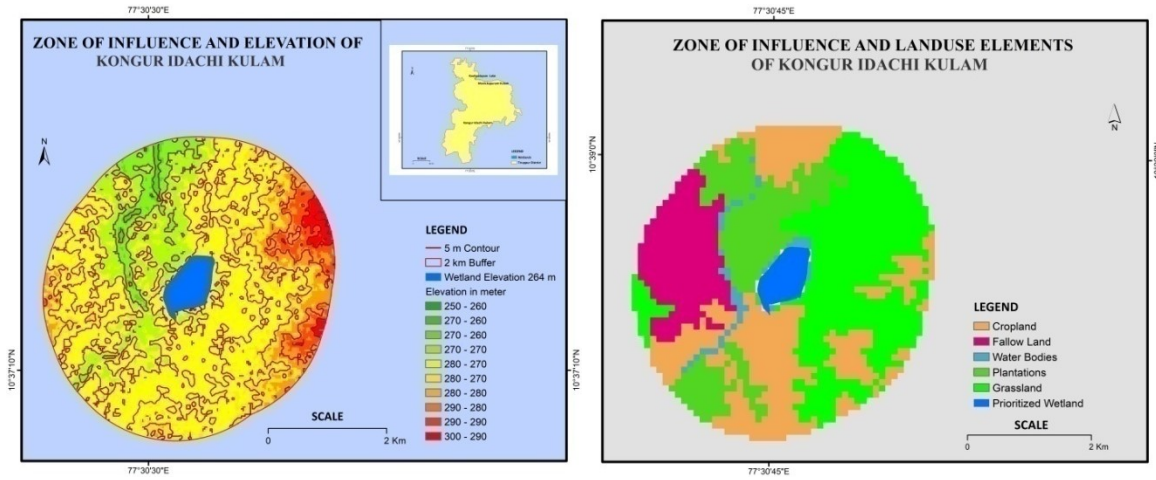
S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae	Least Concern	-	-	+
2	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Least Concern	+	-	+

3	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Least Concern	-	+	+
4	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	-	+	+
5	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	Near Threatened	-	+	+
6	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	-	+	+
7	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	Near Threatened	-	-	+
8	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Ardeidae	Least Concern	-	-	+
9	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	-	+	+
10	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	-	+	+
11	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	-	+	+
12	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	-	+	+
13	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	-	+	+
14	Spot-billed Pelican	<i>Pelecanus philippensis</i>	Pelecanidae	Near Threatened	-	+	+
15	Darter	<i>Anhinga melanogaster</i>	Anhingidae	Near Threatened	-	+	+
16	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	-	+	+
17	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	Least Concern	-	+	+
18	Great Cormorant	<i>Phalacrocorax carbo</i>	Phalacrocoracidae	Least Concern	-	-	+
19	Brahminy Kite	<i>Haliastur indus</i>	Accipitridae	Least Concern	-	-	+
20	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	Least Concern	-	-	+
21	Purple Swampphen	<i>Porphyrio porphyrio</i>	Rallidae	Least Concern	-	+	+
22	Common Moorhen	<i>Gallinula chloropus</i>	Rallidae	Least Concern	-	+	+
23	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	-	+	+
24	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	-	+	+
25	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	-	+	+
26	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Least Concern	-	+	+
27	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	Least Concern	-	-	+
28	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	-	-	+
29	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Columbidae	Least Concern	-	-	+
30	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	-	+
31	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	-	+	+
32	Jacobin Cuckoo	<i>Clamator jacobinus</i>	Cuculidae	Least Concern	-	-	+
33	Asian Koel	<i>Eudynamis scolopaceus</i>	Cuculidae	Least Concern	-	+	+
34	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	Least Concern	+	+	+
35	Asian Palm Swift	<i>Cypsiurus balasienis</i>	Apodidae	Least Concern	+	+	+
36	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	-	+	+
37	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae	Least Concern	-	-	+
38	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	Least Concern	-	-	+
39	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	Least Concern	+	-	+
40	Black Drongo	<i>Dicrurus macrocerus</i>	Dicruridae	Least Concern	+	+	+
41	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	-	-	+
42	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
43	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	Least Concern	-	+	+
44	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	-	-	+
45	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	+	+	+
46	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
47	House Sparrow	<i>Passer domesticus</i>	Passeridae	Least Concern	-	-	+
48	Baya Weaver	<i>Ploceus philippinus</i>	Ploceidae	Least Concern	-	-	+
49	Indian Silverbill	<i>Euodice malabarica</i>	Estrildidae	Least Concern	-	-	+
50	Black-headed Munia	<i>Lonchura malacca</i>	Estrildidae	Least Concern	-	-	+
51	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	Least Concern	+	+	+
Total					10	30	51

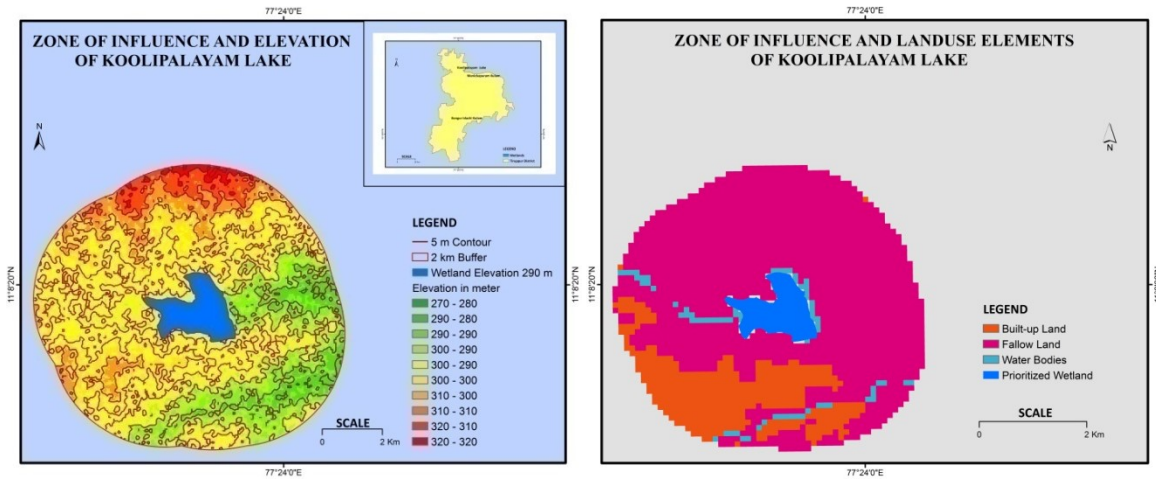
Table 27.9: List of Mammals recorded in Tiruppur District

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+
3	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	-	+	-
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	-	+	+
Total					3	5	4

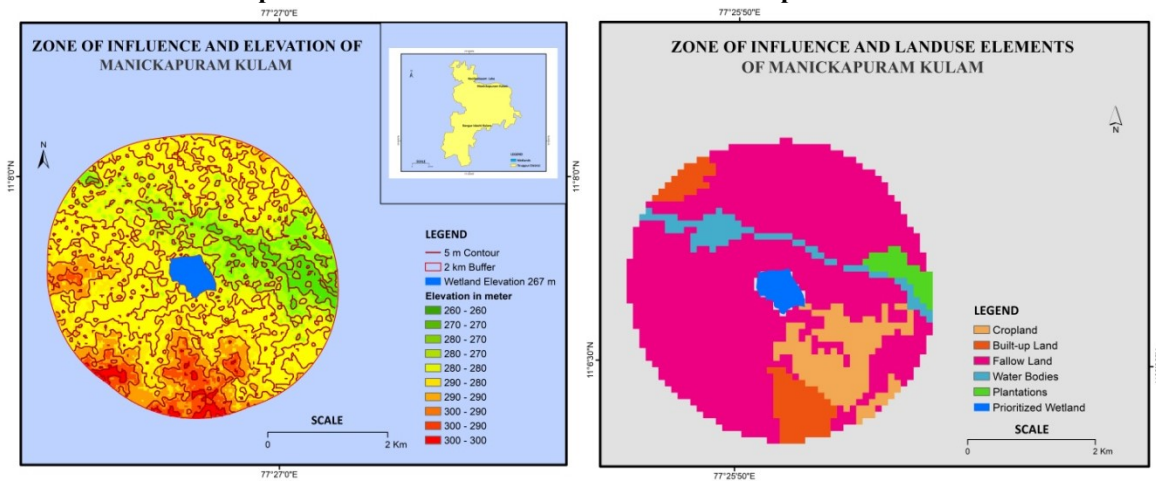
Map 27.2: Zone of Influence around the KongurIdachiKulam.



Map 27.3: The zone of influence around the Koolipalayam Lake.



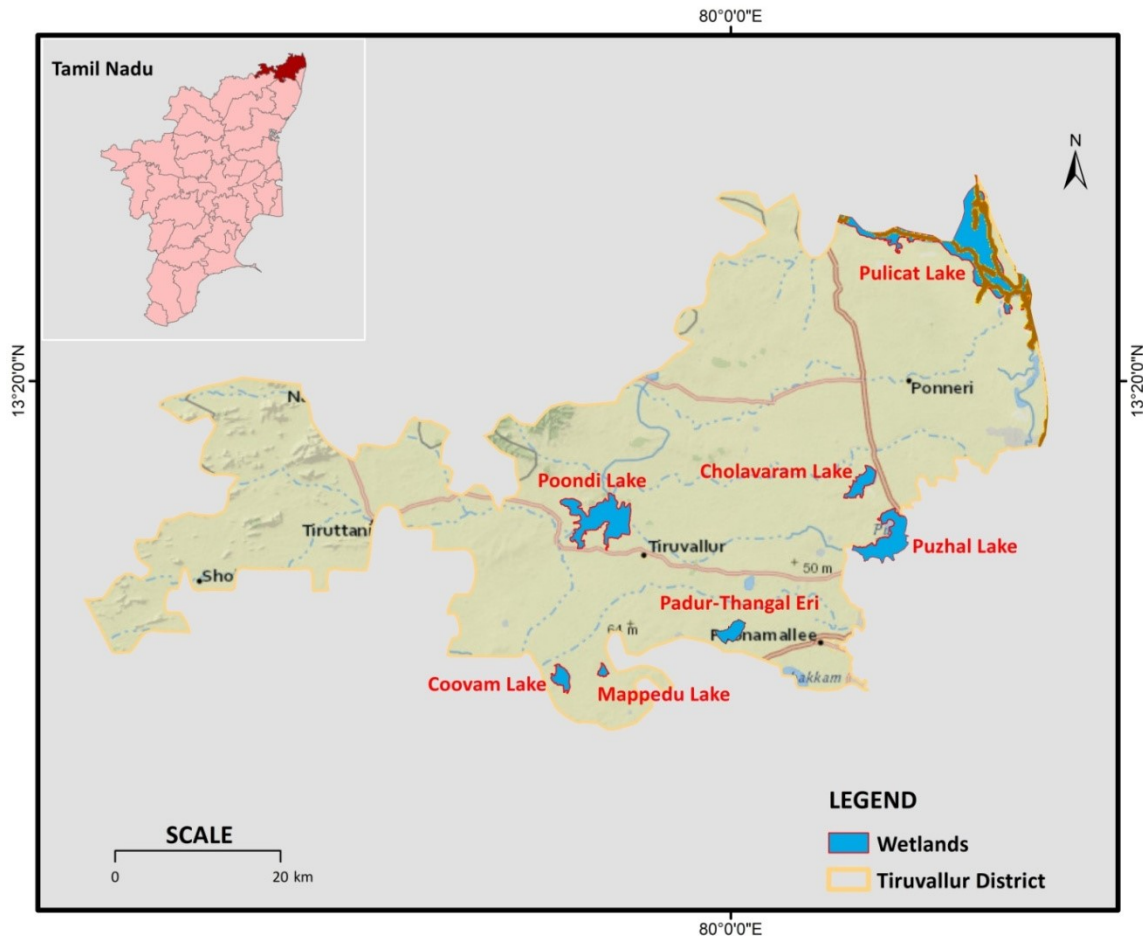
Map 27.4: Zone of Influence around the ManickapuramKulam.



28. Tiruvallur District

Tiruvallur was originally known as Tiruvallur which specifies the sleeping position of the holy lord "Balaji", in the Veeraragava temple of Tiruvallur. Historically, this region was under a chain of regimes commencing from the Pallavas during the 7th century ending with the Nawab of Arcot during the early part of 19th century when it came under the British rule. The district of Tiruvallur has been carved out by bifurcating erstwhile Chengalpattu district. It is bordered on the north by Andhra Pradesh state, on the east by the Bay of Bengal, on the southeast by Chennai district, on the south by Kanchipuram and on the west by Vellore district. The coastal region of the district is mostly flat and dreary; but in the other parts it is undulating and even hilly in some places. The area under forests in this district is quite meager.

Thiruvallur is one of the fast developing districts of Tamil Nadu situated near Chennai city, giving it a special industrial and commercial importance. Total geographic area of Thiruvallur is 3422 km². Total area under wetland is 53863 ha, which includes 590 small wetland (<2.25 ha). Lakes/Ponds occupy 33.54% of wetland area. The second major wetland type is Tanks/Ponds. There are 603 Tanks/Ponds with 11825 ha area (21.95%). The other wetland types are; Lagoons (14.92 %), Reservoirs (10.54 %) and River/Stream (9.34 %). Of the seven wetlands selected in the district, Pulicat followed by Poondi are the large wetlands while Mappeduperiyaeri is the smallest of the wetlands (Map 28.1).



Map 28.1: Wetlands of Tiruvallur district assessed for Prioritization

Cholavaram Lake

Cholavaram Tank (Plate 28) is one of the largest lakes around the city and the water from the rain-fed reservoir is drawn for the city supply, through canals to Puzhal Lake. Villages that surround the wetland include Cholavaram, Vijayanallur, S P K Nagar, Devaneri, Erumavettipalayam, Thedilnagar. The wetland is not a Protected Area and comes under the jurisdiction of PWD.

The geographic coordinates are Latitude: 13°13'09.8" N; 13°13'18.1" N; 13°14'01.8" N; 13°14'24.9" N and Longitude: 080°09'13.6" E; 080°09'16.6" E; 080°09'28.9" E; 080°09'08.1" E.

Manickapuram Lake is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area as well as receives water from the Poondi wetland. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater. The over flow also feeds into the Puzhal lake. The lake has an area of 640 hectares and based on the secondary information the average depth is 4 meters. The wetland is surrounded by 65 % Forest, 15% Grassland/scrubland, 10% rural settlements and 5% Industries. It has an area of 3835.3 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 28.2).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.5, salinity measuring 0.174 ppt, the TDS was recorded high at 151 ppm. The vegetation comprised of 46 plant species (Table 28.1) including 10 invasive species that also include *Ipomoea sp.*, *Prosopis juliflora* and *Parthenium hysterophorus*. The fauna comprised of 78 animal species including three domestic species were recorded during the survey (Table 28.2 to 28.10). Two Near Threatened species of birds were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. Fishery is a recreational option in the wetland for many and fishing as a livelihood is done by very few families which is a community right. The fish seed is introduced by the Tamil Nadu Fisheries department and mostly comprises of the common carps. The locals frequent the wetland to feed the fish as an entertainment. The wetland is used for grazing and bathing by livestock is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and due to deforestation the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has several temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland however the density is less. There is increase in agricultural activities that are growing into the wetland. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities. The wetland is used for washing of vehicles as well as for other human activities. The state highway passes close by the wetland leading to polluting activities. New industries are being set up in the catchment area.

The wetland is not included in any of the protection and conservation categories.

Coovam Lake

Coovam tank (Plate 28) is based in Tiruvallur district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Coovam, Perambakkam, Narasingapuram, Elamayankottur, Chellappattidi, Kottur, Gunagambakkam, Elambakkam, Poonor.

The geographic coordinates are Latitude: 13° 00'16.7" N; 13° 01'30.9" N; 13° 01'30.0" N and Longitude: 079° 48'33.5" E; 079° 48'38.8" E; 079° 48'37.5" E.

Coovam tank is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and the overflow forms the Coovam river. The lake has an area of 431 hectares and based on the secondary information the average depth is 3 meters. The wetland is surrounded by 70 % Agriculture, 10% Grassland/scrub land, 10% rural settlements and 10% urban settlements. It has an area of 3166.33 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 28.3).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.5, salinity measuring 0.138 ppt, the TDS was recorded high at 160 ppm. The vegetation comprised of 56 plant species (Table 28.1) including seven invasive species that also include *Ipomoea sp.*, *Prosopis juliflora* and *Parthenium hysterophorus*. The fauna comprised of 102 animal species including four domestic species were recorded during the survey (Table 28.2 to 28.10). There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. Fishery is a recreational option in the wetland for many and fishing as a livelihood is undertaken on a minor scale. The wetland is not a site for recreation only the locals come for recreational fishing. The wetland is used for grazing bathing by livestock is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland does not have any idol immersion but solid waste dumping and encroachment activities are observed to a very small extent. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some grazing activities that should be regulated as they are in its initial stages.

Mappedu Lake

Commonly known as MappeduLake or Mappedueri (Plate 29) is based in Tiruvallur district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Mappedu, Meicheri, Avanthavakkam, Eraamangalam, Satharai, Muthur, Narasingamangalam, Govindamedu, Keelcheri.

The geographic coordinates are Latitude: 13° 01'35.6" N; 13° 01'12.1" N; 13° 01'05.6" N; 13° 00'55.1" N and Longitude: 079° 51'35.6" E; 079° 51'52.6" E; 079° 51'56.06" E; 079° 52'02.8" E.

Mappedu Lake is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater. The lake has an area of 118 hectares and based on the secondary

information the average depth is 4.5 meters. The wetland is surrounded by 75 % Agriculture, 15% Grassland/scrubland, 5% Rural settlements and 5% Urban settlements. It has an area of 2218.25 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 28.4).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.5, salinity measuring 0.138 ppt, the TDS was recorded high at 98 ppm. The vegetation comprised of 54 plant species (Table 28.1) including 10 invasive species that also include *Ipomoea sp.*, *Prosopis juliflora* and *Parthenium hysterophorus*. The fauna comprised of 92 animal species including four domestic species were recorded during the survey (Table 28.2 to 28.10). There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around and within the wetland and major portion of the lake water is used for irrigation. The wetland is used for grazing and bathing by livestock. Fishery is a recreational option in the wetland for many and fishing as a livelihood is not undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. There is increase in agricultural activities around the wetland. There are invasive plant species that is changing the habitat of the wetland however the density is less. The wetland does not have any idol immersion but solid waste dumping and encroachment activities are observed to a very small extent.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some grazing activities that should be regulated as they are in its initial stages.

Padur Thangal Eri

Padur Thangal eri (Plate 29) is based in Poonamallee taluka in Tiruvallur district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Padur and Thangal.

The geographic coordinates are Latitude: 13° 03'06.5" N; 13° 03'08.3" N; 13° 03'10.0" N; 13° 04'02.1" N; 13° 02'08.6" N; and Longitude: 079° 59'57.3" E; 079° 59'54.8" E; 079° 59'49.7" E; 080° 00'53.8" E; 080° 00'08.7" E.

PadurThangaleri is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and the overflow goes to Chembrapakameri. The lake has an area of 507 hectares and based on the secondary information the average depth is 3 meters. The wetland is surrounded by 60 % Agriculture, 10% Industries, 25% rural settlements and 5% Forest. It has an area of 1805 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 28.5).

The wetland was Mesotrophic during the visit, with the pH of the water being 9, salinity measuring 0.231 ppt, the TDS was recorded high at 339 ppm. The vegetation comprised of 60 plant species (Table 28.1) including 10 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, *Lantana camara* and *Ipomoea sp.* The fauna comprised of 75 animal species including three domestic species were recorded during the survey (Table 28.2 to 28.10). There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. There are agriculture or plantation activities within the wetland by locals and forest department. Fishery is a commercial and recreational option in the wetland for many as tender are issued only recently by PWD. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland however the density is less. The wetland does not have any idol immersion but solid waste dumping and encroachment activities are observed to a very small extent.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some grazing activities that should be regulated as they are in its initial stages.

Poondi Lake

Poondi Lake is also called as Sathyamoorthy Dam (Plate 29) is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Poondi, Pullarambakkam, Sirvunannur, Kandigai, Pudur, Kuppamasathiram, Metupalayam, Thiripakkam, Bangarampet, Arampakkam, Patarapermandur.

The geographic coordinates are Latitude: 13° 09'58.0" N; 13° 11'44.4" N; 13° 10'54.1" N; 13° 11'52.5" N; 13° 12'31.1" N; 13° 12'48.0" N; 13° 11'42.4" N; and Longitude: 079° 53'25.3" E; 079° 53'27.0" E; 079° 53'24.0" E; 079° 53'27.0" E; 079° 52'26.5" E 079° 51'58.4" E; 079° 50'15.6" E.

Poondi Lake is a wetland that belongs to the Man-made (inland) tank category in the sub category seasonal intermittent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and direct inflow from the river Krishna. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater. The lake has an area of 2613 hectares and based on the secondary information the average depth is 8 meters. The wetland is surrounded by 20 % Agriculture, 5% Grassland /scrubland and 75% rural settlements. It has an area of 7775.57 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 28.6).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.4, salinity measuring 0.116 ppt, the TDS was recorded high at 195 ppm. The vegetation comprised of 60 plant species (Table 28.1) including nine invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 90 animal species including four domestic species were recorded during the survey (Table 28.2 to 28.10).

The water from the wetland is used for drinking purpose. The municipal corporation provides drinking water to Chennai corporation. The locals use water from the borewell for irrigation. Agriculture is undertaken around the wetland and ground water is used for irrigation. Fishery is undertaken in the wetland but for the past two years it has been given to the private sector. The local fishers are awaiting the high courts verdict. The wetland is used for grazing and bathing by livestock. The wetland is a site for recreation, frequented by morning walkers and nature enthusiast for bird watching. The wetland plays the primary role of buffering by acting as a sponge during events of

floods and extreme rainfall. The wetland has a few temples along its bank and a few cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. There is increase in agricultural activities around the wetland. There are invasive plant species that is changing the habitat of the wetland. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories.

Pulicat Lake

Pulicat Lake formerly Palaverkaadu Eri (Plate 29) is the second largest brackish water lake or lagoon in India, after Chilika Lake. It straddles the border of Andhra Pradesh and Tamil Nadu states with over 96% of it in Andhra Pradesh and 4% in Tamil Nadu situated on the Coromandal Coast in South India. The lake encompasses the Pulicat Lake Bird Sanctuary. The barrier island of Sriharikota separates the lake from the Bay of Bengal and is home to the Satish Dhawan Space Centre. Villages that surround the wetland include Pazhaverkkadu, Thirumalainagar, Gunamkuppam, Lighthouse kuppam, Nadukuppam, Karimanl, Pettai, Pallikuppam, Vanirankuppam, Nakathuravur, Arankuppam.

The geographic coordinates are Latitude: 13° 25'10.1" N; 13° 25'29.2" N; 13° 25'40.1" N; 13° 26'34.3" N; 13° 27'45.3" N and Longitude: 080° 19'13.4" E; 080° 19'13.4" E; 080° 18'32.1" E; 080° 15'42.8" E; 080° 14'58.0" E.

Pulicat Lake is a wetland that belongs to the Natural category in the sub category Coastal. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and direct inflow from the Swarnamugi river, Kalangi river and Arani river and tidal influence of the Bay of Bengal. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater. The lake has an area of 56781 hectares and based on the secondary information the average depth is 3 meters. The wetland is surrounded by 5% Aquaculture farms, 10 % Agriculture, 15% Forest and 70% rural settlements. It has an area of 32227.7 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 28.7).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.5, salinity measuring 2.183 ppt, the TDS was recorded high at 2951 ppm. The vegetation comprised of 28 plant species (Table 28.1) including nine invasive species that also include *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 65 animal species including four domestic species were recorded during the survey (Table 28.2 to 28.10). One Near Threatened bird was observed during the survey, while on the basis of secondary data, the fishes recorded from the landing grounds around Pulicat lake were from several threat categories of IUCN, i.e. 44 Near Endangered, Two Near Threatened, One vulnerable and one Endangered (Table 28.14 a-g). It must be noted here that the fisherman also travel into the open sea for fishing.

The water from the wetland is marine and not used for drinking purpose. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and the water from the wetland penetrates through the ground water interfaces. Fishery is a major livelihood along the wetland, which is a community right, there is villagers fishing society. The wetland is used for grazing and bathing by livestock. The wetland is a site for recreation and is not frequented by nature enthusiast for bird watching. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has temples and other religious institutions along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. There is increase in industrial activities that is impacting the aquaculture fishery mainly the shrimp culture of the region. The wetland has some amount of idol immersion as well as solid waste dumping and encroachment activities. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is included in ESA as well as the wetland of National Importance.

Puzhal Lake

Puzhal lake (Plate 29) is also known as Red hills lake is located in Ponneri taluk of Thiruvallur district, Tamil Nadu. Puzhal lake is one of the rain-fed reservoirs and a drinking water source for the Chennai city. The Puzhal reservoir was built in 1876 during the British rule in Puzhal Town. Villages that surround the wetland include Puzhal, Banunagar, Kallikuppam, Sakthinagar, Sammyapuram, Oragadam, Thirumulaivazhal, Om shakthinagar, Naravaikuppam, Gandhinagar and Alamaathi. The wetland is a Protected Area by the corporation as it is used for supplying drinking water.

The geographic coordinates are Latitude: 13° 08'07.8" N; 13° 08'19.0" N; 13° 09'52.6" N; 13° 10'00.9" N; 13° 10'06.3" N; 13° 11'05.1" N; 13° 11'13.7" N and Longitude: 080° 09'49.6" E; 080° 10'41.9" E; 080° 11'38.3" E; 080° 11'21.2" E; 080° 11'23.0" E; 080° 11'27.1" E; 080° 10'58.1" E.

Pulicat Lake is a wetland that belongs to the Man-made (inland) category in the sub category Dam/ Reservoir. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area. The water also helps in replenishing the groundwater. The over flow also feeds into the Pallar River. The lake has an area of 1841 hectares and based on the secondary information the average depth is 5 meters. The wetland is surrounded by 10 % Agriculture, 20% Industries and 70% Urban settlements. It has an area of 6240.21 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 28.8).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.5, salinity measuring 0.245 ppt, the TDS was recorded high at 260 ppm. The vegetation comprised of 40 plant species (Table 28.1) including 10 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 90 animal species including four domestic species were recorded during the survey (Table 28.2 to 28.10). One near Threatened specie of birds were observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is used for drinking purpose. Agriculture is undertaken around the wetland and the ground water is used for irrigation. Fishery is not permitted in the lake however, recreational fishery is practiced and morning walkers use the bund of the wetland. The wetland is used for grazing and bathing by livestock. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has several temples and other religious institutions along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is increase in the carp population altering the characteristics of the wetland although there is no fishing activity. There are invasive plant species that is changing the habitat of the wetland however the density is less. The pollution in the form of sewage, effluents and solidwaste dumping is seen but it is low threat in its present condition. The wetland has some amount

of idol immersion as well as solid waste dumping and encroachment activities. The siltation is also observed near the inlet as well as the outlet of the wetland.

The wetland is not included in any of the protection and conservation categories. However the wetland is given protection by the PWD as it is used for drinking purposes.

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Table 28.1: List of Plants recorded in Tiruvallur District (A - Cholavaram Lake, B - Coovam Lake, C - Mappedu Lake, D - Padur-Thangal Eri, E - Poondi Lake, F - Pulicat Lake, G - Puzhal Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D	E	F	G
1	Sacred Water Lotus	<i>Nelumbo nucifera</i>	Nelumbonaceae	Native	NA	-	-	-	+	+	-	-
2	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	+	+	-	+	-	-	+
3	White wild Musk Mallow	<i>Abelmoschus ficulneus</i>	Malvaceae	Native	NA	-	-	-	+	-	-	-
4	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	-	+	+	+	-	-	-
5	False mallow, Broom weed	<i>Malvastrum coromandelianum</i> subsp. <i>coromandelianum</i>	Malvaceae	Native	NA	-	-	-	+	+	-	-
6	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	-	+	+	+	+	+
7	Long-stock Sida	<i>Sida cordata</i>	Malvaceae	Native	NA	+	+	+	+	-	+	+
8	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	-	+	+	+	+
9	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	+	+	+	+	-	+
10	Necklace-Pod Alyce Clover	<i>Alysicarpus monilifer</i>	Fabaceae	Native	NA	-	-	+	+	-	-	-
11	Alyce clover	<i>Alysicarpus ovalifolius</i>	Fabaceae	Native	NA	-	-	-	+	-	-	-
12	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	+	+	-	+	+	+	-
13	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+	+	+	+	+
14	Common Sesban	<i>Sesbania sesban</i>	Fabaceae	Native	NA	-	-	-	+	-	-	-
15	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	+	+	+	+	+	+
16	Forest Red Gum	<i>Eucalyptus tereticornis</i>	Myrtaceae	Exotic	NA	-	-	-	+	-	+	-
17	White Alder	<i>Turnera subulata</i>	Turneraceae	Invasive	NA	-	-	-	+	-	-	-
18	Bitter Apple, Colocynth	<i>Citrullus colocynthis</i>	Cucurbitaceae	Native		-	-	-	+	-	-	-
19	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	-	+	-	+	-	-	-
20	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	-	-	-	+	-	-	-
21	Jima	<i>Glinus oppositifolius</i>	Molluginaceae	Native	NA	-	-	-	+	-	-	-
22	Chay Root	<i>Oldenlandia umbellata</i>	Rubiaceae	Native		-	-	-	+	-	-	-
23	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	+	+	+	+	-	-	-
24	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	+	+	+	+	-	-	-
25	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	+	+	+	+	+	-
26	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+	+	+	+	+
27	South Indian Mahua	<i>Madhuca longifolia</i> var. <i>latifolia</i>	Sapotaceae	Native	NA	-	-	-	+	+	-	-
28	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+	+	+	+	+
29	Indian Sarsaparilla	<i>Hemidesmus indicus</i>	Apocynaceae	Native	NA	-	-	-	+	-	-	-
30	Rosy Milkweed Vine	<i>Oxystelma esculentum</i>	Apocynaceae	Native	LC	-	-	+	+	-	-	-
31	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	-	-	+	+	+	-	-
32	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	-	-	-	+	-	-	-
33	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	-	-	-	+	-	-	-
34	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	+	+	+	+	-
35	Kidney leaf morning glory	<i>Merremia emarginata</i>	Convolvulaceae	Native	LC	-	-	+	+	-	-	-
36	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	-	-	-	+	-	-	-
37	American mint, Bush mint	<i>Mesosphaerum suaveolens</i>	Lamiaceae	Naturalized	NA	-	-	-	+	-	-	-
38	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	+	+	-	+	+	-	+
39	Calico Plant	<i>Alternanthera ficoidea</i>	Amaranthaceae	Introduced		+	-	+	+	+	+	-
40	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	-	+	-	+	-	-	-
41	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	+	+	+	+	+
42	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	-	+	-	+	-	+	+
43	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+	+	+	-	-
44	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	-	+	-	+	-	-	-
45	Madras Leaf flower	<i>Phyllanthus maderaspatensis</i>	Phyllanthaceae	Native	NA	-	-	-	+	-	-	-
46	Stone Breaker, Seed Under Leaf	<i>Phyllanthus niruri</i>	Phyllanthaceae	Native	NA	-	-	-	+	-	-	-
47	Peepal	<i>Ficus religiosa</i>	Moraceae	Native	NA	-	+	-	+	-	-	+
48	Bengal Dayflower	<i>Commelina benghalensis</i>	Commelinaceae	Native	LC	+	+	-	+	-	-	+
49	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	-	-	+	+	+	-	-
50	Coconut Tree	<i>Cocos nucifera</i>	Arecaceae	Native	NA	-	-	-	+	-	-	-

51	Narrow-Leaved Cattail	<i>Typha angustifolia</i>	Typhaceae	Native	LC	-	-	-	+	-	-	-
52	Floating Lace Plant	<i>Aponogeton natans</i>	Aponogetonaceae	Native	LC	+	-	-	+	-	-	-
53	Water Garss	<i>Bulbostylis barbata</i>	Cyperaceae	Native	NA	-	-	-	+	-	-	-
54	White Water Sedge	<i>Cyperus dubius</i>	Cyperaceae	Native	LC	-	+	-	+	-	-	-
55	Flatsedge	<i>Cyperus eleusinoides</i>	Cyperaceae	Native	NA	-	-	-	+	-	-	-
56	Giant Reed	<i>Arundo donax</i>	Poaceae	Invasive	LC	-	-	+	+	-	-	-
57	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	-	+	+	+	+	+
58	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	-	+	+	+	+	+
59	Kans grass	<i>Saccharum spontaneum</i>	Poaceae	Native	LC	-	+	+	+	+	-	-
60	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	+	+	+	+	-	+	+
Total						23	26	25	60	21	17	16

Table 28.2: List of Insects recorded in Tiruvallur District (A - Cholavaram Lake, B - Coovam Lake, C - Mappedu Lake, D - Padur-Thangal Eri, E - Poondi Lake, F - Pulicat Lake, G - Puzhal Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C	D	E	F	G
1	Toothpick Grasshopper	<i>Leptysma marginicollis</i>	Acrididae	-	+	+	-	+	-	+
2	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	+	-	-	-	+	-
3	Mantis Egg	<i>Ootheca</i>	Mantodeae	-	+	-	-	-	-	-
4	Spittle bug	<i>Clovia sp.</i>	Aphrophoridae	+	+	+	-	+	+	+
5	Water Strider	<i>Gerris sp.</i>	Gerridae	+	+	+	+	+	+	+
6	Cow bug	<i>Oxyrachis tarandus</i>	Membracidae	-	+	-	-	-	-	-
7	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	+	+	+	-	+	-	+
8	Transverse lady beetle	<i>Coccinella transversalis</i>	Coccinellidae	-	+	-	-	-	-	-
9	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	-	+	-	+	+	+	+
10	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	-	+	+	+	+	-	+
11	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	-	+	-	+	+	+	+
12	Great Yellow Potter Wasp	<i>Delta campaniforme</i>	Vespidae	-	+	-	-	-	-	-
13	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	+	-	-	-	-	-
14	Giant Water Bug	<i>Lethocerus deyrollei</i>	Belostomatidae	+	-	-	-	-	-	-
15	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	-	-	-	+	+	-	-
16	Blue Banded Honeybee	<i>Amegilla cingulata</i>	Apidae	-	-	-	+	+	-	-
17	Giant Honey Bee	<i>Apis dorsata</i>	Apidae	-	-	-	+	-	-	-
18	Spider Wasp	<i>Pompilidae sp.</i>	Pompilidae	-	-	-	+	-	-	-
19	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	-	-	-	-	+	-
Total				4	13	5	8	8	6	7

Table 28.3: List of Butterflies recorded in Tiruvallur District (A - Cholavaram Lake, B - Coovam Lake, C - Mappedu Lake, D - Padur-Thangal Eri, E - Poondi Lake, F - Pulicat Lake, G - Puzhal Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C	D	E	F	G
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	+	+	+	-	+	+	+
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	+	+	+	-	-	+
3	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	+	+	+	-	+	+	+
4	Common Grass Yellow	<i>Eurema hecabe</i>	Coliadinae	Common	+	+	+	-	+	+	+
5	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	-	+	+	+
6	Small Orange Tip	<i>Colotis etrida</i>	Pierinae	Common	+	+	+	-	+	+	+
7	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	+	+	-	-	-	-	-
8	Dark Grass Blue	<i>Zizeeria sandra</i>	Polyommatainae	Common	-	+	-	-	-	-	-
9	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	-	+	+	-	+	-	+
10	Tiny Grass Blue	<i>Zizula hylax</i>	Polyommatainae	Common	-	+	-	-	-	-	-
11	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	+	+	-	+	-	+
12	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	+	+	+	-	+	-	+
13	Striped Tiger	<i>Danaus genutia</i>	Danainae	Common	+	+	+	-	+	-	+
14	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+	+	+	+	+
15	Common Crow	<i>Euploea core</i>	Danainae	Common	-	+	+	-	+	+	+

16	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	+	+	+	+	+	+	+
17	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	+	+	+	-	+	-	+
18	Blue Pansy	<i>Junonia orithiya</i>	Nymphalinae	Common	-	+	-	+	-	-	-
19	Peacock Pansy	<i>Junonia almana</i>	Nymphalinae	Common	-	+	-	+	-	-	-
20	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	+	+	+	-	+	+	+
21	Danaid Eggfly	<i>Hypolimnas misippus</i>	Nymphalinae	Common	+	+	+	-	+	-	+
Total					15	21	16	5	15	9	16

Table 28.4: List of Odonates recorded in Tiruvallur District (A - Cholavaram Lake, B - Coovam Lake, C - Mappedu Lake, D - Padur-Thangal Eri, E - Poondi Lake, F - Pulicat Lake, G - Puzhal Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C	D	E	F	G
1	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	+	+	+	-	+	+	+
2	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	+	+	+	+	-	+
3	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	+	+	+	+	+	+
4	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+	+	+	+
5	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+	+	+	+	+
6	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	+	+	+	+	+
7	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	+	+	+	+	+	+	+
8	Pigmy Dartlet	<i>Agriocnemis pygmaea</i>	Coenagrionidae	Common	-	+	-	-	+	-	-
9	Coromandel Marsh Dart	<i>Ceriagrion coromandelianum</i>	Coenagrionidae	Common	-	+	-	+	+	-	-
10	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	-	-	-	+	-	-	-
11	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	-	-	-	+	-	-	-
12	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	-	-	-	-	+	-	-
13	Pruinosed Dartlet	<i>Agriocnemis femina</i>	Coenagrionidae	Common	-	-	-	-	+	-	-
14	Red Marsh Trotter	<i>Tramea basilaris</i>	Libellulidae	Common	-	-	-	-	+	-	-
Total					7	8	7	9	12	6	7

Table 28.5: List of Arachnida recorded in Tiruvallur District (A - Cholavaram Lake, B - Coovam Lake, C - Mappedu Lake, D - Padur-Thangal Eri, E - Poondi Lake, F - Pulicat Lake, G - Puzhal Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C	D	E	F	G
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	-	+	+	-	+	-	+
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	+	+	-	+	-	-
3	Orb-weaver spider	<i>Araneidae</i>	Araneidae	-	-	-	-	+	-	-
Total				0	2	2	0	3	0	1

Table 28.6: List of Fishes recorded in Tiruvallur District (A - Cholavaram Lake, B - Coovam Lake, C - Mappedu Lake, D - Padur-Thangal Eri, E - Poondi Lake, F - Pulicat Lake, G - Puzhal Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F	G
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	+	+	-	+	+	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	+	-	-	+	+	+
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	+	-	+	-	-	+	+
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	+	+	-	+	+	+
5	Striped Snakehead	<i>Channa striata</i>	Channidae	LC	+	+	+	-	+	+	+
6	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	+	+	-	-	-	+	+
7	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	-	+	+	-	-	+	+
8	Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	+	+	-	-	-	-	+
9	Tank goby	<i>Glossogobius giurinus</i>	Gobiidae	LC	+	-	+	-	-	-	+
10	Climbing erch	<i>Anabastestudineus</i>	Anabantidae	DD	+	+	+	-	+	+	+
11	Spiny loach	<i>Lepidocephalichthys thermalis</i>	Cobitidae	LC	-	-	-	-	+	+	+
12	Long snouted barb	<i>Puntius dorsalis</i>	Cyprinidae	LC	-	+	-	-	-	-	+
13	White sardinella	<i>Sardinella albella</i>	Clupeidae	LC	-	-	+	-	-	-	+
14	Tenpounder	<i>Elops machnata</i>	Elopidae	LC	-	-	-	-	-	-	+
15	Commerson's anchovy	<i>Stolephorus commersonii</i>	Engraulidae	LC	-	-	-	-	-	-	+
16	Dussumier's halfbeak	<i>Hyporhamphus dussumieri</i>	Hemiramphidae	NE	-	-	+	-	-	-	+

17	Thread fin	<i>Polynemus plebeius</i>	Polynemidae	NE	-	-	+	-	-	-	+
18	Featherback	<i>Notopterus notopterus</i>	Notopteridae		-	-	+	-	-	-	+
19	Indian mackerel	<i>Rastrelliger kanagurta</i>	Scombridae	DD	-	-	-	-	-	-	+
20	King soldier bream	<i>Argyrops spinifer</i>	Sparidae	LC	-	-	-	-	-	-	+
21	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	+	-	-	+	+	-
22	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	+	-	+	-	+	+	-
23	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	+	-	-	-	-	-	-
24	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	+	-	-	-	-	+	-
25	Bloch's Gizzard Shad	<i>Nematalosa nasus</i>	Clupeidae	LC	+	+	-	-	-	+	-
26	Catla	<i>Catla catla</i>	Cyprinidae	LC	-	+	+	-	-	-	-
27	Spiny eel	<i>Macrognathus pancalus</i>	Mastacembelidae	LC	-	-	+	-	-	-	-
28	Long whiskers catfish	<i>Mystus gulio</i>	Bagridae	LC	-	-	+	-	+	-	-
Total					15	12	15	0	9	13	20

Table 28.7: List of Amphibians recorded in Tiruvallur District (A - Cholavaram Lake, B - Coovam Lake, C - Mappedu Lake, D - Padur-Thangal Eri, E - Poondi Lake, F - Pulicat Lake, G - Puzhal Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C	D	E	F	G
1	Indian Bull Frog	<i>Hoplobatrachus tigerinus</i>	Dicroglossidae	Least Concern	+	-	-	-	-	-	-
Total					1	0	0	0	0	0	0

Table 28.8: List of Reptiles recorded in Tiruvallur District (A - Cholavaram Lake, B - Coovam Lake, C - Mappedu Lake, D - Padur-Thangal Eri, E - Poondi Lake, F - Pulicat Lake, G - Puzhal Lake)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C	D	E	F	G
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	+	+	+	+	+	+	+
3	Water Snake	<i>Xenochrophis piscator</i>	Colubridae	Least Concern	+	+	-	-	+	-	-
Total					3	3	2	2	3	2	2

Table 28.9: List of Birds recorded in Tiruvallur District (A - Cholavaram Lake, B - Coovam Lake, C - Mappedu Lake, D - Padur-Thangal Eri, E - Poondi Lake, F - Pulicat Lake, G - Puzhal Lake)

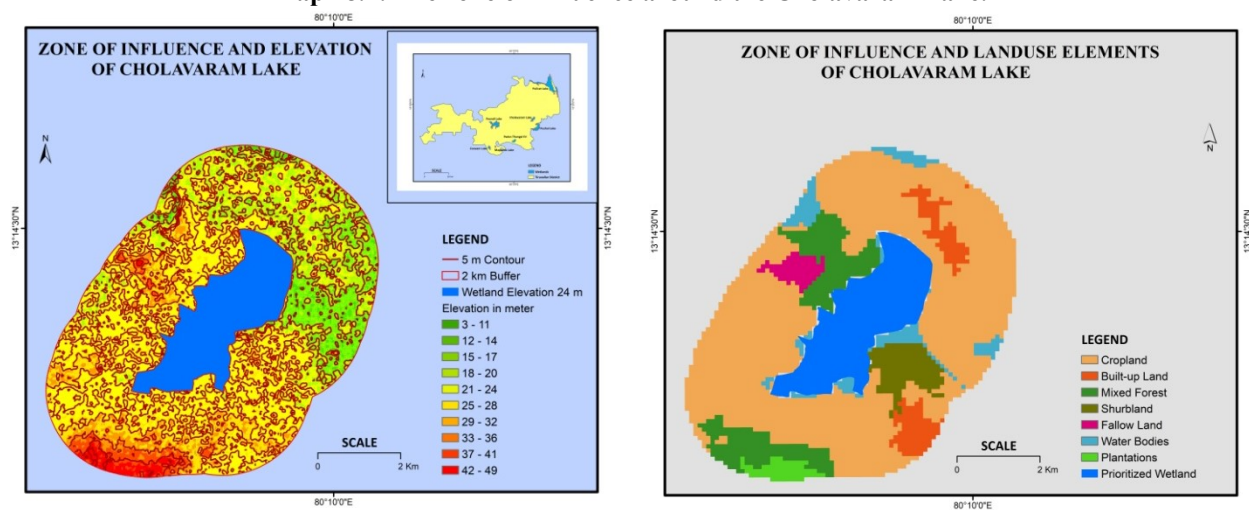
S. No	Common English Name	Scientific Name	Family	Category	A	B	C	D	E	F	G
1	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae	LC	+	+	+	+	+	+	+
2	Lesser Whistling-duck	<i>Dendrocygna javanica</i>	Anatidae	LC	-	+	-	+	-	-	-
3	Cotton Pygmy-goose	<i>Nettapus coromandelianus</i>	Anatidae	LC	-	-	-	+	-	-	-
4	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	LC	-	+	+	+	-	-	+
5	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	LC	-	-	-	+	-	-	-
6	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	LC	+	+	+	+	+	-	+
7	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae	LC	-	-	-	+	-	+	-
8	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	LC	+	+	+	+	+	+	+
9	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	LC	-	-	+	+	+	-	+
10	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	LC	-	+	+	+	+	-	-
11	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	LC	+	+	+	+	+	+	+
12	Great Egret	<i>Casmerodius albus</i>	Ardeidae	LC	+	-	-	+	-	-	-
13	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	LC	+	+	+	+	+	+	+
14	Little Egret	<i>Egretta garzetta</i>	Ardeidae	LC	+	+	+	+	+	+	+
15	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	LC	+	+	+	+	+	+	+
16	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	LC	-	-	-	+	-	-	-
17	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	LC	-	-	-	+	-	-	-
18	Purple Swampphen	<i>Porphyrio porphyrio</i>	Rallidae	LC	-	+	+	+	+	-	-
19	Common Moorhen	<i>Gallinula chloropus</i>	Rallidae	LC	-	-	-	+	-	-	-
20	Eurasian Coot	<i>Fulica atra</i>	Rallidae	LC	-	-	+	+	+	-	-
21	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	Jacanidae	LC	+	+	+	+	-	-	-
22	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	LC	-	+	-	+	-	-	-

23	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	LC	+	+	+	+	+	+	+
24	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	LC	+	+	-	+	-	-	-
25	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	LC	+	+	-	+	-	-	+
26	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	LC	-	-	-	+	-	-	-
27	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	LC	+	+	+	+	+	+	+
28	Asian Koel	<i>Eudynamys scolopaceus</i>	Cuculidae	LC	+	+	+	+	+	+	+
29	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	LC	+	+	+	+	+	-	+
30	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	LC	+	+	+	+	+	+	+
31	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	LC	+	+	+	+	+	+	+
32	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	LC	+	+	+	+	+	+	+
33	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	LC	-	-	-	+	-	-	-
34	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	LC	-	-	-	+	-	-	-
35	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	LC	-	-	-	+	-	-	-
36	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	LC	-	-	-	+	-	-	-
37	House Crow	<i>Corvus splendens</i>	Corvidae	LC	+	+	+	+	+	+	+
38	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	LC	-	-	+	+	-	-	-
39	Plain Prinia	<i>Priniain ornata</i>	Cisticolidae	LC	-	-	-	+	-	-	-
40	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	LC	+	+	+	+	+	+	+
41	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	LC	+	+	+	+	+	+	+
42	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	LC	+	+	+	+	+	+	+
43	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	LC	+	+	+	+	+	+	+
44	Scaly-breasted Munia	<i>Lonchura punctulata</i>	Estrildidae	LC	-	+	+	+	+	-	+
45	Green Sandpiper	<i>Tringa ochropus</i>	Scolopacidae	LC	-	+	+	-	+	+	+
46	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	LC	+	+	+	-	+	+	+
47	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	LC	+	+	+	-	+	+	+
48	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	LC	+	+	+	-	+	+	+
49	Black-headed Munia	<i>Lonchura malacca</i>	Estrildidae	LC	-	+	+	-	+	-	-
50	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	LC	+	+	+	-	+	+	+
51	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	NT	-	+	-	-	-	+	+
52	Caspian Tern	<i>Hydroprogne caspia</i>	Laridae	LC	-	-	-	-	-	-	+
53	Brown Shrike	<i>Lanius cristatus</i>	Laniidae	LC	-	-	-	-	-	-	+
54	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	LC	-	-	-	-	-	-	+
55	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	LC	-	+	-	-	-	-	-
56	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae	LC	-	+	-	-	-	-	-
57	Northern Shoveler	<i>Anas clypeata</i>	Anatidae	LC	-	-	+	-	-	-	-
58	Black-winged Kite	<i>Elanus caeruleus</i>	Accipitridae	LC	-	-	+	-	-	-	-
59	Eurasian Marsh Harrier	<i>Circus aeruginosus</i>	Accipitridae	LC	-	-	+	-	-	-	-
60	Rosy Starling	<i>Pastor roseus</i>	Sturnidae	LC	-	-	+	-	-	-	-
Total					27	37	37	44	31	24	32

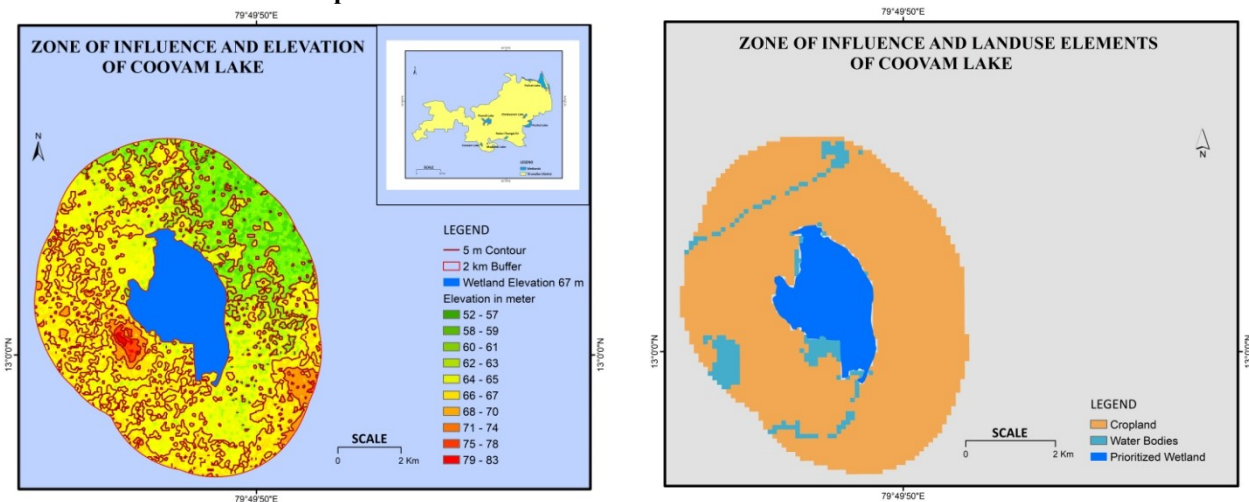
Table 28.10: List of Mammals recorded in Tiruvallur District (A - Cholavaram Lake, B - Coovam Lake, C - Mappedu Lake, D - Padur-Thangal Eri, E - Poondi Lake, F - Pulicat Lake, G - Puzhal Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C	D	E	F	G
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+	+	+	+	+
4	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	+	+	+	-	+	+	+
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+	+	+	+	+
Total					5	5	5	4	5	5	5

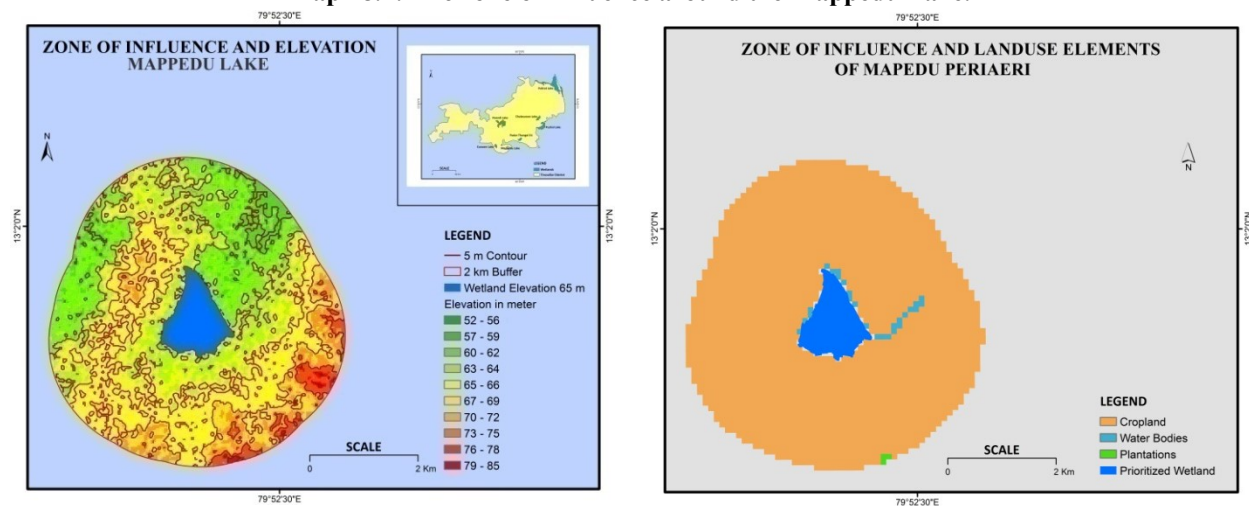
Map 28.2: The zone of influence around the Cholavaram Lake.



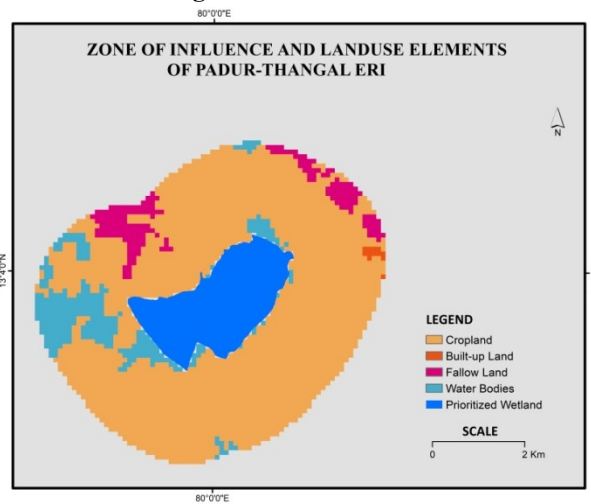
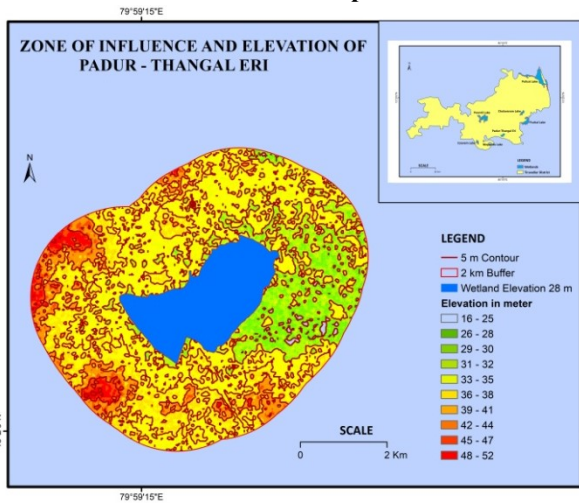
Map 28.3: The zone of influence around the Coovam Lake.



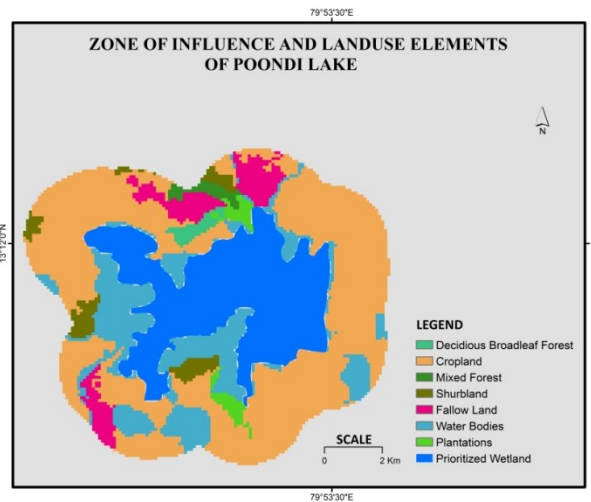
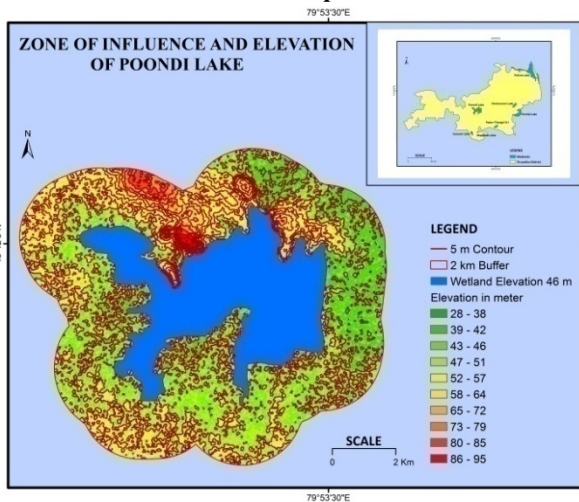
Map 28.4: The zone of influence around the Mappedu Lake.



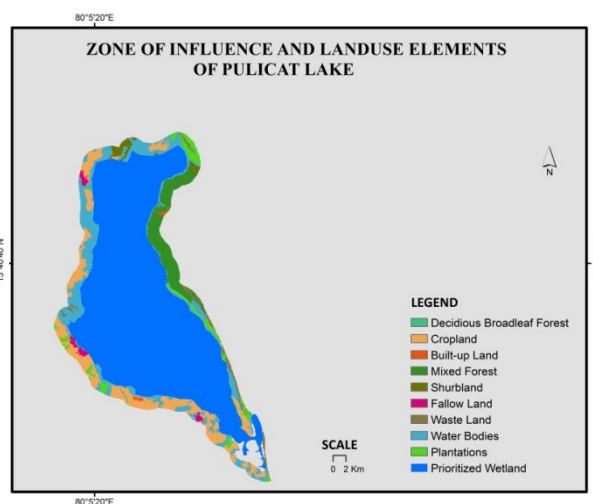
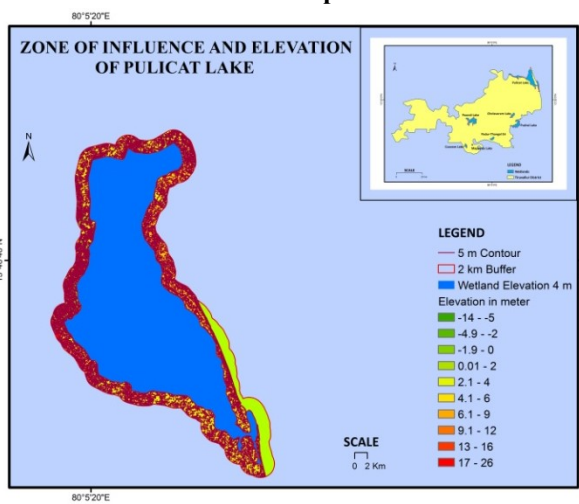
Map 28.5: Zone of influence for Padur -Thangal Eri.



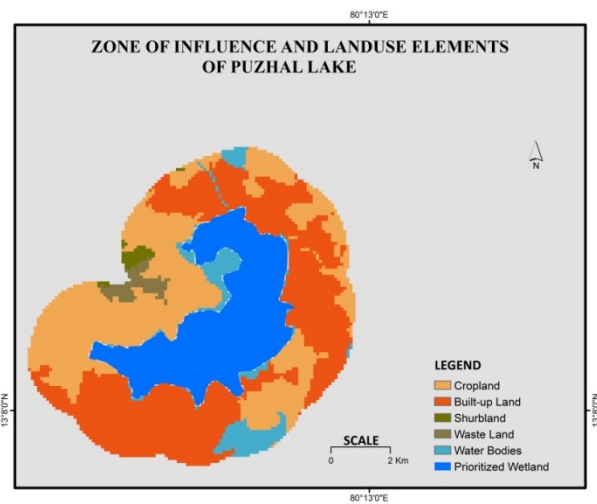
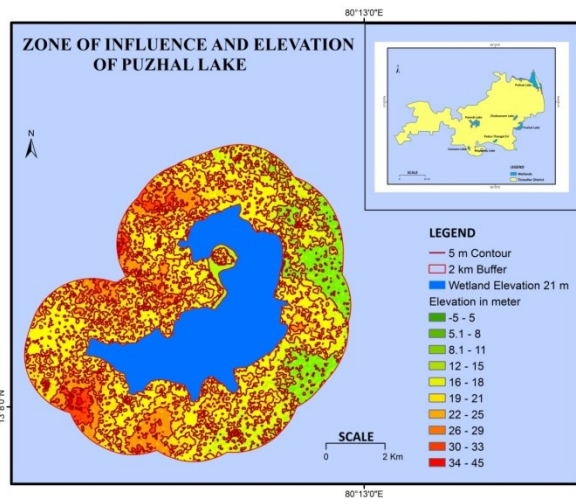
Map 28.6: The zone of influence around the Poondi Lake.



Map 28.7: The zone of influence around the Pulicat Lake.



Map 28.8: The zone of influence around the Puzhal Lake.



29. Tiruvannamalai District

Tiruvannamalai district is known for eternal peace, with the proud possession of the sacred shrine of Lord Arunachaleswara and Ashrams. It had started functioning as a separate district from 30th September 1989, on bifurcation of the erstwhile North Arcot district. Tiruvannamalai district has an area of 6,191 km². It is bounded on the north by Vellore district, on the east by Kanchipuram district, on the south by Villupuram district, and on the west by Dharmapuri and Krishnagiri districts. One sixth of the area of this district is covered by reserve forest and hills which is part of Eastern Ghats under Javvadhu Hills. The important hills in this district are Tiruvannamalai (2668 ft MSL), Javvadhu hills (2500 ft MSL) and Kailasagiri (2743 ft MSL).

Total area under wetland is 48130 ha, which includes 262 small wetland (<2.25 ha). Lakes/Ponds occupy 44.56% of wetland area. The second major wetland type is Tanks/Ponds. There are 1362 Tanks/Ponds with 20661 ha area (42.93%) in the district. The other wetland types are; Reservoirs (4.58 %) and River/Stream (7.0 %). Of the eight wetlands selected in the district, Dusi Mamandoor Lake followed by Shatanur reservoir is the largest while Ponnur lake is the smallest of the wetlands (Map 29.1).



Map 29.1: Wetlands of Tiruvannamalai district assessed for Prioritization

Anakkavoor Lake

Anakkavur Eri (Plate 30) is based in Seyyara taluka in Tiruvannamalai district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Irugal, Tavasi, Sengadu, Athikulam, Vilarupattu, Oorrukudi.

The geographic coordinates are Latitude: 12° 38'03.4" N; 12° 38'02.9" N; 12° 37'57.6" N; 12° 37'54.2" N; 12° 37'27.2" N and Longitude: 079° 32'15.2" E; 079° 32'13.7" E; 079° 32'13.5" E ; 079° 32'12.7" E; 079° 32'10.1" E.

Anakkavur Eri is a wetland that belongs to the the Natural (inland) category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and water from three adjoining lakes, the over flow water goes to Seyyar river. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and again joins the Seyyar river. The lake has an area of 257 hectares and based on the secondary information the average depth is 4 meters. The wetland is surrounded by 90 % Agriculture and 10% Rural settlements. It has an area of 2842.28 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 29.2).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.2, salinity measuring 0.582 ppt, the TDS was recorded high at 837 ppm. The vegetation comprised of 32 plant species (Table 29.1) including seven invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 61 animal species including three domestic species were recorded during the survey (Table 29.2 to 29.12). There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The Local Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. Fishery is a recreational option in the wetland for many and fishing as a livelihood is undertaken on a minor scale. Commercial fishing is undertaken only seasonally on contract from the PWD. Aquaculture is also undertaken by the locals. The wetland is used for grazing and bathing by livestock. The wetland acts as a sink for sediments and for sand or silt is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland does not have any idol immersion and encroachment activities are observed to a very small extent.

The wetland is not included in any of the protection and conservation categories. The encroaching agriculture within the wetland has to be controlled or prohibited as it has just begun.

Dusi Mamandoor Lake

Dusi Mamandoor Lake or Mamandoor Lake (Plate 30) is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Dusi, Mamandoor, Azhyangalpattu, Chellaperumpulimedu, Cholavaram, Chithathoor, Harigarapakkam, Narasamangalam, Ayyankulam, Namandi.

The geographic coordinates are Latitude: 12° 44'26.9" N; 12° 44'24.9" N; 12° 44'21.6" N; 12° 45'07.8" N and Longitude: 079° 39'22.7" E; 079° 39'29.9" E; 079° 39'31.7" E; 079° 39'51.8" E

Dusi Mamandoor Lake is a wetland that belongs to the the Natural (inland) category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area as well as receives water from the Cheyyar river system. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater. The over flow also feeds into the Arapakkam lake. The lake has an area of 640 hectares and based on the secondary information the average depth is 7 meters. The wetland is surrounded by 90 % Agriculture and 10% Grassland/scrubland. It has an area of 3883.45 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 29.3).

The wetland was Mesotrophic during the visit, with the pH of the water being 9.1, salinity measuring 0.245 ppt, the TDS was recorded high at 269 ppm. The vegetation comprised of 39 plant species (Table 29.1) including six invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 74 animal species including three domestic species were recorded during the survey (Table 29.2 to 29.12). Two near Threatened species of fish were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. But the locals have borewells and the local panchayat provides borewell water for their daily needs. Agriculture is undertaken around the wetland and within the wetland major portion of the lake water is used for irrigation. Fishery is a recreational option in the wetland for many and fishing as a livelihood is done by very few families which is a community right. The fish seed is introduced by the PWD and mostly comprises of the common carps. The locals only frequent the wetland to feed the fish as an entertainment. The wetland is in the proximity of Panchapandavas Palace (Caves) where local tourist visit and also visit the wetlands. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland however the density is less. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. The wetland faces a minimal threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland. Increasing agriculture within the wetland is a major concern.

Kappalur Lake

Kappalur Lake (Plate 30) is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Kappalur, Kappalur MGR colony, Kappalur Keela colony, Eechankadu, Kappalur Mettu colony, Kolakotta, Kappalur Anna nagar, China Kappalur.

The geographic coordinates are Latitude: 12° 27'31.1" N; 12° 27'47.7" N; 12° 27'49.5" N; 12° 27'52.6" N; 12° 27'52.4" N; and Longitude: 079° 05'45.5" E; 079° 05'46.8" E; 079° 05'42.0" E; 079° 05'26.5" E; 079° 05'22.8" E.

Kappalur Lake is a wetland that belongs to the the Man-made (inland) category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area and the Thenpennai river tributary. The water also helps in the replenishing the groundwater. The

over flow also feeds into the agriculture rivers and the lakes Kangaynoor and Putharampattu. The lake has an area of 154 hectares and based on the secondary information the average depth is 2 meters. The wetland is surrounded by 80 % Agriculture, 10% Rural settlements and 10% Grassland/scrubland. It has an area of 2352.03 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 29.4).

The wetland was Mesotrophic during the visit, with the pH of the water being 9.3, salinity measuring 0.174 ppt, the TDS was recorded high at 121 ppm. The vegetation comprised of 49 plant species (Table 29.1) including eight invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 89 animal species including four domestic species were recorded during the survey (Table 29.2 to 29.12). One near Threatened specie of birds and two fish species were observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around and within the wetland and the ground and wetland waters is used for irrigation. Commercial Fishery is not undertaken in the lake however recreational fishery is practiced. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has several temples and other religious institutions around the wetland and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There are invasive plant species that is changing the habitat of the wetland however the density is less. The wetland faces a minimal threat from reclamation and encroachment, solid waste dumping although it is observed around the wetland. The wetland is also used for washing of vehicles at a very minimal scale.

The wetland is not included in any of the protection and conservation categories.

Pelasur Lake

Pelasur Periya Eri (Plate 30) is also known as Easa Periya eri is based in Polur taluka in Tiruvannamalai district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Thennampattu, Nayanthangal, Mottur, Natteri, Ranthan, Thiruvengkadathankudisai.

The geographic coordinates are Latitude: 12° 27'41.9" N; 12° 27'48.7" N; 12° 27'49.6" N; 12° 28'02.8" N; 12° 27'58.0" N and Longitude: 079° 09'01.8" E; 079° 08'51.4" E; 079° 08'48.1" E ; 079° 08'33.4" E; 079° 08'37.1" E.

Pelasur Periya Eri is a wetland that belongs to the Natural (inland) category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and water from 26 adjoining lakes. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and again joins the Mandakolatureri. The lake has an area of 163 hectares and based on the secondary information the average depth is 4 meters. The wetland is surrounded by 85 % Agriculture and 15% Rural settlements. It has an area of 2506.09 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 29.5).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.89, salinity measuring 0.43 ppt, the TDS was recorded high at 622 ppm. The vegetation comprised of 34 plant species (Table 29.1) including five invasive species that also include *Parthenium hysterophorus* and *Prosopis juliflora*. The fauna comprised of 45

animal species including four domestic species were recorded during the survey (Table 29.2 to 29.12). One threatened species of bird and two fish species were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The Local Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. Fishery is a recreational option in the wetland for many and fishing as a livelihood is undertaken on a minor scale. Commercial fishing is undertaken only seasonally on contract from the PWD. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland does have any idol immersion and encroachment activities are observed to a very small extent.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some grazing activities that should be regulated as they are in its initial stages. The agriculture within the wetland has to be controlled or prohibited.

Ponnur Lake

Ponnur Lake (Plate 31) is based in Tiruvannamalai district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Ponnur, Elangadu, Nalleri, Soraputhur, Japthikarani.

The geographic coordinates are Latitude: 12° 28'15.5" N; 12° 28'13.3" N; 12° 28'13.1" N; and Longitude: 079° 32'00.2" E; 079° 31'53.0" E; 079° 31'50.6" E

Ponnur Lake is a wetland that belongs to the the Natural (inland) category in the sub category seasonal intermittent lake. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields and the Einthukanu river system. The lake has an area of 113 hectares and based on the secondary information the average depth is 1.5 meters. The wetland is surrounded by 50 % Agriculture, 40 % Forest and 10% Grassland/scrubland. It has an area of 2237.94 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 29.6).

The wetland was Mesotrophic during the visit, with the pH of the water being 9.5, salinity measuring 0.102 ppt, the TDS was recorded high at 141 ppm. The vegetation comprised of 44 plant species (Table 29.1) including 10 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 46 animal species were recorded during the survey (Table 29.2 to 29.12). There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The villagers have dug out wells and borewells that they use for their daily consumption. The local panchayat also provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. There are farmlands where agriculture is undertaken around the wetland. Fishery is undertaken only as a recreation activity by few locals and not as a livelihood. The fishes are mostly the local species; some individuals capture the fingerlings for ornamental

aquaculture practice. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has two temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. Increasing agriculture within the wetland and siltation during the monsoon season is one of the major threats to the wetland.

The wetland is not included in any of the protection and conservation categories. The wetland faces a severe threat from increasing agriculture within the wetland changing the land use.

Sathanur Reservoir

Sathanur Reservoir or Dam (Plate 31) is based in Tiruvannamalai district. The wetland comes under the jurisdiction of Tamil Nadu Forest department and the PWD. Tamil Nadu Tourism Department also operates tourism around the Dam area. Villages that surround the wetland include Sathanur.

The geographic coordinates are Latitude: 12° 10'40.4" N; 12° 10'36.9" N; 12° 10'46.4" N; and Longitude: 078° 50'37.2" E; 078° 15'24.4" E; 078° 15'44.6" E

Sathanur Reservoir is a wetland that belongs to the the Man-Made category in the sub category Dam/ Reservoir. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and direct inflow from the Swarnamugi river, Kalangi river and Arani river. The water from the wetland forms a main source for the irrigation, drinking in the surrounding area. The water also helps in replenishing the groundwater. The water is also used for hydropower generation. The lake has an area of 633 hectares and based on the secondary information the average depth is 8 meters. The wetland is surrounded by 90 % Forest, 8% Grassland/scrubland and 2 % Others. It has an area of 7303.33 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 29.7).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.8, salinity measuring 0.317 ppt, the TDS was recorded high at 436 ppm. The vegetation comprised of 44 plant species (Table 29.1) including eight invasive species that also include *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 55 animal species including one domestic species were recorded during the survey (Table 29.2 to 29.12). Four near Threatened species of fish were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is used for drinking purpose. The wetland is a major Dam that provides to the villages and towns in the district. Agriculture is not undertaken around the wetland. Fishery is a major livelihood along the wetland, which is a community right, there is villagers fishing society. PWD gives the annual contracts. There are crocodiles also within the wetland. The wetland is a site for recreation and is not frequented by locals as a picnic spot. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The wetland has temples and other religious institutions along its bank.

The wetland does not show major change in the pattern of water inflow and outflow. The encroachments into the forest land should be controlled. Tourism needs to be regulated.

The wetland is protected by the Forest department and the PWD as well as it is the wetland of National Importance.

Thennampattu Lake

Thennampattu lake (Plate 31) is based in Tiruvannamalai district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Thennampattu, Nayanthangal, Mottur, Natteri, Ranthan and Thiruvengkadathankudisai.

The geographic coordinates are Latitude: 12° 47'51.0" N; 12° 47'55.5" N; 12° 48'02.5" N and Longitude: 079° 29'32.5" E; 079° 29'31.5" E; 079° 29'31.5" E

Thennampattu lake is a wetland that belongs to the Natural (inland) category in the sub category seasonal intermittent lake. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and from Pallar river system. The water from the wetlands forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater and again joins the Pallar river. The lake has an area of 298 hectares and based on the secondary information the average depth is 3 meters. The wetland is surrounded by 90 % Agriculture and 10% Grassland/scrubland. It has an area of 3064.91 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 29.8).

The wetland was Mesotrophic during the visit, with the pH of the water being 9.7, salinity measuring 0.353 ppt, the TDS was recorded high at 495 ppm. The vegetation comprised of 63 plant species (Table 29.1) including 12 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 75 animal species including two domestic species were recorded during the survey (Table 29.2 to 29.12). One threatened species of bird and two fish species were observed during the survey. There are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. The Local Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Agriculture is undertaken around the wetland and major portion of the lake water is used for irrigation. Fishery is a recreational option in the wetland for many and fishing as a livelihood is undertaken on a minor scale. Commercial fishing is undertaken only seasonally on contract from the PWD. The wetland is not a site for recreation only the locals come for recreational fishing. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has temples along its bank and major cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solidwaste dumping is seen but it is a low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland does not have any idol immersion and encroachment activities are observed to a very small extent. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some grazing activities that should be regulated as they are in its initial stages.

Vakkadai Lake

Vakkadai Lake is also called as Vazhaikudai lake or Kazhainipakkam lake (Plate 31) is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Vazhaikudai, Kazhainipakkam, Malikaipattu, Agatheripattu, Korukai.

The geographic coordinates are Latitude: 12° 37'34.1" N; 12° 37'30.1" N; 12° 37'36.5" N; 12° 37'41.8" N; 12° 37'49.3" N; 12° 37'53.4" N; and Longitude: 079° 28'18.5" E; 079° 28'01.6" E; 079° 27'48.1" E; 079° 27'45.6" E; 079° 27'45.9" E 079° 27'45.5" E

Vakkadai lake is a wetland that belongs to the Man made (inland) category in the sub category Tank of seasonal intermittent nature. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and direct inflow from the Kuppanathan river canal. The water from the wetland forms a main source for the agriculture lands in the surrounding area. The water also helps in replenishing the groundwater overflow feeds to Kollathur lake, Sengadu lake, Kovillur lake and Naval Lake. The lake has an area of 309 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 90 % Agriculture, 5% Rural settlements and 5% Grassland/scrubland. It has an area of 3085.92 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 29.9).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.9, salinity measuring 0.138 ppt, the TDS was recorded high at 212 ppm. The vegetation comprised of 37 plant species (Table 29.1) including eight invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 96 animal species including three domestic species were recorded during the survey (Table 29.2 to 29.12). Three Near Threatened fish species were observed during the survey.

The water from the wetland is not used for drinking purpose. The municipal corporation provides drinking water. The locals use water from the borewell for irrigation and drinking. Agriculture is undertaken around the wetland and wetland and ground water is used for irrigation. Fishery is undertaken in the wetland. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland acts as a sink for sediments. The wetland has a few temples along its bank and a few cultural and religious activities are performed in the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is very little pollution in the form of sewage, effluents and solid waste dumping is seen but it is a low threat in its present condition. There are invasive plant species that is changing the habitat of the wetland. The wetland has solid waste dumping and encroachment activities. The wetland is used for washing of vehicles as well as for other human activities.

The wetland is not included in any of the protection and conservation categories. The wetland is mostly surrounded by agricultural activities with some developmental activities that should be regulated as they are in its initial stages.

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Table 29.1: List of Plants recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	Category	A	B	C	D	E	F	G	H
1	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	+	+	-	+	+	-	+	+
2	Wild Spider Flower	<i>Gynandropsis gynandra</i>	Cleomaceae	Native	NA	+	-	-	-	+	-	+	-
3	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	+	+	-	-	+	+	-
4	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	+	+	-	+	+	+	+
5	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	-	+	+	+	+	+	+
6	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	-	-	+	-	+	+	+
7	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	+	-	+	-	+	-	+
8	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+	+	+	+	+	+
9	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	+	-	-	-	-	-	-	-
10	Baheda	<i>Terminalia bellirica</i>	Combretaceae	Native		+	-	-	-	-	-	-	-
11	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	+	-	-	+	-	-	-	-
12	Ribbed Sponge Gourd	<i>Luffa acutangula</i>	Cucurbitaceae	Native	NA	+	-	-	-	-	-	-	-
13	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	+	+	+	+	-	+	+	-
14	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+	+	+	-	+	+
15	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	-	+	+	-	-	+	-
16	South Indian Mahua	<i>Madhuca longifolia var. latifolia</i>	Sapotaceae	Native	NA	+	-	-	-	-	-	-	-
17	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+	+	+	+	+	-
18	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	+	-	-	+	-	-	+	-
19	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	+	-	+	-	-	-	+	-
20	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	+	-	-	-	-	-	-	-
21	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	+	-	+	-	+	+
22	Kidney leaf morning glory	<i>Merremia emarginata</i>	Convolvulaceae	Native	LC	+	-	+	-	-	-	-	-
23	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	+	-	-	-	-	-	+	-
24	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	-	-	+	+	+	+	+
25	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+	+	-	+	-	+
26	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	+	-	-	+	+	-	+	-
27	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	-	-	+	-	+	+	-
28	Wild Date Palm	<i>Phoenix sylvestris</i>	Arecaceae	Native	NA	+	-	-	-	-	-	-	+
29	Yellow Nutsedge	<i>Cyperus esculentus</i>	Cyperaceae	Native	LC	+	-	-	-	-	-	-	-
30	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	-	+	-	+	+	+	+
31	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	+	+	+	+	+	+	+
32	Finger grass	<i>Enteropogon dolichos tachyus</i>	Poaceae	Native	NA	+	-	-	-	-	-	-	-
33	Sacred Water Lotus	<i>Nelumbo nucifera</i>	Nelumbonaceae	Native	NA	-	+	+	-	-	-	-	-
34	Mexican Prickly Poppy	<i>Argemone mexicana</i>	Papaveraceae	Invasive	NA	-	+	-	-	-	-	+	-
35	Oldman's Cap	<i>Polycarpha corymbosa</i>	Caryophyllaceae	Native	NA	-	+	+	-	-	-	-	-
36	Musk Mallow	<i>Abelmoschus moschatus</i>	Malvaceae	Native	NA	-	+	-	-	-	-	+	-
37	Horn-Fruited Jute	<i>Corchorus tridens</i>	Malvaceae	Native	NA	-	+	-	-	+	+	-	+
38	crab's eye, Jequirity	<i>Abrus precatorius</i>	Fabaceae	Native	NA	-	+	-	-	-	-	-	-
39	Smooth Rattlepod	<i>Crotalaria pallida</i>	Fabaceae	Native	NA	-	+	-	-	+	-	-	-
40	Birdsville Indigo	<i>Indigofera linnaei</i>	Fabaceae	Native	NA	-	+	-	-	-	-	-	-
41	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	-	+	-	-	+	+	+	+
42	Catweed, crofton weed,	<i>Ageratina adenophora</i>	Asteraceae	Naturalized		-	+	-	-	-	-	-	-
43	Slender Dwarf Morning glory	<i>Evolvulus alsinoides</i>	Convolvulaceae	Naturalized	NA	-	+	-	-	+	+	-	-
44	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	-	+	-	-	+	+	+	+
45	Devil's Claws	<i>Martynia annua</i>	Martyniaceae	Native	NA	-	+	-	-	-	-	+	-
46	Wedge-Leaf Foldwing	<i>Dicliptera paniculata</i>	Acanthaceae	Native	NA	-	+	-	-	-	-	+	-
47	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	-	+	-	-	+	+	-	+
48	Hoary Basil,	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	-	+	+	-	-	+	+	-
49	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	-	+	+	+	+	+	+	-
50	Calico Plant	<i>Alternanthera ficoidea</i>	Amaranthaceae	Introduced		-	+	-	-	-	-	-	-
51	False Amaranth	<i>Digera muricata</i>	Amaranthaceae	Native	NA	-	+	-	-	-	-	-	-
52	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	-	+	-	-	+	+	+	+
53	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	-	+	+	-	+	+	+	-
54	Glandular Jatropha	<i>Jatropha glandulifera</i>	Euphorbiaceae	Native	NA	-	+	-	-	-	-	-	+

55	Stone Breaker,	<i>Phyllanthus niruri</i>	Phyllanthaceae	Native	NA	-	+	-	-	-	-	-	-
56	Bengal Dayflower	<i>Commelina benghalensis</i>	Commelinaceae	Native	LC	-	+	-	+	-	-	+	-
57	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	-	+	+	+	-	-	+	+
58	Coconut Tree	<i>Cocos nucifera</i>	Arecaceae	Native	NA	-	+	-	-	-	-	+	-
59	Water Garss	<i>Bulbostylis barbata</i>	Cyperaceae	Native	NA	-	+	-	-	-	+	-	-
60	Japanese Lovegrass	<i>Eragrostis amabilis</i>	Poaceae	Native	NA	-	+	-	-	-	-	+	-
61	Tapering-Leaf Tiliacora	<i>Tiliacora acuminata</i>	Menispermaceae	Native		-	-	+	-	-	-	-	-
62	Spade Flower	<i>Afrohybanthus enneaspermus</i>	Violaceae	Native	NA	-	-	+	-	-	-	+	-
63	Long-stock Sida	<i>Sida cordata</i>	Malvaceae	Native	NA	-	-	+	+	+	-	+	-
64	Indian tulip tree	<i>Thespesia populnea</i>	Malvaceae	Native	LC	-	-	+	-	-	-	-	-
65	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	-	-	+	-	-	-	+	-
66	Spherical Rattlepod	<i>Crotalaria globosa</i>	Fabaceae	Native		-	-	+	-	-	-	-	-
67	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	-	-	+	+	-	-	+	-
68	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	-	-	+	+	-	+	+	-
69	Cucumber	<i>Cucumis sativus</i>	Cucurbitaceae	Native	NA	-	-	+	-	-	-	+	-
70	Desert Horse Purslane	<i>Trianthema portulacastrum</i>	-	Native	NA	-	-	+	+	-	-	-	-
71	Sage leaved Alangium	<i>Alangium salviifolium</i>	Cornaceae	Native	NA	-	-	+	-	-	-	-	-
72	Jointed Hedysotis	<i>Hedysotis articularis</i>	Rubiaceae	Native	NA	-	-	+	-	-	-	-	-
73	Bristly Starbur, Goat's Head	<i>Acanthospermum hispidum</i>	Asteraceae	Native	NA	-	-	+	-	-	-	-	-
74	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	-	-	+	-	+	-	+	+
75	Cowplant	<i>Gymnema sylvestre</i>	Apocynaceae	Native	NA	-	-	+	-	-	-	-	-
76	Common Heliotrope	<i>Heliotropium ellipticum</i>	Heliotropiaceae	Native		-	-	+	-	-	-	-	-
77	Roundleaf Bindweed,	<i>Evolvulus nummularius</i>	Convolvulaceae	Native	NA	-	-	+	-	-	-	-	-
78	Datura	<i>Datura innoxia</i>	Solanaceae	Invasive	NA	-	-	+	-	-	-	-	-
79	Wedge-Leaf Foldwing	<i>Dicliptera cuneata</i>	Acanthaceae	Native	NA	-	-	+	-	-	-	-	-
80	Green Shrimp Plant	<i>Ecobolium ligustrinum</i>	Acanthaceae	Native	NA	-	-	+	-	-	-	-	+
81	Erect Spiderling	<i>Boerhavia repens</i>	Nyctaginaceae	Invasive	NA	-	-	+	-	-	-	-	-
82	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	-	-	+	-	-	+	+	+
83	Kapok bush	<i>Aerva javanica</i>	Amaranthaceae	Native	NA	-	-	+	-	-	-	-	-
84	Plumed cockscomb	<i>Celosia argentea</i>	Amaranthaceae	Native	NA	-	-	+	-	-	-	-	-
85	Agave, Century plant	<i>Agave americana</i>	Asparagaceae	Introduced		-	-	+	-	-	-	-	-
86		<i>Commelina diffusa</i> subsp. <i>diffusa</i>	Commelinaceae	Native		-	-	+	-	+	+	-	-
87	Flatsedge	<i>Cyperus eleusinoides</i>	Cyperaceae	Native	NA	-	-	+	-	-	-	-	-
88	Common nut sedge	<i>Cyperus rotundus</i>	Cyperaceae	Native	LC	-	-	+	-	-	-	-	-
89	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	-	-	+	+	+	-	+	+
90	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	-	-	-	+	-	-	-	-
91	Cuban jute, Jelly leaf,	<i>Sida rhombifolia</i>	Malvaceae	Native		-	-	-	+	-	-	-	-
92	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	-	-	-	+	+	-	+	-
93	Lotus Sweetjuice,	<i>Glinus lotoides</i>	Molluginaceae	Native		-	-	-	+	+	+	-	-
94	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	-	-	-	+	+	-	-	-
95	Chay Root, Indian madder	<i>Oldenlandia umbellata</i>	Rubiaceae	Native		-	-	-	+	-	-	-	-
96	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	-	-	-	+	+	-	+	+
97	Indian Heliotrope	<i>Heliotropium indicum</i>	Heliotropiaceae	Native	NA	-	-	-	+	+	-	-	+
98	False waterwillow	<i>Andrographis echinoides</i>	Acanthaceae	Native	NA	-	-	-	+	-	-	-	-
99	Kans grass	<i>Saccharum spontaneum</i>	Poaceae	Native	LC	-	-	-	+	-	-	-	-
100	Prickly Custard Apple	<i>Annona muricata</i>	Annonaceae	Native	NA	-	-	-	-	+	-	-	-
101	Jamaica Cherry	<i>Muntingia calabura</i>	Muntingiaceae	Exotic	NA	-	-	-	-	+	-	-	-
102	Indian Plum	<i>Ziziphus mauritiana</i>	Rhamnaceae	Native	NA	-	-	-	-	+	-	-	-
103	Sticky Indigo	<i>Indigofera colutea</i>	Fabaceae	Native	NA	-	-	-	-	+	-	-	-
104	Siam Weed	<i>Chromolaena odorata</i>	Asteraceae	Invasive	NA	-	-	-	-	+	-	-	-
105	Pale Java Tea	<i>Orthosiphon pallidus</i>	Lamiaceae	Native		-	-	-	-	+	-	-	-
106	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	-	-	-	-	+	+	+	-
107	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	-	-	-	-	+	-	-	+
108	Hairy fig, Devil fig	<i>Ficus ulmifolia</i>	Moraceae	Native	VU	-	-	-	-	+	-	-	-
109	Governor's plum, Flacourtia,	<i>Flacourtia indica</i>	Salicaceae	Native	NA	-	-	-	-	+	-	-	-
110	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	-	-	-	-	+	-	-	-
111	Wiregrass	<i>Aristida setacea</i>	Poaceae	Native	NA	-	-	-	-	+	-	-	-
112	SlimflowerLovegrass	<i>Eragrostis gangetica</i>	Poaceae	Native	NA	-	-	-	-	+	-	-	-
113	Water Clover	<i>Marsilea quadrifolia</i>	Marsileaceae	Native	LC	-	-	-	-	+	-	-	-
114	Ceiba, White Silk-Cotton Tree	<i>Ceiba pentandra</i>	Malvaceae	Naturalized	LC	-	-	-	-	-	+	-	-
115	Siris Tree, Women's tongue	<i>Albizia lebbek</i>	Fabaceae	Native	NA	-	-	-	-	-	+	-	-
116	Purple orchid tree	<i>Bauhinia purpurea</i>	Fabaceae	Native	LC	-	-	-	-	-	+	-	-

117	Golden shower tree	<i>Cassia fistula</i>	Caesalpinaceae	Native	NA	-	-	-	-	-	+	-	-
118	Royal senna	<i>Senna italica</i>	Caesalpinaceae	Native	NA	-	-	-	-	-	+	-	-
119	Indian Almond	<i>Terminalia catappa</i>	Combretaceae	Native	NA	-	-	-	-	-	+	-	-
120	Papaya Tree	<i>Carica papaya</i>	Caricaceae	Native	DD	-	-	-	-	-	+	-	-
121	Pumpkin, Field pumpkin	<i>Cucurbita pepo</i>	Cucurbitaceae	Native	NA	-	-	-	-	-	+	-	-
122	Purple leaved button	<i>Spermacoce ocymoides</i>	Rubiaceae	Native	LC	-	-	-	-	-	+	-	-
123	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	-	-	-	-	-	+	-	-
124	Obscure Morning Glory	<i>Ipomoea obscura</i>	Convolvulaceae	Invasive	NA	-	-	-	-	-	+	-	-
125	Large caltrops	<i>Pedaliium murex</i>	Pedaliaceae	Native	NA	-	-	-	-	-	+	-	-
126	Wild Poinsettia	<i>Euphorbia heterophylla</i>	Euphorbiaceae	Naturalized	NA	-	-	-	-	-	+	-	-
127	Duckweed	<i>Spirodela polyrhiza</i>	Araceae	Native	LC	-	-	-	-	-	+	-	-
128		<i>Fimbristylis dichotoma</i>	Cyperaceae	Native	LC	-	-	-	-	-	+	-	-
129	Field Milkwort	<i>Polygala arvensis</i>	Polygalaceae	Native	NA	-	-	-	-	-	-	+	-
130	East Indian Mallow, Jute	<i>Corchorus aestuans</i>	Malvaceae	Native		-	-	-	-	-	-	+	-
131	Bush Grape	<i>Cayratia trifolia</i>	Vitaceae	Native	NA	-	-	-	-	-	-	+	-
132	Touch Me Not	<i>Mimosa pudica</i>	Fabaceae	Native	LC	-	-	-	-	-	-	+	-
133	Red fruit creeper	<i>Corallocarpus epigaeus</i>	Cucurbitaceae	Native	NA	-	-	-	-	-	-	+	-
134	Chitrak	<i>Plumbago zeylanica</i>	Plumbaginaceae	Native	NA	-	-	-	-	-	-	+	-
135	Rosy Milkweed Vine	<i>Oxystelma esculentum</i>	Apocynaceae	Native	LC	-	-	-	-	-	-	+	+
136	Sweet indrajao	<i>Wrightia tinctoria</i>	Apocynaceae	Native	LC	-	-	-	-	-	-	+	-
137	Indian Borage	<i>Trichodesma indicum</i>	Boraginaceae	Native	NA	-	-	-	-	-	-	+	-
138	Ganges Primrose	<i>Asystasia gangetica</i>	Acanthaceae	Native	NA	-	-	-	-	-	-	+	-
139	Long-flower Barleria	<i>Barleria acuminata</i>	Acanthaceae	Native	NA	-	-	-	-	-	-	+	-
140	Spreading Ruellia	<i>Ruellia patula</i>	Acanthaceae	Native	NA	-	-	-	-	-	-	+	-
141	Diffuse Hogweed	<i>Commicarpus chinensis</i>	Nyctaginaceae	Native	NA	-	-	-	-	-	-	+	-
142	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	-	-	-	-	-	-	+	-
143	Banyan tree	<i>Ficus benghalensis</i>	Moraceae	Native	NA	-	-	-	-	-	-	+	-
144	Mysore Fig, Brown Wolly Fig	<i>Ficus drupacea</i>	Moraceae	Native	NA	-	-	-	-	-	-	+	-
145	Mauritian Grass	<i>Apluda mutica</i>	Poaceae	Native	NA	-	-	-	-	-	-	+	-
146	---	<i>Abelmoschus angulosus</i>	Malvaceae	Native	NA	-	-	-	-	-	-	-	+
Total						32	38	48	33	44	42	63	28

Table 29.2: List of Arthropoda recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F	G	H
1	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	-	-	-	-	-	-	-
2	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	-	-	-	-	-	-	-
3	Bicolour Ant	<i>Meranoplus bicolor</i>	Formicidae	+	-	-	-	-	-	-	-
4	Black Ant	<i>Myrmecaria brunnea</i>	Formicidae	+	-	-	-	-	-	-	-
5	Orange Spider Wasp	<i>Cryptocheilus bicolor</i>	Pompilidae	+	-	-	-	-	-	-	-
Total				5	0	0	0	0	0	0	0

Table 29.3: List of Diplopoda recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E	F	G	H
1	Yellow Spotted Millipede	<i>Harpaphe haydeniana</i>	Xystodesmidae	+	-	-	-	-	-	-	+
2	Millipede	<i>Spinotarsus colosseus</i>	Odonotopgidae	-	-	-	-	-	-	-	+
Total				1	0	0	0	0	0	0	2

Table 29.4: List of Insects recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C	D	E	F	G	H
1	Water Strider	<i>Gerris sp.</i>	Gerridae	-	+	+	-	+	-	+	+
2	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	-	+	+	-	-	+	+	+
3	Small Dung Beetle	<i>Onthophagus sp.</i>	Scarabaeidae	-	+	-	-	-	-	-	-

4	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	-	+	+	+	-	+	+	+
5	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	-	+	+	+	-	-	+	+
6	Toothpick Grasshopper	<i>Leptysmia marginicollis</i>	Acrididae	-	-	+	-	+	-	-	+
7	Blue Banded Honeybee	<i>Amegilla cingulata</i>	Apidae	-	-	+	-	-	+	+	+
8	ArborealBicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	-	+	+	-	-	+	+
9	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	-	-	+	+	+	+	+	+
10	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	-	+	-	-	+	-	-
11	Crickets	<i>Teleogryllus mitratus</i>	Gryllidae	-	-	-	+	-	-	-	-
12	Orange Spider Wasp	<i>Cryptocheilus bicolor</i>	Pompilidae	-	-	-	-	-	+	-	-
13	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	-	-	-	-	-	-	-	+
14	Praying Mantis	<i>Mantidae sp.</i>	Mantodae	-	-	-	-	-	-	-	+
15	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrocoridae	-	-	-	-	-	-	-	+
16	Polished Leaf-Border Ant	<i>Leptogenys chinensis</i>	Formicidae	-	-	-	-	-	-	-	+
Total				0	5	9	5	3	6	7	12

Table 29.5: List of Butterflies recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C	D	E	F	G	H
1	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	+	+	+	+	+	+	+
2	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	+	+	+	+	+
3	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	+	+	-	-	-	-	+	-
4	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	-	-	-	-	-	-	-	-
5	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	+	-	+	-	-	-	+	-
6	Joker	<i>Byblia ilithyia</i>	Biblidinae	Common	+	-	-	-	-	-	-	-
7	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	+	+	-	-	-	-	-	-
8	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	+	+	+	-	-	-	+	+
9	Heliotrope Moth	<i>Utetheisa pulchelloides</i>	Erebidae	Common	+	-	-	-	-	-	-	-
10	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	-	+	+	-	-	-	-	+
11	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	-	+	-	-	-	-	-	+
12	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	-	+	-	-	-	+	+	+
13	Gram Blue	<i>Euchrysops cnejus</i>	Polyommatainae	Common	-	+	-	-	-	-	-	-
14	Striped Tiger	<i>Danaus genutia</i>	Danainae	Common	-	+	-	-	-	-	-	+
15	Double-Branded Crow	<i>Euploea sylvestre coreta</i>	Danainae	Common	-	+	-	-	-	-	-	-
16	Common Crow	<i>Euploea core</i>	Danainae	Common	-	+	+	-	-	-	-	-
17	Plain Palm Dart	<i>Cephren esacalle</i>	Hesperiinae	Common	-	-	+	-	-	-	-	-
18	Common Mormon	<i>Papilio polytes</i>	Papilioninae	Common	-	-	+	-	-	-	+	-
19	Lime Butterfly	<i>Papilio demoleus</i>	Papilioninae	Common	-	-	-	-	-	+	-	-
20	Rounded Pierrot	<i>Tarucus nara</i>	Polyommatainae	Common	-	-	-	-	-	+	-	-
21	Common Pierrot	<i>Castalius rosimon</i>	Polyommatainae	Common	-	-	-	-	-	+	-	-
22	African Marbled Skipper	<i>Gomalia elma</i>	Pyrginae	Uncommon	-	-	-	-	-	-	+	-
23	Continental Swift	<i>Parnara ganga</i>	Hesperiinae	Common	-	-	-	-	-	-	+	-
24	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	-	-	-	-	-	-	+	+
25	Common Wanderer	<i>Pareronia hippia</i>	Pierinae	Common	-	-	-	-	-	-	+	-
26	Common Gull	<i>Cepora nerissa</i>	Pierinae	Common	-	-	-	-	-	-	+	+
27	Psyche	<i>Leptosia nina</i>	Pierinae	Common	-	-	-	-	-	-	+	+
28	Common Cerulean	<i>Jamides celeno</i>	Polyommatainae	Common	-	-	-	-	-	-	+	-
29	Common Sailer	<i>Neptis hylas</i>	Limenitinae	Common	-	-	-	-	-	-	+	-
30	Chocolate Pansy	<i>Junonia iphita</i>	Nymphalinae	Common	-	-	-	-	-	-	+	+
31	Yellow Orange Tip	<i>Ixias pyrene</i>	Pierinae	Common	-	-	-	-	-	-	-	+
32	Common Jezebel	<i>Delias eucharis</i>	Pierinae	Common	-	-	-	-	-	-	-	+
Total					8	12	8	2	2	6	16	13

Table 29.6: List of Odonates recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C	D	E	F	G	H
1	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	+	+	+	+	+	+	+
2	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	+	+	-	-	-	+	-
3	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+	+	+	+	+
4	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+	+	+	+	+	+
5	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	-	+	+	-	-	+	-
6	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	+	-	-	-	-	-	+	-
7	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	-	+	+	-	+	-	-	-
8	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	-	+	+	-	-	-	-	+
9	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	-	+	-	-	+	-	-	-
10	Coromandel Marsh Dart	<i>Ceriagrion coromandelianum</i>	Coenagrionidae	Common	-	+	-	-	+	+	+	+
11	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	-	+	+	-	+	-	-	-
12	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	-	-	+	-	-	-	-	-
13	Red Marsh Trotter	<i>Tramea basilaris</i>	Libellulidae	Common	-	-	+	-	-	-	-	-
14	Pigmy Dartlet	<i>Agriocnemis pygmaea</i>	Coenagrionidae	Common	-	-	-	-	+	-	-	-
15	Milky Dartlet	<i>Agriocnemis lacteola</i>	Coenagrionidae	Uncommon	-	-	-	-	+	-	-	-
16	Coral-Tailed Cloud Wing	<i>Tholymis tillarga</i>	Libellulidae	Common	-	-	-	-	-	-	+	-
17	Brown Dusk Hawk	<i>Zyxomma petiolatum</i>	Libellulidae	Common	-	-	-	-	-	-	+	-
18	Blue Dart	<i>Pseudagrion microcephalum</i>	Coenagrionidae	Common	-	-	-	-	-	-	-	+
Total					6	8	10	4	9	4	9	6

Table 29.7: List of Arachnida recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C	D	E	F	G	H
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	-	+	+	-	+	-	+	+
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	-	+	-	-	-	+	+
3	Long Jawed Orb-weaver	<i>Tetragnatha sp.</i>	Tetragnathidae	-	-	-	-	-	-	-	+
Total				0	1	2	0	1	0	2	3

Table 29.8: List of Fishes recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E	F	G	H
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	+	+	+	+	+	+	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	+	+	+	+	+	+	+
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	+	+	+	-	+	-	+	-
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	+	+	-	+	+	+	+
5	Striped Snakehead	<i>Channa striata</i>	Channidae	LC	+	+	+	+	+	-	+	+
6	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	+	-	-	-	-	+	+	+
7	Spiny eel	<i>Macrogynathus pancalus</i>	Mastacembelidae	LC	+	+	-	-	+	+	-	+
8	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	-	+	-	-	+	+	-	+
9	Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	-	+	-	-	+	+	-	-
10	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	-	+	+	-	+	+	-	+
11	Climbing erch	<i>Anabas testudineus</i>	Anabantidae	DD	-	+	+	-	-	+	-	+
12	Spiny loach	<i>Lepidocephalichthys thermalis</i>	Cobitidae	LC	-	+	+	-	-	+	+	-
13	Long snouted barb	<i>Puntius dorsalis</i>	Cyprinidae	LC	-	+	-	-	-	-	-	+
14	Tenpounder	<i>Elops machnata</i>	Elopidae	LC	-	+	-	-	-	-	-	+
15	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	-	-	+	-	-	+	+	+

16	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	-	-	+	-	+	-	-	-
17	Caltla	<i>Catla catla</i>	Cyprinidae	LC	-	-	+	+	+	+	+	-
18	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	-	-	+	+	+	-	+	-
19	Long whiskers catfish	<i>Mystus gulio</i>	Bagridae	LC	-	-	+	-	-	+	-	-
20	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	-	-	-	-	+	-	+	+
21	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	-	-	-	-	-	+	-	+
22	White sardinella	<i>Sardinella albella</i>	Clupeidae	LC	-	-	-	-	-	-	-	+
23	Dussumier's halfbeak	<i>Hyporhamphus dussumieri</i>	Hemiramphidae	NE	-	-	-	-	-	-	-	+
24	Featherback	<i>Notopterus notopterus</i>	Notopteridae	LC	-	-	-	-	-	-	-	+
25	King soldier bream	<i>Argyrops spinifer</i>	Sparidae	LC	-	-	-	-	-	-	-	+
26	Great barracuda	<i>Sphyraena barracuda</i>	Sphyraenidae	LC	-	-	-	-	-	-	-	+
Total					7	13	13	5	13	14	11	19

Table 29.9: List of Amphibians recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C	D	E	F	G	H
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	Least Concern	-	+	+	-	+	-	-	-
2	Indian Pond Frog	<i>Euphlyctis hexadactylus</i>	Dicroglossidae	Least Concern	-	-	+	-	+	-	-	-
3	Indian Bull Frog	<i>Hoplobatrachus tigerinus</i>	Dicroglossidae	Least Concern	-	-	-	-	+	-	-	-
Total					0	1	2	0	3	0	0	0

Table 29.10: List of Reptiles recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

S. No	CommonEnglishName	Scientific Name	Family	IUCN Status	A	B	C	D	E	F	G	H
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+	+	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	-	+	+	-	+	+	+	+
Total					1	2	2	1	2	2	2	2

Table 29.11: List of Birds recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

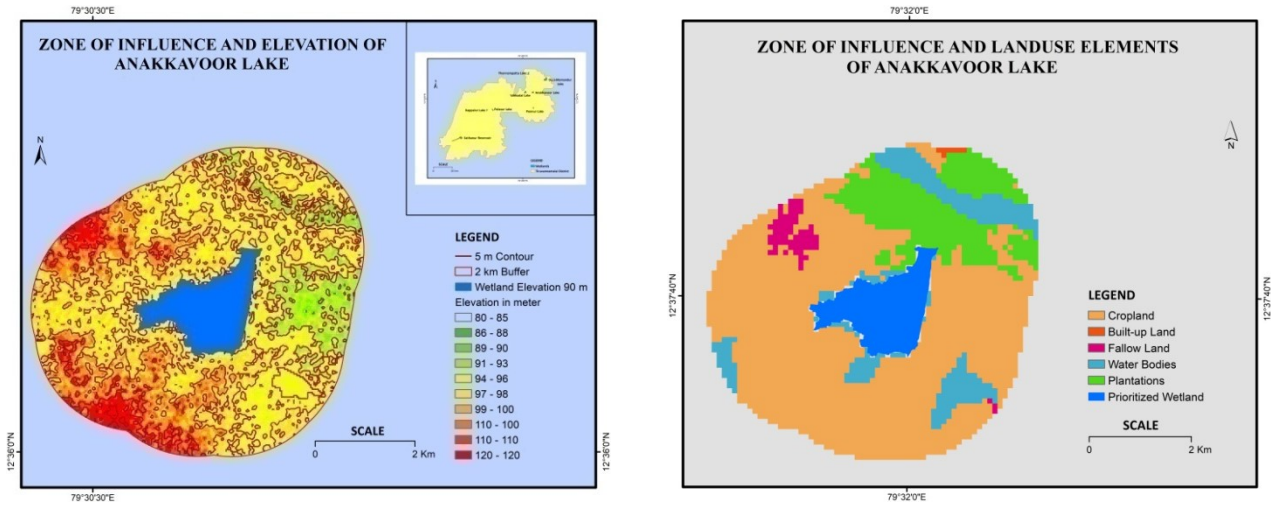
S. No	CommonEnglishName	Scientific Name	Family	Category	A	B	C	D	E	F	G	H
1	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae	LC	+	-	-	-	-	-	-	-
2	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	NT	+	-	-	-	-	-	-	-
3	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	LC	+	+	+	+	+	+	+	+
4	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	LC	+	-	+	-	-	-	+	-
5	Little Egret	<i>Egretta garzetta</i>	Ardeidae	LC	+	-	+	+	+	+	+	+
6	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	LC	+	+	+	+	-	+	+	+
7	Eurasian Coot	<i>Fulica atra</i>	Rallidae	LC	+	-	+	+	+	-	+	+
8	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	LC	+	+	+	+	-	-	+	+
9	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	LC	+	+	+	+	+	+	+	+
10	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	LC	+	-	+	+	+	+	-	-
11	Jacobin Cuckoo	<i>Clamator jacobinus</i>	Cuculidae	LC	+	-	-	+	-	-	-	-
12	Asian Koel	<i>Eudynamys scolopaceus</i>	Cuculidae	LC	+	-	-	-	+	-	-	+
13	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	LC	+	+	+	+	+	-	+	-
14	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	LC	+	+	+	+	+	-	-	+
15	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	LC	+	-	-	+	+	-	-	-
16	White-throated Kingfisher	<i>Haleyon smyrnensis</i>	Alcedinidae	LC	+	+	+	+	+	+	+	+
17	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	LC	+	-	-	-	-	-	-	-
18	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	LC	+	+	+	+	+	+	+	+
19	Rufous Treepie	<i>Dendrocitta vagabunda</i>	Corvidae	LC	+	-	-	-	-	-	-	+
20	House Crow	<i>Corvus splendens</i>	Corvidae	LC	+	+	+	+	+	+	+	+

21	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	LC	+	-	-	-	-	-	-	-
22	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	LC	+	-	+	-	+	+	+	+
23	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	LC	+	+	+	+	+	+	+	+
24	Brahminy Starling	<i>Sturnia pagodarum</i>	Sturnidae	LC	+	-	+	-	-	-	-	-
25	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	LC	+	-	-	-	+	-	-	+
26	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	LC	+	+	+	-	+	+	+	+
27	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	LC	+	+	+	-	+	-	+	+
28	Loten's Sunbird	<i>Cinnyris lotenia</i>	Nectariniidae	LC	+	-	-	-	-	-	-	-
29	Black-headed Munia	<i>Lonchura malacca</i>	Estrildidae	LC	+	-	-	-	-	-	-	-
30	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	LC	-	+	+	+	-	-	-	+
31	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	LC	-	+	+	-	+	+	+	+
32	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	LC	-	+	+	-	-	+	-	-
33	Shikra	<i>Accipiter badius</i>	Accipitridae	LC	-	+	-	-	-	-	-	-
34	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae	LC	-	+	-	-	-	+	+	-
35	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	LC	-	+	-	+	-	-	-	-
36	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	LC	-	+	+	-	-	-	-	+
37	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	LC	-	+	-	+	-	-	+	+
38	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	LC	-	+	+	-	-	-	-	+
39	Oriental skylark	<i>Alauda gulgula</i>	Alaudidae	LC	-	+	-	-	-	-	-	-
40	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	LC	-	+	-	-	-	-	-	+
41	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	LC	-	+	+	-	-	-	-	+
42	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	LC	+	-	-	+	+	-	+	+
43	Paddyfield Pipit	<i>Anthus rufulus</i>	Motacillidae	LC	-	+	-	-	-	-	-	-
44	Cotton Pygmy-goose	<i>Nettapus coromandelianus</i>	Anatidae	LC	-	-	+	-	-	-	-	-
45	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	LC	-	-	+	-	-	-	-	+
46	Northern Pintail	<i>Anas acuta</i>	Anatidae	LC	-	-	+	-	+	-	-	-
47	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	LC	-	-	+	-	-	-	+	+
48	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae	LC	-	-	+	-	+	-	-	+
49	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	LC	-	-	+	+	-	+	+	-
50	Great Egret	<i>Casmerodius albus</i>	Ardeidae	LC	-	-	+	-	-	-	+	+
51	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	LC	-	-	+	-	-	-	-	-
52	Common Moorhen	<i>Gallinula chloropus</i>	Rallidae	LC	-	-	+	-	-	-	-	-
53	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	LC	-	-	+	-	-	-	-	+
54	Indian Robin	<i>Saxicoloides fulicatus</i>	Muscicapidae	LC	-	-	+	-	-	-	-	+
55	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	NT	-	-	-	+	-	-	-	-
56	Common Snipe	<i>Gallinago gallinago</i>	Scolopacidae	LC	-	-	-	+	-	-	-	-
57	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	LC	-	-	-	+	-	-	-	-
58	Northern Shoveler	<i>Anas clypeata</i>	Anatidae	LC	-	-	-	-	+	-	-	-
59	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	LC	-	-	-	-	+	-	-	+
60	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Ardeidae	LC	-	-	-	-	-	+	-	-
61	Little Swift	<i>Apus affinis</i>	Apodidae	LC	-	-	-	-	-	+	-	-
62	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	Jacanidae	LC	-	-	-	-	-	-	+	-
63	Lesser Whistling-duck	<i>Dendrocygna javanica</i>	Anatidae	LC	-	-	-	-	-	-	-	+
64	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	LC	-	-	-	-	-	-	-	+
65	Indian Golden Oriole	<i>Oriolus kundoo</i>	Oriolidae	LC	-	-	-	-	-	-	-	+
Total					30	25	35	22	23	17	23	34

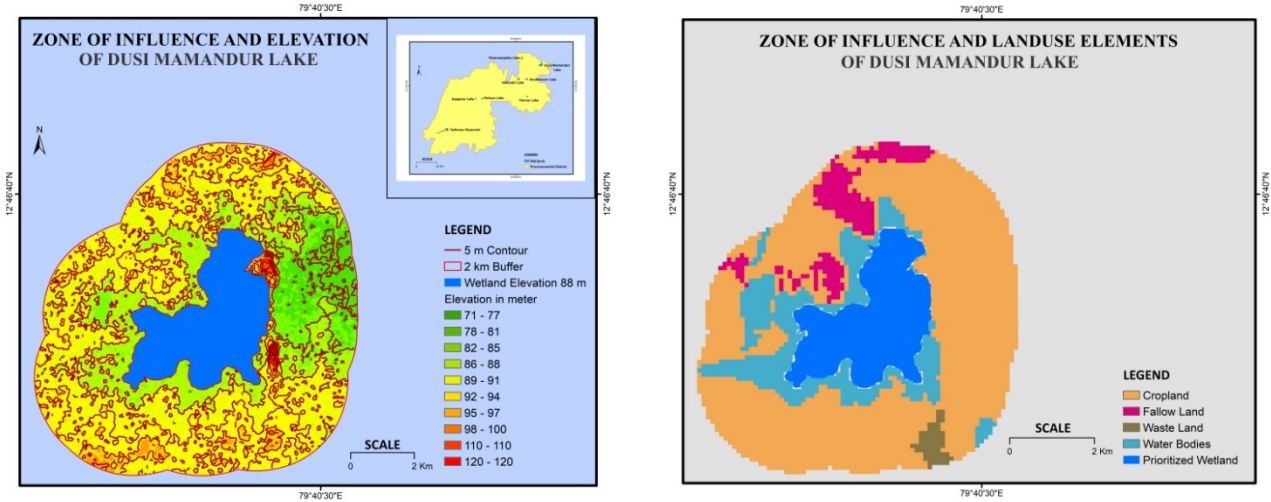
Table 29.12: List of Mammals recorded in Tiruvannamalai District (A - Anakkavoor Lake, B – Dusi Mamandoor Lake, C - Kappalur Lake, D - Pelasur Lake, E - Ponnur Lake, F - Sathanur Reservoir, G - Thennampattu Lake, H - Vakkadai Lake)

S. No	CommonEnglishName	Scientific Name	Family	Category	A	B	C	D	E	F	G	H
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+	-	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+	-	-	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	+	+	-	-	-	+
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+	+	-	+	+	+
5	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	-	-	+	+	-	-	-	-
6	Bonnet Macaque	<i>Macaca radiata</i>	Cercopithecidae	Least Concern	-	-	-	-	-	+	-	-
Total					4	4	5	5	0	3	3	4

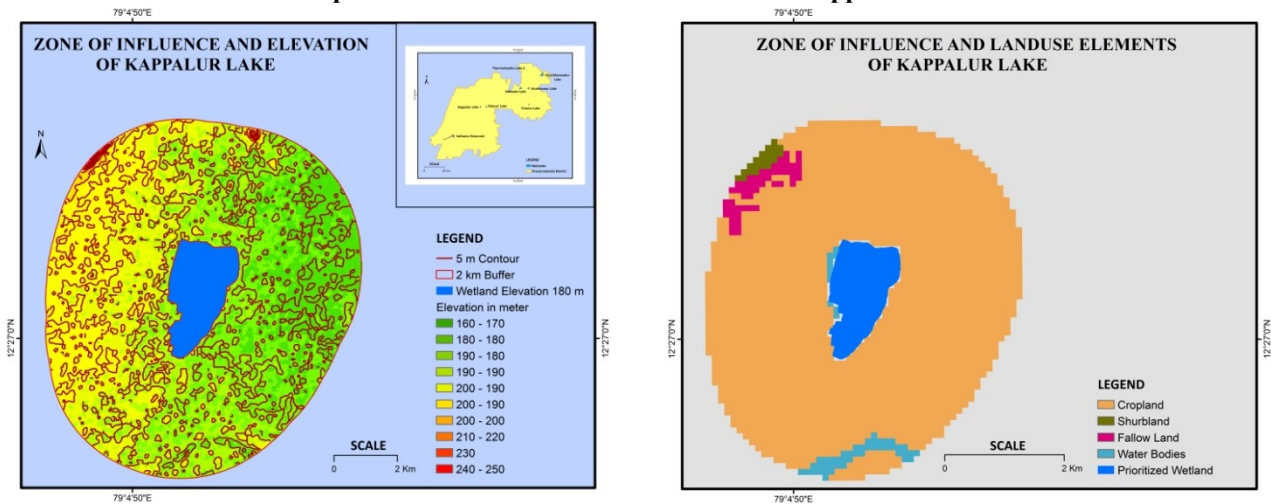
Map 29.2: Zone of Influence around the Anakkavoor Lake.



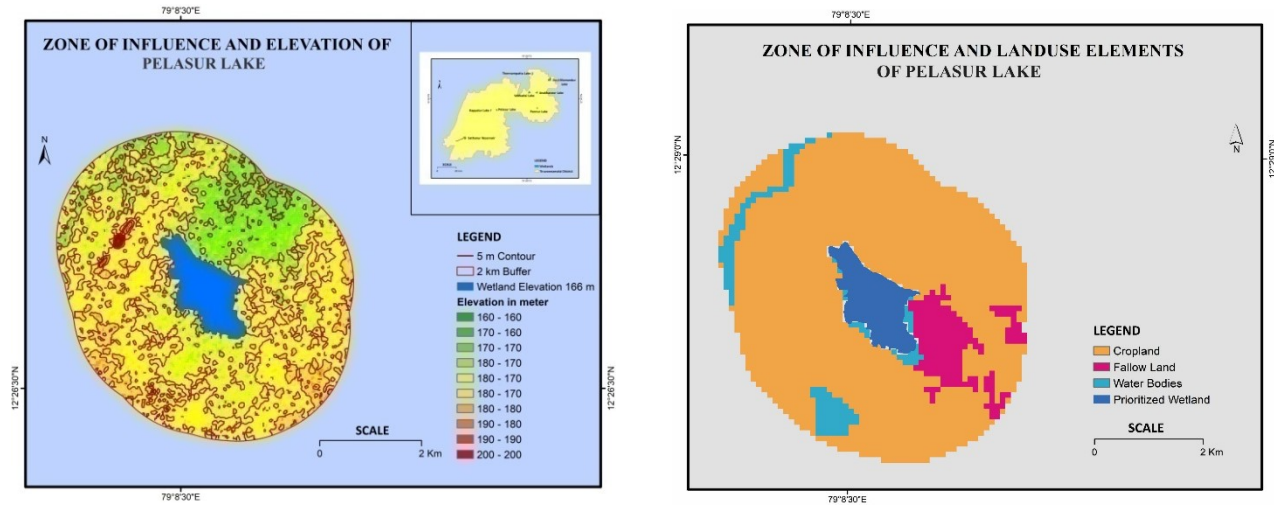
Map 29.3: The zone of influence around the Dusimamandur Lake.



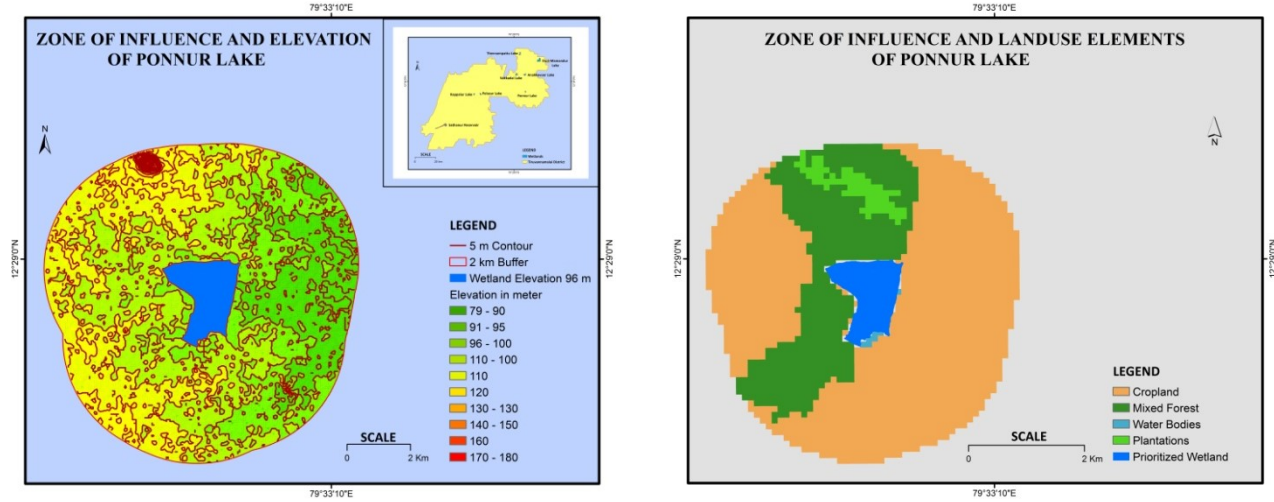
Map 29.4: The zone of influence around the Kappalur Lake.



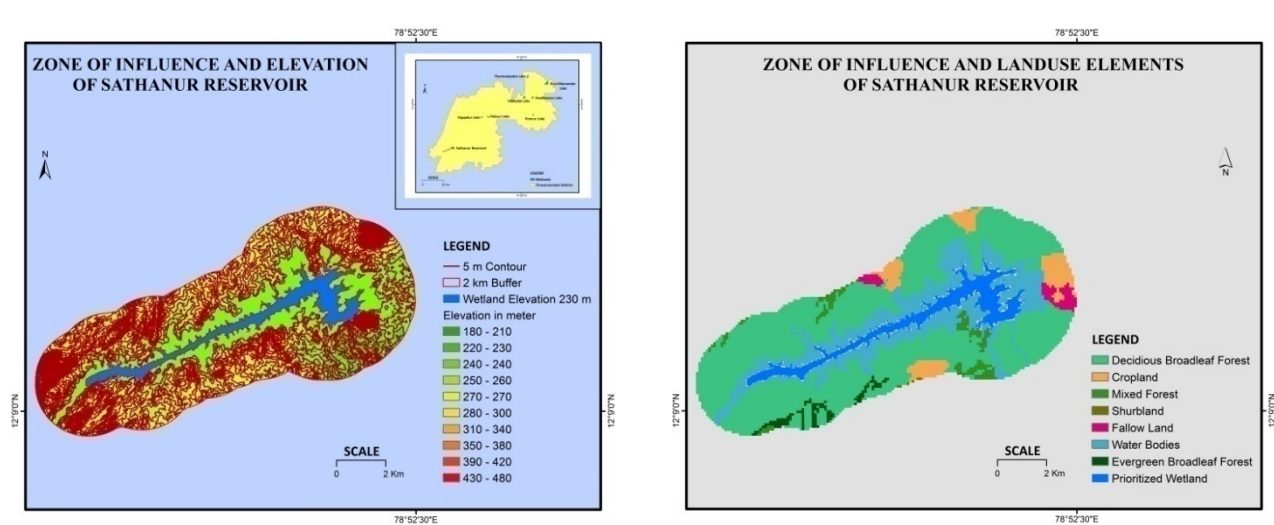
Map 29.5: Zone of influence around the Pelasur Lake.



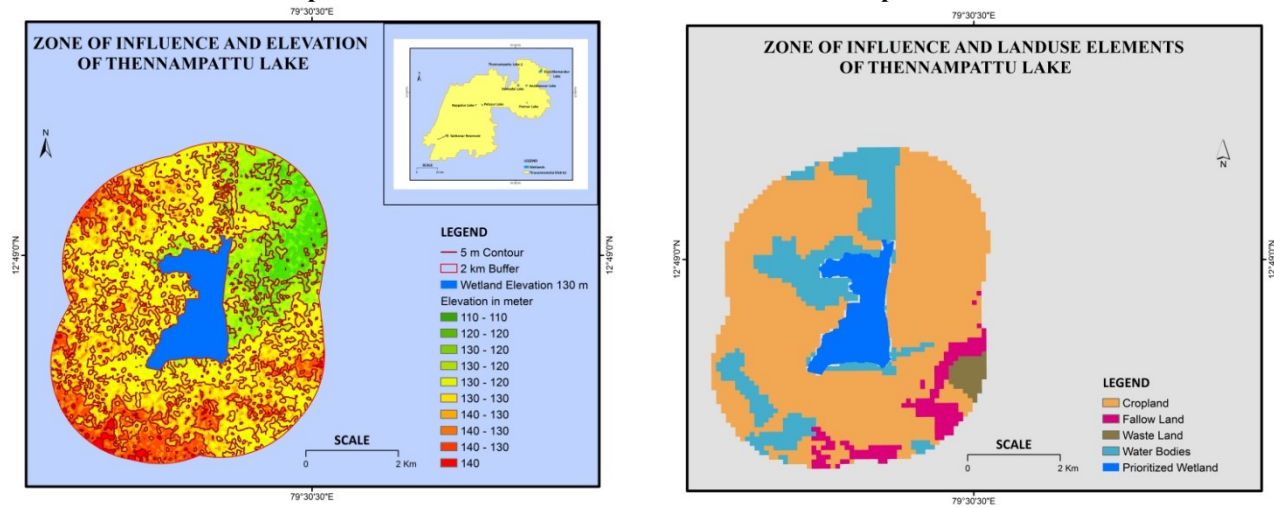
Map 29.6: The zone of influence around the Ponnur Lake.



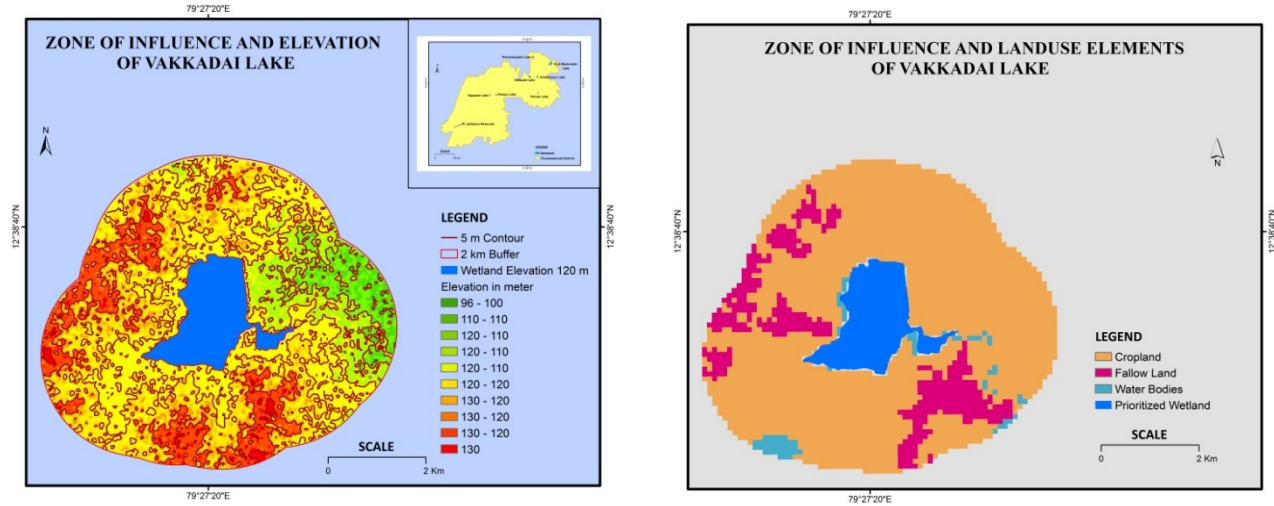
Map 29.7: The zone of influence around the Sathanur Reservoir.



Map 29.8: The zone of influence around the Thennampattu Lake.



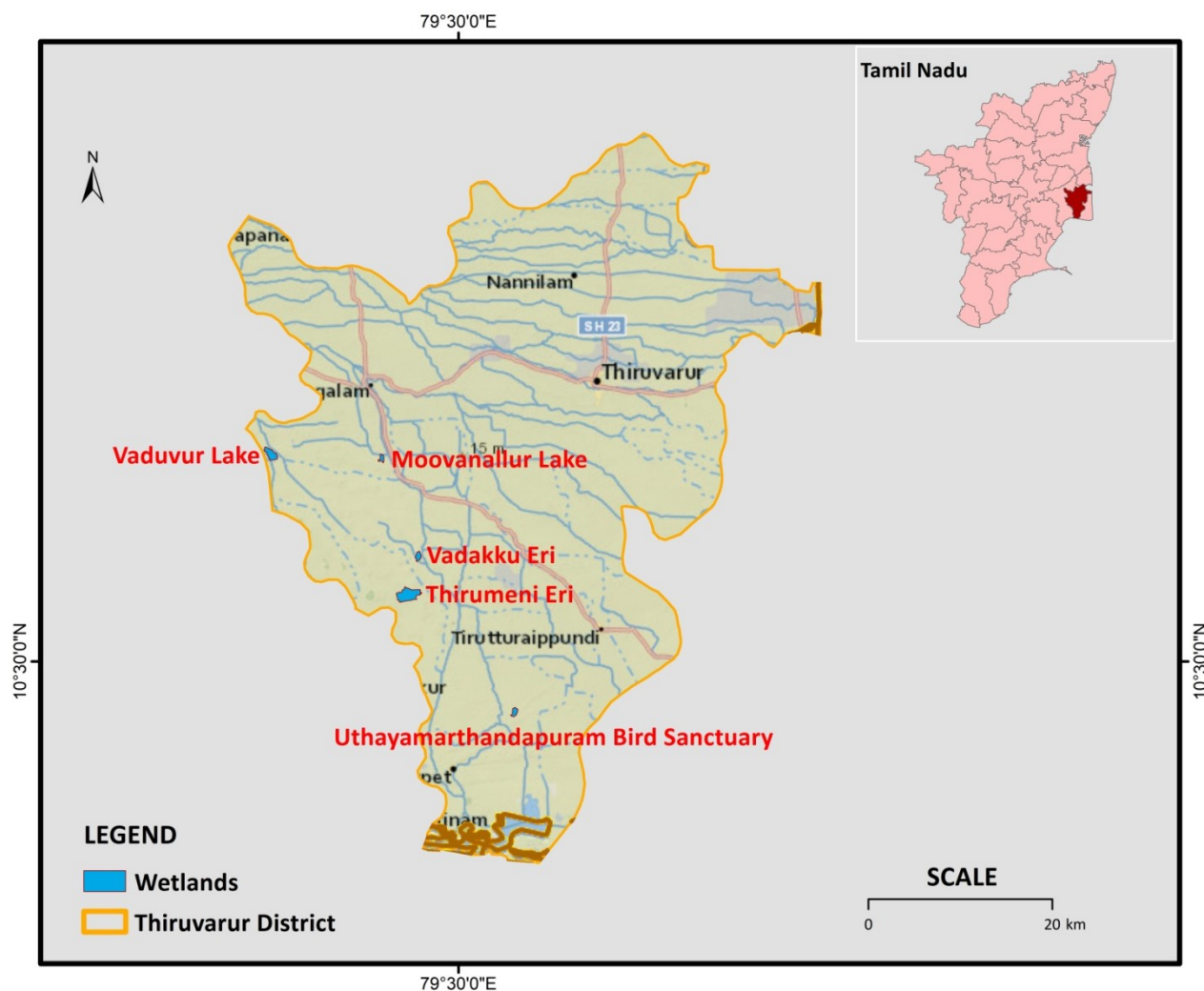
Map 29.9: The zone of influence around the Vakkadai Lake.



30. Tiruvarur District

Tiruvarur is lying between Nagapattinam district on the east and Thanjavur district on the west, and is bounded by the Palk Strait on the south. The district headquarters is located at Tiruvarur town. Thiruvarur district is famous for its evergreen paddy fields. The mangrove forests in Muthupettai, occupies an important place among the nature's beauty of this district, besides the sprawling paddy fields on both sides of rivers, canals and roads. The Birds' sanctuary in Udhayamarthandapuram and Vaduvor are wonderful places that attract tourists.

Total geographic area of Tiruvarur is 2097.09 km². Total area under wetland is 22591 ha, which includes 1026 small wetland (<2.25 ha). Major wetland types of the district are; Inter-tidal mudflats (6924 ha), Lagoons (4786 ha), River/Stream (5669 ha) and Tanks/ponds (901 ha). Of the five wetlands selected in the district, Thirumenieri is the largest while Moovanallur is the smallest of the wetlands (Map 30.1).



Map 30.1: Wetlands of Thiruvarur district assessed for Prioritization

Moovanallur Lake

Mooanallureri (Plate 32) is also known as Rajalikudi lake is based in Mannargudi taluka in Thiruvavur district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Moovanallur, Kudikadu, vettikadu, Marapuram.

The geographic coordinates are Latitude: 10° 42'08.7" N; 10° 42'02.3" N; 10° 41'53.2" N; and Longitude: 079° 25'33.7 E; 079° 25'35.1" E; 079° 25'37.2" E

Moovanallur eri is a wetland that belongs to the Natural (inland) category in the sub category seasonal intermittent wetland. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area and Bhamani river a tributary of Cauvery. There is a channel Kattuvaikal channel also that goes along the wetland but the water is not released into the wetland. The water also helps in replenishing the groundwater, feeds the smaller wetlands around and the agriculture lands. The lake has an area of 33 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 90 % Agriculture and 10% Rural settlements. It has an area of 1798.09 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 30.2).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 30 plant species (Table 30.1) including three invasive species that include *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 10 animal species including two domestic species were recorded during the survey (Table 30.2 to 30.10). Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around the wetland and the ground water is used for irrigation. Commercial fishery is undertaken in the lake through permission from the village panchayat and the PWD, recreational fishery is also practiced. Duck farming and goatery is practiced within the wetland during the dry season. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has a few temples and other religious institutions along its bank, except for recreation no other cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The lack of water due to poor rains has formed a serious threat in its present condition. Solid waste dumping and garbage burning is becoming a issue around the wetland.

The wetland is not protected or conserved under any laws and faces a major threat from solid waste dumping.

ThirumeniEri

Thirumenieri (Plate 32) based in Thiruvavur district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Thirumenakottai, Panchandary and Averikettai.

The geographic coordinates are Latitude: 10° 33'45.7" N; 10° 33'28.7" N; 10° 33'33.0" N and Longitude: 079° 26'23.7 E; 079° 26'36.0" E; 079° 26'56.7" E.

Thirumenieri is a wetland that belongs to the thethe Natural (inland) category in the sub category seasonal intermittent wetland. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area. The water also helps in the replenishing the groundwater, feeds the smaller wetlands around and the agriculture lands. The lake has an area of 284 hectares and based on the secondary information the average depth is 3.5 meters. The wetland is surrounded by 90 % Agriculture and 10% Rural settlements. It has an area of 2726.84 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 30.3).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.6, salinity measuring 0.174 ppt, the TDS was recorded high at 197 ppm. The vegetation comprised of 46 plant species (Table 30.1) including five invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, and *Ipomoea sp.* The fauna comprised of 71 animal species including three domestic species were recorded during the survey (Table 30.2 to 30.10). Two Threatened fish species were recorded during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around the wetland and the ground water is used for irrigation. Commercial fishery is not undertaken in the lake, recreational fishery is practiced. The wetland is used for grazing and bathing by livestock. There is mining for sand or silt undertaken on a regular basis. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time.

The wetland does not show major change in the pattern of water inflow and outflow. The lack of water due to poor rains has formed a serious threat in its present condition. Solid waste dumping and garbage burning is becoming a issue around the wetland.

The wetland is not protected or conserved under any laws and faces a major threat from solid waste dumping and encroachment.

Udayamarthandapuram Bird Sanctuary

Udayamarthandapuram Bird Sanctuary (Plate 32) is a Protected Area located in Thiruvarur district in the Indian state of Tamil Nadu. It is declared as a Protected Area in December 1999. It is home to a variety of birds. The sanctuary is open to visitors throughout the year. The wetland comes under the jurisdiction of Tamil Nadu Forest Department. Villages that surround the wetland include Udayamarthandapuram.

The geographic coordinates are Latitude: 10°26'57.1" N; 10°26'59.6" N; 10°26'59.7" N; 10°27'09.7" N; 10° 27'15.2" N and Longitude: 079°33'10.6 E; 079°33'15.7" E; 079°33'09.8" E; 079°33'10.0" E; 079°33'13.1" E.

Udayamarthandapuram Bird Sanctuary is a wetland that belongs to the Man-made (inland) category in the sub category seasonal intermittent wetland. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and the Mettur Dam. The water also helps in replenishing the groundwater, feeds the smaller wetlands around and the agriculture lands. The lake has an area of 466 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 80 % Agriculture and 20% Rural settlements. It has an area of 1825.83 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 30.4).

The wetland was Mesotrophic during the visit, with the pH of the water being 9.5, salinity measuring 0.245 ppt, the TDS was recorded high at 244 ppm. The vegetation comprised of 93 plant species (Table 30.1) including 15 invasive

species that also include *Parthenium hysterophorus*, *Prosopis juliflora* and *Eichornia crassipes*. The fauna comprised of 59 animal species including three domestic species were recorded during the survey (Table 30.2 to 30.10). Two Threatened species of birds and fish were observed during the survey. Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around the wetland and the ground water is used for irrigation. Commercial fishery is not undertaken in the lake, recreational fishery is also not practiced. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has a few temples and other religious institutions along its bank, except for recreation no other cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The lack of water due to poor rains has formed a serious threat in its present condition.

The wetland is Protected Area and conserved by the forest department. The wetland receives very little water that needs to be addressed.

Vadakku Eri

Vadakku eri is also called Kezhadhulasenthrapura eri or Kannarampettai lake (Plate 32) is based in Mannargudi taluka in Thiruvallur district, the wetland is not a Protected Area comes under the jurisdiction of PWD. Villages that surround the wetland include Kannarampettai, Mebalathottam, Thokubikad, Kezhadhulasenthrapura.

The geographic coordinates are Latitude: 10° 35'51.5" N; 10° 35'59.5" N; and Longitude: 079° 27'32.2 E; 079° 27'44.6" E

Vadakkueri is a wetland that belongs to the Natural (inland) category in the sub category seasonal intermittent wetland. The main source of water for the wetland is Rainfall, groundwater, the surrounding runoff from the catchment area and Bhamani river a tributary of Cauvery. The water also helps in replenishing the groundwater, feeds the smaller wetlands around and the agriculture lands. The lake has an area of 46.3 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 80 % Agriculture and 20% Rural settlements. It has an area of 1843.25 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 30.5).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The wetland was observed to be closer to Mesotrophic as the wetland was observed to have maximum floating, submergent and emergent vegetation, however this cannot be confirmed as the wetland was dry during our visit. The vegetation comprised of 44 plant species (Table 30.1) including nine invasive species that include *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornia crassipes* and *Ipomoea sp.* The fauna comprised of 32 animal species including three domestic species were recorded during the survey (Table 30.2 to 30.10). Tilapia is a very common invasive species that was recorded. Although there are introduced common carps in the lake the extent of their invasion is not documented and needs a detailed study.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around the wetland and the ground water is used for irrigation. Commercial fishery is not undertaken in the lake, recreational fishery is also practiced. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering

by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has a few temples and other religious institutions along its bank, except for recreation no other cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The lack of water due to poor rains has formed a serious threat in its present condition. Solid waste dumping and garbage burning is becoming a issue around the wetland.

The wetland is not protected or conserved under any laws. The wetland faces a major threat from solid waste dumping.

VaduvurLake

Vaduvur Lake is commonly known as Vaduvur bird sanctuary Lake (Plate 33) comes under the jurisdiction of Tamil Nadu Forest Department. Villages that surround the wetland include Vadavoor, Thenpathi, Vadapathy, Pudukottai, Meyvasal, Kondaiyur.

The geographic coordinates are Latitude: 10° 41'48.5" N; 10° 41'49.7" N; 10° 41'54.4" N; and Longitude: 079° 18'57.5" E; 079° 19'02.9" E; 079° 19'21.4" E.

Vaduvur Lake is a wetland that belongs to the theMan-made (inland) category in the sub category seasonal intermittent wetland. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and fromVadavoor river and Cauvery river channels. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields and Kananaru river. The lake has an area of 111 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 60 % Agriculture, 20% Grasslands/Scrubland and 20% Rural settlements. It has an area of 2174.16 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 30.6).

The wetland was Eutrophic during the visit, with the pH of the water being 8.8, salinity measuring 0.317 ppt, the TDS was recorded high at 370 ppm. The vegetation comprised of 56 plant species (Table 30.1) including 13 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 107 animal species including four domestic species were recorded during the survey (Table 30.2 to 30.10). Two Threatened species of birds and one species of fish were observed during the survey.

The water from the wetland is not used for drinking purpose as the water is present for brief period. The Village Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. The farmlands around use the water from both wetland and borewell water. The wetland supports local fish species when water is present and there is no commercial fishery. The site is majorly used by the locals for grazing their cattle and goats. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. The bird sanctuary is frequented by nature lovers and bird enthusiast; there is also a walking path for the local tourist.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The wetland is besides a state high way road that has heavy traffic.

The wetland is a bird sanctuary and has the protection of the forest department. The wetland faces a severe threat from invasive species and the road traffic that is gradually changing the wetland character.

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Table 30.1: List of Plants recorded in Tiruvarur (A - Moovanallur Lake, B - Thirumeni Eri, C - Udayamarthandapuram Bird Sanctuary, D - Vadakku Eri)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D
1	Ceylon caper	<i>Capparis zeylanica</i>	Capparaceae	Native	NA	+	-	-	-
2	Musk Mallow	<i>Abelmoschus moschatus</i>	Malvaceae	Native	NA	+	-	-	+
3	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	+	+	+
4	Long-stock Sida	<i>Sida cordata</i>	Malvaceae	Native	NA	+	-	+	+
5	Jackal Jujube	<i>Ziziphus oenopolia</i>	Rhamnaceae	Native	LC	+	-	-	-
6	Bush Grape	<i>Cayratia trifolia</i>	Vitaceae	Native	NA	+	-	-	+
7	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	-	-	+
8	Mango	<i>Mangifera indica</i>	Anacardiaceae	Native	DD	+	-	-	-
9	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	-	+	+
10	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	+	+	+	+
11	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	+	-	+	+
12	Golden shower tree	<i>Cassia fistula</i>	Caesalpiniaceae	Native	NA	+	-	-	-
13	Papaya Tree	<i>Carica papaya</i>	Caricaceae	Native	DD	+	-	-	-
14	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	-	+
15	Periwinkle, Vinca	<i>Catharanthus roseus</i>	Apocynaceae	Introduced	NA	+	-	-	-
16	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	-	-	+
17	Large caltrops	<i>Pedaliium murex</i>	Pedaliaceae	Native	NA	+	-	-	+
18	Sesame	<i>Sesamum indicum</i>	Pedaliaceae	Native	NA	+	-	-	-
19	Devil's Claws	<i>Martynia annua</i>	Martyniaceae	Native	NA	+	-	+	-
20	Sessile Joyweed	<i>Alternanthera sessilis</i>	Amaranthaceae	Native	LC	+	-	-	-
21	Plumed cockscomb,	<i>Celosia argentea</i>	Amaranthaceae	Native	NA	+	+	-	-
22	Rottler'sChrozophora	<i>Chrozophora rotleri</i>	Euphorbiaceae	Native	NA	+	-	-	-
23	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	-	+
24	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	+	-	-	-
25	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	+	-	-	-
26	Banyan tree	<i>Ficus benghalensis</i>	Moraceae	Native	NA	+	+	-	-
27	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	-	+
28	Water Garss	<i>Bulbostylis barbata</i>	Cyperaceae	Native	NA	+	-	-	-
29	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	-	+	+
30	Kans grass	<i>Saccharum spontaneum</i>	Poaceae	Native	LC	+	-	-	+
31	Field Milkwort	<i>Polygala arvensis</i>	Polygalaceae	Native	NA	-	+	-	-
32	---	<i>Abelmoschus angulosus</i>	Malvaceae	Native	NA	-	+	-	+
33	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	-	+	-	+
34	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	-	+	-	+
35	Indian Plum	<i>Ziziphus mauritiana</i>	Rhamnaceae	Native	NA	-	+	-	-
36	crab's eye,Jequirity	<i>Abrus precatorius</i>	Fabaceae	Native	NA	-	+	+	-
37	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	-	+	+	+
38	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	-	+	-	-
39	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	-	+	-	+
40	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	-	+	-	+
41	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	-	+	-	+
42	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	-	+	-	-
43	Black nightshade	<i>Solanum nigrum</i>	Solanaceae	Native	NA	-	+	-	-
44	Purple Fruited Pea Eggplant	<i>Solanum trilobatum</i>	Solanaceae	Native	NA	-	+	+	-
45	Golden Bladderwort	<i>Utricularia aurea</i>	Lentibulariaceae	Native	LC	-	+	-	-
46	Marsh Barbel	<i>Hygrophila schulli</i>	Acanthaceae	Native	LC	-	+	+	-
47	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	-	+	-	-
48	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	-	+	+	-
49	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	-	+	-	+
50	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	-	+	-	-
51	Agave, Century plant	<i>Agave americana</i>	Asparagaceae	Introduced		-	+	-	-
52	Floating Lace Plant	<i>Aponogeton natans</i>	Aponogetonaceae	Native	LC	-	+	-	-
53	Common Club-rush	<i>Schoenoplectus subulatus</i>	Cyperaceae	Native	NA	-	+	-	-
54		<i>Aristida adscensionis</i>	Poaceae	Native	NA	-	+	-	-

55	Bermuda grass,	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	-	+	+	-
56	Tapering-Leaf Tiliacora	<i>Tiliacora acuminata</i>	Menispermaceae	Native		-	-	+	+
57	Sacred Water Lotus	<i>Nelumbo nucifera</i>	Nelumbonaceae	Native	NA	-	-	+	-
58	Tree Caper, Grand Caper	<i>Capparis grandis</i>	Capparaceae	Native	NA	-	-	+	-
59	Oldman's Cap	<i>Polycarpaea corymbosa</i>	Caryophyllaceae	Native	NA	-	-	+	-
60	Cuban jute, Jelly leaf,	<i>Sida rhombifolia</i>	Malvaceae	Native		-	-	+	-
61	Indian tulip tree	<i>Thespesia populnea</i>	Malvaceae	Native	LC	-	-	+	-
62	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	-	-	+	-
63	Creeping Wood Sorrel	<i>Oxalis corniculata</i>	Oxalidaceae	Invasive	NA	-	-	+	-
64	Rain Tree	<i>Albizia saman</i>	Fabaceae	Exotic	NA	-	-	+	-
65	Copperpod	<i>Peltophorum pterocarpum</i>	Fabaceae	Introduced	NA	-	-	+	-
66	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	-	-	+	-
67	Coffee senna	<i>Senna occidentalis</i>	Fabaceae	Native	NA	-	-	+	-
68	Siamese Senna	<i>Senna siamea</i>	Fabaceae	Native	LC	-	-	+	-
69	Trailing sesbans	<i>Sesbania procumbens</i>	Fabaceae	Native	NA	-	-	+	-
70	Arjun	<i>Terminalia arjuna</i>	Combretaceae	Native	NA	-	-	+	-
71	Forest Red Gum	<i>Eucalyptus tereticornis</i>	Myrtaceae	Exotic	NA	-	-	+	-
72	Ribbed Sponge Gourd	<i>Luffa acutangula</i>	Cucurbitaceae	Native	NA	-	-	+	-
73	Tiny False Buttonweed	<i>Spermacoce pusilla</i>	Rubiaceae	Native	NA	-	-	+	-
74	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	-	-	+	-
75	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	-	-	+	+
76	South Indian Mahua	<i>Madhuca longifolia</i> var. <i>latifolia</i>	Sapotaceae	Native	NA	-	-	+	-
77	Sneeze Wort, Cotton milk plant	<i>Marsdenia volubilis</i>	Apocynaceae	Native	NA	-	-	+	-
78	African Tulip Tree	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	LC	-	-	+	+
79	Yellow bells	<i>Tecoma stans</i>	Bignoniaceae	Exotic	NA	-	-	+	-
80	Hoary Basil,	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	-	-	+	-
81	Madras Leaf flower	<i>Phyllanthus maderaspatensis</i>	Phyllanthaceae	Native	NA	-	-	+	-
82	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	-	-	+	+
83	Japanese Lovegrass	<i>Eragrostis amabilis</i>	Poaceae	Native	NA	-	-	+	-
84	Common Sesban,	<i>Sesbania sesban</i>	Fabaceae	Native	NA	-	-	-	+
85	Indian Almond	<i>Terminalia catappa</i>	Combretaceae	Native	NA	-	-	-	+
86	Erect Prickly Pear	<i>Opuntia stricta</i>	Cactaceae	Invasive	LC	-	-	-	+
87	Chay Root	<i>Oldenlandia umbellata</i>	Rubiaceae	Native		-	-	-	+
88	Sweet indrajao	<i>Wrightia tinctoria</i>	Apocynaceae	Native	LC	-	-	-	+
89	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	-	-	-	+
90	Seaside Heliotrope,	<i>Heliotropium curassavicum</i>	Heliotropiaceae	Naturalized	LC	-	-	-	+
91	Blue Porterweed	<i>Stachytarpheta jamaicensis</i>	Verbenaceae	Native	NA	-	-	-	+
92	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	-	-	-	+
93	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	-	-	-	+
94	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	-	-	-	+
95	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	-	-	-	+
96	Tanjore jatrophia	<i>Jatropha tanjorensis</i>	Euphorbiaceae	Native	NA	-	-	-	+
97	Cannabis Leaf Nettle,	<i>Tragia plukenetii</i>	Euphorbiaceae	Native		-	-	-	+
98	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	-	-	-	+
99	White Water Sedge	<i>Cyperus dubius</i>	Cyperaceae	Native	LC	-	-	-	+
100	Flatsedge	<i>Cyperus eleusinoides</i>	Cyperaceae	Native	NA	-	-	-	+
Total						30	32	41	44

Table 30.2: List of Insects recorded in Tiruvarur District (A - Moovanallur Lake, B - Thirumeni Eri, C - Udayamarthandapuram Bird Sanctuary, D - Vadakku Eri)

S. No	Common English Name	Scientific Name	Family	A	B	C	D
1	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	-	+
2	Water Strider	<i>Gerris sp.</i>	Gerridae	-	+	+	-
3	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	-	+	+	-
4	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	-	+	+	-
5	Weaver Ant	<i>Oecophylla smaragdina</i>	Formicidae	-	+	-	-
6	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	-	+	-	-

7	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	+	-	-
8	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	-	+	-
Total				1	7	4	1

Table 30.3: List of Butterflies recorded in Tiruvarur District (A - Moovanallur Lake, B - Thirumeni Eri, C - Udayamarthandapuram Bird Sanctuary, D - Vadakku Eri)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C	D
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	-	+	+	-
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	-	+	+	+
3	Common Mormon	<i>Papilio polytes</i>	Papilioninae	Common	-	+	-	-
4	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	-	+	-	-
5	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	-	+	+	+
6	Common Jezebel	<i>Delias eucharis</i>	Pierinae	Common	-	+	-	-
7	Common Cerulean	<i>Jamides celeno</i>	Polyommatainae	Common	-	+	-	-
8	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	-	+	-	-
9	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	-	+	-	-
10	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	-	+	-	+
11	Common Evening Brown	<i>Melanitis leda</i>	Satyrinae	Common	-	-	+	-
12	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	-	-	+	-
13	Heliotrope Moth	<i>Utetheisa pulchelloides</i>	Erebidae	Common	-	-	+	-
14	Gram Blue	<i>Euchrysops cnejus</i>	Polyommatainae	Common	-	-	-	+
Total					0	10	6	4

Table 30.4: List of Odonates recorded in Tiruvarur District (A - Moovanallur Lake, B - Thirumeni Eri, C - Udayamarthandapuram Bird Sanctuary, D - Vadakku Eri)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C	D
1	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	-	+
2	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	-	+	+	-
3	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	-	+	-	-
4	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	-	+	+	+
5	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	-	+	+	+
Total					1	5	3	3

Table 30.5: List of Arachnida recorded in Tiruvarur District (A - Moovanallur Lake, B - Thirumeni Eri, C - Udayamarthandapuram Bird Sanctuary, D - Vadakku Eri)

S. No	Common English Name	Scientific Name	Family	A	B	C	D
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	+	-
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	-	+	-
Total				1	0	2	0

Table 30.6: List of Fishes recorded in Tiruvarur District (A - Moovanallur Lake, B - Thirumeni Eri, C - Udayamarthandapuram Bird Sanctuary, D - Vadakku Eri)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	-	+	+	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	-	+	+	+
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	+	+	+
4	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	-	+	+	-
5	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	-	+	+	+
6	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	-	+	+	-
7	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	-	+	-	-
8	Catla	<i>Catla catla</i>	Cyprinidae	LC	-	+	-	-
9	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	-	+	-	-

10	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	-	-	+	+
11	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	-	-	+	-
12	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	-	-	+	-
13	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	-	-	-	+
14	Spiny eel	<i>Macrogynathus pancalus</i>	Mastacembelidae	LC	-	-	-	+
Total					0	9	9	7

Table 30.7: List of Amphibians recorded in Tiruvarur District (A - Moovanallur Lake, B - Thirumeni Eri, C - Udayamarthandapuram Bird Sanctuary, D - Vadakku Eri)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C	D
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	LC	-	-	-	+
Total					0	0	0	1

Table 30.8: List of Reptiles recorded in Tiruvarur District (A - Moovanallur Lake, B - Thirumeni Eri, C - Udayamarthandapuram Bird Sanctuary, D - Vadakku Eri)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	-	+	-	-
Total					1	2	1	1

Table 30.9: List of Birds recorded in Tiruvarur District (A - Moovanallur Lake, B - Thirumeni Eri, C - Udayamarthandapuram Bird Sanctuary, D - Vadakku Eri)

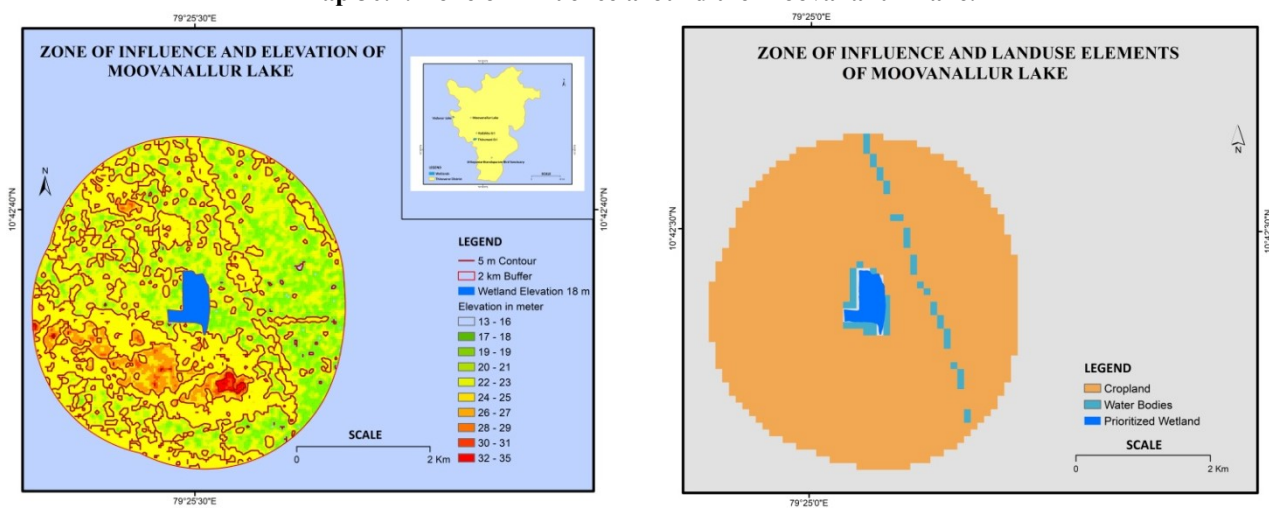
S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C	D
1	Indian Nightjar	<i>Caprimulgus asiaticus</i>	Caprimulgidae	Least Concern	+	-	-	-
2	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+	+
3	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+	+
4	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	+	+	+	+
5	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	-	-	+
6	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Least Concern	-	+	+	-
7	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	-	+	+	-
8	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	-	+	+	-
9	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	-	+	+	-
10	Great Egret	<i>Casmerodius albus</i>	Ardeidae	Least Concern	-	+	-	-
11	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	-	+	+	-
12	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	-	+	+	-
13	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	-	+	+	-
14	Brahminy Kite	<i>Haliastur indus</i>	Accipitridae	Least Concern	-	+	-	-
15	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	-	+	-	-
16	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	-	+	+	-
17	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae	Least Concern	-	+	-	-
18	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	Least Concern	-	+	-	-
19	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	-	+	+	-
20	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Least Concern	-	+	-	+
21	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	-	+	+	-
22	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae	Least Concern	-	+	-	-
23	Brown Shrike	<i>Lanius cristatus</i>	Laniidae	Least Concern	-	+	-	-
24	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Least Concern	-	+	-	+
25	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	Least Concern	-	+	-	+
26	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	Least Concern	-	+	+	-
27	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	Least Concern	-	+	+	-
28	Rosy Starling	<i>Pastor roseus</i>	Sturnidae	Least Concern	-	+	-	-
29	Indian Robin	<i>Saxicoloides fulicatus</i>	Muscicapidae	Least Concern	-	+	-	+
30	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	Least Concern	-	+	-	-
31	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	-	-	+	-
32	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	Near Threatened	-	-	+	-

33	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae	Least Concern	-	-	+	-
34	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Ardeidae	Least Concern	-	-	+	-
35	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	Least Concern	-	-	+	-
36	Darter	<i>Anhinga melanogaster</i>	Anhingidae	Near Threatened	-	-	+	-
37	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	Least Concern	-	-	+	-
38	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	-	-	+	-
39	Asian Koel	<i>Eudynamys scolopaceus</i>	Cuculidae	Least Concern	-	-	+	+
40	Oriental Magpie Robin	<i>Copsychus saularis</i>	Muscicapidae	Least Concern	-	-	+	-
41	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	-	-	+	-
42	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	Least Concern	-	-	+	-
43	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	-	-	-	+
44	Jerdon's Bushlark	<i>Mirafra affinis</i>	Alaudidae	Least Concern	-	-	-	+
Total					5	28	27	11

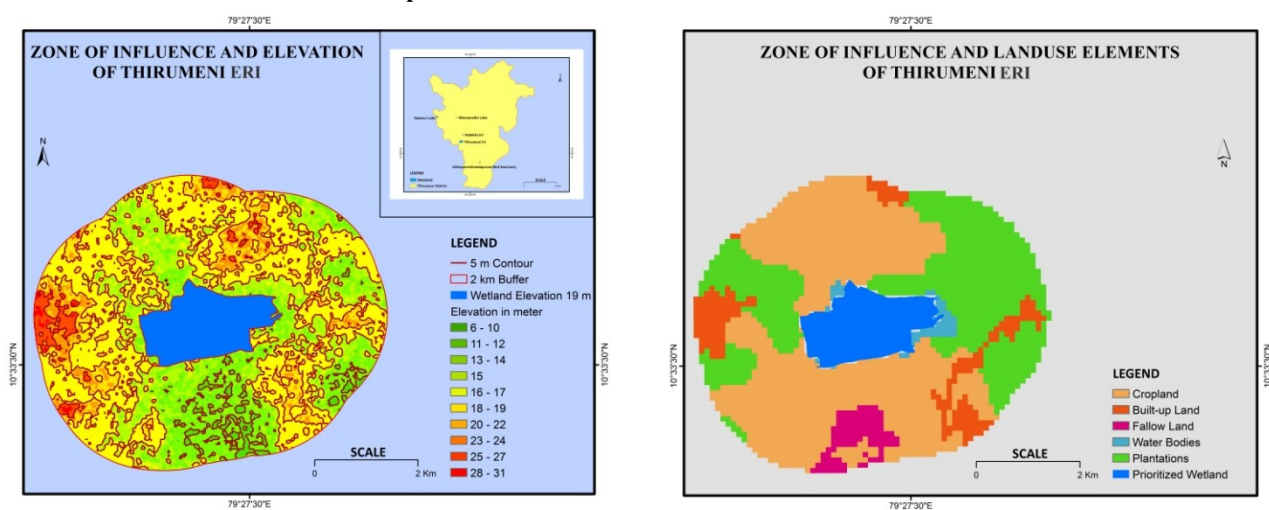
Table 30.10: List of Mammals recorded in Tiruvarur District (A - Moovanallur Lake, B - Thirumeni Eri, C - Udayamarthandapuram Bird Sanctuary, D - Vadakku Eri)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C	D
1	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+
2	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	-	+	+
3	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	-	+	+	+
4	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	-	-	+	+
5	Indian grey Mongoose	<i>Herpestes edwardsi</i>	Herpestidae	Least Concern	-	-	+	-
Total					2	2	5	4

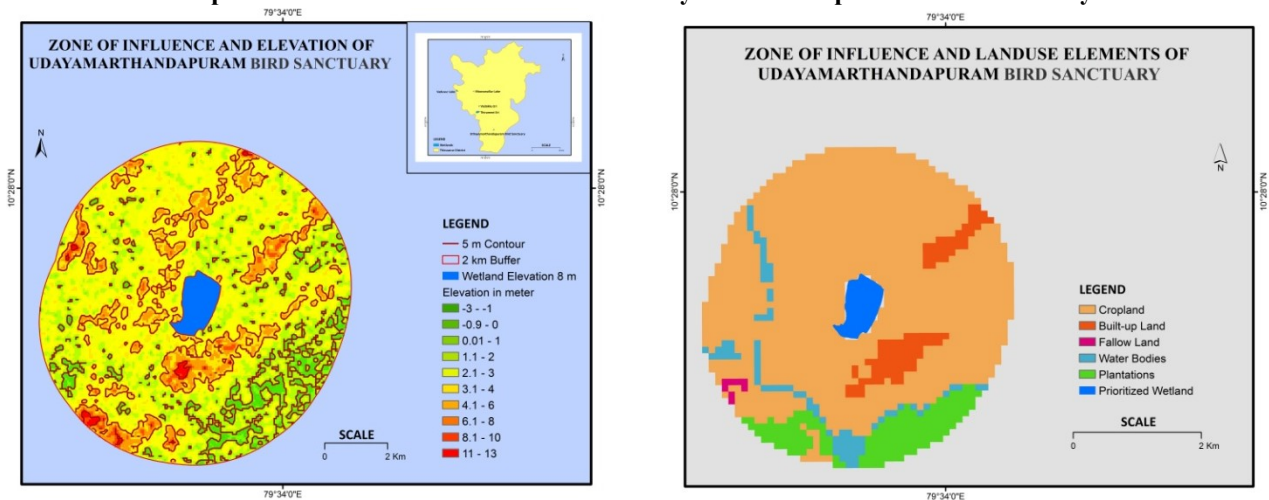
Map 30.2: Zone of Influence around the Moovanallur Lake.



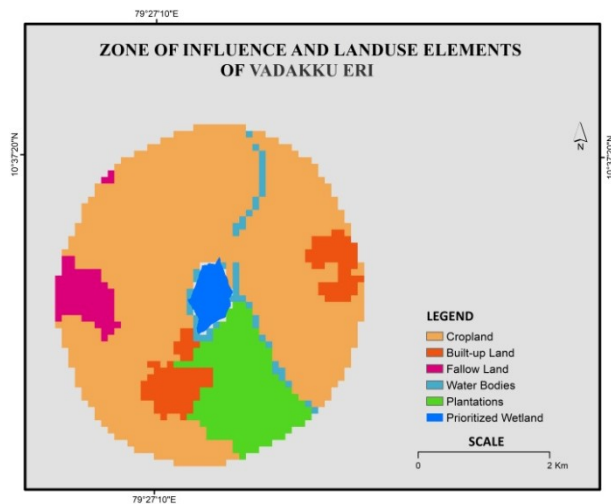
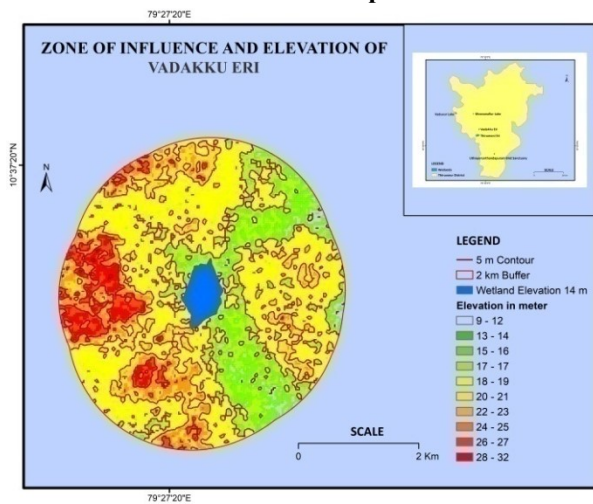
Map 30.3: Zone of Influence around the Thirumeni Eri.



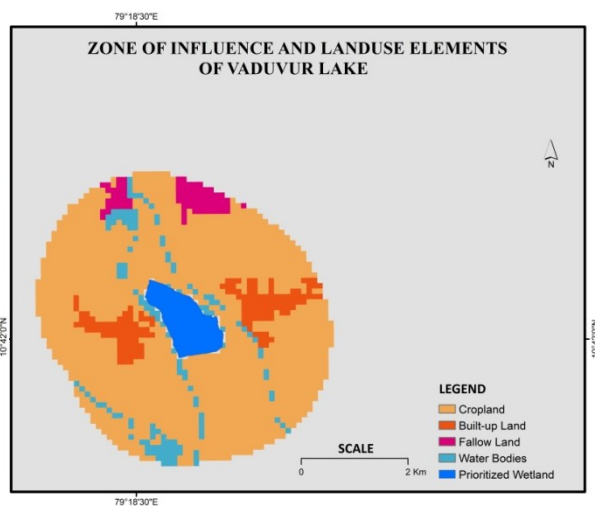
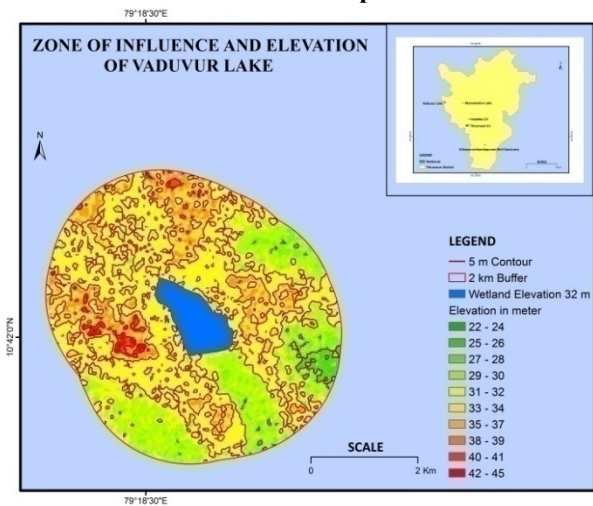
Map 30.4: Zone of Influence around the Udayamarthandapuram Bird Sanctuary.



Map 30.5: Zone of influence around the Vadakku Eri.



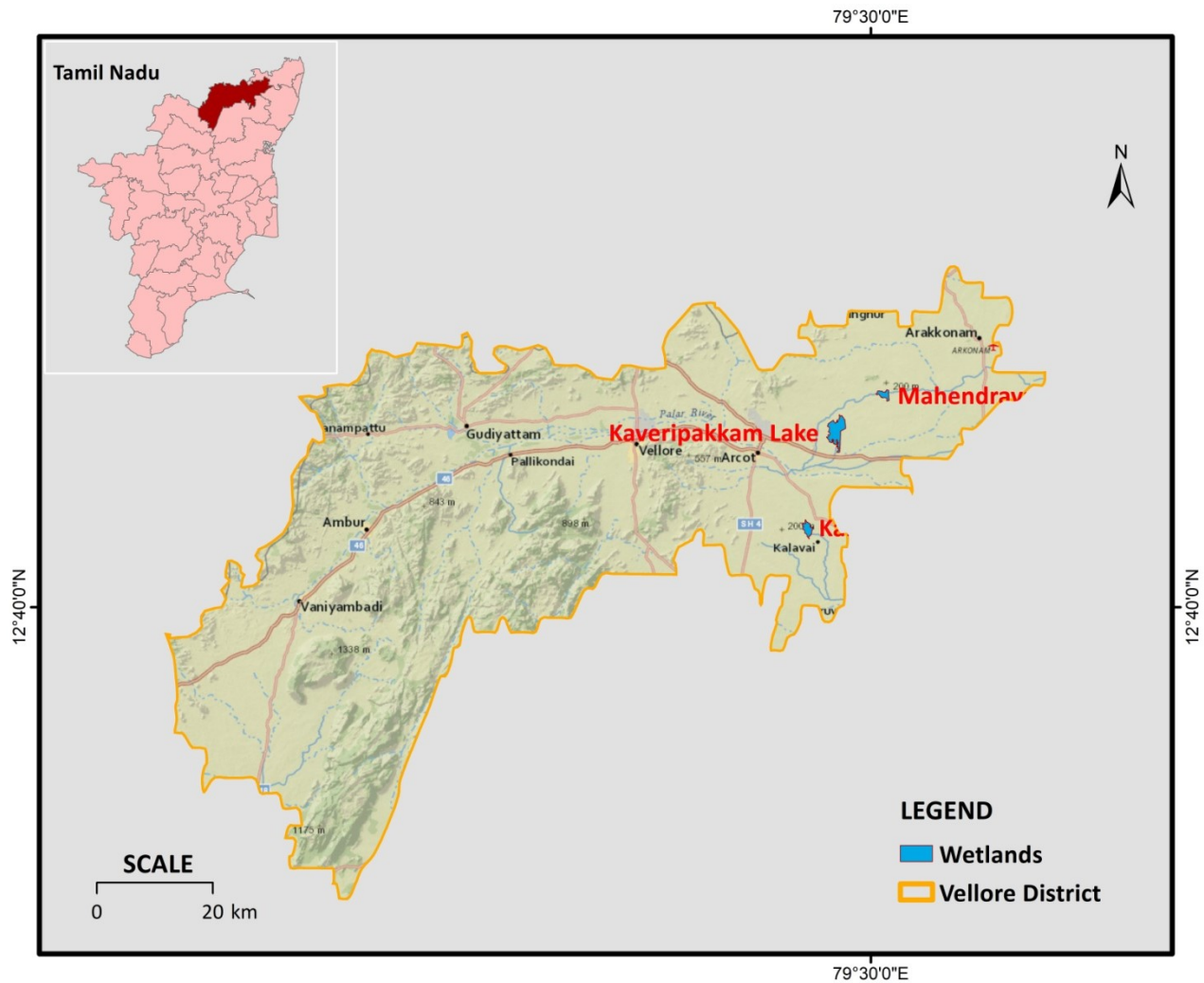
Map 30.6: Zone of influence around the Vaduvur Lake.



31. Vellore District

Vellore is bounded on the northeast by Thiruvallur district, on the southeast by Kanchipuram district, on the south by Tiruvannamalai district, on the southwest by Krishnagiri district, and on the northwest and north by Andhra Pradesh state. Vellore had the privilege of being the seat of the Pallava, Chola, Nayak, Maratha, Arcot Nawabs and Bijapur Sultan Kingdoms. It was described as the best and the strongest fortress in the Carnatic War in the 17th Century.

Total geographic area of Vellore is 6077 km². Total area under wetland is 32640 ha, which includes 354 small wetland (<2.25 ha). Lakes/Ponds occupy 48.06% of wetland area. The second major wetland type is Tanks/Ponds. There are 561 Tanks/Ponds with 7973 ha area (24.43%). Area under River/Stream is 8511 ha (26.08 %). Of the three wetlands selected in the district, Kaveribakkam is the largest while Mahendravadi is the smaller of the three wetlands (Map31.1).



Map 31.1: Wetlands of Vellore district assessed for Prioritization

Kalavai Lake

Kalavai eri (Plate33) is also known as Akramelleeri is based in Arcot taluka in Vellore district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Nethapakkam, Agaram, Allalacheri.

The geographic coordinates are Latitude: 12° 46'54.2" N; 12° 46'56.1" N; 12° 47'00.1" N; 12° 46'29.7" N and Longitude: 079° 23'50.1" E; 079° 23'54.7" E; 079° 23'59.6" E; 079° 24'13.0" E.

Kalavaieri is a wetland that belongs to the Natural (inland) tank category in the sub category permanent tank. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area, Metur Dam channel and Palar river. The water from the wetland helps in replenishing the groundwater and the overflow joins the adjoining ten village tanks and agriculture fields. The lake has an area of 279 hectares and based on the secondary information the average depth is 4 meters. The wetland is surrounded by 90 % Agriculture and 10% Rural settlements. It has an area of 2881.42 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 31.2).

The wetland was Mesotrophic during the visit, with the pH of the water being 9.03, salinity measuring 1.06 ppt, the TDS was recorded high at 1480 ppm. The vegetation comprised of 41 plant species (Table 31.1) including eight invasive species that also include *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 63 animal species including four domestic species were recorded during the survey (Table 31.2 to 31.10). One Threatened species of fish were observed during the survey. Tilapia and common carps were recorded. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The PWD issues annual tenders. The site adjoining the wetland is majorly used by the locals for agriculture and as toilet. Mining for sand or silt is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a major temple along its vicinity and major cultural and religious activities are performed in the wetland. The surrounding area of the wetland is heavily encroached upon.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not a Protected Area and faces a severe threat from land use change, mainly from agriculture practices and compromise in the quality of the water.

Kaveripakkam Lake

Kaveripakkam (Plate33), is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Kaveripakkam, Kattalai, Ayyampettai, cherry, Oparanthanagal, Eechanthangal, Mootur, Baguvali, Sumaithangi.

The geographic coordinates are Latitude: 12° 54'34.5" N; 12° 54'40.5" N; 12° 54'51.1" N; and Longitude: 079° 27'07.6" E; 079° 27'08.2" E; 079° 27'09.1" E.

Kaveripakkam is a wetland that belongs to the Natural (inland) tank category in the sub category seasonal intermittent tank. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area, and Palar river and Ponnaiyah river system indirect influence. The water from the wetland helps in replenishing the groundwater

and the overflow joins the adjoining village tanks and agriculture fields. The lake has an area of 977 hectares and based on the secondary information the average depth is 5 meters. The wetland is surrounded by 90 % Agriculture and 10% Grassland/scrubland. It has an area of 4653.22 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 31.3).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.4, salinity measuring 0.532 ppt, the TDS was recorded high at 634 ppm. The vegetation comprised of 38 plant species (Table 31.1) including nine invasive species that also include *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 65 animal species including two domestic species were recorded during the survey (Table 31.2 to 31.10). Three Threatened species of fish were observed during the survey. Tilapia and common carps were recorded. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The borassus plant sap is also collected for local consumption and sale in the local market. The site adjoining the wetland is majorly used by the locals for dumping garbage, release of sewage and effluents and as toilet. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a major temple along its vicinity and major cultural and religious activities are performed in the wetland. The surrounding area of the wetland is heavily encroached upon.

The wetland has a little potential of change in the outflow of the water. The wetland has been facing land use change pressure. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is not is not a Protected Area and faces a severe threat from landuse change mainly agriculture practices and compromise in the quality of the water.

MahendrawadiLake

Mahendrawadi eri, (Plate 33) is based in Nemeli taluka in Vellore district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Vedanthangal, Koothampakal, Mallimodi.

The geographic coordinates are Latitude: 12° 59'39.3" N; 12° 59'27.2" N; 12° 59'21.0" N; 12° 59'20.4" N; 12° 59'36.2" N and Longitude: 079° 30'38.0" E; 079° 30'56.2" E; 079° 31'48.6" E; 079° 31'39.3" E; 079° 31'41.2" E.

Mahendrawadi eri is a wetland that belongs to the Natural (inland) tank category in the sub category permanent tank. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and Palar river. The water from the wetland helps in replenishing the groundwater and the overflow joins the adjoining 12 village tanks and agriculture fields. The lake has an area of 215 hectares and based on the secondary information the average depth is 4 meters. The wetland is surrounded by 85 % Agriculture and 15% Rural Settlement. It has an area of 2695.64 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 31.4).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.89, salinity measuring 0.777 ppt, the TDS was recorded high at 1500 ppm. The vegetation comprised of 31 plant species (Table 31.1) including eight invasive species that also include *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 37 animal species including three domestic species were recorded during the survey (Table 31.2 to 31.10). Tilapia and common carps

were recorded. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is used for agriculture. The municipal corporation provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. Fishery is undertaken for commercial purpose, and some amount of recreational fishery is undertaken. The PWD issues annual tenders. There is mining for sand or silt undertaken on a regular basis. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has major temples along its vicinity and major cultural and religious activities are performed in the wetland. The surrounding area of the wetland is heavily encroached upon.

The wetland has a little potential of change in the outflow of the water and the wetland has been facing land use change pressure. The wetland water quality and the ecological character is changing rapidly due to lack of conservation measures.

The wetland is of historical importance as it was constructed during the Palavas period but is not a Protected Area. The wetland faces a severe threat from land use change mainly agriculture practices and compromise in the quality of the water.

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Table 31.1: List of Plants recorded in Vellore District (A - Kalavai Lake, B - Kaveripakkam Lake, C - Mahendravadi Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN status	A	B	C
1	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	+	-	-
2	Spade Flower	<i>Afrohybanthus enneaspermus</i>	Violaceae	Native	NA	+	-	-
3	---	<i>Abelmoschus angulosus</i>	Malvaceae	Native	NA	+	-	-
4	White wild Musk Mallow	<i>Abelmoschus ficulneus</i>	Malvaceae	Native	NA	+	-	-
5	Horn-Fruited Jute	<i>Corchorus tridens</i>	Malvaceae	Native	NA	+	+	-
6	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	+	+
7	Long-stock Sida	<i>Sida cordata</i>	Malvaceae	Native	NA	+	-	-
8	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	+	-
9	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	+	+	+
10	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	-	+	+
11	Mango	<i>Mangifera indica</i>	Anacardiaceae	Native	DD	+	-	-
12	Narrowleaf Indigo	<i>Indigofera linifolia</i>	Fabaceae	Native	LC	+	-	-
13	Touch Me Not	<i>Mimosa pudica</i>	Fabaceae	Native	LC	+	-	-
14	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
15	Blistering Ammannia	<i>Ammannia baccifera</i>	Lythraceae	Native	LC	+	-	-
16	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	-	-
17	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	+	+	-
18	Indian Mulberry,	<i>Morinda coreia</i>	Rubiaceae	Native		+	-	-
19	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+
20	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	-	+
21	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	-	-
22	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	+	-	+
23	Dwarf morning glory	<i>Evolvulus alsinoides</i>	Convolvulaceae	Naturalized	NA	+	-	+
24	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	-	+
25	Denseflower Witchweed	<i>Striga densiflora</i>	Orobanchaceae	Native	NA	+	-	-
26	False waterwillow	<i>Andrographis echinoides</i>	Acanthaceae	Native	NA	+	-	-
27	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	+	-	+
28	Blue Porterweed	<i>Stachytarpheta jamaicensis</i>	Verbenaceae	Native	NA	+	-	-
29	Prickly Amaranth	<i>Amaranthus spinosus</i>	Amaranthaceae	Exotic	NA	+	-	-
30	False Amaranth	<i>Digera muricata</i>	Amaranthaceae	Native	NA	+	-	-
31	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	+
32	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	+	+	-
33	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	-	-
34	Triangular Spurge	<i>Euphorbia antiquorum</i>	Euphorbiaceae	Native		+	-	-
35	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	+
36	Wild Date Palm	<i>Phoenix sylvestris</i>	Arecaceae	Native	NA	+	-	+
37	Water Garss	<i>Bulbostylis barbata</i>	Cyperaceae	Native	NA	+	-	-
38	Peri peri	<i>Cyperus corymbosus</i>	Cyperaceae	Native	NA	+	-	-
39		<i>Aristida adscensionis</i>	Poaceae	Native	NA	+	-	-
40	Lemon grass	<i>Cymbopogon citratus</i>	Poaceae	Native	NA	+	-	-
41	Indian comet grass	<i>Perotis indica</i>	Poaceae	Native	NA	+	-	-
42	Mexican Prickly Poppy	<i>Argemone mexicana</i>	Papaveraceae	Invasive	NA	-	+	-
43	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	-	+	-
44	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	-	+	-
45	Heart leaf sida	<i>Sida cordifolia</i>	Malvaceae	Native	NA	-	+	-
46	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	-	+	-
47	crab's eye,Jequirity	<i>Abrus precatorius</i>	Fabaceae	Native	NA	-	+	-
48	Siris Tree, Women's tongue	<i>Albizia lebbeck</i>	Fabaceae	Native	NA	-	+	-
49	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	-	+	-
50	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	-	+	-
51	Ribbed Sponge Gourd	<i>Luffa acutangula</i>	Cucurbitaceae	Native	NA	-	+	-
52	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	-	+	-
53	Wedge-Leaf Foldingwing	<i>Dicliptera paniculata</i>	Acanthaceae	Native	NA	-	+	-

54	Green Shrimp Plant	<i>Ecbolium ligustrinum</i>	Acanthaceae	Native	NA	-	+	-
55	Malabar Catmint	<i>Anisomeles malabarica</i>	Lamiaceae	Native	NA	-	+	-
56	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	-	+	-
57	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	-	+	-
58	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	-	+	-
59	Smooth Chaff Flower	<i>Alternanthera paronychioides</i>	Amaranthaceae	Naturalized	NA	-	+	-
60	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	-	+	-
61	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	-	+	+
62	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	-	+	-
63	Bengal Dayflower	<i>Commelina benghalensis</i>	Commelinaceae	Native	LC	-	+	-
64	Coconut Tree	<i>Cocos nucifera</i>	Arecaceae	Native	NA	-	+	+
65	Giant Reed	<i>Arundo donax</i>	Poaceae	Invasive	LC	-	+	-
66	Para Grass	<i>Brachiaria mutica</i>	Poaceae	Invasive	LC	-	+	-
67	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	-	+	+
68	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	-	+	-
69	Sacred Water Lotus	<i>Nelumbo nucifera</i>	Nelumbonaceae	Native	NA	-	-	+
70	Birdsville Indigo	<i>Indigofera linnaei</i>	Fabaceae	Native	NA	-	-	+
71	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	-	-	+
72	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	-	-	+
73	Erect Prickly Pear	<i>Opuntia stricta</i>	Cactaceae	Invasive	LC	-	-	+
74	Jima	<i>Glinus oppositifolius</i>	Molluginaceae	Native	NA	-	-	+
75	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	-	-	+
76	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	-	-	+
77	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	-	-	+
78	Diffuse Hogweed	<i>Commicarpus chinensis</i>	Nyctaginaceae	Native	NA	-	-	+
79	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	-	-	+
80	Banyan tree	<i>Ficus benghalensis</i>	Moraceae	Native	NA	-	-	+
81	Satawari	<i>Asparagus racemosus</i>	Asparagaceae	Native	NA	-	-	+
82	Narrow-Leaved Cattail	<i>Typha angustifolia</i>	Typhaceae	Native	LC	-	-	+
83	Wiregrass	<i>Aristida setacea</i>	Poaceae	Native	NA	-	-	+
84	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	-	-	+
Total						40	38	32

Table 31.2: List of Insects recorded in Vellore District (A - Kalavai Lake, B - Kaveripakkam Lake, C - Mahendravadi Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	+	+	-
2	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	+	+
3	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	+	+
4	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	+
5	Indian Robber fly	<i>Asilidae sp.</i>	Asilidae	+	-	-
6	Water Strider	<i>Gerris sp.</i>	Gerridae	-	+	-
7	Black Ant	<i>Myrmecaria brunnea</i>	Formicidae	-	+	+
8	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	-	+	-
Total				5	8	4

Table 31.3: List of Butterflies recorded in Vellore District(A - Kalavai Lake, B - Kaveripakkam Lake, C - Mahendravadi Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Indian Dartlet	<i>Oriens goloides</i>	Hesperiinae	Common	+	-	-
2	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	+	+	-
3	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	+	-
4	Lime Butterfly	<i>Papilio demoleus</i>	Papilioninae	Common	+	-	+
5	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	+	+	-
6	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	-
7	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	+	-	-
8	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	+	-	-
9	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	+	+
10	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	+	+	-

11	Striped Tiger	<i>Danaus genutia</i>	Danainae	Common	+	-	-
12	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	+
13	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	+	-	-
14	Common Leopard	<i>Phalanta phalantha</i>	Heliconiinae	Common	+	-	-
15	Joker	<i>Byblia ilithyia</i>	Biblidinae	Common	+	-	-
16	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	+	-	-
17	Peacock Pansy	<i>Junonia almana</i>	Nymphalinae	Common	+	-	-
18	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	-	+	+
19	Chocolate Pansy	<i>Junonia iphita</i>	Nymphalinae	Common	-	+	-
Total					17	9	4

Table 31.4: List of Odonates recorded in Vellore District (A - Kalavai Lake, B - Kaveripakkam Lake, C - Mahendravadi Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	+	+
2	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	+	-
3	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+
4	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+
5	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	-
6	Pruinosed Dartlet	<i>Agriocnemis femina</i>	Coenagrionidae	Common	-	+	-
7	Coromandel Marsh Dart	<i>Ceragrion coromandelianum</i>	Coenagrionidae	Common	-	+	-
8	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	-	-	+
9	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	-	-	+
10	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	+	+	+
Total					6	8	6

Table 31.5: List of Arachnida recorded in Vellore District (A - Kalavai Lake, B - Kaveripakkam Lake, C - Mahendravadi Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	-	+	-
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	+	-
Total				0	2	0

Table 31.6: List of Fishes recorded in Vellore District(A - Kalavai Lake, B - Kaveripakkam Lake, C - Mahendravadi Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	+	-
2	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	+	+	+
3	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	+	-
4	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	+	-	+
5	Catla	<i>Catla catla</i>	Cyprinidae	LC	+	+	-
6	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	+	+	-
7	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	-	+	-
8	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	-	+	-
9	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	-	+	-
10	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	-	+	-
11	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	-	+	-
12	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	-	+	-
13	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	-	-	+
14	Pool barb, Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	-	-	+
Total					6	11	4

Table 31.7: List of Amphibians recorded in Vellore District (A - Kalavai Lake, B - Kaveripakkam Lake, C - Mahendravadi Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	Least Concern	+	-	-
2	Indian Pond Frog	<i>Euphlyctis hexadactylus</i>	Dicroglossidae	Least Concern	+	-	-
Total					2	0	0

Table 31.8: List of Reptiles recorded in Vellore District (A - Kalavai Lake, B - Kaveripakkam Lake, C - Mahendravadi Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	-	+	-
Total					1	2	1

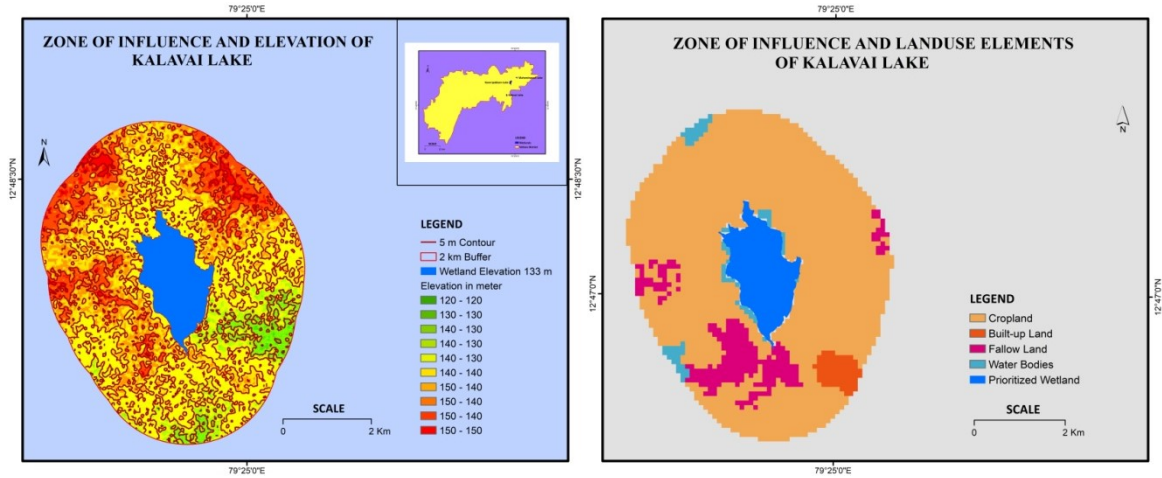
Table 31.9: List of Birds recorded in Vellore District (A - Kalavai Lake, B - Kaveripakkam Lake, C - Mahendravadi Lake)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C
1	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae	Least Concern	+	-	-
2	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	+
3	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	+	-
4	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	+	+
5	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	+	+
6	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	+
7	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	Least Concern	+	-	-
8	Asian Palm Swift	<i>Cypsiurus balaisensis</i>	Apodidae	Least Concern	+	-	+
9	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Least Concern	+	+	+
10	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	+	+	-
11	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+
12	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
13	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	+	+	-
14	Jerdon's Bushlark	<i>Mirafra affinis</i>	Alaudidae	Least Concern	+	-	-
15	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	+	-	-
16	Zitting Cisticola	<i>Cisticola juncidis</i>	Cisticolidae	Least Concern	+	-	-
17	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
18	Brahminy Starling	<i>Sturnia pagodarum</i>	Sturnidae	Least Concern	+	+	-
19	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	Least Concern	+	-	+
20	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	+	+	-
21	Baya Weaver	<i>Ploceus philippinus</i>	Ploceidae	Least Concern	+	-	-
22	Paddyfield Pipit	<i>Anthus rufulus</i>	Motacillidae	Least Concern	+	-	-
23	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	-	+	+
24	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	-	+	-
25	Brahminy Kite	<i>Haliastur indus</i>	Accipitridae	Least Concern	-	+	-
26	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	-	+	-
27	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	-	+	-
28	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	Least Concern	-	+	-
29	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	-	+	-
30	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	-	+	-
31	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Least Concern	-	+	-
32	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	Least Concern	-	+	-
33	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	Least Concern	-	+	-
34	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	-	+	-
35	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	Least Concern	-	+	-
36	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	-	-	+
37	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	Least Concern	-	-	+
38	Indian Jungle Crow	<i>Corvus (macrorhynchus) culminatus</i>	Corvidae	Least Concern	-	-	+
Total					22	24	14

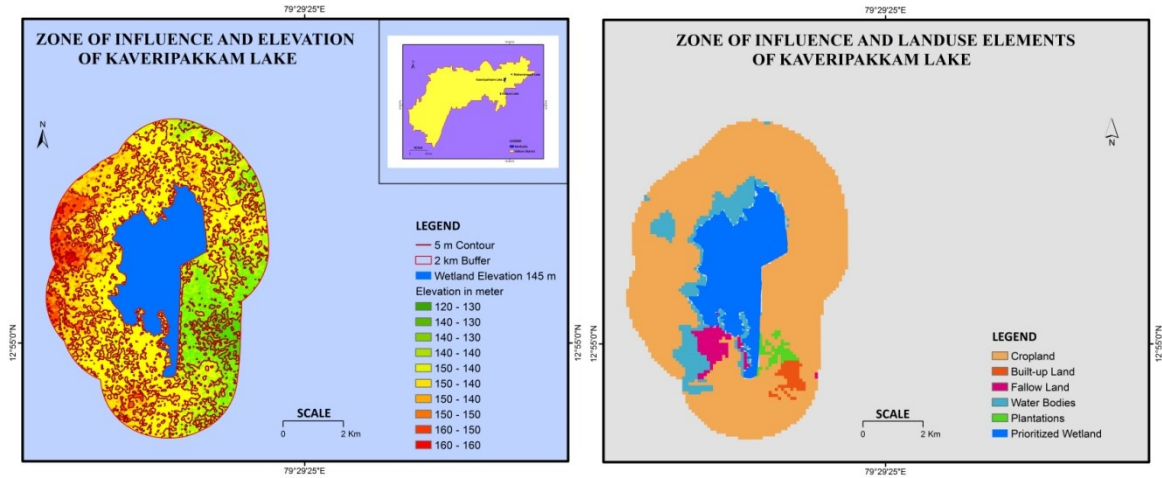
Table 31.10: List of Mammals recorded in Vellore District (A - Kalavai Lake, B - Kaveripakkam Lake, C - Mahendravadi Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	-	+
4	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	+	-	-
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+
Total					5	3	4

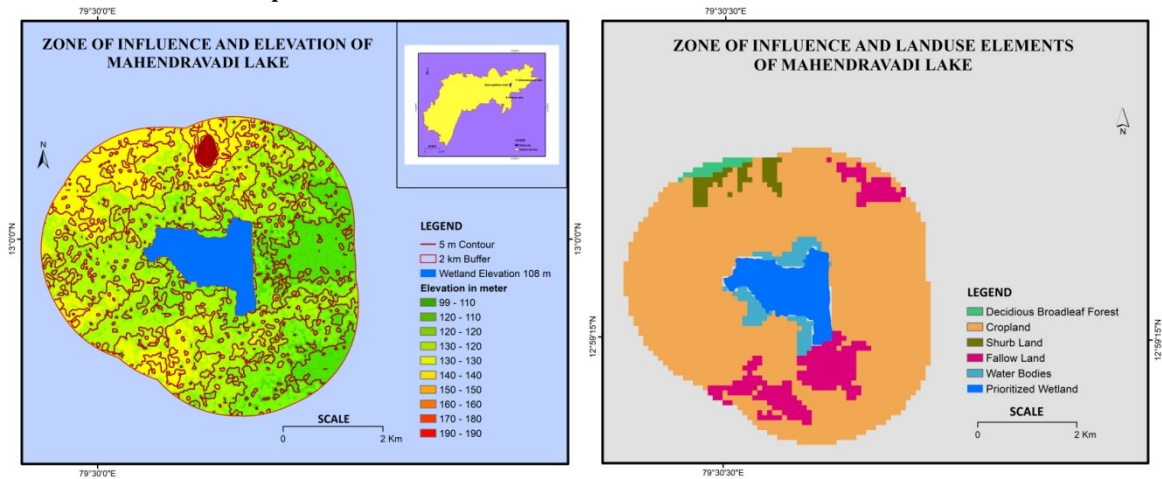
Map 31.2: Zone of Influence around the Kalavai Lake.



Map 31.3: Zone of influence around the Kaveripakkam Lake.



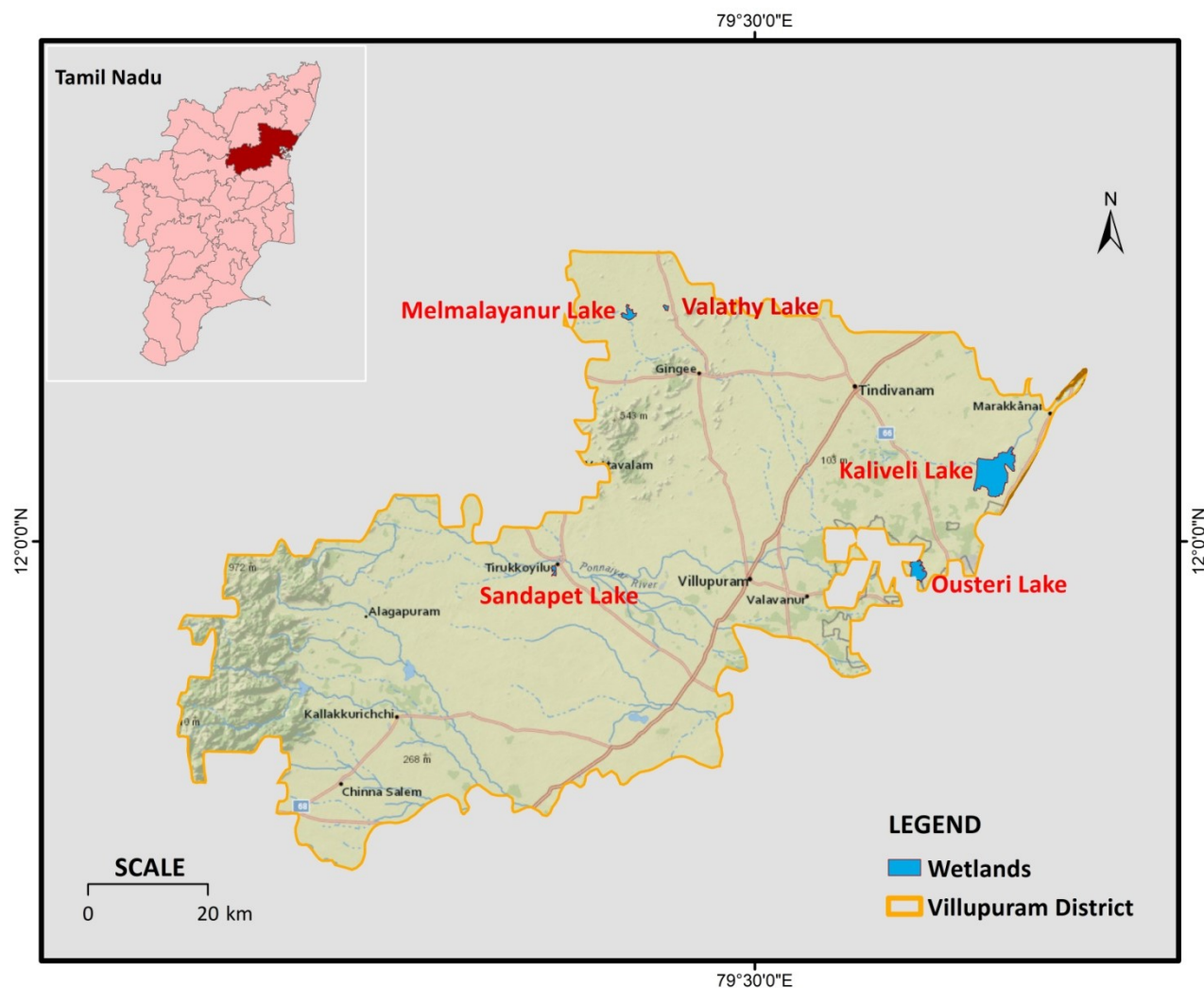
Map 31.4: Zone of Influence around the Mahendravadi Lake.



32. Villupuram District

Villupuram district was earlier a part of Cuddalore district. Viluppuram or (Villupuram) district was bifurcated from the erstwhile composite SourtArcot district in 1993.

Total geographic area of Viluppuram is 7222.03 km². Total area under wetland is 64105 ha, which includes 596 small wetland (<2.25 ha). Lakes/Ponds occupy 30.06% of wetland area. The major wetland type in the district is Tanks/Ponds. There are 1600 Tanks/Ponds with 25850 ha area (40.32%). The other wetland types are; Inter-tidal mudflats (10.99 %), Reservoirs (2.95 %) and River/Stream (11.40 %). Of the five wetlands selected in the district, Kaliveli lake is the largest while Valathy is the smaller of the wetlands (Map 32.1).



Map 32.1: Wetlands of Villupuram district assessed for Prioritization

Kaliveli Lake

Kaliveli Lake (Plate 34) is based in Villipuram district. The wetland is a Protected Area as a wetland of National Importance by the MoEF&CC and comes under the jurisdiction of Tamil Nadu Forest Department. Villages that surround the wetland include Erimedu, Sevadinkuppam, CheiyanKuppam, Kalayankuppam, Aathikuppam, Vandipalayam, Kottikuppam, Pudhupakkam.

The geographic coordinates are Latitude: 12° 06'12.7" N; 12° 06'27.5" N; 12° 06'34.2" N; 12° 06'57.1" N; and Longitude: 079° 53'22.5" E; 079° 53'07.0" E; 079° 52'57.7" E; 079° 52'34.2" E

Kaliveli Lake is a wetland that belongs to the Natural (coastal lagoon) category in the sub category permanent wetland. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and from the Bay of Bengal. The water from the wetland helps in replenishing the groundwater. The lake has an area of 3262 hectares and based on the secondary information the average depth is 1 meters. The wetland is surrounded by 95 % Agriculture and 5% Grassland/Scrubland. It has an area of 6801.82hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 32.2).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.6, salinity measuring 3.116 ppt, the TDS was recorded high at 2352 ppm. The vegetation comprised of 33 plant species (Table 32.1) including eight invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 108 animal species including four domestic species were recorded during the survey (Table 32.2 to 32.11). Two near Threatened species of birds were observed during the survey. Tilapia and common carps were recorded. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around the wetland and the ground water is used for irrigation. Fishery is undertaken without any permission in the lake, recreational fishery is also practiced and is under the forest department control. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has several temples and other religious institutions along its bank, except for recreation no other cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. There is no organized fishing activity, though fishing communities exist. The pollution in the form of sewage, effluents and solidwaste dumping is seen but it is low threat in its present condition.

The wetland is included as wetland of National Importance under the MOEF&CC. The desiltation of the feeder channel should be undertaken to revive the wetland.

Melmalayanur Lake

Melmalayanur Lake (Plate 34) it is also known as Easa eri is based in Tirukovilur taluka in Villupuram district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Malmaliayanur and Thayanur.

The geographic coordinates are Latitude: 12° 20'21.0" N; 12° 20'21.9" N; 12° 20'26.8" N; 12° 20'29.0" N; and Longitude: 079° 19'18.5" E; 079° 19'15.0" E; 079° 19'14.7" E; 079° 19'13.0" E

Melmalayanur Lake is a wetland that belongs to the Natural (inland) category in the sub category intermittent seasonal lakes. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and Thayanur river. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields and Sankaraparani river. The lake has an area of 286 hectares and based on the secondary information the average depth is 3 meters. The wetland is surrounded by 75 % Agriculture and 25% Rural Settlements. It has an area of 2941.13 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 32.3).

The wetland water characteristics was not assessed as during the visit the wetland was completely dry, however the locals informed that it was a fresh water wetland. The vegetation comprised of 25 plant species (Table 32.1) including six invasive species that include *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 21 animal species including three domestic species were recorded during the survey (Table 32.2 to 32.11).

The water from the wetland is not used for drinking purpose as the water is present for brief period. The Village Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. There are farmlands where agriculture is undertaken around the wetland using both wetland and borewell water. The site is majorly used by the locals for grazing their cattle and goats. There was mining for sand or silt undertaken on a regular basis. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There is high-tension wires' passing through the wetland.

The wetland has a high potential of change in the outflow of the water. The wetland faces a severe threat from drought and water scarcity gradually changing the wetland character, unplanned development and increasing sewage and effluents release, solid waste dumping including medical waste and increasing encroachment.

The wetland is not included in any of the protection and conservation categories.

Ousteri Lake

Ousteri Lake also known as Oosudu lake (Plate 34) is an inter state lake that comes under the jurisdiction of Pondicherry and Tamil Nadu. The Wetland is protected by the Tamil Nadu Forest Department. Villages that surround the wetland include Perambai, Pazhayappattampalayam, Nadupalayam, Poothurai, Kondimedu, Manali, Kasipalayam and Kataperikuppam.

The geographic coordinates are Latitude: 11° 56'53.3" N; 11° 56'45.8" N; and Longitude: 079° 45'26.1" E; 079° 45'20.0" E.

Ousteri Lake is a wetland that belongs to the Natural (inland) category in the sub category intermittent seasonal lakes. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and from the Sathnur dam river canal system. The water from the wetland helps in replenishing the groundwater. The lake has an area of 697 hectares and based on the secondary information the average depth is 3 meters. The wetland is surrounded by 80 % Agriculture, 10% Grassland/Scrubland and 10% Rural Settlements. It has an area of 3790.05 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 32.4).

The wetland was Mesotrophic during the visit, with the pH of the water being 8.3, salinity measuring 0.245 ppt, the TDS was recorded high at 183 ppm. The vegetation comprised of 39 plant species (Table 32.1) including seven invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 75 animal species including two domestic species were recorded during the survey (Table 32.2 to 32.11). Two near Threatened species of birds and nine threatened fish species were observed during the

survey. Tilapia and common carps were recorded. Commercial fishing is undertaken as the wetland is controlled by the PWD who gives annual contract when the water is full.

The water from the wetland is not used for drinking purpose. Agriculture is undertaken around and within the wetland and the ground water is used for irrigation. Fishery is undertaken with permissions of PWD in the lake, recreational fishery is also practiced. The wetland is used for grazing and bathing by livestock. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. There is significant runoff from the surrounding catchment area and the wetland acts as a sink for sediments. The locals have informed of the reduction in the depth of the wetland over a period of time. The wetland has several temples and other religious institutions along its bank, except for recreation and cultural activity is organized around the wetland.

The wetland does not show major change in the pattern of water inflow and outflow. The pollution in the form of sewage, effluents, encroachment and solidwaste dumping is seen but it is low threat in its present condition.

The wetland is not included under any conservation program and is below 2500m below Sea level.

ValathyLake

Valathy Lake (Plate 35) is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Valathy, Eriporadai, Muruganthangal.

The geographic coordinates are Latitude: 12° 20'49.7" N; 12° 20'56.2" N; 12° 21'06.7" N; 12° 21'12.3" N; 12° 21'14.3" N; and Longitude: 079° 22'09.9" E; 079° 22'11.0" E; 079° 22'13.4" E; 079° 22'12.6" E; 079° 22'13.5" E

Valathy Lake is a wetland that belongs to the Natural (inland) category in the sub category intermittent seasonal lakes. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 53.6 hectares and based on the secondary information the average depth is 3.5 meters. The wetland is surrounded by 80 % Agriculture, 10% Grassland/Scrubland, 5% Urban settlements and 5% Rural Settlements. It has an area of 1896.73 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland(Map 32.5).

The wetland was Mesotrophic during the visit, with the pH of the water being 9.6, salinity measuring 0.281 ppt, the TDS was recorded high at 197 ppm. The vegetation comprised of 42 plant species (Table 32.1) including nine invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 99 animal species including four domestic species were recorded during the survey (Table 32.2 to 32.11). Two Threatened species of birds and fishes were observed during the survey.

The water from the wetland is not used for drinking purpose as the water is present for brief period. The Village Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. There are farmlands where agriculture is undertaken around the wetland using both wetland and borewell water. Grazing by the cattle is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There is high-tension wires' passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The wetland has been facing drought condition for the past 5 years and water scarcity gradually changing the wetland character.

The wetland is not included in any of the protection and conservation categories.

Sandapet Lake

Sandapeth eri also known as Tirukovilur Periya eri (Plate 34) is based in Tirukovilur taluka in Villupuram district is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Sandapeth and Tirukovilur.

The geographic coordinates are Latitude: 11° 57'46.2" N; 11° 57'49.1" N; 11° 57'45.6" N; 11° 57'42.6" N; 11° 57'31.0" N; and Longitude: 079° 11'48.4" E; 079° 11'56.7" E; 079° 11'55.5" E; 079° 12'00.6" E; 079° 12'05.4" E.

Sandapetheri is a wetland that belongs to the Natural (inland) category in the sub category intermittent seasonal lakes. The main source of water for the wetland is rainfall, groundwater, the surrounding runoff from the catchment area and Sathnur dam. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields and kaccha eri. The lake has an area of 84.8 hectares and based on the secondary information the average depth is 3.5 meters. The wetland is surrounded by 20 % Agriculture, 5% Grassland/Scrubland and 75% Rural Settlements. It has an area of 2241.13 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 32.6).

The wetland was Oligotrophic during the visit, with the pH of the water being 8.2, salinity measuring 0.731 ppt, the TDS was recorded high at 1030 ppm. The vegetation comprised of 43 plant species (Table 32.1) including eight invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 50 animal species including four domestic species were recorded during the survey (Table 32.2 to 32.11).

The water from the wetland is not used for drinking purpose as the water is present for brief period. The Village Panchayat provides drinking water from the borewell water at regular intervals that is used by the locals to fulfill their daily requirements. There are farmlands where agriculture is undertaken around the wetland using both wetland and borewell water. The site is majorly used by the locals for grazing their cattle and goats. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a few temples along its bank and major cultural and religious activities are performed in the wetland when water is present. There are high tension wires passing through the wetland.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment and solid waste dumping including medical waste. The wetland faces a severe threat from drought and water scarcity gradually changing the wetland character.

The wetland is not included in any of the protection and conservation categories.

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Table 32.1: List of Plants recorded in Villupuram District (A - Kaliveli Lake, B - Melmalayanur Lake, C - Ousteri Lake, D – ValathyLake, E - Sandapet Lake)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	IUCN Category	A	B	C	D	E
1	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	+	-	+	-	+
2	Field Milkwort	<i>Polygala arvensis</i>	Polygalaceae	Native	NA	+	-	+	-	-
3	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	+	-	-	-	-
4	Common Wireweed	<i>Sida acuta</i>	Malvaceae	Native	NA	+	+	+	+	-
5	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	-	+	-	+
6	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+	+	+
7	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	+	-	-	-	+
8	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	+	-	-
9	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	+	-	-	+	-
10	Sea purslane, Shore purslane	<i>Sesuvium portulacastrum</i>	Aizoaceae	Native	NA	+	-	-	-	-
11	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	+	-	-	-	-
12	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	+	-	+	-	-
13	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+	+	+
14	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	-	-	+	-
15	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	+	-	-	-	-
16	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	-	+	+
17	Indian Heliotrope	<i>Heliotropium indicum</i>	Heliotropiaceae	Native	NA	+	-	-	-	+
18	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	-	+	+	+
19	Common Leucas	<i>Leucas aspera</i>	Lamiaceae	Native	NA	+	+	+	-	+
20	Hoary Basil,	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	+	-	+	-	-
21	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	+	-	+	-	-
22	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	+	-	-	+	+
23	Calico Plant	<i>Alternanthera ficoidea</i>	Amaranthaceae	Introduced		+	-	-	-	-
24	Smooth Chaff Flower	<i>Alternanthera paronychioides</i>	Amaranthaceae	Naturalized	NA	+	-	-	-	-
25	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	-	+	+
26	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	+	-	-	+	-
27	Bengal Dayflower	<i>Commelina benghalensis</i>	Commelinaceae	Native	LC	+	+	+	+	-
28	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	+	-	+	+
29	Water Garss	<i>Bulbostylis barbata</i>	Cyperaceae	Native	NA	+	-	-	-	-
30	Flatsedge	<i>Cyperus eleusinoides</i>	Cyperaceae	Native	NA	+	-	-	-	+
31	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	+	+	-	+	-
32	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	+	+	+	-
33	Slimflower Lovegrass	<i>Eragrostis gangetica</i>	Poaceae	Native	NA	+	-	-	-	-
34	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	-	+	-	+	-
35	Neem tree	<i>Azadirachta indica</i>	Meliaceae	Native	NA	-	+	+	-	+
36	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	-	+	+	-	-
37	Bitter Apple, Colocynth,	<i>Citrullus colocynthis</i>	Cucurbitaceae	Native		-	+	-	+	-
38	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	-	+	+	-	-
39	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	-	+	-	-	+
40	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	-	+	+	+	+
41	Kidney leaf morning glory	<i>Merremia emarginata</i>	Convolvulaceae	Native	LC	-	+	-	-	-
42	Common Thorn apple	<i>Datura stramonium</i>	Solanaceae	Native	NA	-	+	-	-	-
43	Large caltrops	<i>Pedaliu murex</i>	Pedaliaceae	Native	NA	-	+	-	-	+
44	Lantana	<i>Lantana camara</i>	Verbenaceae	Invasive	NA	-	+	-	+	-
45	Peepal	<i>Ficus religiosa</i>	Moraceae	Native	NA	-	+	-	-	-
46	Wild Date Palm	<i>Phoenix sylvestris</i>	Arecaceae	Native	NA	-	+	+	-	+
47	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	-	+	+	+	-
48	Meghalaya Red Water Lily	<i>Nymphaea odorata</i>	Nymphaeaceae	Native	LC	-	-	+	-	-
49	Ceylon caper	<i>Capparis zeylanica</i>	Capparaceae	Native	NA	-	-	+	-	-
50	East Indian Mallow, Jute,	<i>Corchorus aestuans</i>	Malvaceae	Native		-	-	+	+	-
51	Devil's Backbone	<i>Cissus quadrangularis</i>	Vitaceae	Native	NA	-	-	+	-	-
52	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	-	-	+	-	+
53	Blistering Ammannia	<i>Ammannia baccifera</i>	Lythraceae	Native	LC	-	-	+	-	-

54	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	-	-	+	-	+
55	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	-	-	+	+	-
56	Mexican oleander	<i>Cascabela thevetia</i>	Apocynaceae	Exotic	NA	-	-	+	-	-
57	Silky Morning Glory	<i>Argyreia sericea</i>	Convolvulaceae	Native	NA	-	-	+	-	-
58	Marsh Barbel	<i>Hygrophila schulli</i>	Acanthaceae	Native	LC	-	-	+	-	-
59	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	-	-	+	+	-
60	Green Amaranth	<i>Amaranthus viridis</i>	Amaranthaceae	Exotic	NA	-	-	+	-	-
61	Plumed cockscomb,	<i>Celosia argentea</i>	Amaranthaceae	Native	NA	-	-	+	-	-
62	False Amaranth	<i>Digera muricata</i>	Amaranthaceae	Native	NA	-	-	+	-	-
63	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	-	-	+	+	+
64	Mountain Coffee Bush	<i>Breynia vitis-idaea</i>	Phyllanthaceae	Native	NA	-	-	+	-	-
65	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	-	-	+	-	-
66	Wiregrass	<i>Aristida setacea</i>	Poaceae	Native	NA	-	-	+	-	-
67	Heart-leaved moonseed	<i>Tinospora cordifolia</i>	Menispermaceae	Native	NA	-	-	-	+	-
68	---	<i>Abelmoschus angulosus</i>	Malvaceae	Native	NA	-	-	-	+	+
69	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	-	-	-	+	+
70	crab's eye,Jequirity	<i>Abrus precatorius</i>	Fabaceae	Native	NA	-	-	-	+	-
71	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	-	-	+	-	-
72	Touch Me Not	<i>Mimosa pudica</i>	Fabaceae	Native	LC	-	-	-	+	-
73	Red fruit creeper	<i>Corallocarpus epigaeus</i>	Cucurbitaceae	Native	NA	-	-	-	+	-
74	Ribbed Sponge Gourd	<i>Luffa acutangula</i>	Cucurbitaceae	Native	NA	-	-	-	+	+
75	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	-	-	-	+	-
76	Indian Mulberry,	<i>Morinda coreia</i>	Rubiaceae	Native		-	-	-	+	+
77	Black nightshade,	<i>Solanum nigrum</i>	Solanaceae	Native	NA	-	-	-	+	+
78	Devil's Claws	<i>Martynia annua</i>	Martyniaceae	Native	NA	-	-	-	+	-
79	Barleria terminalis	<i>Barleria strigosa</i>	Acanthaceae	Native	NA	-	-	-	+	-
80	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	-	-	-	+	-
81	Glandular Jatropa	<i>Jatropha glandulifera</i>	Euphorbiaceae	Native	NA	-	-	-	+	-
82	Castor Oil	<i>Ricinus communis</i>	Euphorbiaceae	Native	NA	-	-	-	+	+
83	Coconut Tree	<i>Cocos nucifera</i>	Arecaceae	Native	NA	-	-	-	+	-
84	Para Grass	<i>Brachiaria mutica</i>	Poaceae	Invasive	LC	-	-	-	+	-
85	Kans grass	<i>Saccharum spontaneum</i>	Poaceae	Native	LC	-	-	-	+	-
86	Heart leaf sida	<i>Sida cordifolia</i>	Malvaceae	Native	NA	-	-	-	-	+
87	Jackal Jujube	<i>Ziziphus oenopolia</i>	Rhamnaceae	Native	LC	-	-	-	-	+
88	Siris Tree, Women's tongue	<i>Albizia lebbek</i>	Fabaceae	Native	NA	-	-	-	-	+
89	Peacock Flower	<i>Caesalpinia pulcherrima</i>	Fabaceae	Native		-	-	-	-	+
90	Wild Tamarind	<i>Leucaena leucocephala</i>	Fabaceae	Invasive	NA	-	-	-	-	+
91	Manilla Tamarind	<i>Pithecellobium dulce</i>	Fabaceae	Exotic	NA	-	-	-	-	+
92	Stinking Cassia,	<i>Senna tora</i>	Fabaceae	Native	NA	-	-	-	-	+
93	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	-	-	-	-	+
94	Umbrella Thorn	<i>Vachellia planifrons</i>	Fabaceae	Native	NA	-	-	-	-	+
95	Cucumber	<i>Cucumis sativus</i>	Cucurbitaceae	Native	NA	-	-	-	-	+
96	Pumpkin, Field pumpkin	<i>Cucurbita pepo</i>	Cucurbitaceae	Native	NA	-	-	-	-	+
97	Sneeze Wort,	<i>Marsdenia volubilis</i>	Apocynaceae	Native	NA	-	-	-	-	+
98	Rosy Milkweed Vine	<i>Oxystelma esculentum</i>	Apocynaceae	Native	LC	-	-	-	-	+
99	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	-	-	-	-	+
100	Tarangambadi Justicia	<i>Justicia tranquebariensis</i>	Acanthaceae	Native		-	-	-	-	+
101	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	-	-	-	-	+
Total						33	25	40	41	43

Table 32.2: List of Diplopoda recorded in Villupuram District (A - Kaliveli Lake, B - Melmalayanur Lake, C - Ousteri Lake, D – ValathyLake, E - Sandapet Lake)

S. No	Common Name	Scientific Name	Family	A	B	C	D	E
1	Millipede	<i>Spinotarsus colosseus</i>	Odonotopgidae	-	-	-	+	-
Total				0	0	0	1	0

Table 32.3: List of Insects recorded in Villupuram District (A - Kaliveli Lake, B - Melmalayanur Lake, C - Ousteri Lake, D – ValathyLake, E - Sandapet Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C	D	E
1	Toothpick Grasshopper	<i>Leptysma marginicollis</i>	Acrididae	+	-	+	+	-
2	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	+	-	-	-	-
3	Water Strider	<i>Gerris sp.</i>	Gerridae	+	-	+	+	+
4	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	+	-	+	+	-
5	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	-	+	+	+
6	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	+	+	+	+
7	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	+	+	+
8	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	+	-	-	-	-
9	Whirligig Beetle	<i>Gyrinus sp.</i>	Gyrinidae	-	-	+	-	-
10	Black Ant	<i>Myrmecaria brunnea</i>	Formicidae	-	-	+	-	-
11	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	-	-	-	+	-
12	Small Dung Beetle	<i>Onthophagus sp.</i>	Scarabaeidae	-	-	-	+	-
13	Blue Banded Honeybee	<i>Amegilla cingulata</i>	Apidae	-	-	-	+	-
14	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	-	-	+	+
15	Pharaoh Ant	<i>Monomorium pharaonis</i>	Formicidae	-	-	-	+	-
16	Blister Beetle	<i>Hycleus sp.</i>	Meloidae	+	+	+	+	-
Total				9	3	9	12	5

Table 32.4: List of Butterflies recorded in Villupuram District (A - Kaliveli Lake, B - Melmalayanur Lake, C - Ousteri Lake, D – ValathyLake, E - Sandapet Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C	D	E
1	Common Rose	<i>Pachliopta aristolochiae</i>	Papilioninae	Common	+	-	+	+	-
2	Crimson Rose	<i>Pachliopta hector</i>	Papilioninae	Common	+	-	+	+	+
3	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	+	-	-	+	-
4	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Coliadinae	Common	+	+	+	+	+
5	Common Jezebel	<i>Delias eucharis</i>	Pierinae	Common	+	-	-	-	-
6	Common Cerulean	<i>Jamides celeno</i>	Polyommatainae	Common	+	-	-	-	-
7	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	-	-	+	-
8	Blue Tiger	<i>Tirumala limniace</i>	Danainae	Common	+	-	-	+	-
9	Plain Tiger	<i>Danaus chrysippus</i>	Danainae	Common	+	+	-	+	+
10	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalinae	Common	+	-	+	+	-
11	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	-	+	-	+	+
12	Yellow Orange Tip	<i>Ixias pyrene</i>	Pierinae	Common	-	-	+	+	-
13	Forget-Me-Not	<i>Catochrysops strabo</i>	Polyommatainae	Common	-	-	+	-	-
14	Gram Blue	<i>Euchrysops cnejus</i>	Polyommatainae	Common	-	-	+	+	-
15	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	-	-	+	+	-
16	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	-	-	+	+	+
17	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	-	-	+	+	-
18	Peacock Pansy	<i>Junonia almana</i>	Nymphalinae	Common	-	-	+	-	-
19	Small Orange Tip	<i>Colotis etrida</i>	Pierinae	Common	-	-	-	+	-
20	Common Gull	<i>Cepora nerissa</i>	Pierinae	Common	-	-	-	+	-
21	Common Evening Brown	<i>Melanitis leda</i>	Satyrinae	Common	-	-	-	+	-
22	Chocolate Pansy	<i>Junonia iphita</i>	Nymphalinae	Common	-	-	-	+	-
23	Common Leopard	<i>Phalanta phalantha</i>	Heliconiinae	Common	-	-	-	-	+
Total					10	3	11	18	6

Table 32.5: List of Odonates recorded in Villupuram District (A - Kaliveli Lake, B - Melmalayanur Lake, C - Ousteri Lake, D – ValathyLake, E - Sandapet Lake)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C	D	E
1	Golden Dartlet	<i>Ischnura aurora</i>	Coenagrionidae	Common	+	-	-	+	-
2	Coromandel Marsh Dart	<i>Ceragrion coromandelianum</i>	Coenagrionidae	Common	+	-	+	+	-
3	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	-	+	+	+
4	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	+	-	+	+	+

5	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+	+	+
6	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+	+	+
7	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	+	+	-	+	+
8	Long-Legged Marsh Glider	<i>Trithemis pallidinervis</i>	Libellulidae	Common	+	-	-	+	-
9	Senegal Golden Dartlet	<i>Ischnura senegalensis</i>	Coenagrionidae	Common	-	-	+	-	-
10	Blue Dart	<i>Pseudagrion microcephalum</i>	Coenagrionidae	Common	-	-	-	+	-
11	Three Lined Dart	<i>Pseudagrion decorum</i>	Coenagrionidae	Common	-	-	-	+	-
12	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	-	-	-	+	-
13	Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae	Common	-	-	-	+	-
14	Red Marsh Trotter	<i>Tramea basilaris</i>	Libellulidae	Common	-	-	-	+	-
15	Black Marsh Trotter	<i>Tramea limbata</i>	Libellulidae	Common	-	-	-	+	-
16	Taeniolate Marsh Hawk	<i>Orthetrum taeniolatum</i>	Libellulidae	Common	-	-	-	+	-
Total					8	3	6	15	5

Table 32.6: List of Arachnida recorded in Villupuram District (A - Kaliveli Lake, B - Melmalayanur Lake, C - Ousteri Lake, D – ValathyLake, E - Sandapet Lake)

S. No	Common English Name	Scientific Name	Family	A	B	C	D	E
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	-	+	+	-
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	-	-	-	+	-
3	Wolf Spider	<i>Pardosa sp.</i>	Lycosidae	-	-	-	-	+
Total				1	0	1	2	1

Table 32.7: List of Fishes recorded in Villupuram District (A - Kaliveli Lake, B - Melmalayanur Lake, C - Ousteri Lake, D – ValathyLake, E - Sandapet Lake)

S. No	Common Name	Scientific Name	Family	Category	A	B	C	D	E
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	-	+	+	+
2	Grass Carp	<i>Ctenopharyngodon idella</i>	Cyprinidae	NA	+	-	+	+	-
3	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	+	-	+	+	-
4	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	+	-	+	+	+
5	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	+	-	-	+	-
6	Spiny eel	<i>Macrognathus pancalus</i>	Mastacembelidae	LC	+	-	-	-	-
7	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	+	-	+	-	-
8	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	+	-	+	+	-
9	Catla	<i>Catla catla</i>	Cyprinidae	LC	+	-	+	-	-
10	Mrigal carp	<i>Cirrhinus mrigala</i>	Cyprinidae	LC	+	-	+	+	-
11	Climbing erch	<i>Anabas testudineus</i>	Anabantidae	DD	+	-	+	-	-
12	Long whiskers catfish	<i>Mystus gulio</i>	Bagridae	LC	+	-	+	-	-
13	Long snouted barb	<i>Puntius dorsalis</i>	Cyprinidae	LC	+	-	-	-	-
14	White sardinella	<i>Sardinella albella</i>	Clupeidae	LC	+	-	-	-	-
15	Commerson's anchovy	<i>Stolephorus commersonii</i>	Engraulidae	NE	+	-	-	-	-
16	Dussumier's halfbeak	<i>Hyporhamphus dussumieri</i>	Hemiramphidae	NE	+	-	-	-	-
17	Featherback	<i>Notopterus notopterus</i>	Notopteridae	LC	+	-	-	-	-
18	Indian mackerel	<i>Rastrelliger kanagurta</i>	Scombridae	DD	+	-	-	-	-
19	King soldier bream	<i>Argyrops spinifer</i>	Sparidae	LC	+	-	-	-	-
20	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	-	-	+	+	-
21	Green chromide	<i>Etroplus suratensis</i>	Cichlidae	LC	-	-	+	-	+
22	Pool barb, Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	-	-	+	+	-
23	Rohu	<i>Labeo rohita</i>	Cyprinidae	LC	-	-	+	+	+
24	Spiny loach	<i>Lepidocephalichthys thermalis</i>	Cobitidae	LC	-	-	+	-	-
25	Tenpounder	<i>Elops machnata</i>	Elopidae	LC	-	-	+	-	-
Total					19	0	16	10	4

Table 32.8: List of Amphibians recorded in Villupuram District (A - Kaliveli Lake, B - Melmalayanur Lake, C - Ousteri Lake, D – ValathyLake, E - Sandapet Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C	D	E
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	LC	-	-	-	-	+

2	Indian Pond Frog	<i>Euphlyctis hexadactylus</i>	Dicroglossidae	LC	-	-	-	-	+
Total					0	0	0	0	2

Table 32.9: List of Reptiles recorded in Villupuram District (A - Kaliveli Lake, B - Melmalayanur Lake, C - Ousteri Lake, D – ValathyLake, E - Sandapet Lake)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C	D	E
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	+	-	+	+	-
Total					2	1	2	2	1

Table 32.10: List of Birds recorded in Villupuram District (A - Kaliveli Lake, B - Melmalayanur Lake, C - Ousteri Lake, D – ValathyLake, E - Sandapet Lake)

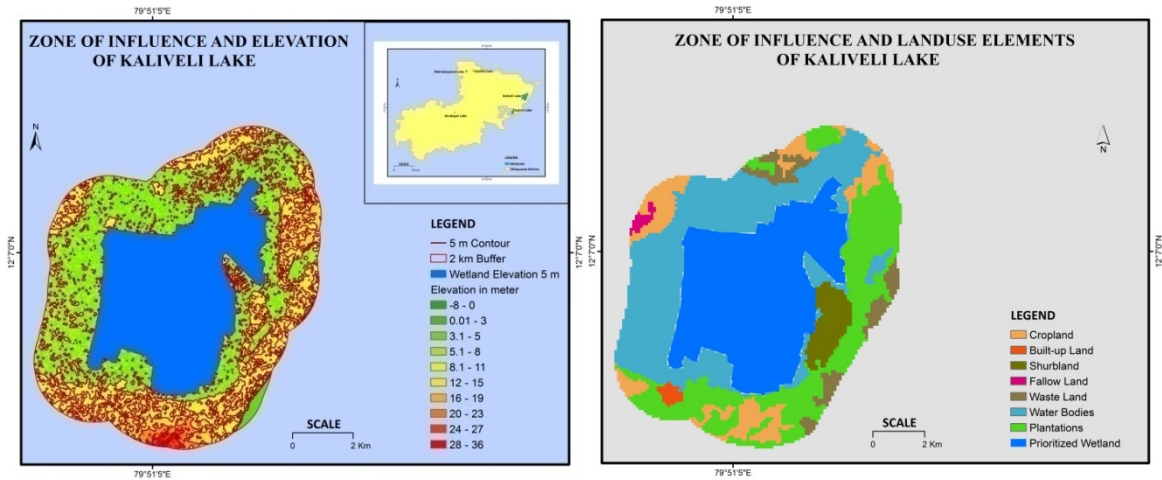
S. No	Common English Name	Scientific Name	Family	Category	A	B	C	D	E
1	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Least Concern	+	-	-	-	-
2	Northern Shoveler	<i>Anas clypeata</i>	Anatidae	Least Concern	+	-	-	-	-
3	Northern Pintail	<i>Anas acuta</i>	Anatidae	Least Concern	+	-	-	-	-
4	Garganey	<i>Anas querquedula</i>	Anatidae	Least Concern	+	-	-	+	-
5	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	+	-	-	+	-
6	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	Near Threatened	+	-	-	-	-
7	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	+	-	+	+	-
8	Greater Flamingo	<i>Phoenicopterus roseus</i>	Phoenicopteridae	Least Concern	+	-	-	-	-
9	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	Near Threatened	+	-	-	-	-
10	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae	Least Concern	+	-	-	+	-
11	Eurasian Spoonbill	<i>Platalea leucorodia</i>	Threskiornithidae	Least Concern	+	-	-	-	-
12	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	-	+	+	+
13	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	+	-	-	-	-
14	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	Least Concern	+	-	+	-	-
15	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	-	+	+	-
16	Great Egret	<i>Casmerodius albus</i>	Ardeidae	Least Concern	+	-	-	+	-
17	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	+	-	+	+	-
18	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	-	+	+	-
19	Spot-billed Pelican	<i>Pelecanus philippensis</i>	Pelecanidae	Near Threatened	+	-	-	-	-
20	Darter	<i>Anhinga melanogaster</i>	Anhingidae	Near Threatened	+	-	+	-	-
21	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	-	+	+	-
22	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	Least Concern	+	-	-	-	-
23	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	+	-	-	+	-
24	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	+	+	-	+
25	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	Least Concern	+	-	-	-	-
26	Kentish Plover	<i>Charadrius alexandrinus</i>	Charadriidae	Least Concern	+	-	-	-	-
27	Common Redshank	<i>Tringa totanus</i>	Scolopacidae	Least Concern	+	-	-	-	-
28	Marsh Sandpiper	<i>Tringa stagnatilis</i>	Scolopacidae	Least Concern	+	-	-	-	-
29	Common Greenshank	<i>Tringa nebularia</i>	Scolopacidae	Least Concern	+	-	-	-	-
30	Green Sandpiper	<i>Tringa ochropus</i>	Scolopacidae	Least Concern	+	-	-	-	-
31	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae	Least Concern	+	-	-	-	-
32	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Least Concern	+	-	-	-	+
33	Little Stint	<i>Calidris minuta</i>	Scolopacidae	Least Concern	+	-	-	-	-
34	Dunlin	<i>Calidris alpina</i>	Scolopacidae	Least Concern	+	-	-	-	-
35	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	Least Concern	+	-	+	-	-
36	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	-	+	-	+
37	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	-	+	+	+
38	Asian Koel	<i>Eudynamys scolopaceus</i>	Cuculidae	Least Concern	+	-	+	+	+
39	Southern Coucal	<i>Centropus (sinensis) parroti</i>	Cuculidae	Least Concern	+	-	-	+	-
40	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	-	+	+	-
41	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Least Concern	+	+	+	+	+
42	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	+	-	+	+	+
43	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	-	-	-

44	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	-	-	-	-	-
45	Ashy-crowned Sparrow-lark	<i>Eremopterix griseus</i>	Alaudidae	Least Concern	+	-	-	-	-
46	Oriental skylark	<i>Alauda gulgula</i>	Alaudidae	Least Concern	+	-	-	-	-
47	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	Least Concern	+	-	+	-	-
48	Plain Prinia	<i>Prinia ornata</i>	Cisticolidae	Least Concern	+	-	+	-	-
49	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	Least Concern	+	-	+	+	-
50	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	Least Concern	+	-	+	+	-
51	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	+	-	+	+	+
52	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+	+	+
53	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	Least Concern	+	-	+	-	+
54	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	Least Concern	+	-	+	+	+
55	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	Least Concern	+	-	+	-	-
56	Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>	Charadriidae	Least Concern	-	+	-	-	-
57	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	-	+	-	-	-
58	Red-rumped Swallow	<i>Cecropis daurica</i>	Hirundinidae	Least Concern	-	+	-	-	-
59	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	-	-	+	+	-
60	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae	Least Concern	-	-	-	+	-
61	Blue-tailed Bee eater	<i>Merops philippinus</i>	Meropidae	Least Concern	-	-	-	+	-
62	Brown Shrike	<i>Lanius cristatus</i>	Laniidae	Least Concern	-	-	-	+	-
63	Indian Golden Oriole	<i>Oriolus kundoo</i>	Oriolidae	Least Concern	-	-	-	+	-
64	Indian Jungle Crow	<i>Corvus (macrorhynchus) culminatus</i>	Corvidae	Least Concern	-	-	-	+	+
65	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	-	-	-	+	-
66	Rosy Starling	<i>Pastor roseus</i>	Sturnidae	Least Concern	-	-	-	+	-
67	Oriental Magpie Robin	<i>Copsychus saularis</i>	Muscicapidae	Least Concern	-	-	-	+	-
68	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae	Least Concern	-	-	-	-	+
69	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	Least Concern	-	-	-	-	+
70	Little Swift	<i>Apus affinis</i>	Apodidae	Least Concern	-	-	-	-	+
71	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	Least Concern	-	-	-	-	+
72	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	Least Concern	-	-	-	-	+
Total					54	7	26	31	18

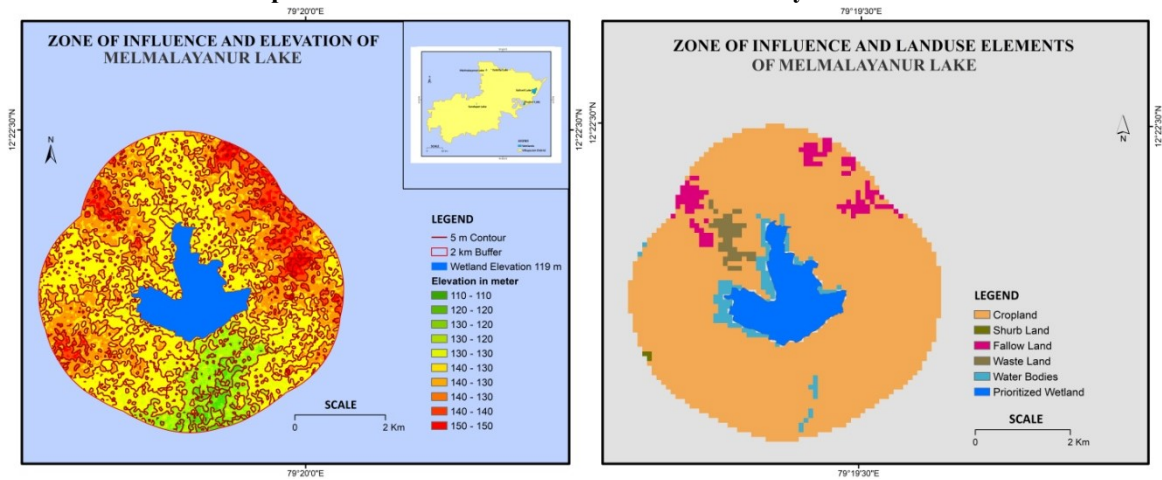
Table 32.11: List of Mammals recorded in Villupuram District (A - Kaliveli Lake, B - Melmalayanur Lake, C - Ousteri Lake, D – ValathyLake, E - Sandapet Lake)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C	D	E
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	+	+	+	+	+
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	+	+	-	+	+
4	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	+	-	-	+	+
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	+	+	+
Total					5	4	3	5	5

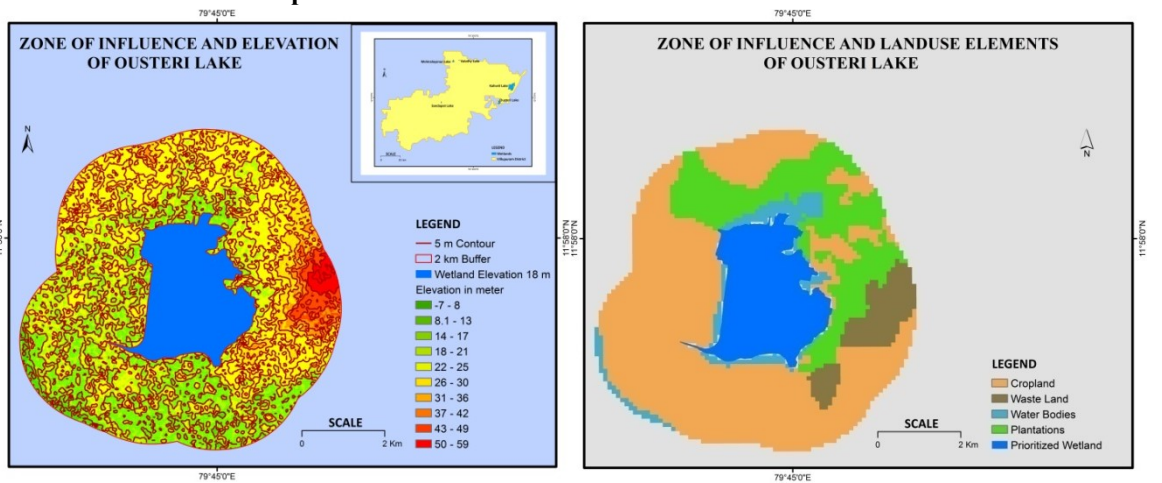
Map 32.2: The zone of influence around the Kaliveli Lake.



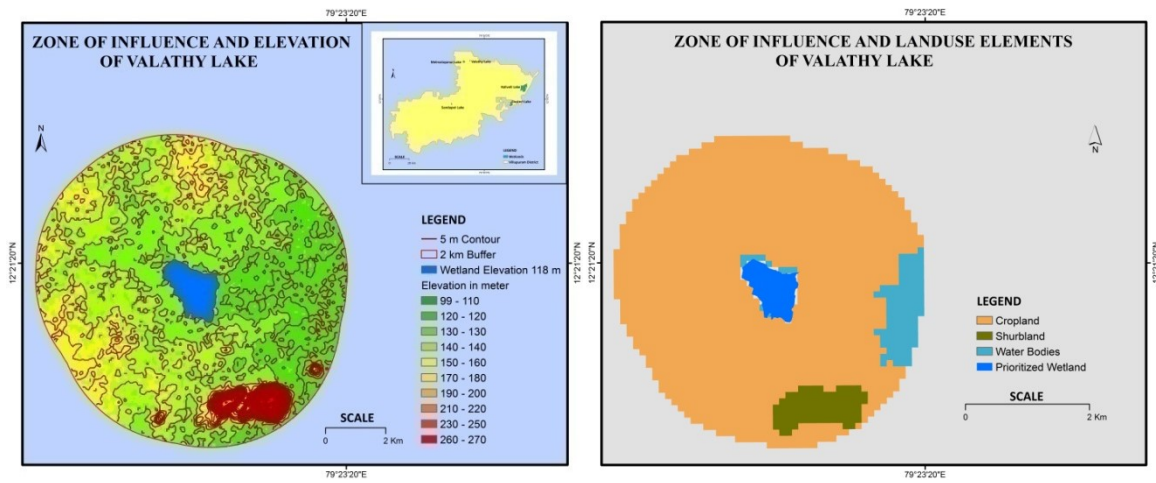
Map 32.3: Zone of Influence around the Melmalayanur Lake.



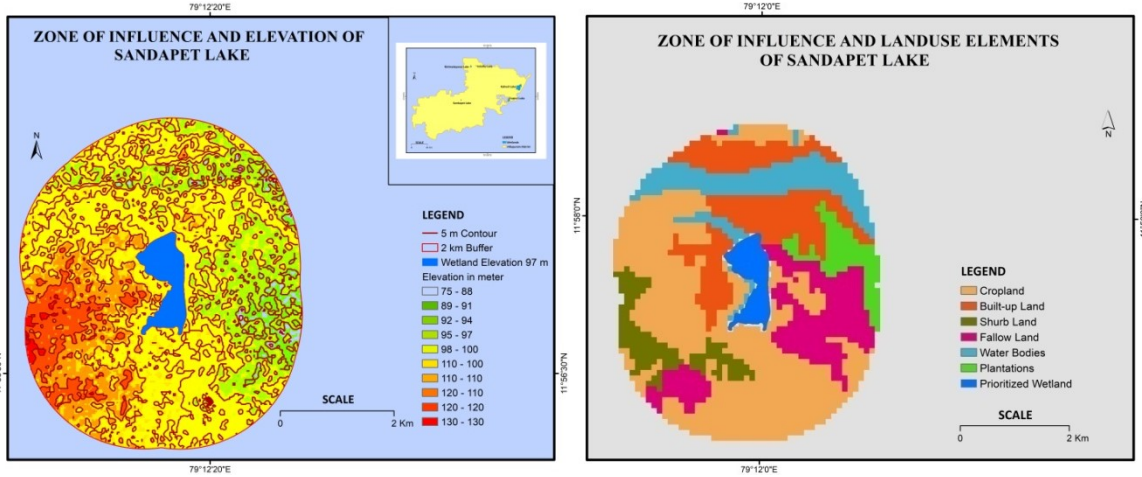
Map 32.4: The zone of influence around the Ousteri Lake.



Map 32.5: The zone of influence around the Valathy Lake.



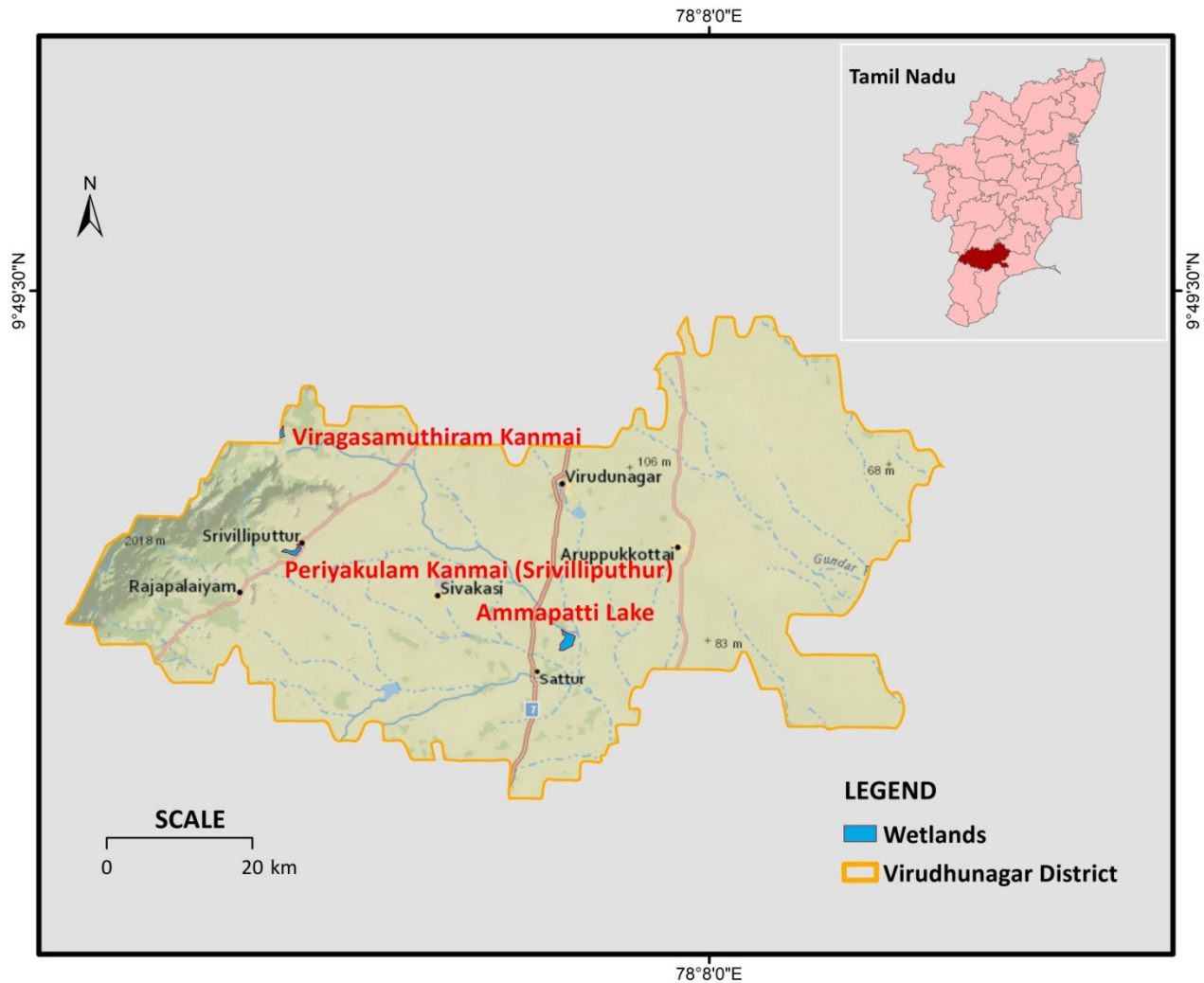
Map 32.6: Zone of influence around the Sandapet Lake.



33. Virudhunagar District

Virudhunagar district is famous for its temples and food, was formerly called Karmavirer Kamarajar district. Virudhunagar district was formed by the separation of old Ramanathapuram district in 1987 into Ramanathapuram district, Sivagangai district and the west part as Virudhunagar district. The term Virudhu means award in Tamil. The district is bounded by Sivagangai district and Madurai district on the north, Tirunelveli district and Tuticorin district to the south and Ramanathapuram district on east and Kerala state to the west and Theni district to the northwest.

Total geographic area of Virudhunagar is 4232 km². Total area under wetland is 29071 ha, which includes 590 small wetland (<2.25 ha). Lakes/Ponds occupy 47.79% of wetland area. The second major wetland type is Tanks/Ponds. There are 738 Tanks/Ponds with 8889 ha area (30.58%). Of the three wetlands selected in the district, Ammapatti is the largest while Periyakulam Kanmai is the smallest of the three wetlands (Map 33.1).



Map 33.1: Wetlands of Virudhunagar district assessed for Prioritization

Ammapatti Lake

Ammapatty Kanmai (Plate 35) comes under the jurisdiction of village panchayat of Ammapatty, Viruddhanagar and is not a Protected Area. Villages that surround the wetland include Ammapatty, Kumarareddypuram, Rukkumingi, Ramalingapuram.

The geographic coordinates are Latitude: 09° 24'04.9" N; 09° 22'29.7" N; 9° 22'32.7" N; 9° 22'40.2" N; and Longitude: 077° 57'35.9" E; 077° 57'10.8" E; 077° 57'14.0" E; 077° 57'18.2" E

Ammapatty Kanmai is a wetland that belongs to the Man-made (inland) category in the sub category intermittent seasonal lakes. The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and the overflow of Kolvarpatti Dam. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 336 hectares and based on the secondary information the average depth is 2.5 meters. The wetland is surrounded by 80 % Agriculture, 10% Grassland/Scrubland and 10% Rural Settlements. It has an area of 2919.96 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 33.2).

The wetland was Mesotrophic during the visit, with the pH of the water being 7.6, salinity measuring 0.102 ppt, the TDS was recorded high at 184 ppm. The vegetation comprised of 46 plant species (Table 33.1) including 14 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 72 animal species including four domestic species were recorded during the survey (Table 33.2 to 33.10).

The water from the wetland is not used for drinking purpose as the water is present for brief period. The municipal corporation provides drinking water from the Kollvarpatty dam water at regular intervals and the bore well that is used by the locals to fulfill their daily requirements. There are large number of farmlands where agriculture is undertaken around the wetland using borewell water. The wetland supports local fish species when water is present and there is no commercial fishery. Grazing by the cattle is undertaken. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a temple along its bank and major cultural and religious activities are performed in the wetland when water is present.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. Unplanned development and increasing sewage and effluents are a major threat that needs to be regulated.

The wetland is not included in any of the protection and conservation categories.

Viragsamuthiram kanmai

Viragsamuthiram is commonly called as Periyakulam Kanmai (Plate 35) is based in Srivilipudur taluka in Viruddhanagar district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Koomapatti and Viragsamuthiram.

The geographic coordinates are Latitude: 09° 38'47.2" N; 09° 38'40.6" N; 9° 38'39.4" N; 9° 38'42.4" N and Longitude: 077° 36'30.8" E; 077° 36'33.3" E; 077° 36'34.6" E; 077° 36'31.8" E.

Viragsamuthiram is a wetland that belongs to the Natural (inland) category in the sub category intermittent seasonal lakes. (This is a Complex wetland). The main source of water for the wetland is rainfall, the surrounding runoff from the catchment area and small stream from the Palavakkal Dam. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. There is runoff from the surrounding area during the monsoon season and is interconnected to the surrounding wetlands. The lake has an area of 66.7 hectares and based on the secondary information the average depth is 2 meters. The wetland is surrounded by 80 % Agriculture and

20% Rural Settlements. It has an area of 2087.28 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 33.3).

The wetland was Mesotrophic during the visit, with the pH of the water being 9.6, salinity measuring 0.5 ppt, the TDS was recorded high at 211 ppm. The vegetation comprised of 48 plant species (Table 33.1) including 10 invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora*, *Eichornea crassipes* and *Ipomoea sp.* The fauna comprised of 50 animal species including three domestic species were recorded during the survey (Table 33.2 to 33.10). Two Threatened species of birds were observed during the survey.

The water from the wetland is not used for drinking purpose as the water is present for brief period. The municipal corporation provides drinking water from the bore well that is used by the locals to fulfill their daily requirements. The farmlands where agriculture is undertaken around the wetland also use borewell water. Fishery is undertaken in the presence of water and the PWD issues tender. Grazing by the cattle is undertaken. There is regular mining for sand or silt undertaken with the permission of the municipality. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a number of temples the Karupurayan temple is on its bank and major cultural and religious activities are performed in the wetland when water is present.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. Sand mining is a potential threat for the future. The sewage water is a major concern to the wetland.

The wetland is not included in any of the protection and conservation categories. The wetland faces a severe threat from drought and water scarcity gradually changing the wetland character. The soil mining that is undertaken legally should be prohibited if possible.

Periyakulam Kanamai

Periyakulam Kanmai (Plate 35) is based in Srivilipudur taluka in Viruddhanagar district. The wetland is not a Protected Area and comes under the jurisdiction of PWD. Villages that surround the wetland include Kansapuram, Koomapatti, Ramasawapuram, Ammatchiyapuram.

The geographic coordinates are Latitude: 09° 38'47.2" N; 09° 38'40.6" N; 9° 38'39.4" N; 9° 38'42.4" N; and Longitude: 077° 36'30.8" E; 077° 36'33.3" E; 077° 36'34.6" E; 077° 36'31.8" E

Periyakulam Kanmai is a wetland that belongs to the Natural (inland) category in the sub category intermittent seasonal lakes. The main source of water for the wetland is Rainfall, the surrounding runoff from the catchment area and the overflow of Arjuna Nadi Dam and the complex wetlands. The water from the wetland helps in replenishing the groundwater and the overflow feeds the adjoining agriculture fields. The lake has an area of 148 hectares and based on the secondary information the average depth is 3 meters. The wetland is surrounded by 80 % Agriculture and 20% Rural Settlements. It has an area of 2663.95 hectares zone of influence calculated with a fixed buffer area of 2 kms around the wetland (Map 33.4).

The wetland was Oligotrophic during the visit, with the pH of the water being 7.6, salinity measuring 1.54 ppt, the TDS was recorded high at 721 ppm. The vegetation comprised of 33 plant species (Table 33.1) including seven invasive species that also include *Parthenium hysterophorus*, *Prosopis juliflora* and *Ipomoea sp.* The fauna comprised of 49 animal species including three domestic species were recorded during the survey (Table 33.2 to 33.10). Two Threatened species of birds were observed during the survey.

The water from the wetland is not used for drinking purpose as the water is present for brief period. The municipal corporation provides drinking water from the Pilavakaldam water at regular intervals and the bore well that is used by the locals to fulfill their daily requirements. There are large number of farmlands where agriculture is undertaken

around the wetland using borewell water. The site is majorly used by the locals for grazing their cattle and goats, as well as fishery is also undertaken when water is available. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall. The wetland has a temple along its bank and major cultural and religious activities are performed in the wetland when water is present.

The wetland has a high potential of change in the outflow of the water due to the increasing encroachment. The wetland faces a severe threat from drought and water scarcity gradually changing the wetland character.

The wetland is not included in any of the protection and conservation categories.

Table 33.1: List of Plants recorded in Virudhunagar District (A - Ammapatti Lake, B – Viragsamuthiramkanmai, C – PeriyakulamKanamai)

S. No	Common English Name	Scientific Name	Family	Native / Alien / Invasive / Exotic	Category	A	B	C
1	Mexican Prickly Poppy	<i>Argemone mexicana</i>	Papaveraceae	Invasive	NA	+	-	-
2	Musk Mallow	<i>Abelmoschus moschatus</i>	Malvaceae	Native	NA	+	-	-
3	Indian Mallow	<i>Abutilon indicum</i>	Malvaceae	Native	NA	+	-	+
4	Long-stock Sida	<i>Sida cordata</i>	Malvaceae	Native	NA	+	-	-
5	Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae	Invasive	NA	+	+	+
6	Balloon Vine	<i>Cardiospermum halicacabum</i>	Sapindaceae	Native	NA	+	+	-
7	Touch Me Not	<i>Mimosa pudica</i>	Fabaceae	Native	LC	+	-	-
8	Pongam Tree	<i>Pongamia pinnata</i>	Fabaceae	Native	LC	+	-	-
9	Algaroba	<i>Prosopis juliflora</i>	Fabaceae	Invasive	NA	+	+	+
10	Tanner's Cassia	<i>Senna auriculata</i>	Fabaceae	Native	NA	+	-	-
11	Love in a mist	<i>Passiflora foetida</i>	Passifloraceae	Invasive	NA	+	+	-
12	Ivy Gourd	<i>Coccinia grandis</i>	Cucurbitaceae	Native	NA	+	-	+
13	Desert Horse Purslane	<i>Trianthema portulacastrum</i>	Aizoaceae	Native	NA	+	+	-
14	Daisy-leaved Chickweed	<i>Para mollugo nudicaulis</i>	Molluginaceae	Native	NA	+	-	+
15	Great Morinda	<i>Morinda citrifolia</i>	Rubiaceae	Native	NA	+	-	+
16	Siam Weed	<i>Chromolaena odorata</i>	Asteraceae	Invasive	NA	+	-	-
17	False Daisy	<i>Eclipta alba</i>	Asteraceae	Native	LC	+	-	-
18	Carrot Grass	<i>Parthenium hysterophorus</i>	Asteraceae	Invasive	NA	+	+	+
19	Tridax Daisy	<i>Tridax procumbens</i>	Asteraceae	Invasive	NA	+	-	-
20	Common Cocklebur	<i>Xanthium strumarium</i>	Asteraceae	Native	NA	+	+	-
21	South Indian Mahua	<i>Madhuca longifolia</i> var. <i>latifolia</i>	Sapotaceae	Native	NA	+	-	-
22	Crown Flower	<i>Calotropis gigantea</i>	Apocynaceae	Native	NA	+	+	+
23	Pergularia	<i>Pergularia daemia</i>	Apocynaceae	Native	NA	+	+	+
24	Indian Heliotrope	<i>Heliotropium indicum</i>	Heliotropiaceae	Native	NA	+	-	-
25	Clustered Morning Glory	<i>Hewittia malabarica</i>	Convolvulaceae	Invasive	NA	+	-	-
26	Tambar vel	<i>Ipomoea campanulata</i>	Convolvulaceae	Invasive	NA	+	-	-
27	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae	Invasive	NA	+	+	-
28	Kidney leaf morning glory	<i>Merremia emarginata</i>	Convolvulaceae	Native	LC	+	-	-
29	Datura metel	<i>Datura metel</i>	Solanaceae	Invasive	NA	+	-	-
30	Thorny Nightshade	<i>Solanum virginianum</i>	Solanaceae	Native	NA	+	-	-
31	Long-flower Barleria	<i>Barleria acuminata</i>	Acanthaceae	Native	NA	+	+	-
32	Wedge-Leaf Foldwing	<i>Dicliptera paniculata</i>	Acanthaceae	Native	NA	+	-	-
33	Irula , Kannuthumbai	<i>Leucas urticifolia</i>	Lamiaceae	Native	NA	+	-	-
34	Four O'Clock,	<i>Mirabilis jalapa</i>	Nyctaginaceae	Naturalized	NA	+	-	-
35	Khaki Weed	<i>Alternanthera pungens</i>	Amaranthaceae	Invasive	NA	+	-	-
36	Sessile Joyweed	<i>Alternanthera sessilis</i>	Amaranthaceae	Native	LC	+	+	-
37	False Amaranth	<i>Digera muricata</i>	Amaranthaceae	Native	NA	+	-	-
38	Prostrate Gomphrena	<i>Gomphrena serrata</i>	Amaranthaceae	Invasive	NA	+	+	-
39	Indian Copperleaf	<i>Acalypha indica</i>	Euphorbiaceae	Native	NA	+	+	-
40	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Native	NA	+	+	+
41	Asthma Weed	<i>Euphorbia hirta</i>	Euphorbiaceae	Native	NA	+	-	-
42	Psychic Nut	<i>Jatropha curcas</i>	Euphorbiaceae	Invasive	NA	+	-	-
43	Bellyache Bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Native	NA	+	-	-
44	Polmyra Palm	<i>Borassus flabellifer</i>	Arecaceae	Native	NA	+	-	+
45	Crowfoot Grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Native	NA	+	+	+
46	Swollen Finger Grass	<i>Chloris barbata</i>	Poaceae	Native	NA	+	+	-
47	Asian spider flower	<i>Arivela viscosa</i>	Cleomaceae	Native	NA	-	+	+
48	---	<i>Abelmoschus angulosus</i>	Malvaceae	Native	NA	-	+	-
49	Indian Mallow	<i>Abutilon hirtum</i>	Malvaceae	Native	NA	-	+	-
50	Jackal Jujube	<i>Ziziphus oenopolia</i>	Rhamnaceae	Native	LC	-	+	-
51	Siris Tree, Women's tongue	<i>Albizia lebbeck</i>	Fabaceae	Native	NA	-	+	-
52	Spherical Rattlepod	<i>Crotalaria globosa</i>	Fabaceae	Native		-	+	-
53	Birdsville Indigo	<i>Indigofera linnaei</i>	Fabaceae	Native	NA	-	+	+

54	True indigo	<i>Indigofera tinctoria</i>	Fabaceae	Native	NA	-	+	-
55	Coffee senna	<i>Senna occidentalis</i>	Fabaceae	Native	NA	-	+	-
56	Stinking Cassia	<i>Senna tora</i>	Fabaceae	Native	NA	-	+	-
57	Tamarind Tree	<i>Tamarindus indica</i>	Fabaceae	Exotic	LC	-	+	-
58	Common Tephrosia	<i>Tephrosia purpurea</i>	Fabaceae	Native	EN	-	+	+
59	Gum Arabic	<i>Vachellia nilotica</i>	Fabaceae	Invasive	NA	-	+	+
60	Blistering Ammannia	<i>Ammannia baccifera</i>	Lythraceae	Native	LC	-	+	-
61	Madras pea pumpkin	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	NA	-	+	-
62	Jima	<i>Glinus oppositifolius</i>	Molluginaceae	Native	NA	-	+	-
63	Indian Mulberry, Morinda	<i>Morinda coreia</i>	Rubiaceae	Native		-	+	-
64	Purple fleabane	<i>Cyanthillium cinereum</i>	Asteraceae	Native	NA	-	+	+
65	Creeping Coldenia	<i>Coldenia procumbens</i>	Ehretiaceae	Native	NA	-	+	+
66	Water Morning Glory	<i>Ipomoea aquatica</i>	Convolvulaceae	Invasive	LC	-	+	+
67	Large caltrops	<i>Pedaliium murex</i>	Pedaliaceae	Native	NA	-	+	+
68	Red hogweed	<i>Boerhavia diffusa</i>	Nyctaginaceae	Native	NA	-	+	-
69	Prickly Chaff Flower	<i>Achyranthes aspera</i>	Amaranthaceae	Native	NA	-	+	+
70	Mountain Knot Grass	<i>Aerva lanata</i>	Amaranthaceae	Native	NA	-	+	-
71	Smooth Chaff Flower	<i>Alternanthera paronychioides</i>	Amaranthaceae	Naturalized	NA	-	+	-
72	Stone Breaker, Seed Under Leaf	<i>Phyllanthus niruri</i>	Phyllanthaceae	Native	NA	-	+	+
73	Banyan tree	<i>Ficus benghalensis</i>	Moraceae	Native	NA	-	+	-
74	Peepal	<i>Ficus religiosa</i>	Moraceae	Native	NA	-	+	-
75	Coconut Tree	<i>Cocos nucifera</i>	Arecaceae	Native	NA	-	+	-
76	Water Hyacinth	<i>Eichhornia crassipes</i>	Pontederiaceae	Invasive	NA	-	+	+
77	Bermuda grass, Couch grass	<i>Cynodon dactylon</i>	Poaceae	Invasive	NA	-	+	+
78	Butterfly Pea	<i>Clitoria ternatea</i>	Fabaceae	Native	NA	-	-	+
79	Lotus Sweetjuice, damascisa	<i>Glinus lotoides</i>	Molluginaceae	Native		-	-	+
80	Purple Fruited Pea Eggplant	<i>Solanum trilobatum</i>	Solanaceae	Native	NA	-	-	+
81	African Tulip Tree	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	LC	-	-	+
82	Hoary Basil,	<i>Ocimum americanum</i>	Lamiaceae	Native	NA	-	-	+
83	Holy basil,tulsi	<i>Ocimum tenuiflorum</i>	Lamiaceae	Native	NA	-	-	+
84	Peri peri	<i>Cyperus corymbosus</i>	Cyperaceae	Native	NA	-	-	+
85	Yellow Nutsedge	<i>Cyperus esculentus</i>	Cyperaceae	Native	LC	-	-	+
86	Indian comet grass	<i>Perotis indica</i>	Poaceae	Native	NA	-	-	+
Total						46	48	33

Table 33.2: List of Insects recorded in Virudhunagar District (A - Ammapatti Lake, B – Viragsamuthiramkanmai, C – PeriyakulamKanamai)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Toothpick Grasshopper	<i>Leptysma marginicollis</i>	Acrididae	+	-	-
2	Common Field Grasshopper	<i>Chorthippus brunneus</i>	Acrididae	+	-	-
3	Water Strider	<i>Gerris sp.</i>	Gerridae	+	+	+
4	Red Cotton Stainer	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	+	-	-
5	Jewel bug	<i>Chrysocoris stollii</i>	Scutelleridae	+	-	-
6	Transverse lady beetle	<i>Coccinella transversalis</i>	Coccinellidae	+	-	-
7	28 Spotted Potato Ladybird	<i>Henosepilachna vigintioctopunctata</i>	Coccinellidae	+	-	-
8	Whirligig Beetle	<i>Gyrinus sp.</i>	Gyrinidae	+	+	-
9	Carpenter Bee	<i>Xylocopa latipes</i>	Apidae	+	-	+
10	Golden backed Ant	<i>Camponotus sericeus</i>	Formicidae	+	+	-
11	Common Godzilla Ant	<i>Camponotus compressus</i>	Formicidae	+	+	+
12	Potter Wasp	<i>Ancistrocerus sp.</i>	Vespidae	+	+	-
13	Water Scorpion	<i>Laccotrephes griseus</i>	Nepidae	-	+	-
14	Arboreal Bicoloured Ant	<i>Tetraponera rufonigra</i>	Formicidae	-	+	-
15	Grasshopper sp.	<i>Spathosternum prasiniferum</i>	Acrididae	-	-	+
Total				12	7	4

Table 33.3: List of Butterflies recorded in Virudhunagar District (A - Ammapatti Lake, B – Viragsamuthiramkanmai, C – PeriyakulamKanamai)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Common Rose	<i>Pachliopta aristolochiae</i>	Nymphalidae	Common	+	+	-
2	Crimson Rose	<i>Pachliopta hector</i>	Nymphalidae	Common	+	-	-
3	Small Grass Yellow	<i>Eurema brigitta</i>	Coliadinae	Common	+	-	-
4	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Papilionidae	Common	+	+	+
5	Gram Blue	<i>Euchrysops cnejus</i>	Polyommatainae	Common	+	-	-
6	Pale Grass Blue	<i>Pseudozizeeria maha</i>	Polyommatainae	Common	+	-	-
7	Small Grass Jewel	<i>Freyeria putli</i>	Polyommatainae	Common	+	-	-
8	Plain Tiger	<i>Danaus chrysippus</i>	Danaidae	Common	+	+	+
9	Tawny Coster	<i>Acraea violae</i>	Acraeinae	Common	+	-	-
10	Joker	<i>Byblia ilithyia</i>	Cyrestinae	Common	+	-	+
11	Angled Castor	<i>Ariadne ariadne</i>	Biblidinae	Uncommon	+	-	-
12	Lime Butterfly	<i>Papilio demoleus</i>	Papilioninae	Common	-	-	+
13	Crimson Tip	<i>Colotis danae</i>	Pierinae	Uncommon	-	-	+
Total					11	3	5

Table 33.4: List of Odonates recorded in Virudhunagar District (A - Ammapatti Lake, B – Viragsamuthiramkanmai, C – PeriyakulamKanamai)

S. No	Common English Name	Scientific Name	Family	Status	A	B	C
1	Ditch Jewel	<i>Brachythemis contaminata</i>	Libellulidae	Common	+	+	+
2	Ground Skimmer	<i>Diplacodes trivialis</i>	Libellulidae	Common	+	+	+
3	Green Marsh Hawk	<i>Orthetrum sabina</i>	Libellulidae	Common	+	+	+
4	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	Libellulidae	Common	-	+	+
5	Wandering Glider	<i>Pantala flavescens</i>	Libellulidae	Common	-	+	+
6	Coromandel Marsh Dart	<i>Ceragrion coromandelianum</i>	Coenagrionidae	Common	-	-	+
7	Common Clubtail	<i>Ictinogomphus rapax</i>	Gomphidae	Common	-	-	+
8	Yellow-Tailed Ashy Skimmer	<i>Potamarcha congener</i>	Libellulidae	Common	-	-	+
Total					3	5	8

Table 33.5: List of Arachnida recorded in Virudhunagar District (A - Ammapatti Lake, B – Viragsamuthiramkanmai, C – PeriyakulamKanamai)

S. No	Common English Name	Scientific Name	Family	A	B	C
1	Indian Funnel Web Spider	<i>Agelenopsis sp.</i>	Agelenidae	+	+	-
2	Signature Spider	<i>Argiope anasuja</i>	Araneidae	+	-	-
Total				2	1	0

Table 33.6: List of Fishes recorded in Virudhunagar District (A - Ammapatti Lake, B – Viragsamuthiramkanmai, C – PeriyakulamKanamai)

S. No	Common Name	Scientific Name	Family	Category	A	B	C
1	Common Carp	<i>Cyprinus carpio</i>	Cyprinidae	VU	+	+	-
2	Silver Carp	<i>Hypophthalmichthys molitrix</i>	Cyprinidae	NT	+	-	-
3	Tilapia, Nile Tilapia	<i>Oreochromis niloticus</i>	Cichlidae	LC	+	+	-
4	Striped Snakehead, Butterfish	<i>Channa striata</i>	Channidae	LC	+	+	-
5	Spotted snakehead	<i>Channa punctata</i>	Channidae	LC	+	+	-
6	Stinging catfish	<i>Heteropneustes fossilis</i>	Cichlida	LC	+	+	-
7	Giant River Prawn	<i>Macrobrachium rosenbergii</i>	Palaemonidae	LC	+	-	-
8	Half beak	<i>Hyporhamphus limbatus</i>	Hemiramphidae	LC	+	-	-
9	Pool barb, Spotfin Swamp Barb	<i>Puntius sophore</i>	Cyprinidae	LC	+	-	-
10	Tank goby	<i>Glossogobius giuris</i>	Gobiidae	LC	-	+	-
Total					9	6	0

Table 33.7: List of Amphibians recorded in Virudhunagar District (A - Ammapatti Lake, B – Viragsamuthiramkanmai, C – PeriyakulamKanamai)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Dicroglossidae	Least Concern	+	-	+
Total					1	0	1

Table 33.8: List of Reptiles recorded in Virudhunagar District (A - Ammapatti Lake, B – Viragsamuthiramkanmai, C – PeriyakulamKanamai)

S. No	Common English Name	Scientific Name	Family	IUCN Status	A	B	C
1	Common Garden Lizard	<i>Calotes versicolor</i>	Agamidae	Least Concern	+	+	+
2	Common Skink	<i>Mabuya carinata</i>	Scincidae	Least Concern	+	-	-
Total					2	1	1

Table 33.9: List of Birds recorded in Virudhunagar District (A - Ammapatti Lake, B – Viragsamuthiramkanmai, C – PeriyakulamKanamai)

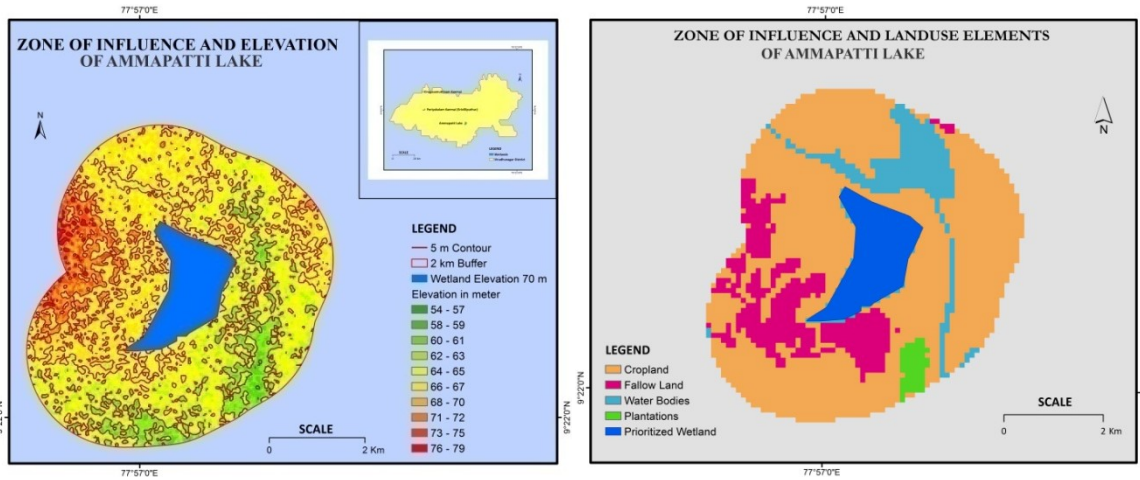
S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Least Concern	+	-	-
2	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	Near Threatened	+	+	+
3	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae	Least Concern	-	+	-
4	Red-naped Ibis	<i>Pseudibis papillosa</i>	Threskiornithidae	Least Concern	+	-	+
5	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Least Concern	+	+	+
6	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	Least Concern	+	+	-
7	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Least Concern	+	-	-
8	Great Egret	<i>Casmerodius albus</i>	Ardeidae	Least Concern	+	-	-
9	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae	Least Concern	+	+	-
10	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Least Concern	+	+	-
11	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	Least Concern	+	+	+
12	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Least Concern	+	-	+
13	Green Sandpiper	<i>Tringa ochropus</i>	Scolopacidae	Least Concern	+	-	-
14	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Columbidae	Least Concern	+	+	+
15	Spotted Dove	<i>Stigmatopelia chinensis</i>	Columbidae	Least Concern	+	-	+
16	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae	Least Concern	+	-	-
17	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	Least Concern	+	+	+
18	Little Swift	<i>Apus affinis</i>	Apodidae	Least Concern	+	-	-
19	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Least Concern	+	-	-
20	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Least Concern	+	+	+
21	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Least Concern	+	+	+
22	Indian Jungle Crow	<i>Corvus (macrorhynchos) culminatus</i>	Corvidae	Least Concern	+	-	-
23	House Crow	<i>Corvus splendens</i>	Corvidae	Least Concern	+	+	+
24	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Least Concern	+	-	-
25	Red-rumped Swallow	<i>Cecropis daurica</i>	Hirundinidae	Least Concern	+	-	-
26	Yellow-billed Babbler	<i>Turdoides affinis</i>	Timaliinae	Least Concern	+	-	-
27	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Least Concern	+	+	+
28	Indian Robin	<i>Saxicoloides fulicatus</i>	Muscicapidae	Least Concern	+	-	-
29	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae	Least Concern	-	+	-
30	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Least Concern	-	+	-
31	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Least Concern	-	+	+
32	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	Near Threatened	-	+	+
33	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	Least Concern	-	+	+
34	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Least Concern	-	+	-
35	Common Pigeon	<i>Columba livia</i>	Columbidae	Least Concern	-	+	+
36	White-rumped Munia	<i>Lonchura striata</i>	Estrildidae	Least Concern	-	+	-
37	Paddyfield Pipit	<i>Anthus rufulus</i>	Motacillidae	Least Concern	-	+	-

38	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae	Least Concern	-	-	+
39	Spot-billed Pelican	<i>Pelecanus philippensis</i>	Pelecanidae	Near Threatened	-	-	+
40	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	Least Concern	-	-	+
41	Purple Swampphen	<i>Porphyrio porphyrio</i>	Rallidae	Least Concern	-	-	+
42	Common Moorhen	<i>Gallinula chloropus</i>	Rallidae	Least Concern	-	-	+
43	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Least Concern	-	-	+
44	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Least Concern	-	-	+
45	Painted Snipe	<i>Rostratulabenghalensis</i>	Rostratulidae	Least Concern	-	-	+
46	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	Least Concern	-	-	+
47	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	Least Concern	-	-	+
48	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	Least Concern	-	-	+
Total					27	22	27

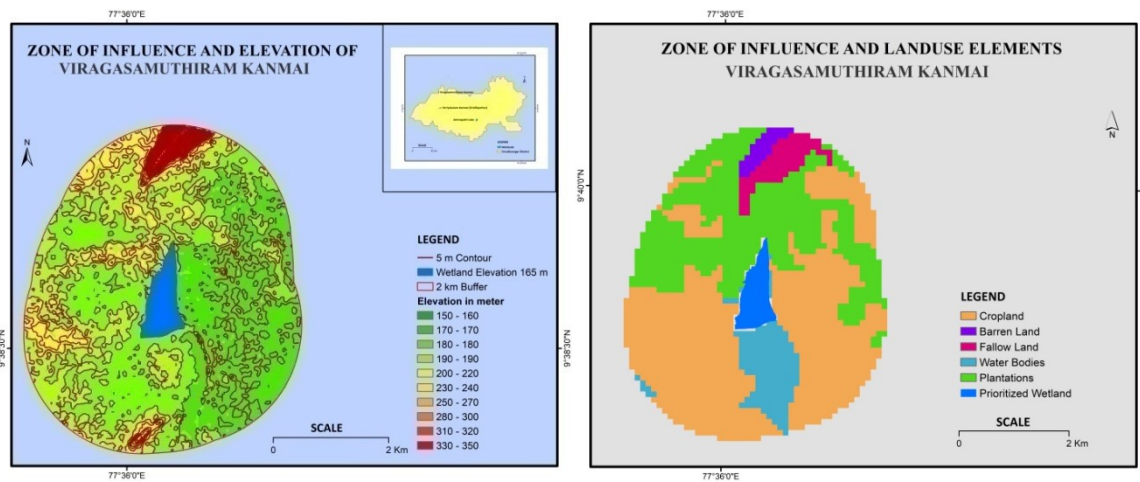
Table 33.10: List of Mammals recorded in Virudhunagar District (A - Ammapatti Lake, B – Viragsamuthiramkanmai, C – PeriyakulamKanamai)

S. No	Common English Name	Scientific Name	Family	Category	A	B	C
1	Dog	<i>Canis lupus familiaris</i>	Canidae	Domestic	-	-	-
2	Cattle	<i>Bos taurus</i>	Bovidae	Domestic	+	+	+
3	Goat	<i>Capra aegagrus hircus</i>	Bovidae	Domestic	-	-	-
4	Water Buffalo	<i>Bubalus bubalis</i>	Bovidae	Domestic	+	-	-
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	Sciuridae	Least Concern	+	+	-
6	Indian grey Mongoose	<i>Herpestes edwardsi</i>	Herpestidae	Least Concern	-	+	-
Total					3	3	1

Map 33.2: Zone of influence around the Ammapatti Lake.



Map 33.3: Zone of Influence around the Viragasamuthiram Kanmai.



Map 33.4: Zone of Influence around the Periyakulam Kanmai.

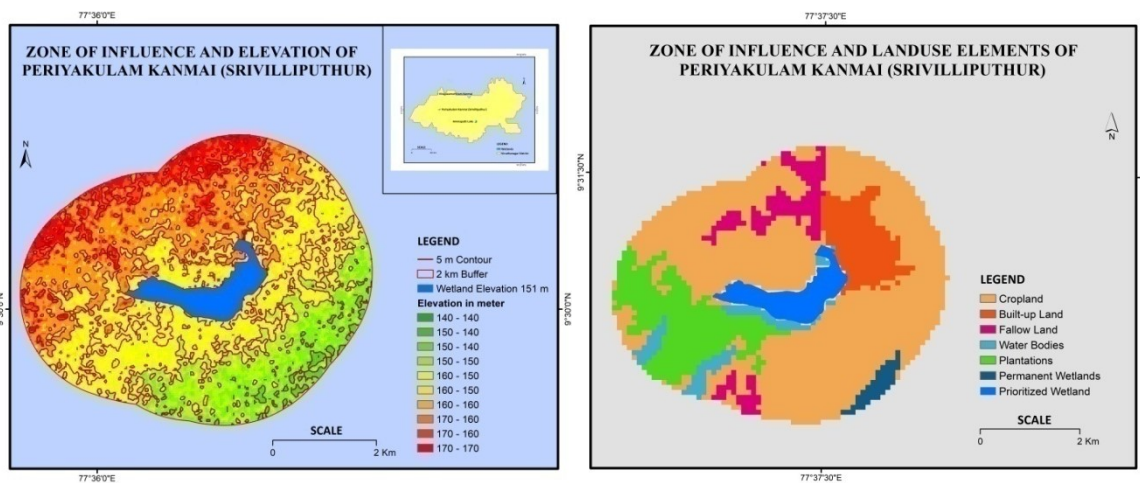


Photo Plates

Plate 1
Ariyalur District



Elanthaikudam Lake



Sukran Lake

Chennai District



Venganur Lake



Ambattur Lake

Plate 2
Chennai District



Korattur Lake



Madipakkam Lake



Pallikaranai Wetland



Velachery Lake

Plate 3
Coimbatore District



Kovaipudur Lake



Kurichi Kulam



Perur Lake



Singanallur Tank

Plate 4
Coimbatore District



Sulur Lake



Ukkadam Lake

Cuddalore District



Bahour Lake



Perumal Lake

Plate 5
Cuddalore District



Veeranam Lake



Wellington Lake

Dharmapuri District



Dharmapuri Lake



Kadagathur Lake

Plate 6

Dharmapuri District



Thumbala Halli Lake

Dindigul District



Kodaikanal Lake



Idumban Kulam



Vaiyapuri Tank

Plate 7
Erode District



Anthiyur Periya Eri



Avalpoondurai Lake



Kavilipalayam Lake



Vellode Bird Sanctuary

Plate 8
Kanchipuram District



Chembarambakkam Lake



Govindavadi Lake



Great Salt Lake



Kolavai Lake

Plate 9
Kanchipuram District



Kooram Lake



Madhuranthakam Lake



Magaral Lake



Odiyur Lake

Plate 10
Kanchipuram District



Parandur Lake



Sirudavoor Lake



Sriperumbudur Lake



Thenneri Lake

Plate 11
Kanchipuram District



Thirupulivanam Lake



Uthiramerur Lake



Uthukadu Lake

Kanyakumari District



Manavalakurichi Lake

Plate 12
Kanyakumari District



Narikulam Lake



Sengulam



Suchindram Kulam Complex



Theroor Wetland Complex

Plate 13

Kanyakumari District



Vembanur Lake

Karur District



Panjappatti Lake



Uppidamangalam Lake



Velliyana Lake

Plate 14
Krishnagiri District



Barur Lake



Kondama Eri



Rama Naicken Lake

Madurai District



T. Kunnathur Lake

Plate 15
Madurai District



Thenur Periyakulam Kanmai



Urapanur Periyakanmai



Vandiyur Lake

Nagapattinam District



Embavai Perunthottam Lake

Plate 16
Nagapattinam District



Keeran Lake



Point Calimere Wildlife and Bird Sanctuary

Namakkal District



Amirthasagaram Lake



Oomayampatti Lake

Plate 17

Namakkal District



Puthur Lake

Nilgiris District



Marlimund Lake

Perambalur District



Ooty Lake



Arumbavur Big Lake

Plate 18
Perambalur District



Athiyur Lake



Kurumbalur Lake

Pudukkottai District



Annavasal Periyakulam Lake



Ponpethi Lake

Plate 19

Pudukkottai District



Seiyanam Periya Eri

Ramanathapuram District



Brahmanankulam



Chitrangudi Bird Sanctuary



Melayakudi Kulam

Plate 20
Ramanathapuram District



Rajasingamangalam Lake



Sakkarakottai Bird Sanctuary



Uthirakosamangai Lake

Salem District



Panai Eri

Plate 21
Salem District



Panamarathupatti Eri



Vadamaneri Lake

Sivagangai District



Andakudi Kanmai



Kattikulam Kanmai

Plate 22
Sivagangai District



Piravalur Kanmai



Vettangudi Bird Sanctuary

Thanjavur District



Kallaperambur Lake



Pannavayal Eri

Plate 23

Thanjavur District



Sendakkottai Lake

Then District



Kamarajapuram Lake



Periyakulam Kanmai



Thamaraikulam Kanmai

Plate 24
Thoothukudi District



Kadamba Kulam



Karungulam Lake



Puthantharuvai Tank



Seydunganallur Kulam

Plate 25

Thoothukudi District



Sivagalai Kulam

Tiruchirappalli District



Alathudaiyanpatti Lake



Gundur Lake



Koothappar Big Tank

Tiruchirappalli District



Valavanthankottai Tank

Tirunelveli District



Chetruthamarai Kulam



Koonthankulam Bird Sanctuary



Melakulam Lake

Plate 27
Tirunelveli District



Puthukulam Lake



V.M.Chatram Lake

Tiruppur District



Vijayanarayanan Tank



Kongur Idachi Kulam

Plate 28
Tiruppur District



Koolipalayam Lake



Manickapuram Kulam

Tiruvallur District



Cholavaram Lake



Coovam Lake

Plate 29



Mappedu Lake



Padur-Thangal Eri



Poondi Lake



Pulicat Lake



Puzhal Lake

Plate 30
Tiruvannamalai District



Anakkavoor Lake



Dusi Mamandoor Lake



Kappalur Lake



Pelasur Lake

Tiruvannamalai District



Ponnur Lake



Sathanur Reservoir



Thennampattu Lake



Vakkadai Lake

Plate 32
Tiruvarur District



Moovanallur Lake



Thirumeni Eri



Udayamarthandapuram Bird Sanctuary



Vadakku Eri

Plate 33

Tiruvavarur District



Vaduvur Lake

Vellore District



Kalavai Lake



Kaveripakkam Lake



Mahendravadi Lake

Plate 34
Villupuram District



Kaliveli Lake



Melmalayanur Lake



Ousteri Lake



Sandapet Lake

Villupuram District



Valathy Lake

Virudhunagar District



Ammapatti Lake



Periyakulam Kanmai



Viragasamuthiram Kanmai

PLATE 36: Wetland Flora



Abutilon indicum



Acalypha ciliata



Achyranthes aspera



Aerva javanica



Aerva lanata



Agave americana



Agave beauleriana



Alstroemeria pelegria



Alternanthera ficoidea



Alternanthera pungens



Alternanthera sessilis



Alysicarpus ovalifolius

PLATE 37: Wetland Flora



Amaranthus spinosus



Amaranthus viridis



Ammania baccifera



Anisomeles malabarica



Argyranthemum gracile



Aristida setacea



Aristolochia bracteolata



Arivela viscosa



Asparagus racemosus



Azadirachta indica



Bambusa bambos



Barleria buxifolia

PLATE 38: Wetland Flora



Barringtonia acutangula



Bonnaya ciliata



Borassus flabellifer



Brachiaria ramosa



Brugmansia suaveolens



Calotropis gigantea



Canna indica



Cassine glauca



Casuarina equisetifolia



Catharanthus roseus



Cayratia trifolia



Ceiba pentandra

PLATE 39: Wetland Flora



Celosia argentea



Chloris barbata



Chrysopogon zizanioides



Cissus vitiginea



Citrullus colocynthis



Clitoria ternatea



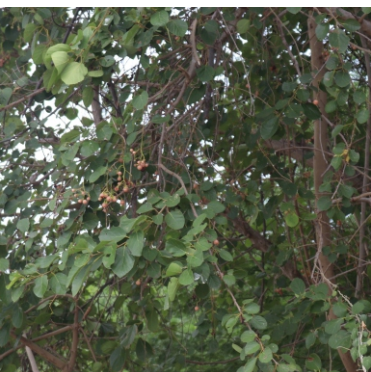
Cocos nucifera



Coldenia procumbens



Commelina benghalensis



Cordia dichotoma



Crinum powellii



Crotalaria pallida

PLATE 40: Wetland Flora



Cucumis dipsaceus



Cyanotis arachnoidea



Cyanotis axillaris



Cymbopogon citratus



Cynodon dactylon



Dactyloctenium aegyptium



Datura metel



Datura stramonium



Dicliptera paniculata



Digera muricata



Ecbolium ligustrinum



Eragrostis pilosa

PLATE 41: Wetland Flora



Erythrina suberosa



Eucalyptus tereticornis



Euphorbia heterophylla



Euphorbia hirta



Evolvulus alsinoides



Ficus benghalensis



Glinus lotoides



Glinus oppositifolius



Gynandropsis gynandra



Heliotropium curassavicum



Heliotropium indicum



Hydrangea macrophylla

PLATE 42: Wetland Flora



Indigofera linnaei



Ipomoea aquatica



Ipomoea obscura



Jatropha glandulifera



Jatropha gossypifolia



Justicia tranquebariensis



Leptopetalum biflorum



Malvastrum coromandelianum



Martynia annua



Merremia emarginata



Mesosphaerum suaveolens



Mimosa pudica

PLATE 43: Wetland Flora



Morinda coreia



Nephrolepis exaltata



Neptunia oleracea



Nerium oleander



Nymphaea odorata



Oldenlandia umbellata



Opuntia stricta



Ottelia alismatoides



Oxystelma esculentum



Paramollugo nudicaulis



Passiflora foetida



Passiflora mollissima



PLATE 44: Wetland Flora



Pedalium murex



Pergularia daemia



Phoenix sylvestris



Phyllanthus niruri



Plumbago zeylanica



Pongamia pinnata



Prosopis juliflora



Ricinus communis



Saccharum spontaneum



Salicornia brachiata



Schoenoplectus subulatus



Senna auriculata



PLATE 45: Wetland Flora



Sesamum indicum



Sesuvium portulacastrum



Sida cordifolia



Sida acuta



Solanum nigrum



Solanum trilobatum



Solanum virginianum



Spermacoce ocymoides



Sphaeranthus indicus



Striga lutea



Tephrosia purpurea



Tragia plukenetii



PLATE 46: Wetland Flora



Tragus mongolorum



Trianthema portulacastrum



Sida cordifolia



Vachelia nilotica



Vitex negundo



Xanthium indicum



Xanthium strumarium



Ziziphus oenoplia

PLATE 47: Invasive Flora



Argemone mexicana



Eichhornia crassipes



Ipomoea carnea



Lantana camara



Leucaena leucocephala



Mimosa diplotricha



Muntingia calabura



Parthenium hysterophorus



Solanum elaeagnifolium



Typha angustifolia



Ulex europeus

Plate 48: Diplopoda

Family: Polydesmida



Harpappe haydeniana

Family: Spirostreptida



Spinotarsus colosseus

Plate 49: Insects

Class: Insecta; Order: Orthoptera; Family: Acrididae



Acrida exaltata



Chrotogonus trachypterus



Criotettix bispinosus



Diabolocatantops pinguis



Leptysma marginicollis



Spathosternum prasiniiferum

Class: Insecta; Order: Hemiptera
Family: Aphrophoridae



Teratodes monticollis



Neorthacris acuticeps



Clovia sp.,

Class: Insecta; Order: Mantodea; Family: Mantodea



Ootheca



Praying Mantis



Family: Belostomatidae

Lethocerus deyrollei

Plate 50: Insects

Class: Insecta; Order: Hemiptera

Family: Coreidae



Anoplocnemis phasiana

Family: Gerridae



Gerris sp.,

Family: Membracidae



Oxyrachis tarandus

Family: Nepidae



Laccotrephes griseus

Family: Pyrrhocoridae



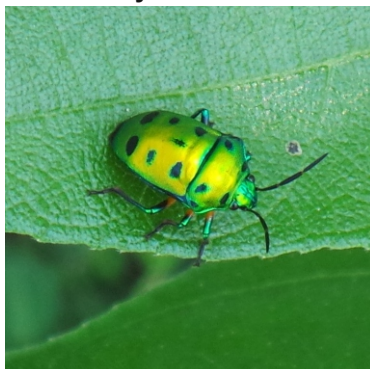
Dysdercus cingulatus

Family: Reduviidae



Reduviidae sp.,

Family: Scutelleridae



Chrysocoris stollii

Class: Insecta; Order: Coleoptera; Family: Carabidae



Brachinus sp.,



Anthia sexguttata

Family: Cantharidae



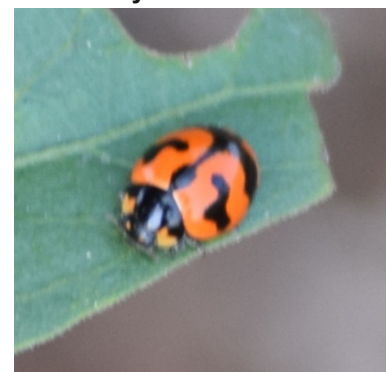
Rhagonycha sp.,

Family: Chrysomelidae



Haemaltica sp.,

Family: Coccinellidae



Coccinella transversalis

Plate 51: Insects

Class: Insecta; Order: Coleoptera

Family: Coccinellidae



Henosepilachna vigintioctopunctata

Family: Gyrinidae



Gyrinus sp.,

Family: Scarabaeidae



Onthophagus sp.,

Family: Meloidae



Hycleus sp.,

Class: Insecta; Order: Hymenoptera; Family: Apidae



Amegilla cingulata

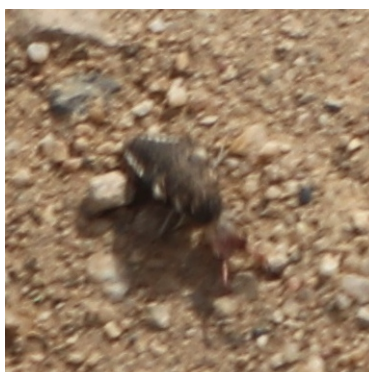


Apis dorsata



Xylocopa latipes

Class: Insecta; Order: Neuroptera; Family: Myrmeleontidae



Myrmeleontidae

Plate 52: Insects

Class: Insecta; Order: Hymenoptera; Family: Formicidae



Leptogenys chinensis



Meranoplus bicolor



Monomorium pharaonis



Myrmecaria brunnea



Polyrhachis rastellata



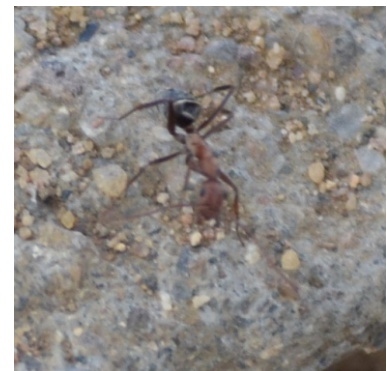
Tetraponera rufonigra



Camponotus sericeus



Camponotus sericeus (Red Morph)



Camponotus sp.,



Camponotus compressus

Plate 53: Insects

Class: Insecta; Order: Hymenoptera

Family: Pompilidae

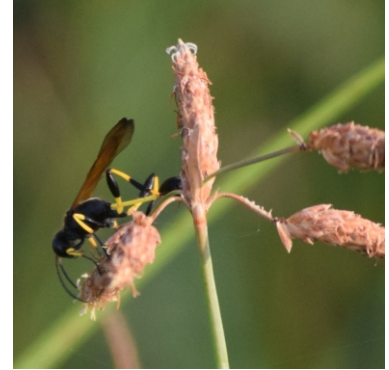


Cryptocheilus bicolor



Pompilidae sp.,

Family: Sphecidae



Sceliphron caementarium

Family: Vespidae



Ancistrocerus sp.,



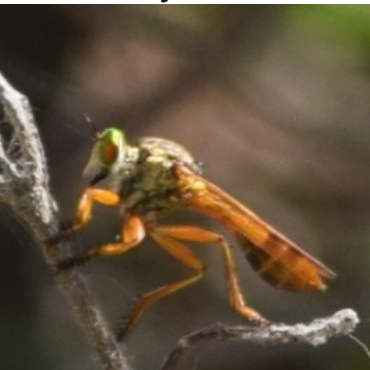
Delta campaniforme



Ropalidia marginata

Class: Insecta; Order: Diptera

Family: Asilidae



Asilidae sp.,

Family: Muscidae



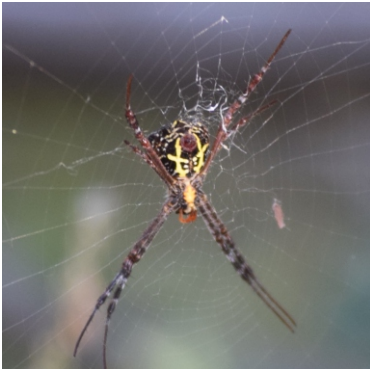
Musca domestica

Family: Sarcophagidae



Sarcophagidae

Plate 63: Arachnida



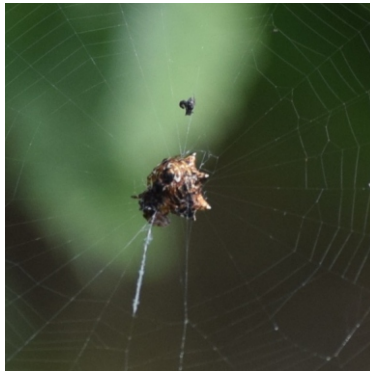
Argiope anasuja



Arctosa sp.,



Eratigena agrestis



Gasteracantha sp.,



Leucauge decorate



Lycosa Lycosidae



Lycosidae sp.,



Pardosa sp.,



Peucetia viridana



Tetragnatha sp.,



PLATE 54: Lepidoptera

Family: Hesperioidea
Sub Family: Pyrginae



Gomalia elma

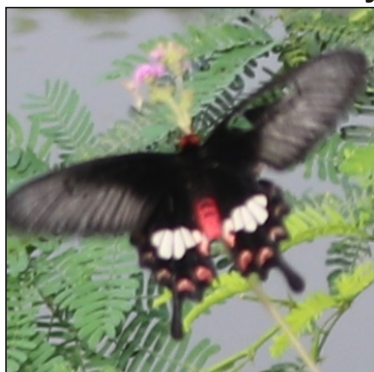


Borbo cinnara

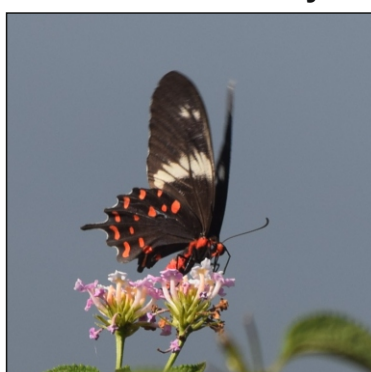


Suastus gremius

Family: Papilionidae Sub Family: Papilioninae



Pachliopta aristolochiae

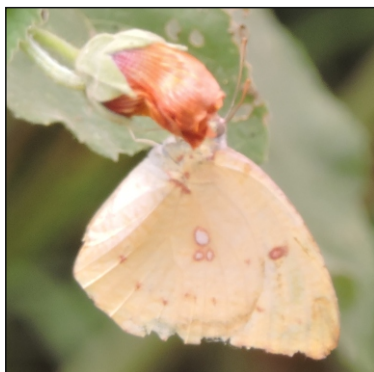


Pachliopta hector



Papilio polytes

Family: Pieridae Sub Family: Coliadinae



Catopsilia pomona



Catopsilia pyranthe



Cepora nerissa

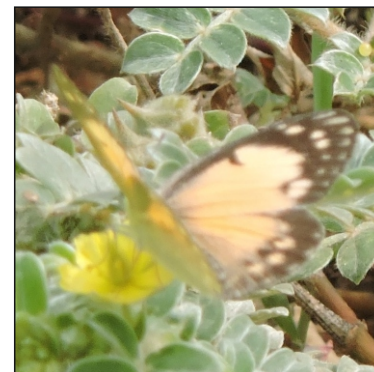
Family: Pieridae
Sub Family: Pierinae



Eurema blanda



Eurema andersoni



Colotis amata



PLATE 55: Lepidoptera
Family: Pieridae Sub Family: Pierinae



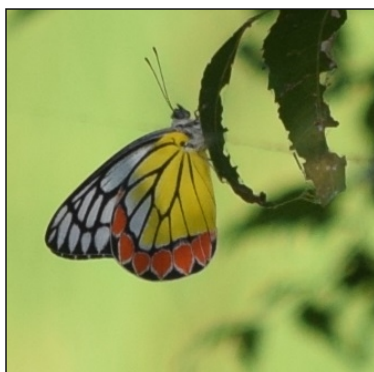
Colotis aurora



Colotis danae



Suastus gremius



Delias eucharis



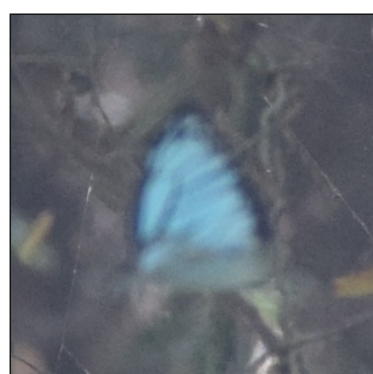
Ixias marianne



Ixias pyrene



Leptosia nina



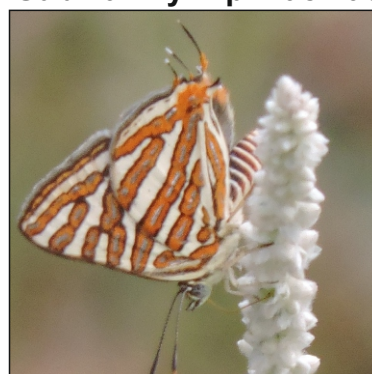
Pareronia hippia

Family: Lycaenidae
Sub Family: Curetinae



Curetis thetis

Family: Lycaenidae
Sub Family: Aphnaeinae



Spindasis vulcanus

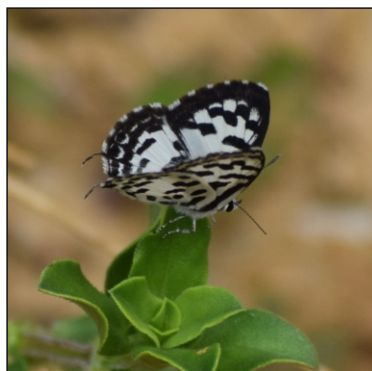


PLATE 56: Lepidoptera

Family: Lycaenidae Sub Family: Polyommatainae



Azanus jesous



Castalius rosimon



Catochrysops strabo



Euchrysops cnejus



Everes lacturnus



Freyeria putli



Jamides celeno



Leptotes plinius



Pseudozizeeria maha



Zizeeria karsandra



Zizina otis



Zizula hylax

PLATE 57: Lepidoptera

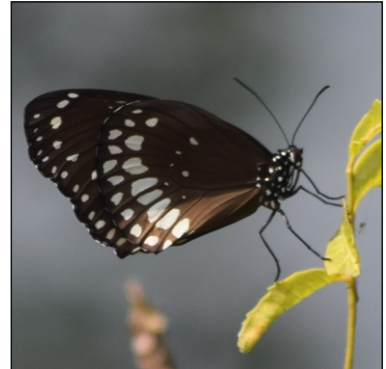
Family: Nymphalidae Sub Family: Danainae



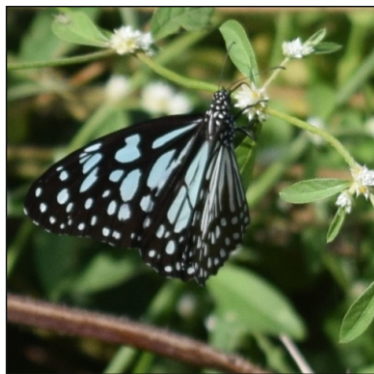
Danaus chrysippus



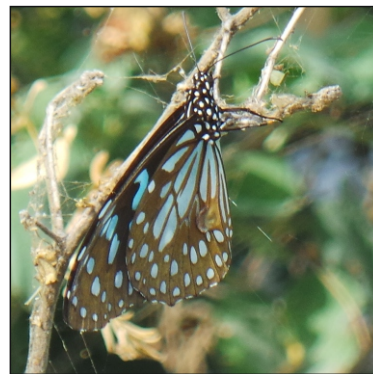
Danaus genutia



Euploea sylvester coreta



Tirumala limniace

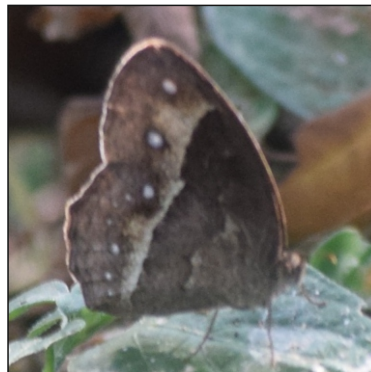


Tirumala septentrionis

Family: Nymphalidae Sub Family: Satyrinae



Melanitis leda



Mycalesis perseus



Melanitis phedima varaha



Mycalesis mineus

Family: Nymphalidae
Sub Family: Charaxinae



Polyura athamas

Family: Nymphalidae
Sub Family: Morphinae



Charaxes solon

PLATE 58: Lepidoptera

Family: Nymphalidae
Sub Family: Acraeinae



Acraea violae

Family: Nymphalidae
Sub Family: Heliconiinae



Phalanta phalantha

Family: Nymphalidae
Sub Family: Limenitinae



Neptis hylas

Family: Nymphalidae
Sub Family: Cyrestinae



Byblia ilithyia

Family: Nymphalidae Sub Family: Biblidinae



Ariadne ariadne



Ariadne merione

Family: Nymphalidae Sub Family: Nymphalinae



Hypolimnys bolina



Hypolimnys misippus



Junonia almana



Junonia atlites



Junonia hierta



Junonia iphita



PLATE 59: Lepidoptera

Family: Nymphalidae Sub Family: Nymphalinae



Junonia lemonias



Junonia orithiya

Family: Crambidae



Spoladea recurvalis

Family: Erebidae



Utetheisa pulchelloides

Family: Lycaenidae Sub Family: Theclinae



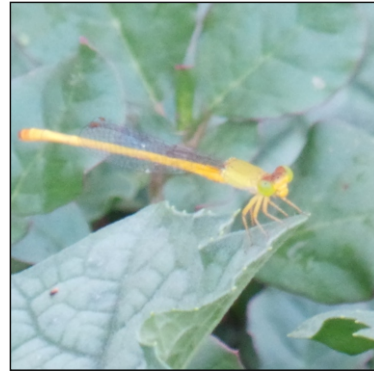
Virachola isocrates



PLATE 60: Odonata
Family: Coenagrionidae



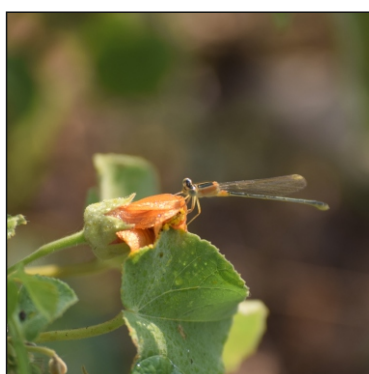
Agriocnemis femina



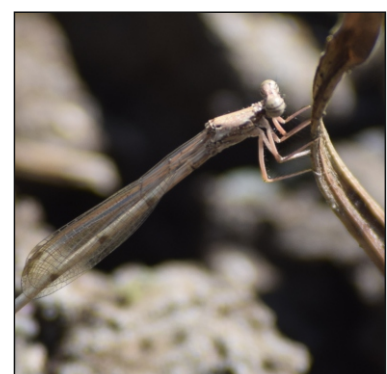
Ceriagrion coromandelianum



Ischnura aurora



Ischnura senegalensis



Lestes umbrinus



Pseudagrion decorum



Pseudagrion microcephalum



Pseudagrion rubriceps

Family: Gomphidae



Ictinogomphus rapax



Paragomphus lineatus



PLATE 61: Odonata
Family: Libellulidae



Acisoma panorpoides



Brachydiplax chalybea



Brachythemis contaminata



Bradinopyga geminata



Crocothemis servilia



Diplacodes trivialis



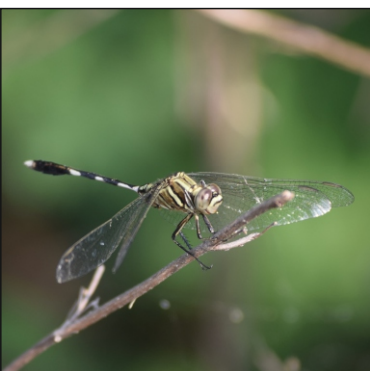
Indothemis carnatica



Orthetrum luzonicum



Orthetrum pruinosum



Orthetrum sabina



Pantala flavescens



Potamarcha congener



PLATE 62: Odonata
Family: Libellulidae



Rhyothemis variegata



Tholymis tillarga



Tramea basilaris



Tramea limbata



Trithemis pallidinervis



Urothemis signata

Family: Lestidae



Zyxomma petiolatum



Lestes elatus



Plate 64: Gastropods



Plate 65: Fishes



Anabas testudineus



Catla catla



Channa punctata



Channa striata



Clarias gariepinus



Etroplus suratensis



Glossogobius giuris



Labeo rohita



Lepidocephalichthys thermalis



Mystus bleekeri

Plate 66: Fishes



Notopterus notopterus



Parambassis ranga



Oreochromis niloticus



Oryzias dancena



Oreochromis mossambicus



Puntius sophore



Mudskipper

Plate 67: Crustaceans



Uca perplexa



Uca pugnax



Uca annulipes

Order: Cladocera
Family: Daphniidae



Daphnia sp.,



PLATE 68: Amphibians
Family: Dicroglossidae



Euphlyctis cyanophlyctis



Euphlyctis hexadactylus



Hoplobatrachus tigerinus



Euodice malabarica



Fejervarya limnocharis



PLATE 69: Reptiles



Calotes versicolor



Mabuya carinata



Psammophilus dorsalis - Female



Psammophilus dorsalis - Male



Sitana ponticeriana



Daboia russelii

PLATE 70: Avifauna
Family: Phasianidae



Francolinus pondicerianus



Pavo cristatus

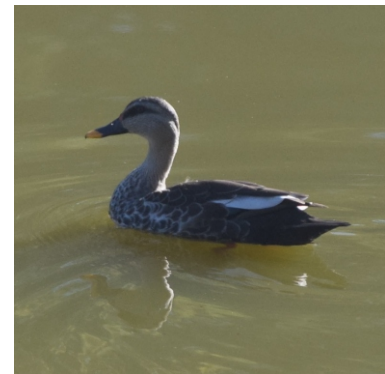
Family: Anatidae



Anas acuta



Anas clypeata



Anas poecilorhyncha



Anas querquedula



Anser indicus



Dendrocygna javanica



Nettapus coromandelianus



Sarkidiornis melanotos



PLATE 71: Avifauna

Family: Podicipedidae

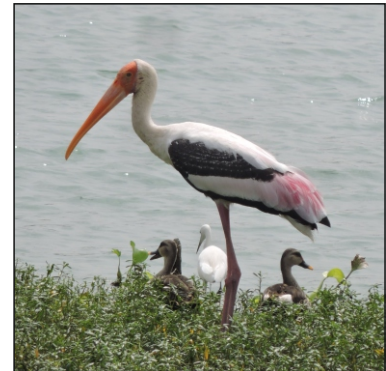


Tachybaptus ruficollis

Family: Ciconiidae



Anastomus oscitans



Mycteria leucocephala

Family: Phoenicopteridae



Phoenicopus roseus

Family: Threskiornithidae



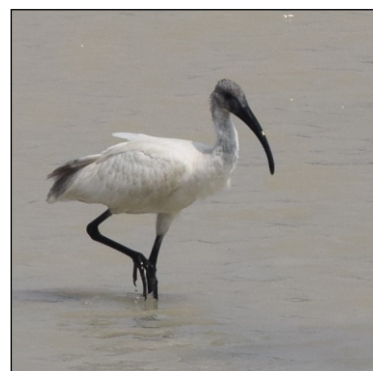
Platalea leucorodia



Plegadis falcinellus



Pseudibis papillosa



Threskiornis melanocephalus



PLATE 72: Avifauna

Family: Ardeidae



Ardea cinerea



Ardea purpurea



Ardeola grayii



Bubulcus ibis



PLATE 73: Avifauna
Family: Ardeidae



Butorides striata



Casmerodius albus



Egretta garzetta



Ixobrychus sinensis



Mesophoyx intermedia



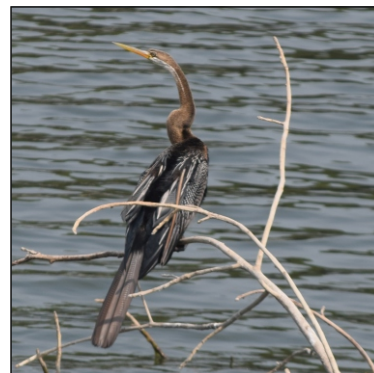
Nycticorax nycticorax

Family: Pelecanidae



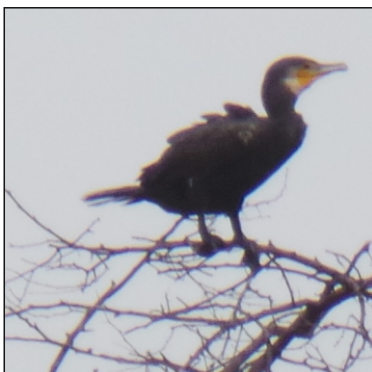
Pelecanus philippensis

Family: Anhingidae

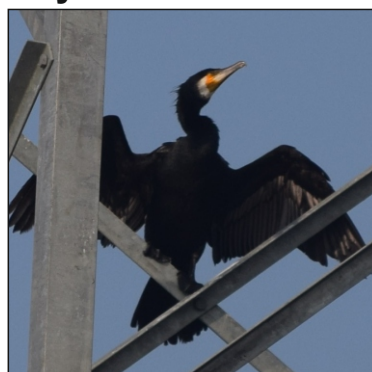


Anhinga melanogaster

Family: Phalacrocoracidae



Phalacrocorax carbo



Phalacrocorax fuscicollis



Phalacrocorax niger



PLATE 74: Avifauna
Family: Accipitridae



Accipiter badius



Butastur teesa



Buteo buteo



Circus aeruginosus



Circus pygargus



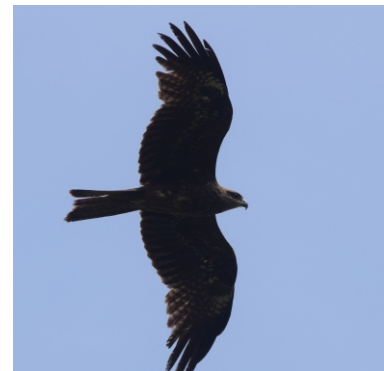
Elanus caeruleus



Haliaastur indus



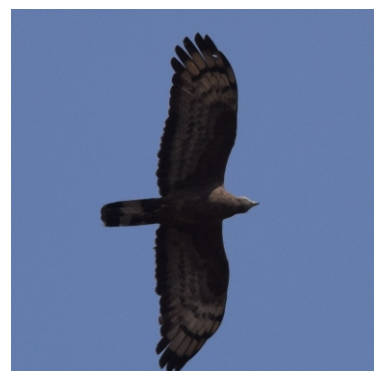
Hieraaetus pennatus



Milvus migrans



Pandion haliaetus



Pernis ptilorhynchus

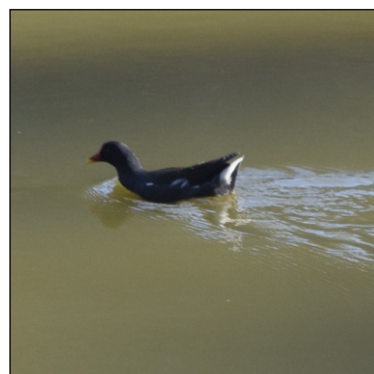
PLATE 75: Avifauna
Family: Rallidae



Amaurornis phoenicurus



Fulica atra

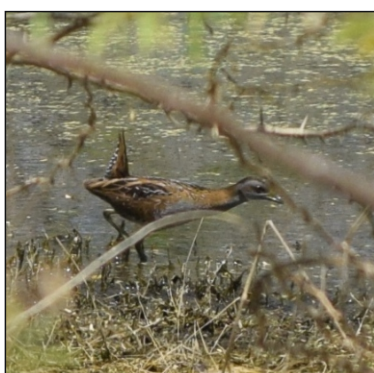


Gallinula chloropus

Family: Turnicidae



Porphyrio porphyrio



Porzana pusilla

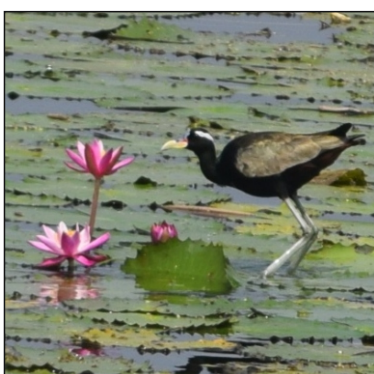


Coturnix coturnix

Family: Jacanidae



Hydrophasianus chirurgus



Metopidius indicus



Himantopus himantopus

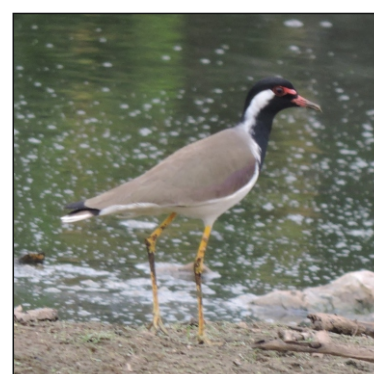
Family: Charadriidae



Charadrius dubius



Vanellus cinereus



Vanellus indicus



PLATE 76: Avifauna
Family: Charadriidae



Vanellus malabaricus

Family: Scolopacidae



Calidris minuta



Numenius arquata



Tringa glareola



Tringa nebularia



Tringa ochropus



Tringa stagnatilis



Tringa totanus

PLATE 77:



Family: Laridae



Chlidonias hybrida



Chroicocephalus brunnicephalus



Gelochelidon nilotica



Hydroprogne caspia

Family: Pteroclididae



Pterocles exustus

Family: Columbidae



Columba livia



Stigmatopelia chinensis



Stigmatopelia senegalensis



Streptopelia decaocto



Streptopelia tranquebarica



PLATE 78: Avifauna

Family: Psittacidae



Psittacula krameri

Family: Cuculidae



Centropus (sinensis) parroti



Clamator jacobinus

Family: Apodidae



Cypsiurus balasiensis

Family: Upupidae



Upupa epops

Family: Coraciidae

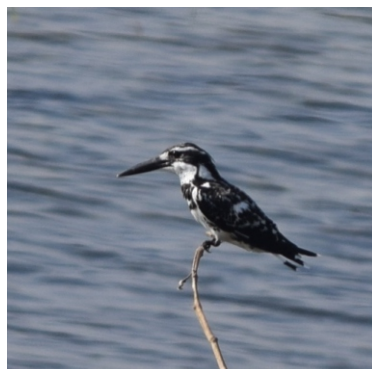


Coracias benghalensis

Family: Alcedinidae



Alcedo atthis



Ceryle rudis

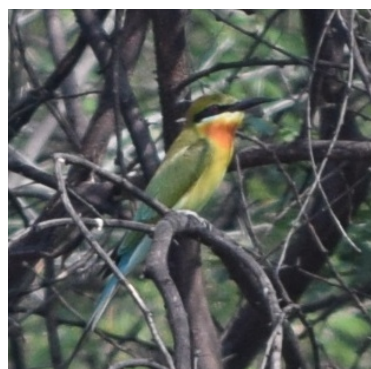


Halcyon smyrnensis

Family: Meropidae



Merops orientalis



Merops philippinus

Family: Tephrodornithidae



Tephrodornis pondicerianus

PLATE 79:

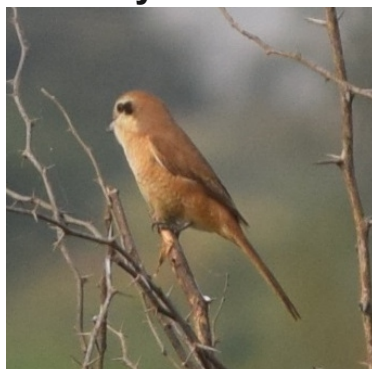


Family: Artamidae



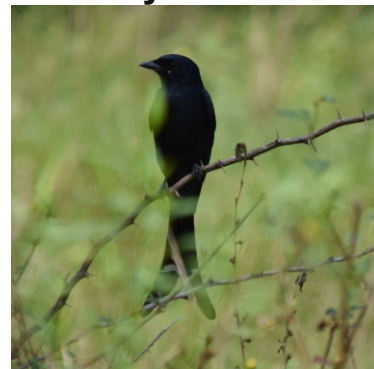
Artamus fuscus

Family: Laniidae



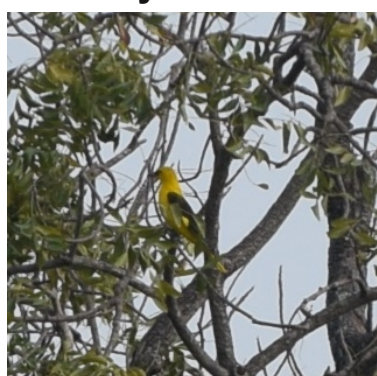
Lanius cristatus

Family: Dicruridae



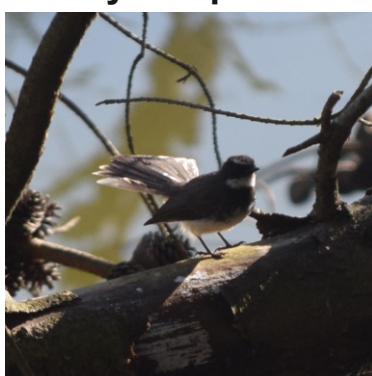
Dicrurus macrocercus

Family: Oriolidae



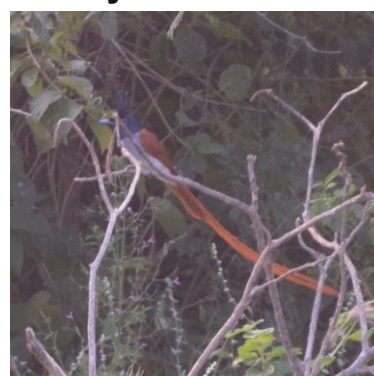
Oriolus kundoo

Family: Rhipiduridae



Rhipidura (albicollis) albogularis

Family: Monarchidae



Terpsiphone paradisi

Family: Corvidae



Corvus (macrorhynchos) culminatus



Corvus splendens



Dendrocitta vagabunda

Family: Paridae



Parus cinereus

Family: Hirundinidae



Cecropis daurica



Hirundo rustica

PLATE 80: Avifauna

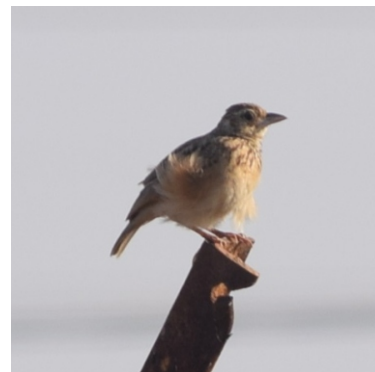
Family: Alaudidae



Alauda gulgula



Eremopterix griseus



Mirafraga affinis

Family: Pycnonotidae

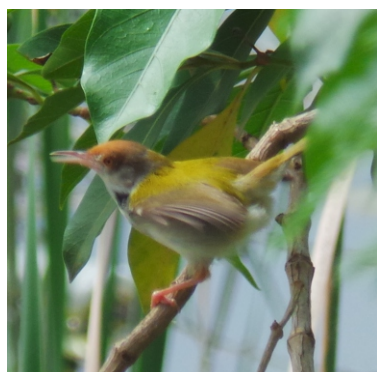


Pycnonotus cafer

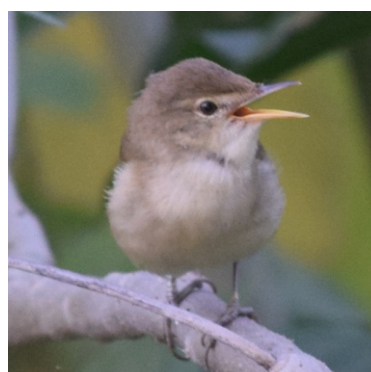


Pycnonotus jocosus

Family: Cisticolidae



Orthotomus sutorius



Prinia inornata



Prinia socialis



Prinia sylvatica



PLATE 81: Avifauna

Family: Acrocephalidae



Acrocephalus dumetorum



Acrocephalus stentoreus

Family: Phylloscopidae



Phylloscopus trochiloides

Family: Timaliinae



Dumetia hyperythra

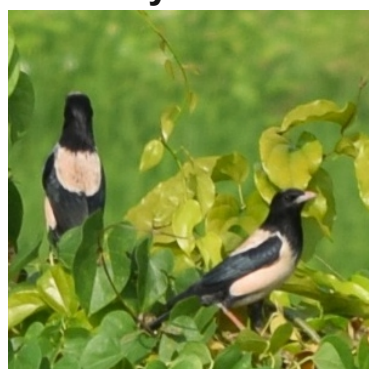


Turdoides affinis

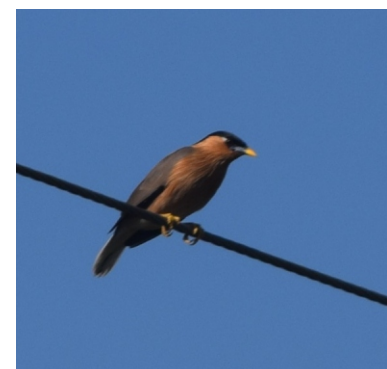
Family: Sturnidae



Acridotheres tristis



Pastor roseus



Sturnia pagodarum



PLATE 82: Avifauna
Family: Muscicapidae



Eumyias albicaudatus



Muscicapa dauurica



Saxicola caprata



Acrocephalus dumetorum

Family: Stenostiridae



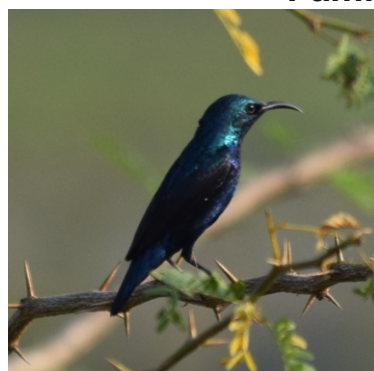
Culicicapa ceylonensis

Family: Dicaeidae

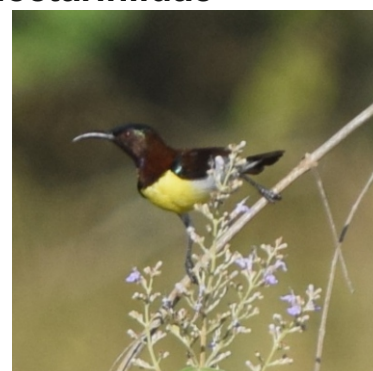


Dicaeum erythrorhynchos

Family: Nectariniidae



Cinnyris asiaticus



Leptocoma zeylonica

PLATE 83: Avifauna

Family: Passeridae



Gymnoris xanthocollis



Passer domesticus

Family: Ploceidae



Ploceus manyar



Ploceus philippinus

Family: Estrildidae



Euodice malabarica



Lonchura malacca



Lonchura punctulata

Family: Motacillidae



Anthus rufulus



Motacilla alba



Motacilla flava



Motacilla maderaspatensis



Plate 84: Mammals

Family: Bovidae



Axis axis



Bubalus bubalis



Bos taurus



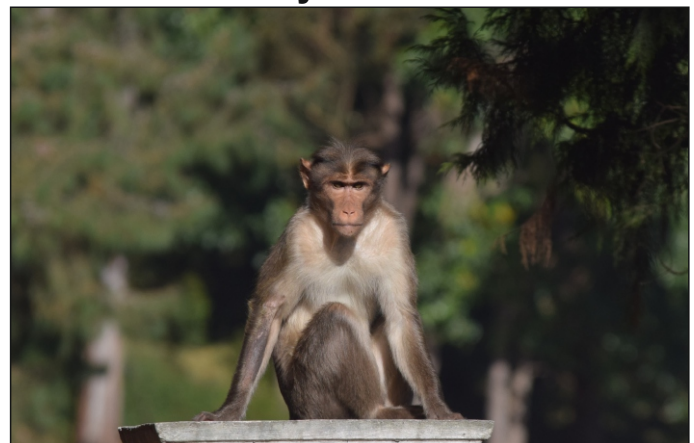
Capra aegagrus hircus

Family: Canidae

Family: Canidae



Canis lupus familiaris



Macaca radiata



Plate 85: Mammals

Family: Equidae



Equus ferus caballus

Family: Felidae



Felis catus

Family: Herpestidae



Herpestes edwardsi

Family: Muridae



Bandicota indica

Family: Sciuridae



Funambulus palmarum

Family: Suidae



Funambulus palmarum



Sus scrofa

Plate 86: Wetland Temple



Elandaikudam Lake - Ariyalur



Kovaipudur Lake - Coimbatore



Idumban Kulam - Dindigul



Vaiyapuri tank - Dindigul

Plate 87: Wetland Temple



Vellode Bird Sanctuary - Erode



Govindavadi Lake - Kancheepuram



Great Salt Lake - Kancheepuram



Sriperumbudur Lake - Kancheepuram



Plate 88: Wetland Temple



Amirthasagaram Lake - Namakkal



Uthirakosamangai Lake - Ramanathapuram



Rajasingamangalam Lake - Ramanathapuram



Vettangudi Bird Sanctuary - Sivagangai



Plate 89: Wetland Temple



Vadamaneri Lake - Salem



Vettangudi Bird Sanctuary - Sivagangai



Periyakulam Kanmai - Theni



Puthukulam - Tirunelveli

Plate 90: Wetland Temple



Kongur Idachi Kulam - Tirupur



Koolipalayam Lake - Tirupur



Padur-Thangal Eri - Tiruvallur



Kaveripakkam Lake - Vellore



Plate 91: Wetland Temple



Periyakulam Kanmai (Srivilliputhur) - Virudhunagar



PLATE 92: Bird Poaching



Anakavoor Lake - Tiruvannamalai



Kallaperambur Lake - Thanjavur



Karungulam - Thoothukudi



Keeran Lake - Nagapattinam



Koothappar Big tank - Tiruchirappalli



Pongoundapara Lake - Krishnagiri



T. Kunnathur - Madurai

Plate 93: Human Uses of Wetlands



Encroachment and solid waste dumping



Agriculture inside the wetland banks



Eutrophication and Encroachment in the wetland



Burning of solid waste along the wetland bunds

Plate 94: Human Uses of Wetlands



Scavenging in the wetlands



Sewage release



Partying along the wetlands



Crematorium along the wetland banks

Plate 95: Human Uses of Wetlands



Recreational and boating activities



Sand mining



Garbage mounds inside the wetland



Plate 96: Human Uses of Wetlands



High tension wires crossing the wetland



Park along the wetland



Washing cattle



Washing clothes

Plate 97: Livelihood



Fishing



Agriculture inside the wetland banks



Cutting fuel wood



Grazing



Plate 98: Livelihood



Salt pans



Drinking water

PLATE 99: Field Photos



Amirthasagaram Lake



Andakudi Lake



Arumbavur Big Lake



Great Salt Lake

PLATE 100: Field Photos



Kadagathur Lake



Kodaikanal Lake



Kolavai Lake



Kongur Idachi Kulam

PLATE 101: Field Photos



Koolipalayam Lake



Kovaiipudur Lake



Kurichi Lake



Madhuranthakam Lake

PLATE 102: Field Photos



Muthaliyarkuppam Lake



Panamarathupatti Eri



Pulicat Lake



Sandapet Lake

PLATE 103: Field Photos



Thamaraikulam Kanmai



Thirupulivanam lake



Uthiramerur Lake



Vellode Bird Sanctuary



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