

FINAL REPORT

SYSTEMATIC BIRD MONITORING AND BIODIVERSITY DOCUMENTATION OF WETLANDS UNDER PROJECT NANNEER

JUNE 2023 - MAY 2024



NANNEER
Water-essence of life



**SALEM
ORNITHOLOGICAL
FOUNDATION**

FINAL REPORT

SYSTEMATIC BIRD MONITORING AND BIODIVERSITY DOCUMENTATION OF WETLANDS UNDER PROJECT NANNER.

June 2023 - May 2024

**PREPARED BY
SALEM ORNITHOLOGICAL FOUNDATION**



FUNDED BY



A.M.M. FOUNDATION

TABLE OF CONTENTS

S.No.	CONTENTS	PAGE NO.
	ACKNOWLEDGEMENT	
1	EXECUTIVE SUMMARY	1
2	INTRODUCTION	3
3	OBJECTIVES	5
4	METHODOLOGY	6
5	ANALYSIS AND RESULTS	7
6	FREQUENCY OF REPORTING - BIRDS	28
7	TOTAL ABUNDANCE OF BIRDS	32
8	SHANNON DIVERSITY INDEX	35
9	PIELOU'S EVENNESS INDEX	37
10	JACCARD SIMILARITY COEFFICIENT	39
11	SEASONALITY OF BIRDS	41
12	MIGRATORY STATUS OF BIRDS	44
13	HABITAT SPECIALIZATION OF BIRDS	47

14	DIET GUILD	50
15	CONSERVATION PRIORITY STATUS OF BIRDS	53
16	CHECKLIST	54
17	PHOTOGRAPHS	75
18	REFERENCES	109



ACKNOWLEDGEMENT

Salem Ornithological Foundation expresses its gratitude and sincere thanks to **A.M.M. Foundation** for funding the project. We deeply thank **Narayanan H**, Senior Associate VP & CE-AMM Foundation, **Ramakrishnan S**, General Manager & Unit Head, Nutra-OYR-EID, **Sajitha Rajeev**, Senior Manager-Projects, A.M.M. Foundation for their incredible support and guidance throughout the course of the project.

A very special thanks to **Bharathi Balan G**, Manager-Environment, Tamil Nadu, E.I.D Parry (India) Ltd, **Vinoth Kumar J**, Executive WTP & ETP for his consistent encouragement and facilitating our requirements whenever requested. We thank **Saravanan V**, Executive-Maintenance for the two-wheeler. We thank the enthusiastic staff of **Parry Nutraceuticals Ltd.** for their participation and support to all the activities towards the conservation of the wetlands.

We thank **Venkatesh S**, post-graduate student in Conservation Practice, ATREE for his inputs and support with data analysis.

We extend our thanks to **Aarti C Rajaratnam**, psychologist and author for the introduction between A.M.M. Foundation and the Salem Ornithological Foundation and for her continued guidance, support and inputs in our work.

We heartfully thank all the **people** residing in and around the wetlands for their incredible support throughout the successful implementation of this project.

Angeline Mano M and Ganeshwar S V,
Salem Ornithological Foundation.

EXECUTIVE SUMMARY

Project Nanneer, a flagship project of the **A.M.M. Foundation** is focused on the restoration and conservation of waterbodies

to benefit humans as well as other lifeforms.

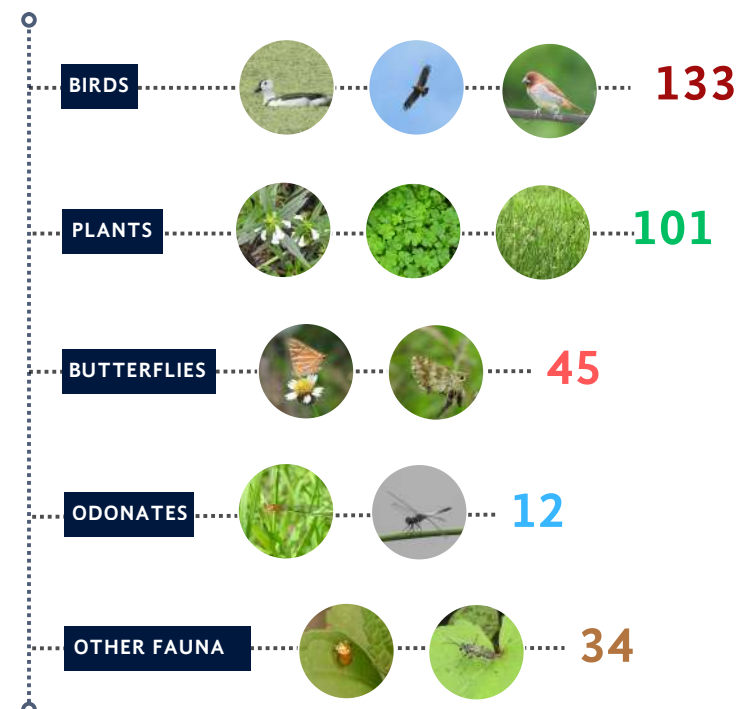
The richness of biodiversity is a good indicator of environmental health and also a measure for the project's success. Hence, a diligent **research** program of **systematic bird monitoring** and **biodiversity documentation** was conducted in **four restored kanmais** in Pudukkottai and Sivagangai, Tamil Nadu

from **June 2023 - May 2024**, in collaboration with **Salem Ornithological Foundation**.

This comprehensive study uncovered a diverse community of **325 species of flora and fauna** in the *kanmais* including 133 bird species, 101 plant species, 45 butterfly species, 12 odonate species, 3 amphibian species, 7 reptile species, 4 mammal species, 4 ant species and other species of fauna. The data is result of **646 hours of field work** in total. Notably, the *kanmais* are ecologically so rich such that the diversity is near-equivalent to some bird sanctuaries. They also serve as a vital **nesting habitat** for various species of waterbirds and terrestrial birds. Several migratory birds utilizing the *Central Asian Flyway* depend on the lake as an essential **wintering ground** for feeding and as a **stopover** site during migration. It is evident that the benefits of the restoration efforts is for every life that depends on these kanmais. We hope the project serves as an inspiration for people from all walks of life to protect our natural resources for our future generations that are yet to witness these wonders around us.

325

species of flora and fauna!

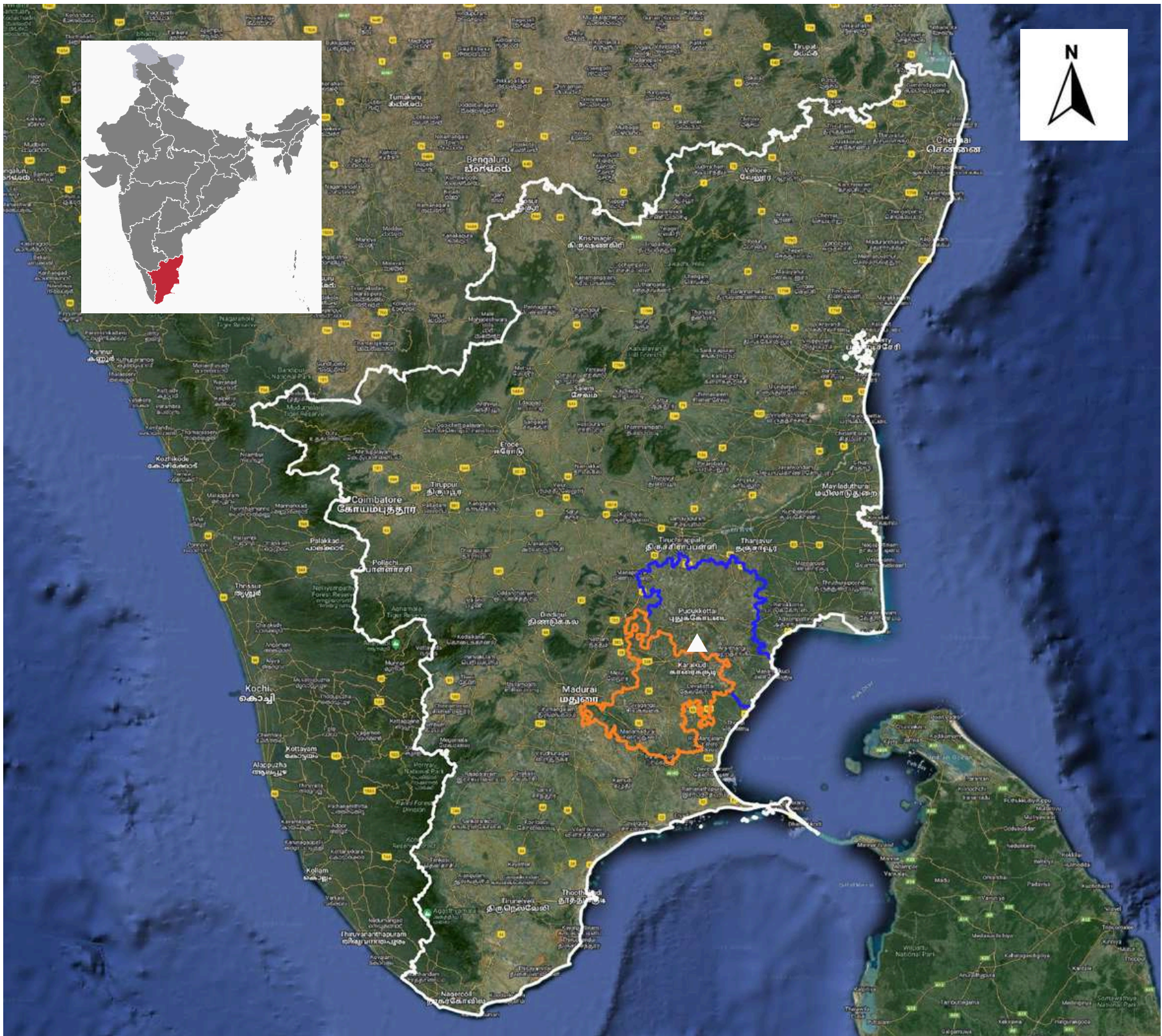


INTRODUCTION

Wetlands are often described as the arteries and veins of a landscape, playing a vital role in maintaining ecological balance. However, these crucial ecosystems are under threat, disappearing at an alarming rate due to increasing anthropogenic pressures. The conservation of wetlands is essential not only for preserving biodiversity but also for ensuring the sustainability of human life. Recognizing this urgent need, **Project Nanneer, a wetland restoration initiative by the A.M.M. Foundation** and Parry Nutraceuticals Ltd., has been actively working to restore and protect these vital habitats.

Situated in the southern region of Tamil Nadu, Pudukkottai and Sivagangai districts are known for their rich cultural heritage and historical significance. The landscape here is diverse, encompassing coastal areas, fertile plains, and rocky hills. The region experiences a typical tropical climate throughout the year, with pleasant weather occurring from November to January and driest conditions in summer. Mean temperatures range from 20°C to 40°C in the plains. Rainfall comes from both Southwest and Northeast Monsoons, with the latter making a significant contribution for agriculture and water supply. The contribution of these monsoons is crucial for sustaining the wetlands and the biodiversity they support.

Project Nanneer is focused on restoring wetlands (implemented by Siruthuli, Coimbatore), in Pudukkottai and Sivagangai. The aim is to benefit not only humans but all forms of life that depend on these water bodies. Restoration efforts under Project Nanneer ensure that the richness of biodiversity, a key indicator of wetland health, is preserved and improved.



Blue represents Pudukkottai District and orange represents Sivagangai District. The white triangle overlapping the district borders indicates the location of the kanmais restored under Project Nanneer.



Map showing the eBird Hotspots of the restored kanmais around the Parry Nutraceuticals Ltd.

While initial documentation provides baseline data, systematic monitoring is essential for tracking changes over time. This helps assess how restoration efforts impact different species. The Salem Ornithological Foundation conducted the **"Systematic Bird Monitoring and Biodiversity Documentation of Wetlands under Project Nanneer"** to evaluate the project's success. This aspect of biodiversity monitoring is often overlooked in restoration projects, but Project Nanneer prioritizes it, making the initiative unique.

The wetlands covered under this project are:

- **Chettiyan Kanmai** (Sivagangai District)
- **Vadakudipatti Kanmai** (Sivagangai District)
- **Kanappettai Kanmai** (Pudukkottai District)
- **Panangudi Kanmai** (Pudukkottai District)

The efforts of Project Nanneer highlight the importance of wetland conservation and restoration. By maintaining and enriching the ecological functions of wetlands, the project ensures benefits for all life forms dependent on these habitats. The systematic monitoring and documentation of biodiversity under this project not only demonstrate its success but also set a precedent for other restoration initiatives. The rich biodiversity and varied landscape of Pudukkottai and Sivagangai districts underscore the importance of preserving these vital ecosystems for future generations.



OBJECTIVES

RESEARCH

- To create a baseline data of overall biodiversity in each of the wetlands under Project Nanneer for future conservation actions
- To conduct a detailed assessment of the species richness, seasonality and percentage of occurrence (or frequency) of birds
- To document all the non-avian fauna and flora of the wetlands

PUBLICATION

- To publish and enhance the bird and biodiversity data of Pudukkottai and Sivagangai and also popular science articles and research papers on the birds and biodiversity of the wetlands



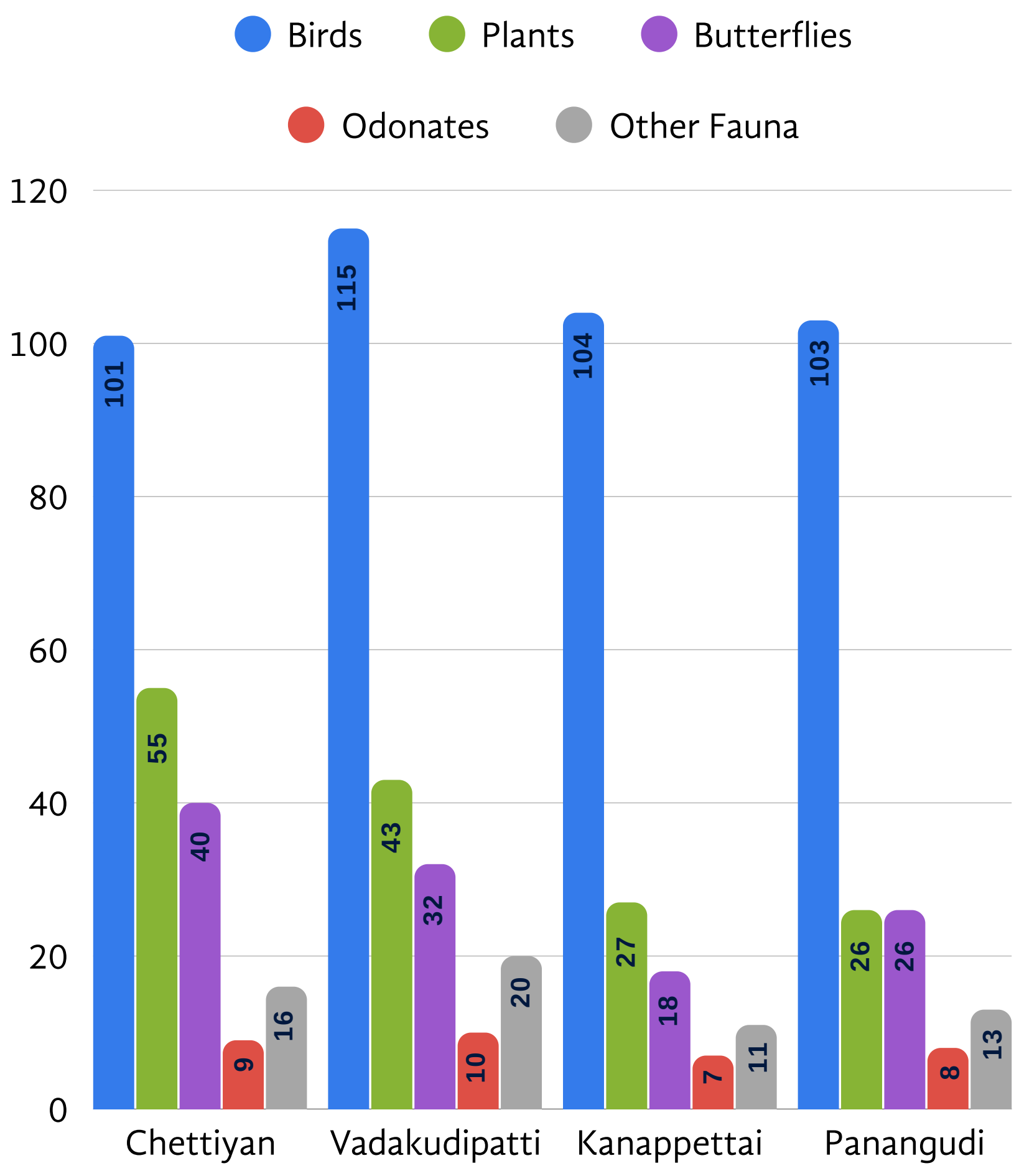
METHODOLOGY

Rather than conducting the study for one calendar year, bird year (from 1 June of one year to 31 May of the next) was chosen because this spans a single migratory season for many bird species in India. It also covers four seasons: (Monsoon: June–August; Autumn: September– November; Winter: December– February; Summer: March–May). Therefore, 2023 refers to the period June 2023 to May 2024. It was made sure that efforts were uniformly spread across the kanmais, particularly in terms of time spent, in order to derive the frequency of species that get reported. Up-to-date protocols such as these were adapted from the State of India's Birds 2023 report and adjusted to suit the project's needs. The timings for the survey was fixed as 07:00 to 10:00 hours and 16:00 to 18:30 hours. The longest bund of wetlands were selected as the transect routes to get maximum coverage to all portions and habitats. Total count method was used to count the birds. Binoculars (Nikon 10x42 and Solognac 10x42) and cameras (Nikon D3400 and Nikon Coolpix P900) were used to identify and photograph the birds. **eBird**, an international citizen science repository for ornithological observations was chosen to upload the sightings. All the bird observations were duly uploaded and were verified by expert reviewers and ornithologists. To view the complete list of bird species recorded, click [here](#).

All the non-avian observations were uploaded to **iNaturalist** database under a separate biodiversity collection project for Project Nanneer. For more details, click [here](#).

ANALYSIS AND RESULTS

From June 2023 - May 2024, Salem Ornithological Foundation documented **325 species of flora and fauna in total**, in all the four kanmais. The bar chart given below is a break down the taxa and the species total in each kanmai. While the number of bird species is highest in Vadakudipatti Kanmai, the species count of plants and butterflies are higher in Chettiyan Kanmai. The remaining two kanmais have also breached the 100 species mark in terms of bird species recorded, is a significant measure of diversity.



CHETTIYAN KANMAI

Name of the Wetland:	Chettiyan Kanmai
Taluk and District:	Karaikudi, Sivagangai, Tamil Nadu
Geo Coordinates:	10.201953, 78.785265
Area in acres:	10.90
Ownership:	Panchayat Union
Total Hours Spent on Field:	161.25
Micro Habitats:	Shallow waters, deeper open waters, plantation, farmlands
Total No. of Species:	221
Total No. of Flora:	55
Total No. of Fauna:	166
No. of Birds:	101
No. of Butterflies and Moths:	41 (40 + 1)
No. of Dragonflies and Damselflies:	9
No. of Other Fauna:	15





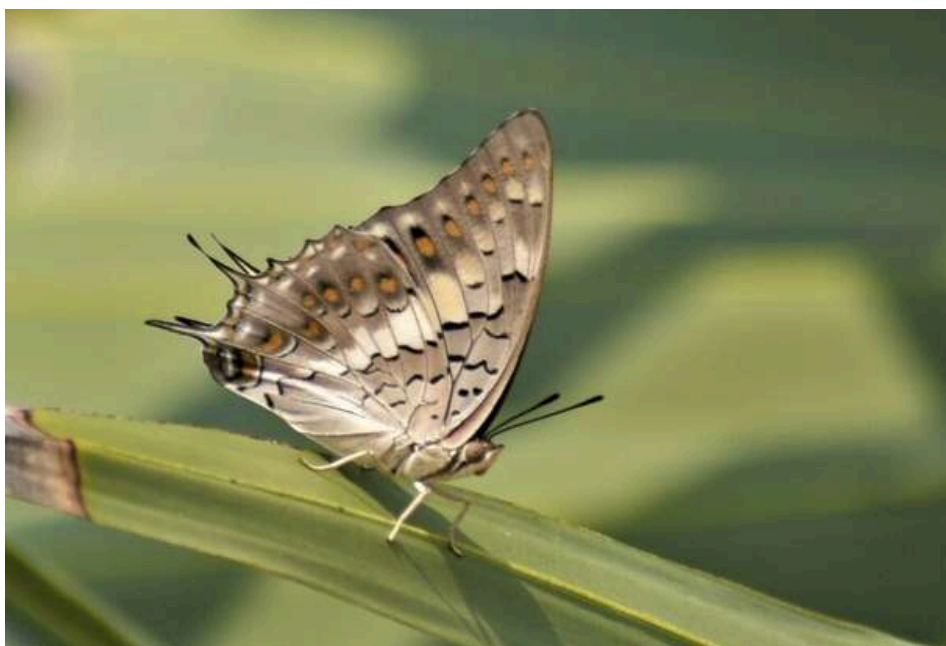
Scanning the QR code will lead to the eBird Hotspot of the Kanmai

Map showing the eBird track along the Chettiyan Kanmai

Despite being the smallest of the four kanmais that were restored, Chettiyan Kanmai has come out on top with **the most number of flora and fauna** recorded (221 species), edging Vadakudipatti Kanmai by just 1 species. Waterbirds generally do not prefer this site but the patch of scrub vegetation at the far end of the kanmai attracts insectivores like Minivets and Cuckooshrikes, which were not documented in the rest of the kanmais. This kanmai is also the favourite waterhole of the Chestnut-bellied Sandgrouse. The record of **Common Buzzard** and **Blyth's Pipit** were the **first documentation** for Sivagangai district. The number of butterflies recorded (40) is also the most than other kanmais.

Highlights

- **Birds:** Chestnut-bellied Sandgrouse, Common Buzzard, Asian Woolly-necked Stork, Small Minivet, Black-headed Cuckooshrike and Blyth's Pipit.
- **Butterflies:** Zebra Blue, Common Silverline, Black Rajah, Indian Sunbeam, Grey Pansy, Striped Tiger and Blue Tiger.
- **Reptiles:** Buff-striped Keelback and Fan-throated Lizard.
- **Odonates:** Variegated Flutterer and Yellow-tailed Ashy Skimmer.



Black Rajah at Chettiyan Kanmai



Plain Tiger and Striped Tiger at Chettiyan Kanmai



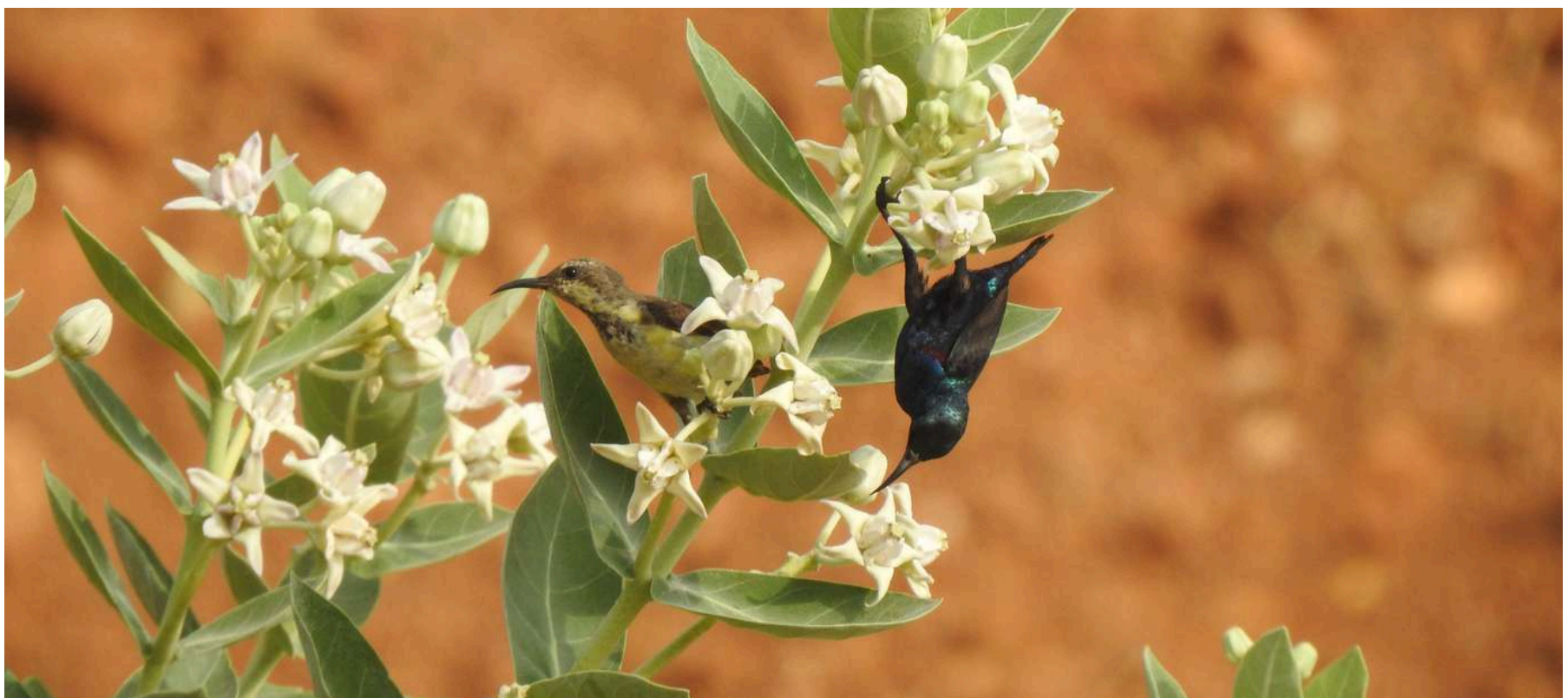
Oriental Honey-buzzard, a resident bird and Common Buzzard, a rare migratory raptor at Chettiyan Kanmai



Indian Silverbill, a resident bird and Green Sandpiper, a migratory species at Chettiyan Kanmai



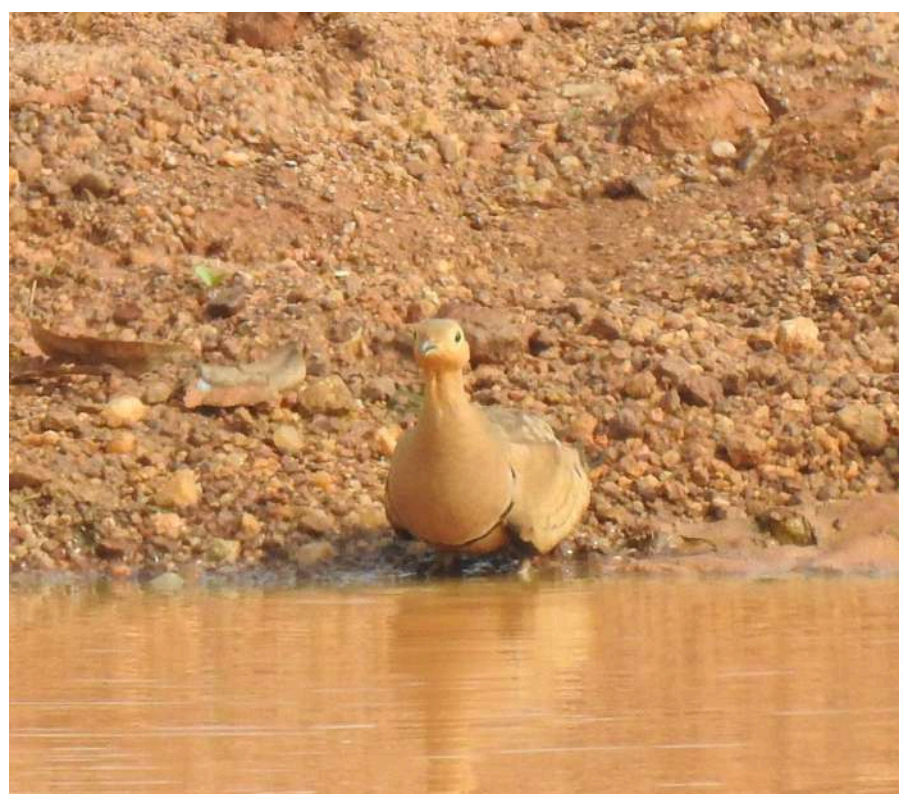
An adult Scaly-breasted Munia with three juveniles at Chettiyan Kanmai



A pair of Purple Sunbird feeding on nectar at Chettiyan Kanmai



Black-headed Ibises alert and ready for take-off at Chettiyan Kanmai

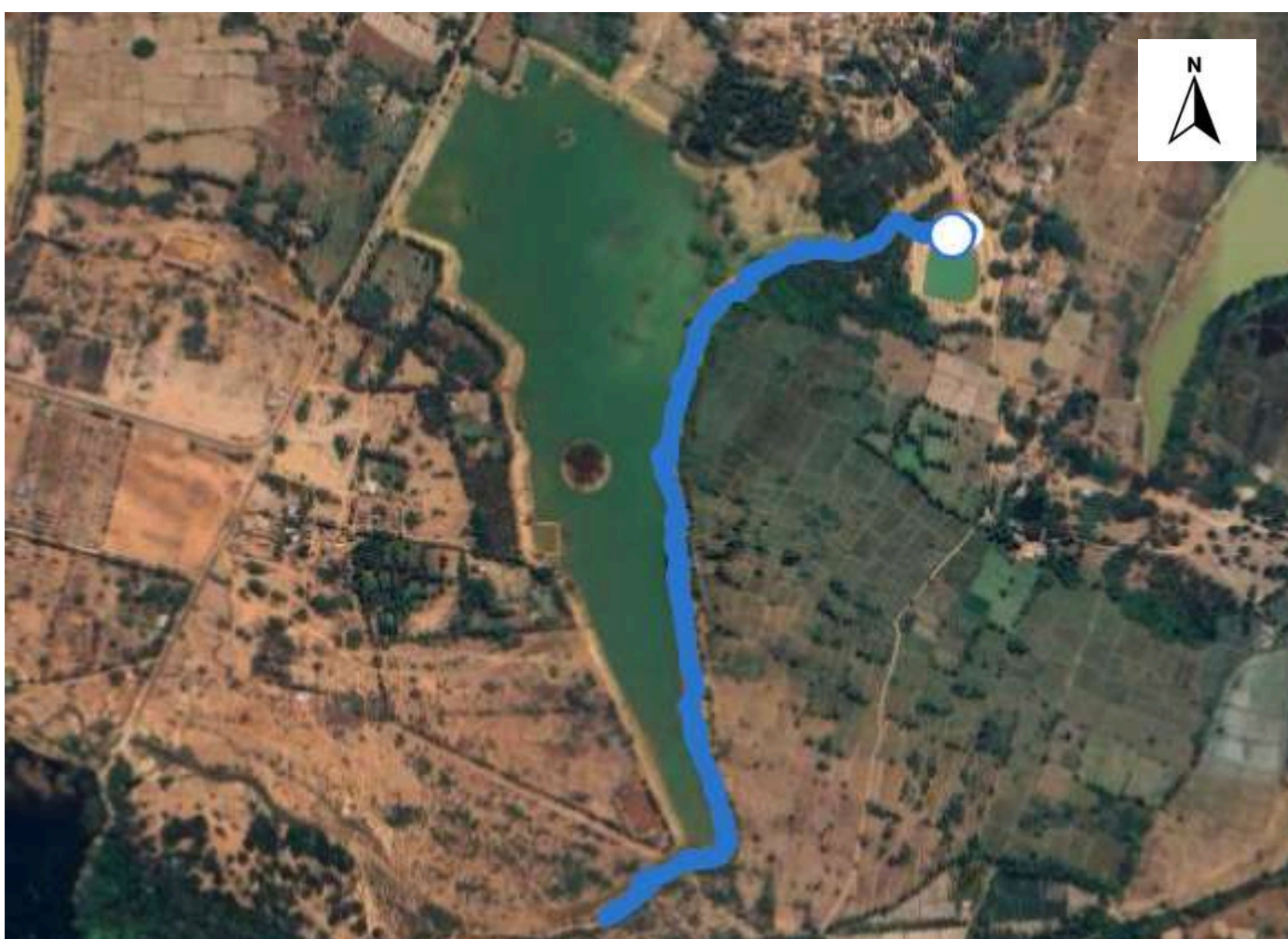


Flocks of Chestnut-bellied Sandgrouse regularly visit Chettiyan Kanmai to drink water

VADAKUDIPATTI KANMAI

Name of the Wetland:	Vadakudipatti Kanmai
Taluk and District:	Karaikudi, Sivagangai, Tamil Nadu
Geo Coordinates:	10.196290, 78.779690
Area in acres:	40.52
Ownership:	Panchayat Union
Total Hours Spent on Field:	161.25
Micro Habitats:	Shallow waters, deeper open waters, scrub jungle, farmlands
Total No. of Species:	220
Total No. of Flora:	43
Total No. of Fauna:	177
No. of Birds:	115
No. of Butterflies and Moths:	33 (32 + 1)
No. of Dragonflies and Damselflies:	10
No. of Other Fauna:	19





Scanning the QR code will lead to the eBird Hotspot of the Kanmai

Map showing the eBird track along the Vadakudipatti Kanmai

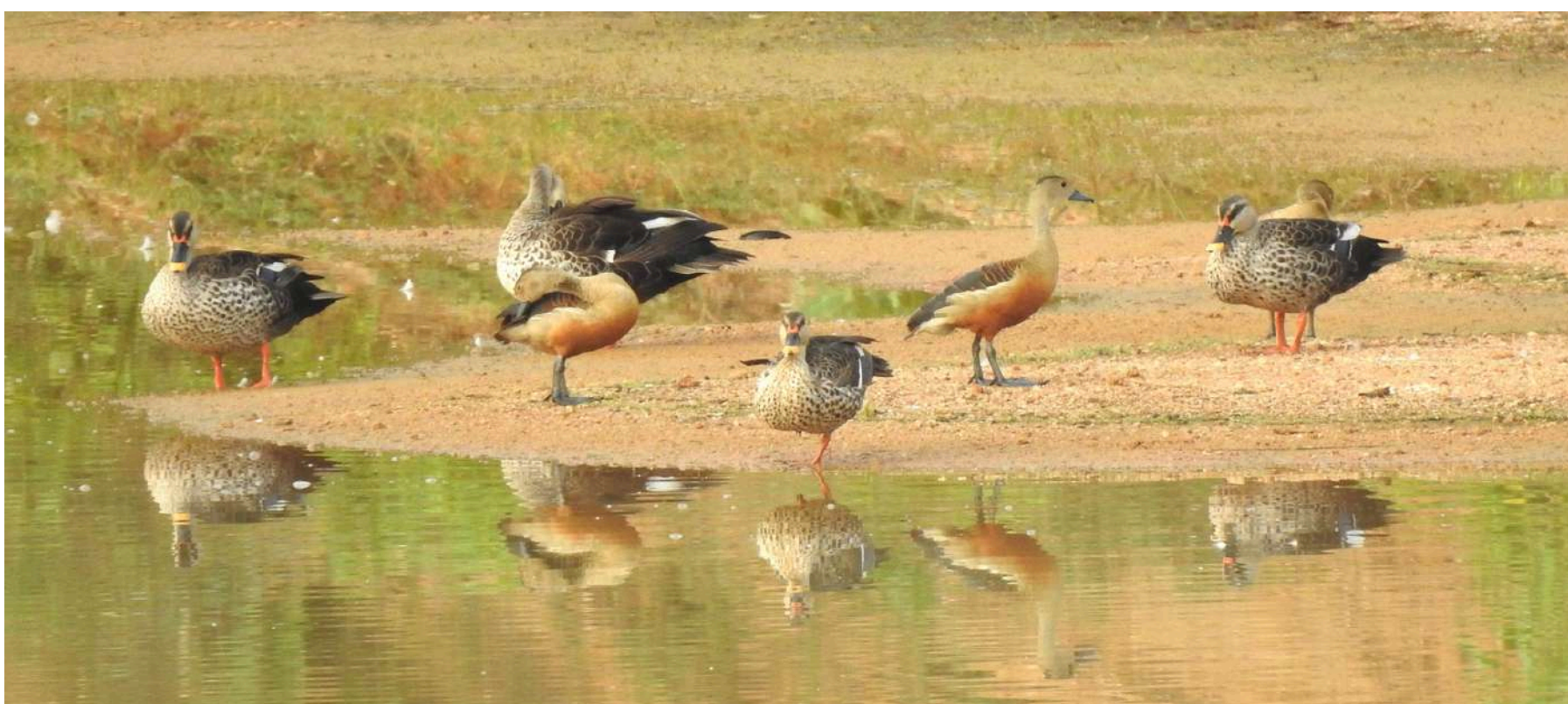
According to eBird, Vettangudi Bird Sanctuary with 117 species is the top hotspot in Sivagangai district. **Vadakudipatti Kanmai** has a near-equivalent diversity with 115 bird species, making it the **No. 2 hotspot** of the region. This speaks volumes about how good the kanmai is for birds and other life. The diversity and total abundance of birds was also the most consistent among the kanmais throughout the year. Migratory waterbirds congregate in this kanmai before returning to their countries of origin. Rare migrants such as Ashy Drongo and Blue-throated Flycatcher were also recorded once. The kanmai definitely has the **potential to be declared as a Biodiversity Heritage Site**.

Highlights

- **Birds: First for Sivagangai:** Crested Serpent Eagle, Temminck's Stint, Citrine Wagtail. Other: Common Snipe, Montagu's Harrier and Marsh Sandpiper.
- **Butterflies:** Small Cupid, Common Banded Peacock, Blue Mormon, Indian Grizzled Skipper, Small Salmon Arab, Grass Jewel, Blue Pansy.
- **Reptiles:** Oriental Rat Snake, Checkered Keelback, Keeled Indian Mabuya.
- **Odonates:** Long-legged Marsh Glider.



Lesser Whistling-Ducks, one of our resident duck species, arriving at Vadakudipatti Kanmai



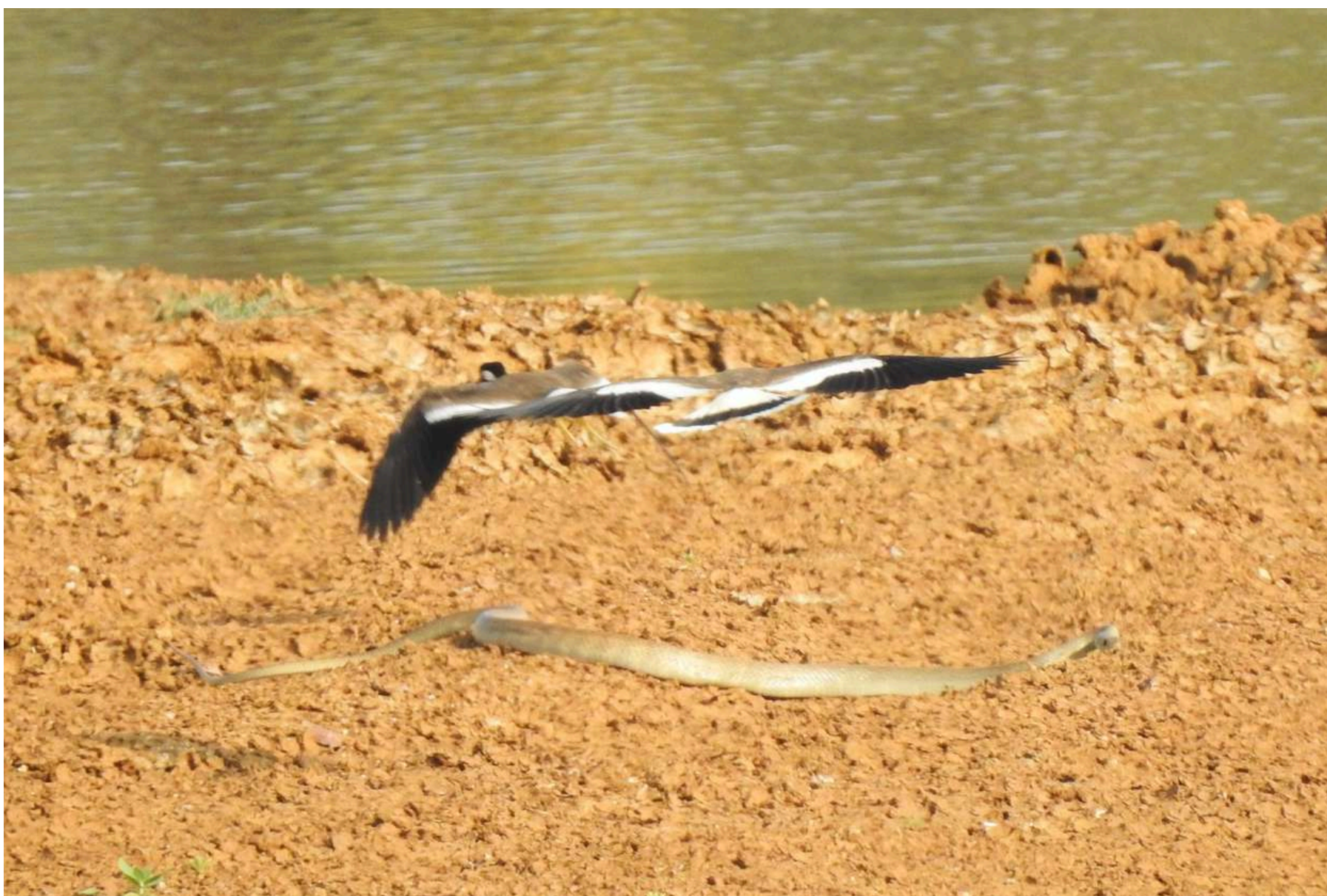
Indian Spot-billed Ducks and Lesser Whistling-Ducks at Vadakudipatti Kanmai



A beautiful adult Red-backed Kite (Brahminy Kite) soaring at Vadakudipatti Kanmai



Ashy Drongo made a stopover at Vadakudipatti Kanmai during its migration



A pair of Red-wattled Lapwings mobbing an Oriental Rat Snake at Vadkudipatti Kanmai



Indian Pond-Herons, Little Egrets, Intermediate Egret and Great Egret at Vadakudipatti Kanmai



Indian Nightjar, a nocturnal species was spotted in broad daylight at Vadakudipatti Kanmai

KANAPPETTAI KANMAI

Name of the Wetland:	Kanappettai Kanmai
Taluk and District:	Thirumayam, Pudukkottai, Tamil Nadu
Geo Coordinates:	10.226805, 78.787999
Area in acres:	87.89
Ownership:	Public Works Department (PWD)
Total Hours Spent on Field:	161.25
Micro Habitats:	Shallow waters, aquatic plants, deep open waters, scrub jungle, farmlands
Total No. of Species:	169
Total No. of Flora:	27
Total No. of Fauna:	142
No. of Birds:	104
No. of Butterflies:	18
No. of Dragonflies and Damselflies:	9
No. of Other Fauna:	11





Scanning the QR code will lead to the eBird Hotspot of the Kanmai

Map showing the eBird track along the Kanapettai Kanmai

The largest of the four restored kanmais, the Kanapettai Kanmai is a magnet for waterbirds. The nature of the water level (shallow waters, medium-depth and deeper waters) caters to the different habitat and feeding requirements of various families of waterbirds. The same nature is observed in other kanmais to a certain degree but the land area for the microhabitats is larger here, thus attracting waterbird congregations in good numbers. This kanmai is also the **favourite fishing ground for Oriental Darter**, a Near Threatened species.

Highlights

- **Birds:** Knob-billed Duck, Little Stint, Common Greenshank, Brown-headed Gull, Whiskered Tern, Booted Eagle, Osprey, Asian Brown Flycatcher.
- **Butterflies:** Lime Swallowtail, Lesser Grass Blue, Forget-Me-Not.
- **Reptiles:** Checkered Keelback.
- **Odonates:** Green Marsh Hawk, Ruddy Marsh Skimmer, Trumpet Tail.



A family of Pied Kingfishers at Kanapettai Kanmai. It is a declining species as per the SolB 2023 report.



Asian Openbill, Oriental Darter, Little Cormorant and Little Egret at Kanapettai Kanmai



A flock of Eastern Cattle Egrets foraging for insects and other prey at Kanapettai Kanmai



Oriental Darter, a Near Threatened species sunning after a hunting session at Kanapettai Kanmai



Resident, within-India migrant and long-distance migrant species together: Black-winged Stilt, Whiskered Tern (rapidly declining species) and Common Sandpiper (declining species) at Kanapettai Kanmai



A flock of Asian Openbills at Kanapettai Kanmai



Rapidly declining Common Greenshanks, long-distance migrants at Kanapettai Kanmai



Asian Brown Flycatcher, an insectivore and within-India migrant at Kanapettai Kanmai

PANANGUDI KANMAI

Name of the Wetland:	Panangudi Kanmai
Taluk and District:	Thirumayam, Pudukkottai, Tamil Nadu
Geo Coordinates:	10.221887, 78.778311
Area in acres:	31.85
Ownership:	Public Works Department (PWD)
Total Hours Spent on Field:	161.25
Micro Habitats:	Shallow waters, deeper open waters, scrub jungle, farmlands
Total No. of Species:	176
Total No. of Flora:	26
Total No. of Fauna:	150
No. of Birds:	103
No. of Butterflies:	26
No. of Dragonflies and Damselflies:	8
No. of Other Fauna:	13





Scanning the QR code will lead to the eBird Hotspot of the Kanmai

Map showing the eBird track along the Panangudi Kanmai

Right from the preliminary assessment to the detailed study, Panangudi Kanmai has mostly been about excellent numbers of **ducks and cormorants**. The kanmai is primarily surrounded by farmlands. The then-ongoing restoration activities and the summer season was a cause to decrease to bird numbers in each quarter. The regular congregation of egrets on one side and visits by Asian Wolly-necked Stork suggests that the disturbances caused were minimal. **Cotton Pygmy-Goose**, the smallest wild duck of India, prefers to forage in this kanmai due to the presence of aquatic flora. The surrounds of the kanmai appears to be a good haven for the secretive **Black-naped Hare**.

Highlights

- **Birds:** Garganey, Cotton Pygmy-Goose, Indian Nightjar, Yellow-wattled Lapwing, Temminck's Stint, White-eyed Buzzard, Oriental Honey-buzzard.
- **Butterflies:** Common Banded Awl, Crimson Rose, Common Jezebel, Pioneer, Joker, Dark Grass Blue, Lemon Pansy.
- **Reptiles:** Oriental Rat Snake, Checkered Keelback, Keeled Indian Mabuya.
- **Odonates:** Variegated Flutterer, Green Marsh Hawk, Trumpet Tail.



Asian Woolly-necked Stork, a Near Threatened species at Panangudi Kanmai



Red-wattled Lapwing and Yellow-wattled Lapwing at Panangudi Kanmai



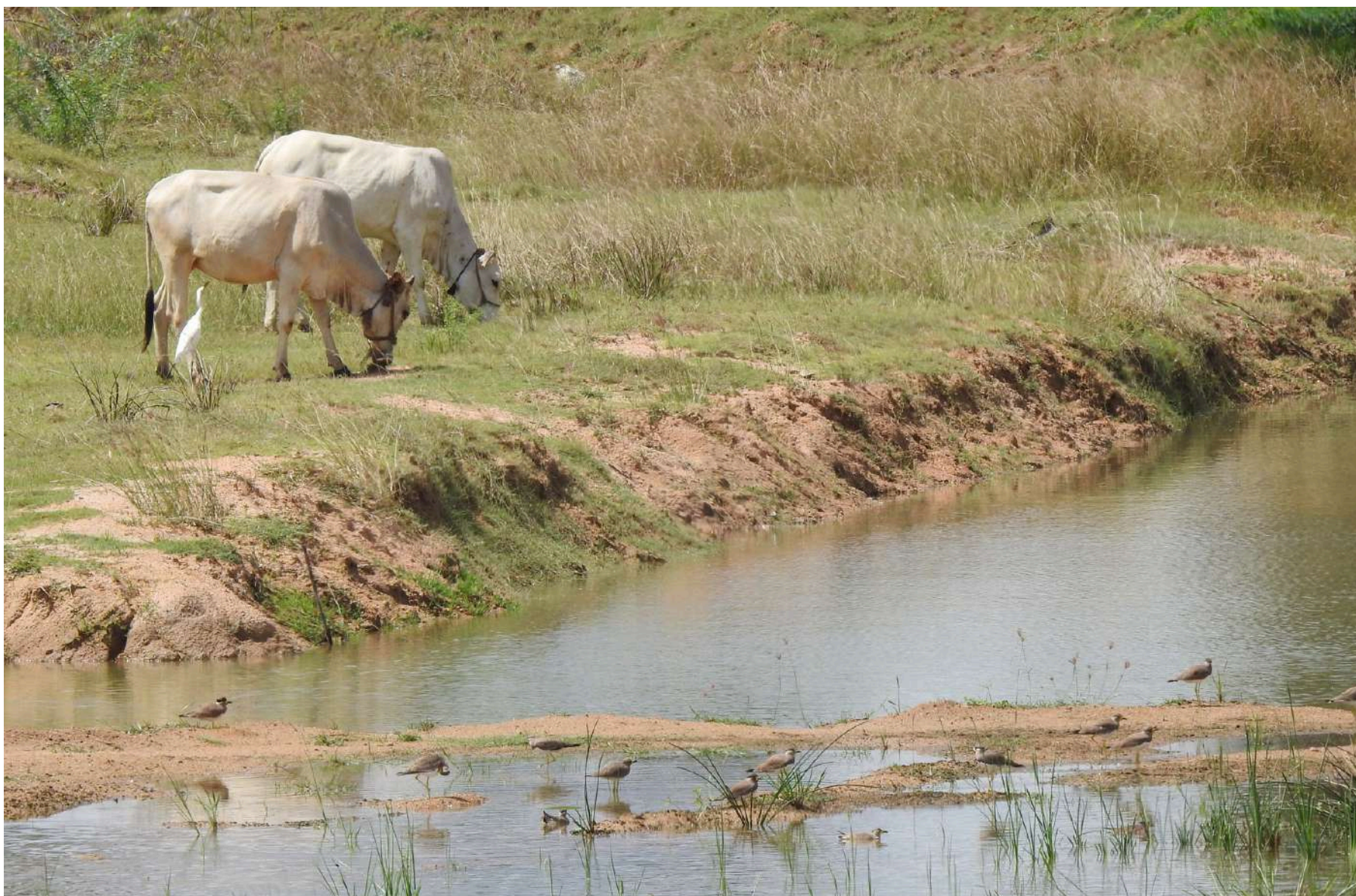
A Pied Kingfisher and a White-throated Kingfisher at the Panangudi Kanmai



A flock of Lesser Whistling-Ducks foraging and preening at Panangudi Kanmai



A flock of Eastern Cattle Egrets at Panangudi Kanmai



While an Eastern Cattle Egret tends to the cows, Yellow-wattled Lapwings cool off at Panangudi Kanmai



A flock of Glossy Ibis before landing at Panangudi Kanmai

FREQUENCY OF REPORTING – BIRDS

Top 10 Birds recorded at CHETTIYAN KANMAI (Jun 2023 - May 2024)		
S.No.	Name of the Species	Frequency of Reporting in % (n=52)
1	Asian Palm Swift	100
2	Common Myna	98.07
3	Indian Pond-Heron	96.15
3	Indian Robin	96.15
5	Large-billed Crow	94.23
5	Red-vented Bulbul	94.23
7	Asian Koel	92.30
7	Rose-ringed Parakeet	92.30
7	Spotted Dove	92.30
10	White-throated Kingfisher	88.46

Frequency means how often a species is reported on complete eBird checklists within a specified date range and region, measured by percent of checklists reporting the species.



ASIAN PALM SWIFT



COMMON MYNA



INDIAN POND-HERON



INDIAN ROBIN



LARGE-BILLED CROW



RED-VENTED BULBUL



ASIAN KOEL



ROSE-RINGED PARAKEET



SPOTTED DOVE



WHITE-THROATED KINGFISHER

Top 10 Birds recorded at VADAKUDIPATTI KANMAI (Jun 2023 - May 2024)		
S.No.	Name of the Species	Frequency of Reporting in % (n=52)
1	Asian Palm Swift	98.07
1	Common Myna	98.07
1	Indian Peafowl	98.07
1	Indian Robin	98.07
1	White-throated Kingfisher	98.07
6	Greater Coucal	96.15
6	Indian Pond-Heron	96.15
6	Large-billed Crow	96.15
6	Rose-ringed Parakeet	96.15
10	Asian Koel	94.23
10	Black Drongo	94.23
10	Eurasian Collared-Dove	94.23
10	Red-vented Bulbul	94.23
10	Spotted Dove	94.23
10	White-browed Bulbul	94.23



ASIAN PALM SWIFT



COMMON MYNA



INDIAN PEA FOWL



INDIAN ROBIN



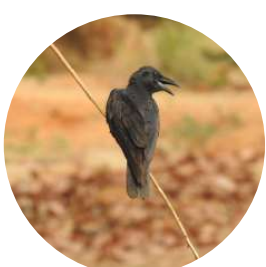
WHITE-THROATED KINGFISHER



GREATER COUCAL



INDIAN POND-HERON



LARGE-BILLED CROW



ROSE-RINGED PARAKEET



ASIAN KOEL

Top 10 Birds recorded at KANAPETTAI KANMAI (Jun 2023 - May 2024)		
S.No.	Name of the Species	Frequency of Reporting in % (n=52)
1	Common Myna	98.07
2	Asian Koel	90.38
2	Asian Palm Swift	90.38
4	Large-billed Crow	88.46
4	Little Egret	88.46
4	Rose-ringed Parakeet	88.46
7	Little Cormorant	86.53
8	Black Drongo	82.69
8	Indian Pond-Heron	82.69
8	Red-wattled Lapwing	82.69



COMMON MYNA



ASIAN KOEL



ASIAN PALM SWIFT



LARGE-BILLED CROW



LITTLE EGRET



ROSE-RINGED PARAKEET



LITTLE CORMORANT



BLACK DRONGO



INDIAN POND-HERON



RED-WATTLED LAPWING

* light blue color indicates the waterbird species

Top 10 Birds recorded at PANANGUDI KANMAI (Jun 2023 - May 2024)		
S.No.	Name of the Species	Frequency of Reporting in % (n=52)
1	Asian Palm Swift	98.07
1	Red-wattled Lapwing	98.07
3	Little Egret	90.38
3	White-throated Kingfisher	90.38
5	Indian Pond-Heron	88.46
6	Common Myna	84.61
6	Little Cormorant	84.61
8	Asian Koel	82.69
9	Black Drongo	80.76
10	Eurasian Collared-Dove	78.84
10	Rose-ringed Parakeet	78.84



ASIAN PALM SWIFT



RED-WATTLED LAPWING



LITTLE EGRET



WHITE-THROATED KINGFISHER



INDIAN POND-HERON



COMMON MYNA



LITTLE CORMORANT



ASIAN KOEL



BLACK DRONGO

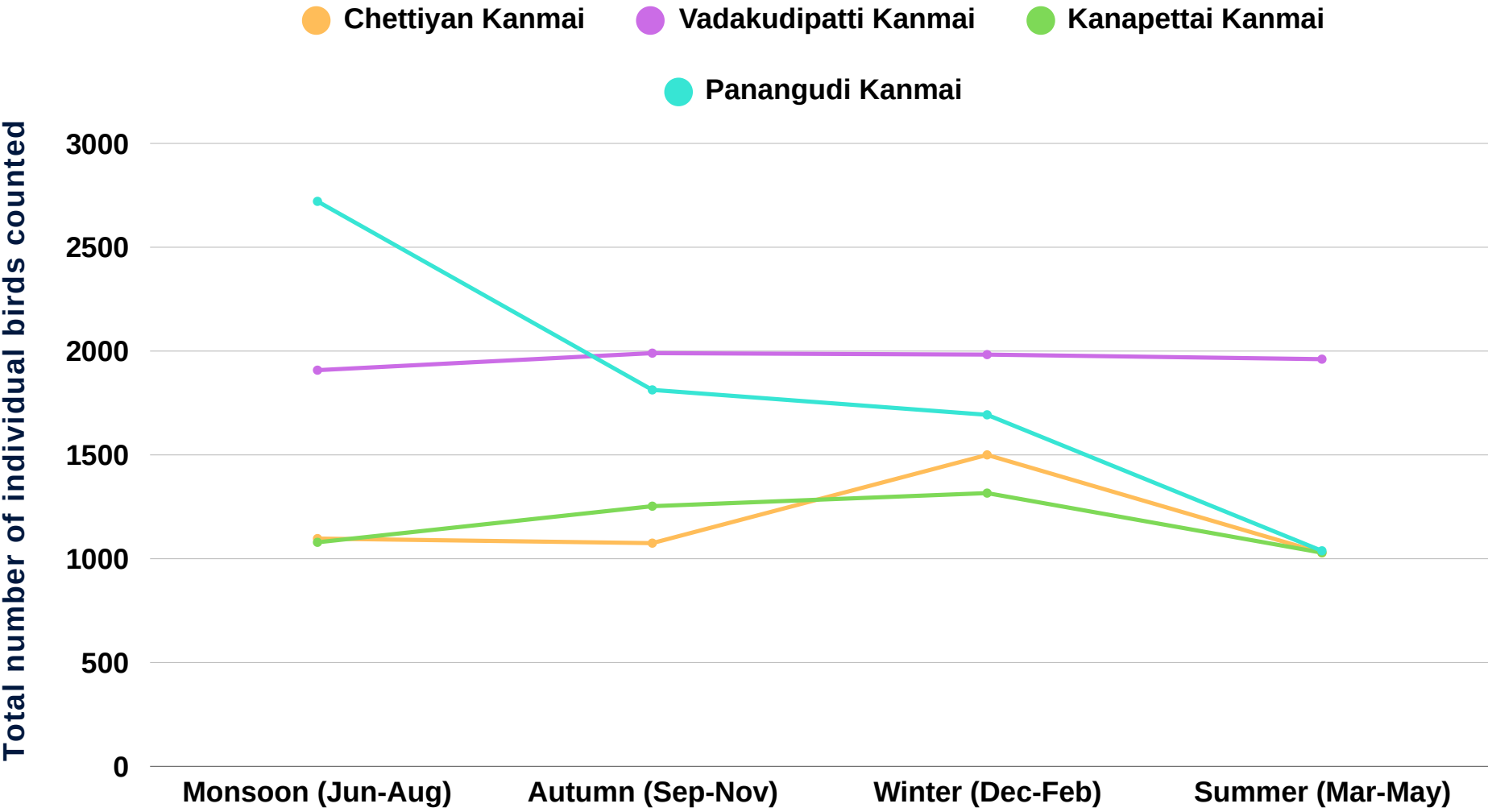


EURASIAN COLLARED-DOVE

* light blue color indicates the waterbird species

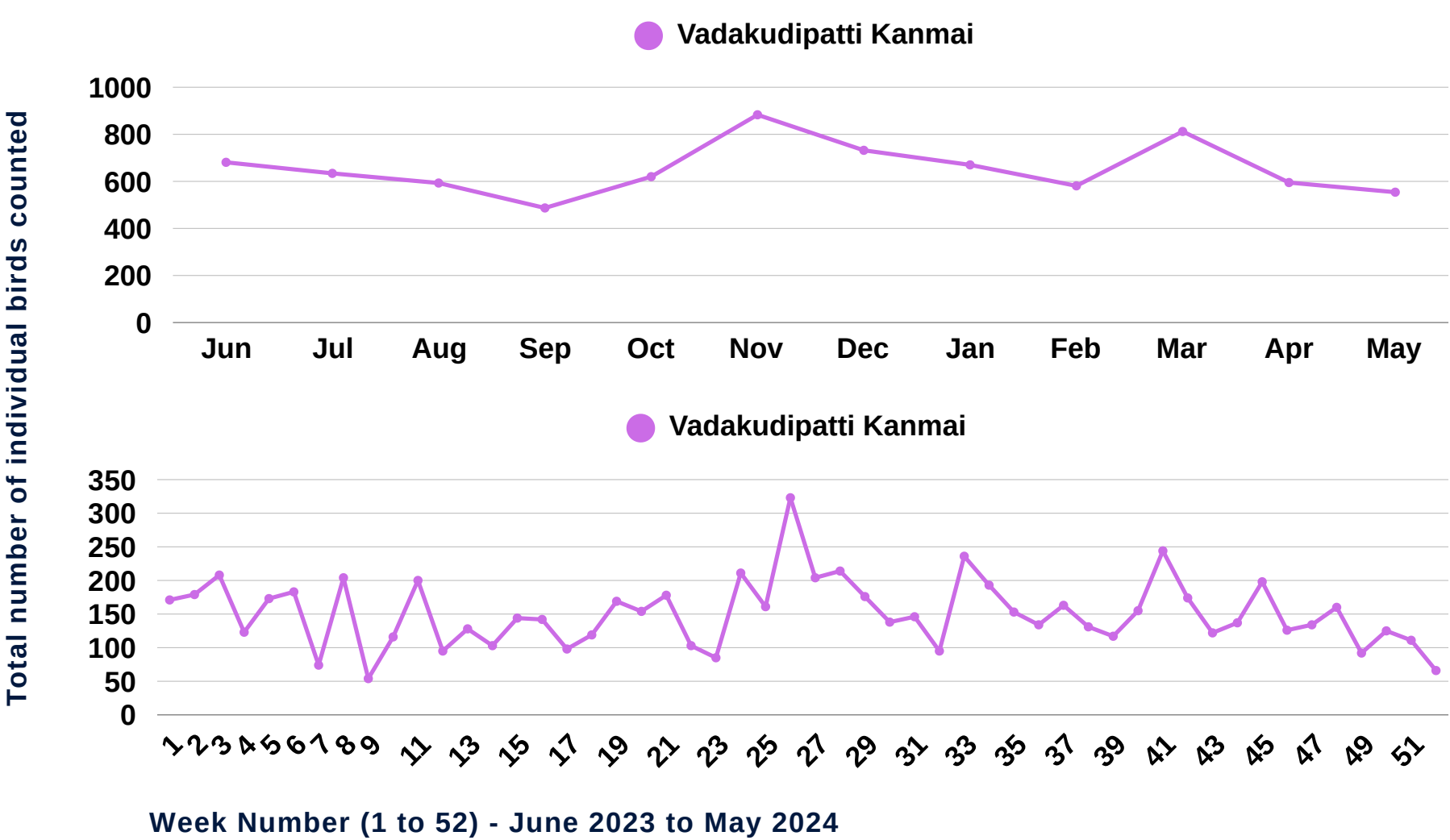
TOTAL ABUNDANCE OF BIRDS

Total abundance is a fundamental metric that refers to the total number of individual birds counted at a specific location during a specific time period. Changes in total abundance can signal shifts in ecosystem health or habitat quality. Rather than collecting data based on calendar year, we decided to do it by bird year, according to the State of India’s Birds 2023 report. A ‘bird year’ is defined from 1 June of one year to 31 May of the next, because this spans a single migratory season for many bird species in India. Therefore, the year 2023 refers to the period from 1 June 2023 to 31 May 2024. Collecting data by bird year also helps to cover the four seasons and organize the observations in a better way: Monsoon: June–August; Autumn: September–November; Winter: December–February; Summer: March–May.

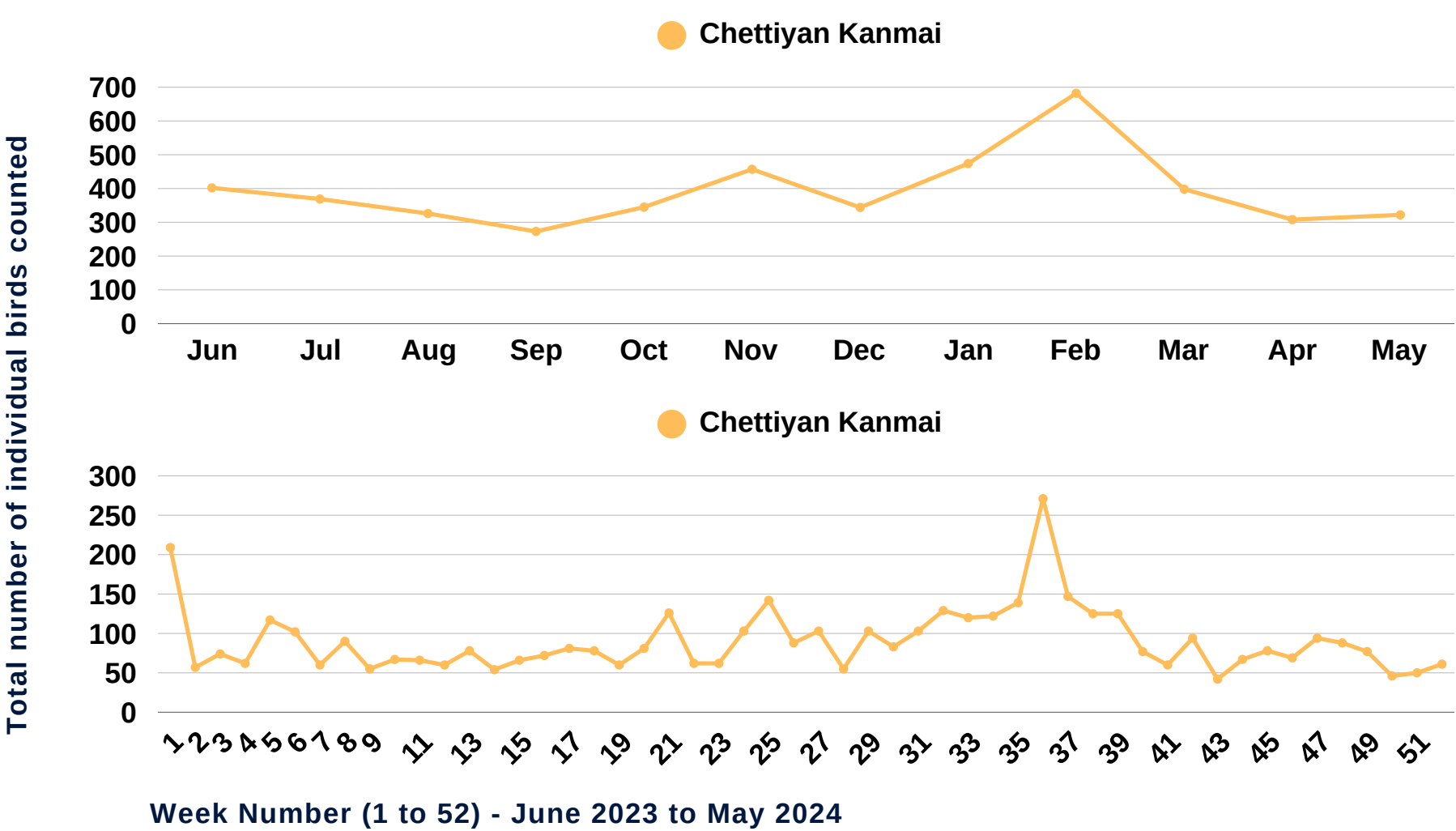


The above line graph indicates the total number of birds counted in four different seasons in each of the four *kanmais*. Despite the changing seasons, it was evident that the total number of individual birds counted at Vadakudipatti Kanmai remains consistent when compared with the rest of the *kanmais*.

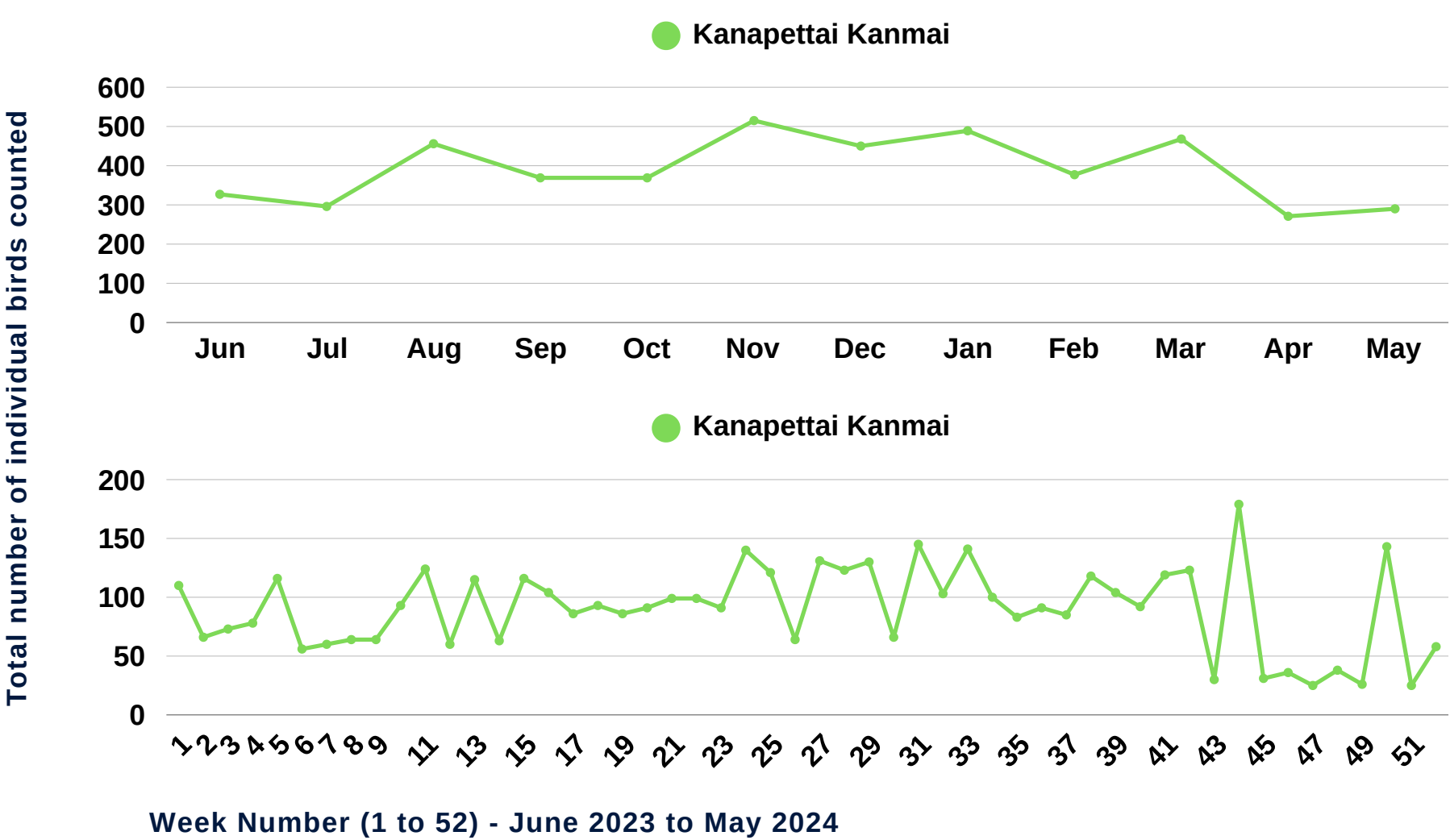
Vadakudipatti Kanmai: The increase in the total number of birds in November was likely due to the arrival of migratory birds. It seems that there was some degree of dispersal and the congregation back in March for return migration.



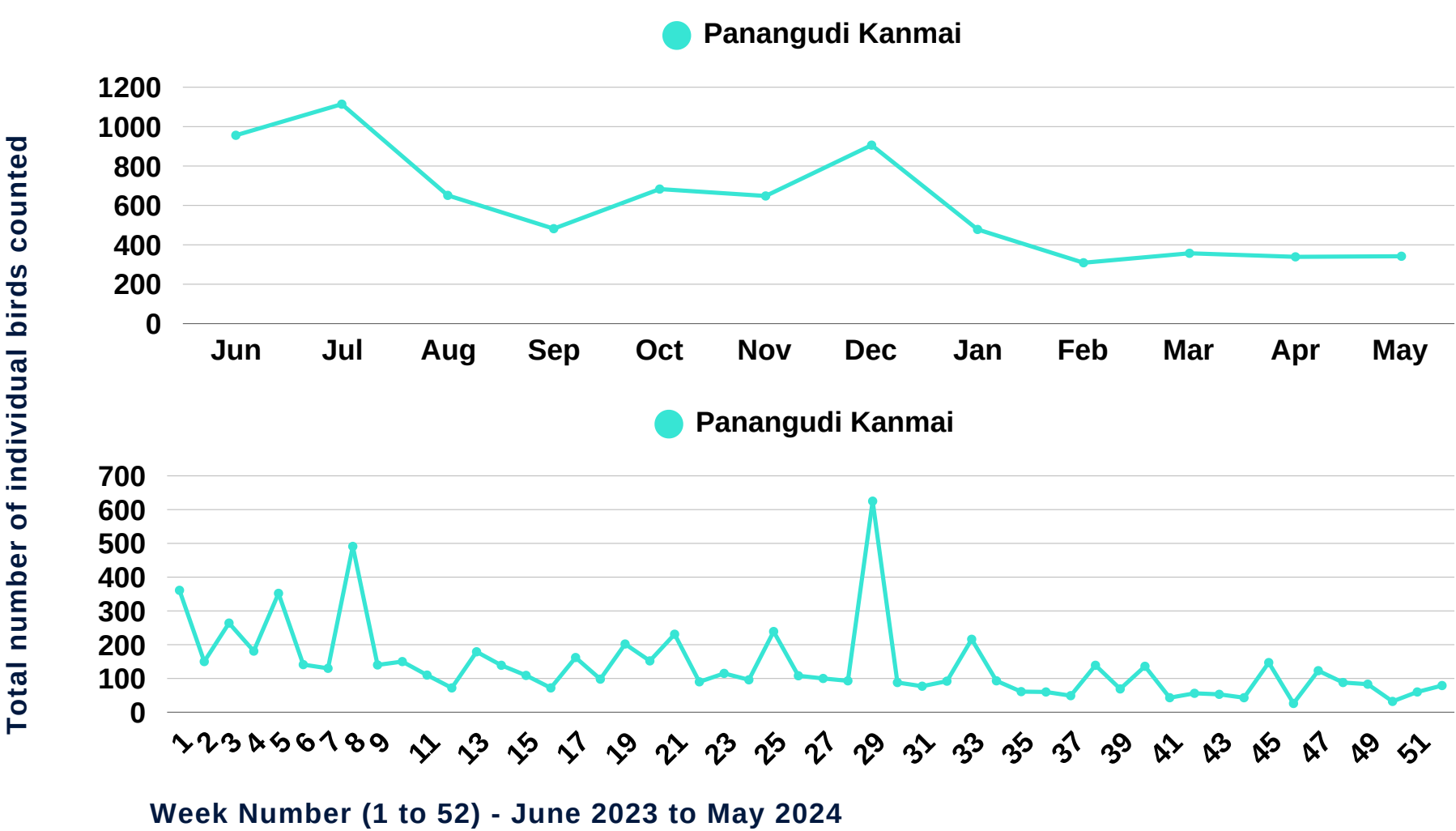
Chettiyan Kanmai: This *kanmai* is not a strong suit for waterbirds due its size but attracts substantial number of birds that are not very water dependent. Quite similar to Vadakudipatti Kanmai, there was a slight increase in the total count in November and once again in February.



Kanapettai Kanmai: Perhaps the second to Vadakudipatti Kanmai with very little changes in the total count in each month, the graph is nearly consistent. The total number of individual birds counted peaked in November.



Panangudi Kanmai: Waterbird numbers most often peaked in this *kanmai* than others. However, due to the then-ongoing restoration work, the *kanmai* was under certain level of disturbance; later dry season started. The peak in December was due to some good rains in the area for a week.

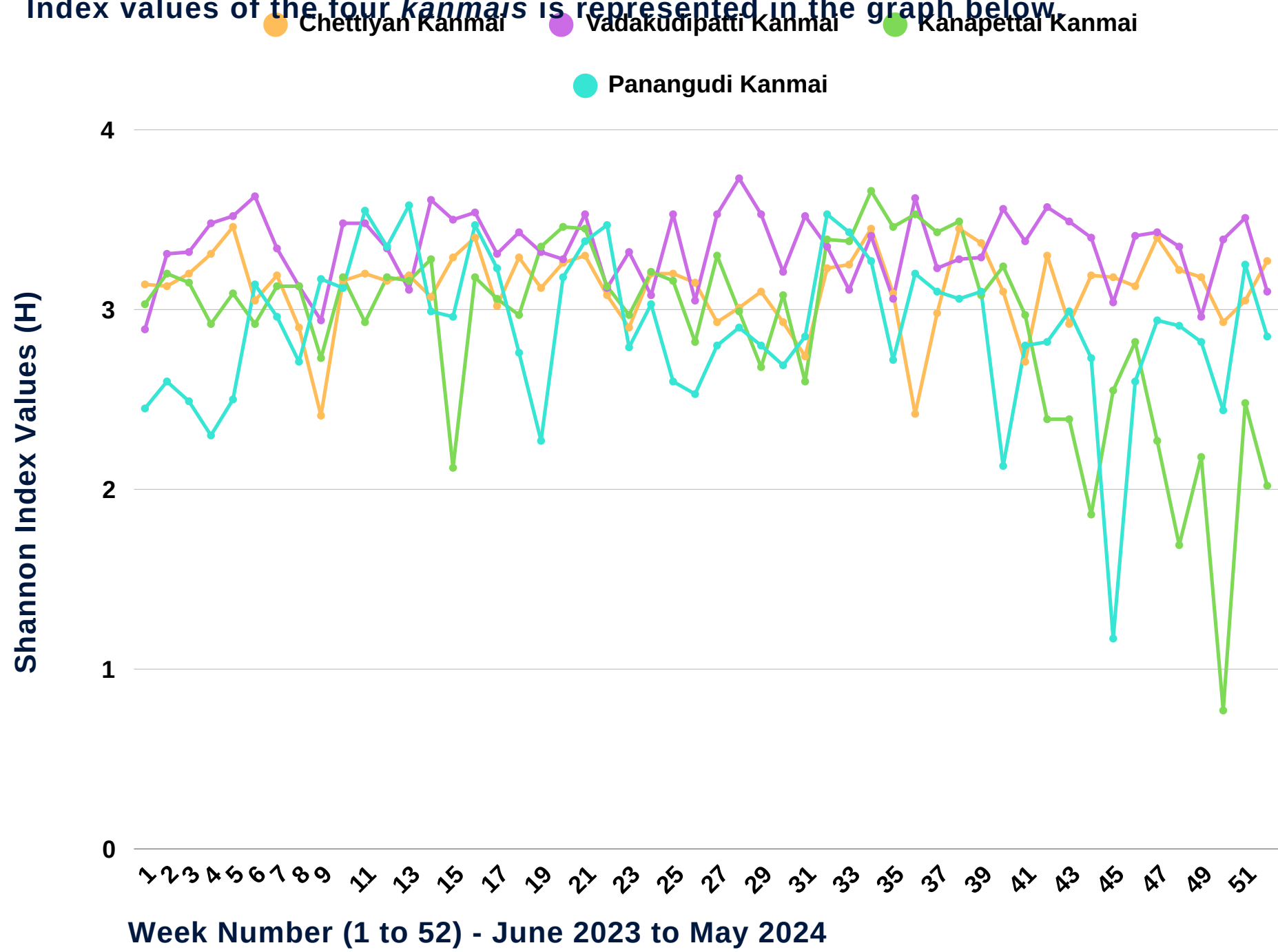


SHANNON DIVERSITY INDEX

The **Shannon Diversity Index** (sometimes called the Shannon-Weiner Index) is a way to measure the diversity of species in a community. It takes into account both species richness and evenness, providing a measure of the uncertainty in predicting the species identity of an individual picked at random from the dataset. Higher values indicate greater diversity.

$$\text{Shannon Index (H)} = - \sum_{i=1}^s p_i \ln p_i$$

where, p is the proportion (n/N) of individuals of one particular species found (n) divided by the total number of individuals found (N), ln is the natural log, Σ is the sum of the calculations, and s is the number of species. The Shannon Index values of the four *kanmais* is represented in the graph below.



CALCULATION:

Name of the Kanmai: Kanapettai Kanmai

Week: 48

Checklist: <https://ebird.org/checklist/S171617409>

$$\text{Shannon Index (H)} = - \sum_{i=1}^s p_i \ln p_i = 1.69$$

S (number of species) = 9

N (total number of individuals) = 38

pi (proportion of individuals) = $\frac{\text{individual count of each species (n)}}{\text{total number of individuals (N)}}$

ln is the natural logarithm

Σ is the sum of calculations

Name of the Species	Count (n)	pi (=n/N)	ln pi	pi (ln pi)
Asian Palm Swift	18	0.473684	-0.747214402	-0.353943664
Shikra	2	0.052632	-2.944438979	-0.154970473
Indian Roller	2	0.052632	-2.944438979	-0.154970473
Coppersmith Barbet	1	0.026316	-3.63758616	-0.095725952
Rose-ringed Parakeet	2	0.052632	-2.944438979	-0.154970473
Black Drongo	2	0.052632	-2.944438979	-0.154970473
Common Myna	7	0.184211	-1.691676011	-0.311624528
Indian Robin	2	0.052632	-2.944438979	-0.154970473
Purple Sunbird	2	0.052632	-2.944438979	-0.154970473
	Σ = 38	Σ = 1		Σ = -1.691116979
				H = 1.69

Similar to the above example, the calculations are repeated for each of the 52 weeks for all the four kanmais and the Shannon Index values are obtained.

PIELOU'S EVENNESS INDEX

Pielou's Evenness Index is a measure of how evenly individuals are distributed across different species in a community. It is derived from the Shannon-Wiener Diversity Index and provides a standardized way to assess evenness, making it easier to compare different communities or ecological systems.

$$J' = \frac{H'}{\ln(S)}$$

where H' is the Shannon Diversity Index value

S is the total number of species (species richness) in the community

ln is the natural logarithm

CALCULATION:

Name of the Kanmai:	Vadakudipatti Kanmai
Week:	28
Checklist:	https://ebird.org/checklist/S157327520
Number of Species (S):	57
Shannon Index value (H'):	3.73
Natural logarithm of S:	4.043051

$$J' = \frac{3.73}{4.043} = 0.922$$

Similar to the above example, the calculations are repeated for each of the 52 weeks for all the four kanmais to obtain the values. Pielou's Evenness Index ranges from 0 to 1. A value close to 1 indicates that individuals are evenly distributed among the different species, meaning the community is very even. A value close to 0 indicates that the community is dominated by a few species, with many species having very few individuals, implying low evenness.

JACCARD SIMILARITY COEFFICIENT

The **Jaccard Index**, also known as the Jaccard similarity coefficient, is a measure of similarity between two sets. It is calculated as the size of the intersection divided by the size of the union of the sets. This index can be extended to compare the species composition between multiple wetlands by using pairwise comparisons.

The Jaccard Index $J(A, B)$ for Wetland A and Wetland B is calculated as:

$$J(A, B) = \frac{|A \cap B|}{|A \cup B|}$$

where

$|A \cap B|$ is the number of species common to both Wetland A and Wetland B

$|A \cup B|$ is the total number of species in Wetland A and Wetland B

Example,

No. of bird species recorded in Chettiyan Kanmai (A): 101

No. of bird species recorded in Vadakudipatti Kanmai (B): 114

$|A \cap B| = 93$ species $|A \cup B| = 121$ species

$$J(A, B) = \frac{|A \cap B|}{|A \cup B|} = \frac{93}{121} = 0.768$$

The calculation is repeated and performed for all pairs of wetlands (A-B, A-C, A-D, B-C, B-D, C-D). Based on the obtained values, a similarity matrix is created. It provides a quantitative representation of how similar or dissimilar various sets of data are to each other.

Similarity Matrix

	A	B	C	D
A	1	0.768	0.752	0.787
B	0.768	1	0.620	0.806
C	0.752	0.620	1	0.775
D	0.787	0.806	0.775	1

In the context of comparing species compositions across different wetlands using the Jaccard index, the similarity matrix can help infer important ecological and conservation-related insights:

- Pairs of wetlands with high Jaccard index values (close to 1) share a large proportion of species. This suggests that these wetlands are likely to have similar ecological characteristics and habitats. In this case, the **Jaccard Index value between Vadakudipatti Kanmai and Panangudi Kanmai is 0.806** which is higher than the rest. High similarity might indicate ecological corridors that facilitate species movement and gene flow between these habitats. Low Jaccard index values (close to 0) have very different species compositions, indicating different habitat types or environmental conditions.

Wetland Pairs	Values	Name of the Kanmais
J (B, D)	0.806	Vadakudipatti and Panangudi
J (A, D)	0.787	Chettiyan and Panangudi
J (C, D)	0.775	Kanapettai and Panangudi
J (A, B)	0.768	Chettiyan and Vadakudipatti
J (A, C)	0.752	Chettiyan and Kanapettai
J (B, C)	0.62	Vadakudipatti and Kanapettai

where **A** - Chettiyan Kanmai | **B** - Vadakudipatti Kanmai | **C** - Kanapettai Kanmai | **D** - Panangudi Kanmai

SEASONALITY OF BIRDS

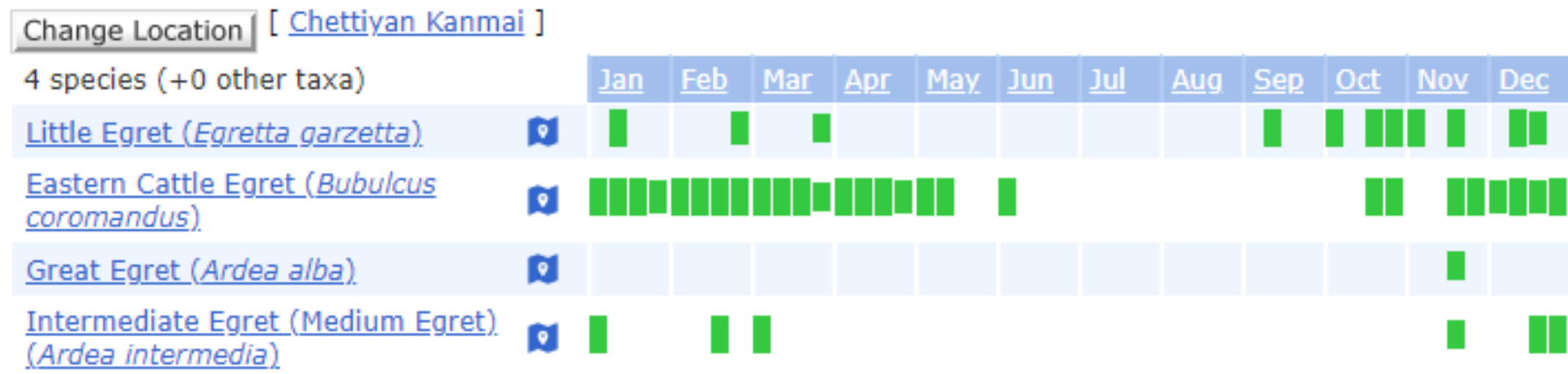
Seasonality in birds refers to the pattern of changes and behaviors exhibited by bird species in response to the changing seasons throughout the year. These changes can include variations in migration patterns, breeding activities, feeding habits and overall distribution. Seasonality is influenced by factors such as temperature, day length, food availability, and reproductive cycles. Overall, seasonality plays a crucial role in shaping the life cycles and ecological interactions of bird populations. Hence, understanding the seasonality in birds is critical for their conservation.

eBird bar charts are based on frequency: the proportion of complete checklists reporting that species within a specified date range and region. Taller bars indicate a species is reported on a greater percentage of checklists. Thus, the taller the bar, the more likely you will encounter a species during that time of year. No bar (an empty gray box) indicates a species is not reported in that region during that time period. The current date is always marked with a vertical line. (via eBird)

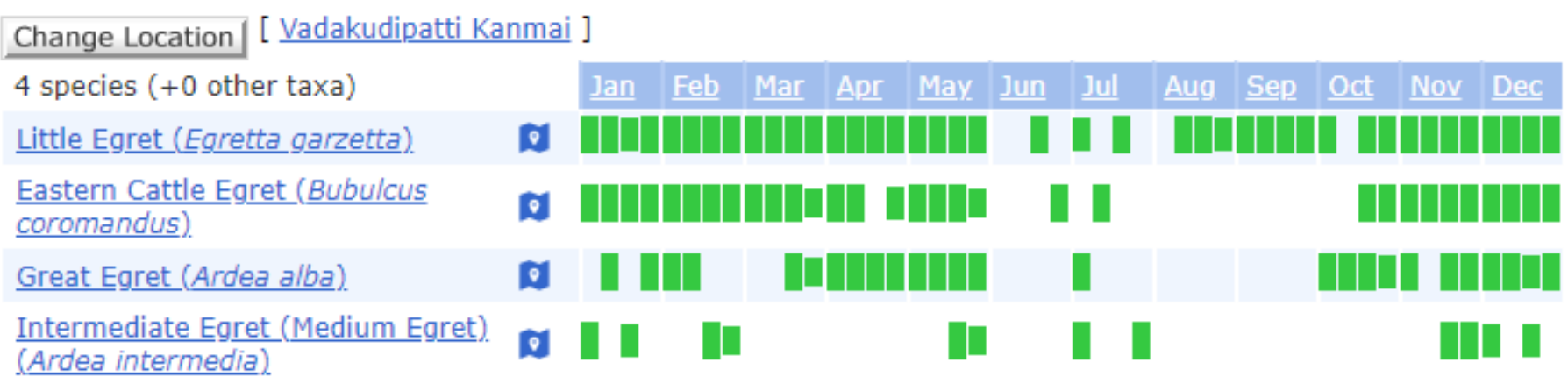
The weekly bird monitoring at Wetlands under Project Nanneer has revealed some exciting patterns in the seasonality of several bird species. Here, we present a set of bird species and their seasonality; rest of it can be seen in the respective **eBird** Hotspots of the kanmais.

SEASONALITY OF WHITE EGRET SP.

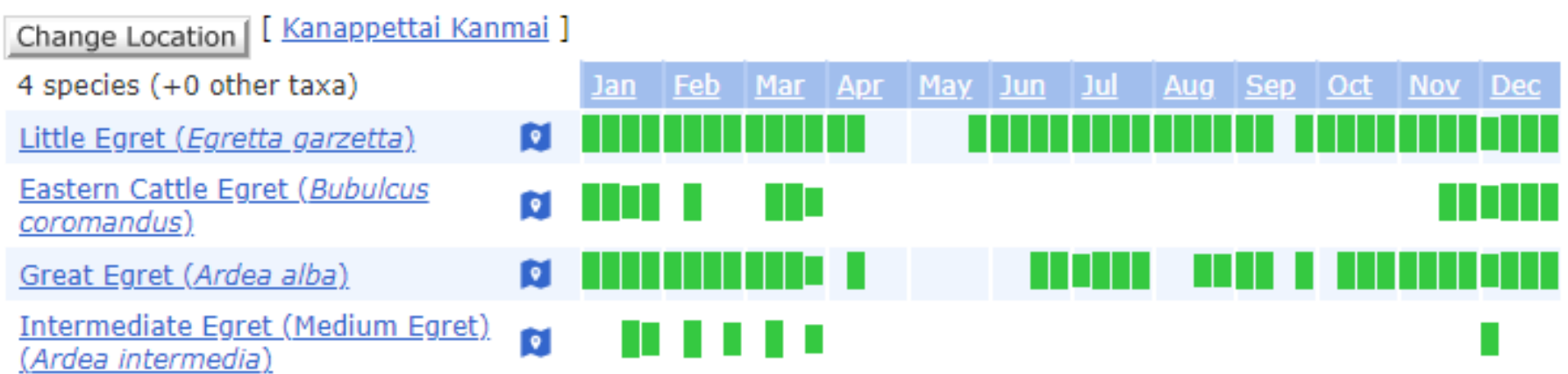
Chetiiyan Kanmai



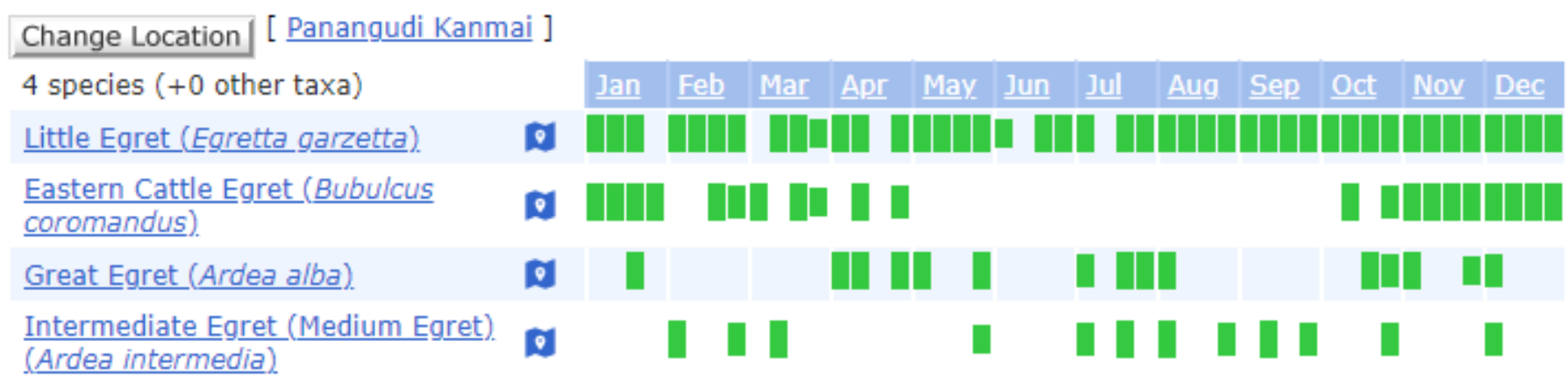
Vadakudipatti Kanmai



Kanapettai Kanmai



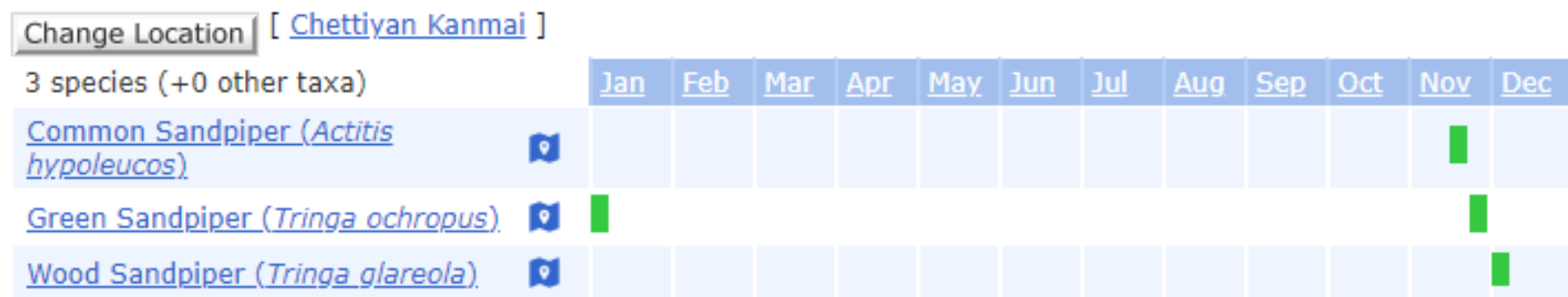
Panangudi Kanmai



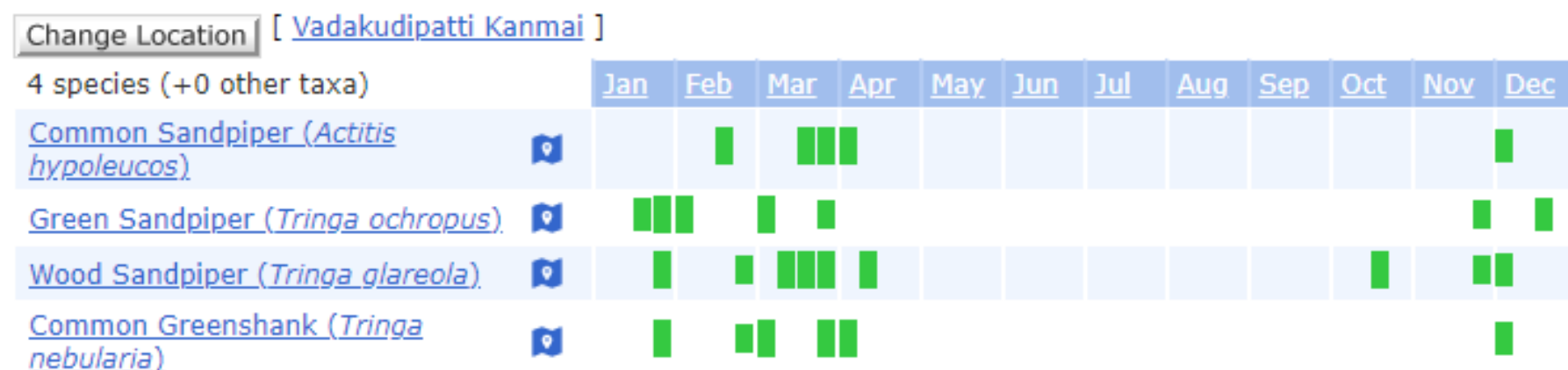
The above bar chart indicates the seasonality of the different white egret sp. in each of the kanmais. Eastern Cattle Egret exhibits strong local movements.

SEASONALITY OF MIGRATORY SHOREBIRD SP.

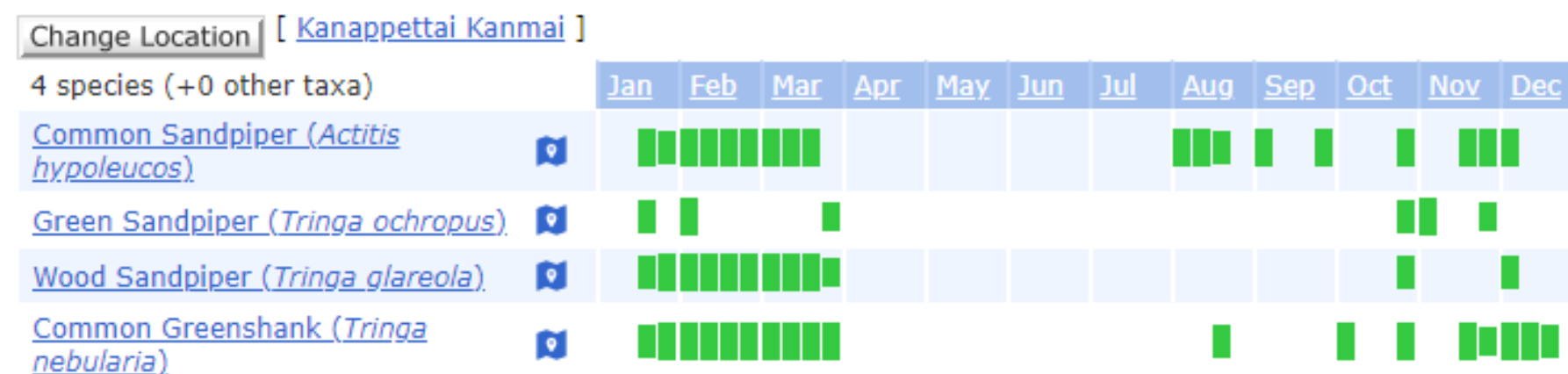
Chetiiyan Kanmai



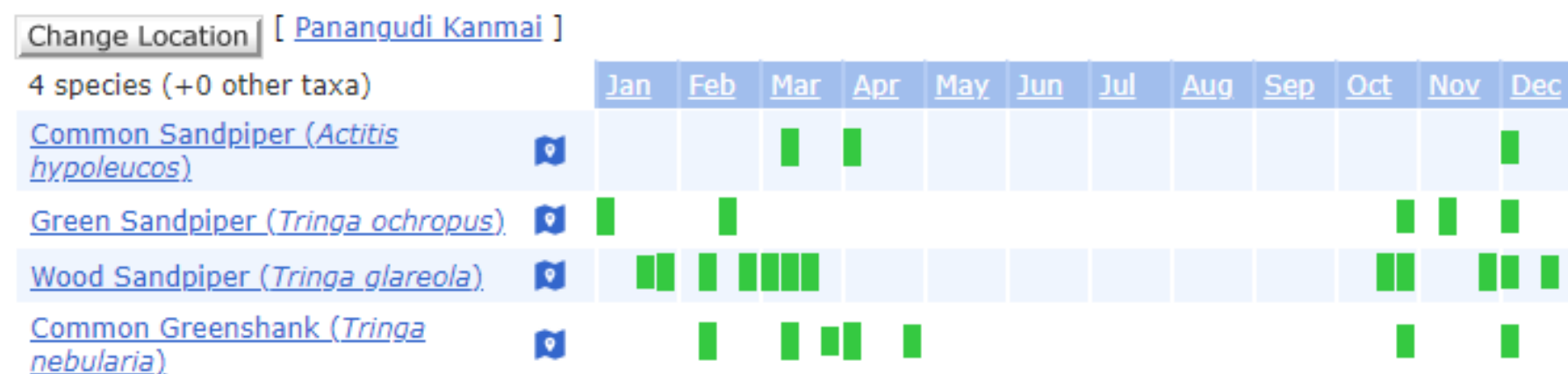
Vadakudipatti Kanmai



Kanapettai Kanmai



Panangudi Kanmai

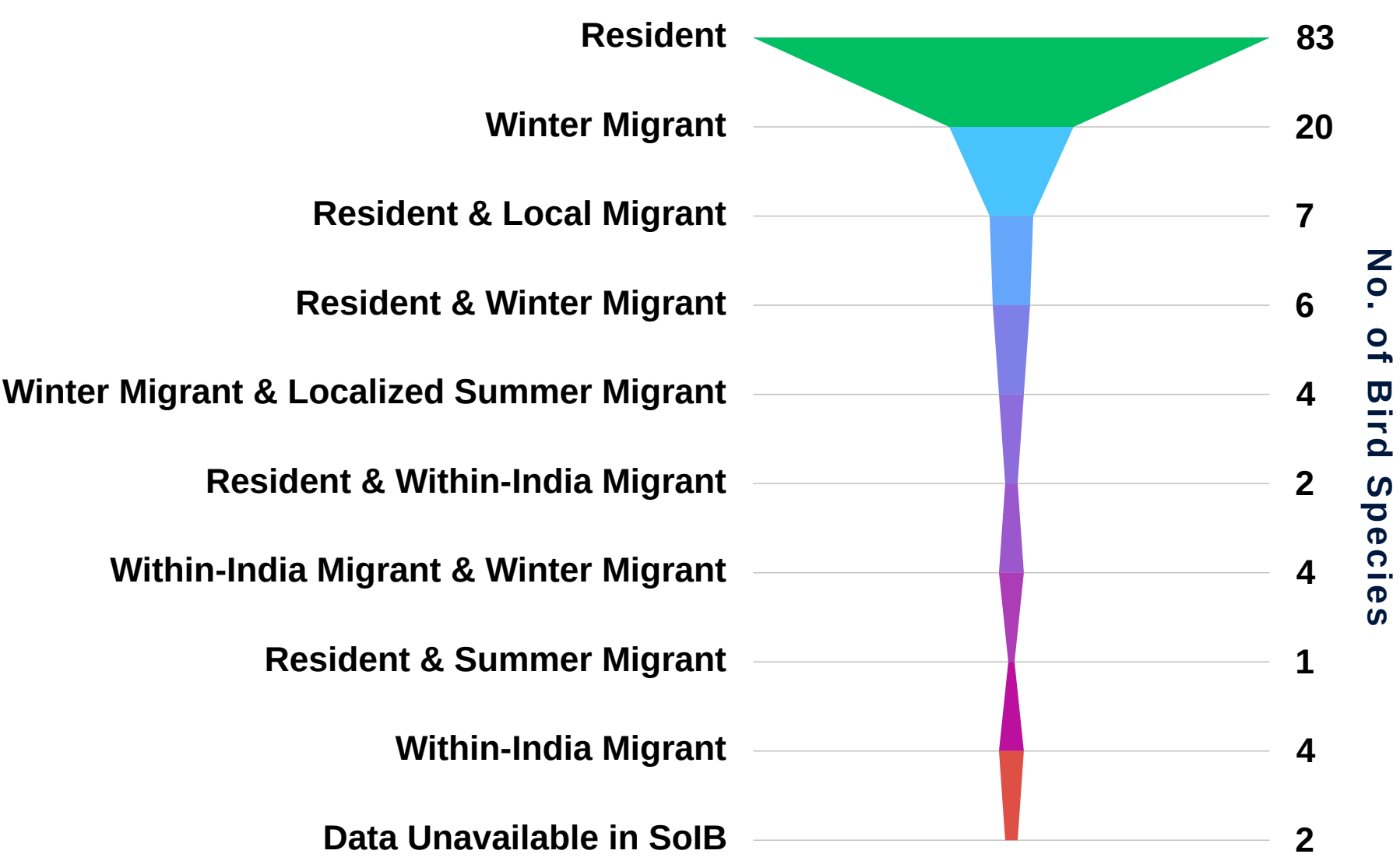


The above bar chart indicates the seasonality patterns of the long-distance migratory shorebirds in each of the kanmais. It is evident that Kanapettai Kanmai is best suited for the shorebirds.

MIGRATORY STATUS OF BIRDS

Every year, migratory birds travel long distances, from hundreds to thousands of kilometers between their nesting and wintering grounds. While some species cover great distances, others migrate shorter distances within the Indian subcontinent. Resident species either remain sedentary or exhibit some local movements. Protecting important wetlands like the Vadakudipatti Kanmai is crucial for migratory birds to replenish themselves on their arrival as well as during their departure.

The migratory status of the bird species documented at Wetlands under Project Nanneer was categorized based on the State of India’s Birds 2023 report.



Winter Migrants (20): Garganey, Northern Shoveler, Temminck's Stint, Little Stint, Common Snipe, Common Sandpiper, Green Sandpiper, Marsh Sandpiper, Wood Sandpiper, Common Greenshank, Osprey, Greater Spotted Eagle, Booted Eagle, Montagu's Harrier, Common Buzzard, Brown Shrike, Blyth's Reed Warbler, Rosy Starling, Western Yellow Wagtail, Blyth's Pipit.

Resident & Local Migrant (7): Gray-bellied Cuckoo, Common Hawk-Cuckoo, Black-winged Stilt, Black Bittern, White-eyed Buzzard, Black Drongo, Purple Sunbird.

Resident & Winter Migrant (6): Eurasian Coot, Little Ringed Plover, Oriental Honey-buzzard, Black Kite, Red-rumped Swallow, House Sparrow.

Winter Migrant and Localized Summer Migrant (4): Brown-headed Gull, Whiskered Tern, Green Warbler, Citrine Wagtail.

Resident & Within India Migrant (2): Indian Paradise-Flycatcher, Pied Bushchat.

Within-India Migrant & Winter Migrant (4): Eurasian Hoopoe, Blue-tailed Bee-eater, Barn Swallow, Asian Brown Flycatcher.

Resident & Summer Migrant (1): Pied Cuckoo

Within-India Migrant (4): Black-headed Cuckooshrike, Indian Golden Oriole, Ashy Drongo, Blue-throated Flycatcher.

Resident (83): Lesser Whistling-Duck, Knob-billed Duck, Cotton Pygmy-Goose, Indian Spot-billed Duck, Indian Peafowl, Gray Francolin, Little Grebe, Rock Pigeon (Feral Pigeon), Eurasian Collared-Dove, Spotted Dove, Laughing Dove, Chestnut-bellied Sandgrouse, Greater Coucal, Blue-faced Malkoha, Asian Koel, Asian Palm Swift, White-breasted Waterhen, Yellow-wattled Lapwing... (contd.)

Red-wattled Lapwing, Pheasant-tailed Jacana, Asian Openbill, Asian Woolly-necked Stork, Oriental Darter, Little Cormorant, Indian Cormorant, Black-crowned Night Heron, Little Egret, Striated Heron, Indian Pond-Heron, Eastern Cattle Egret, Great Egret, Medium Egret, Grey Heron, Purple Heron, Glossy Ibis, Black-headed Ibis, Red-naped Ibis, Crested Serpent-Eagle, Short-toed Snake-Eagle, Shikra, Brahminy Kite, Common Kingfisher, White-throated Kingfisher, Pied Kingfisher, Asian Green Bee-eater, Indian Roller, Coppersmith Barbet, Black-rumped Flameback, Red-necked Falcon, Rose-ringed Parakeet, Small Minivet, Ashy Woodswallow, Common Woodshrike, Common Iora, Rufous Treepie, House Crow, Large-billed Crow, Ashy-crowned Sparrow-Lark, Jerdon's Bushlark, Common Tailorbird, Jungle Prinia, Ashy Prinia, Plain Prinia, Zitting Cisticola, White-browed Bulbul, Red-vented Bulbul, Large Gray Babbler, Yellow-billed Babbler, Brahminy Starling, Common Myna, Indian Robin, Oriental Magpie-Robin, Pale-billed Flowerpecker, Purple-rumped Sunbird, Loten's Sunbird, Baya Weaver, Indian Silverbill, Scaly-breasted Munia, White-rumped Munia, Tricolored Munia, Yellow-throated Sparrow, White-browed Wagtail, Paddyfield Pipit.

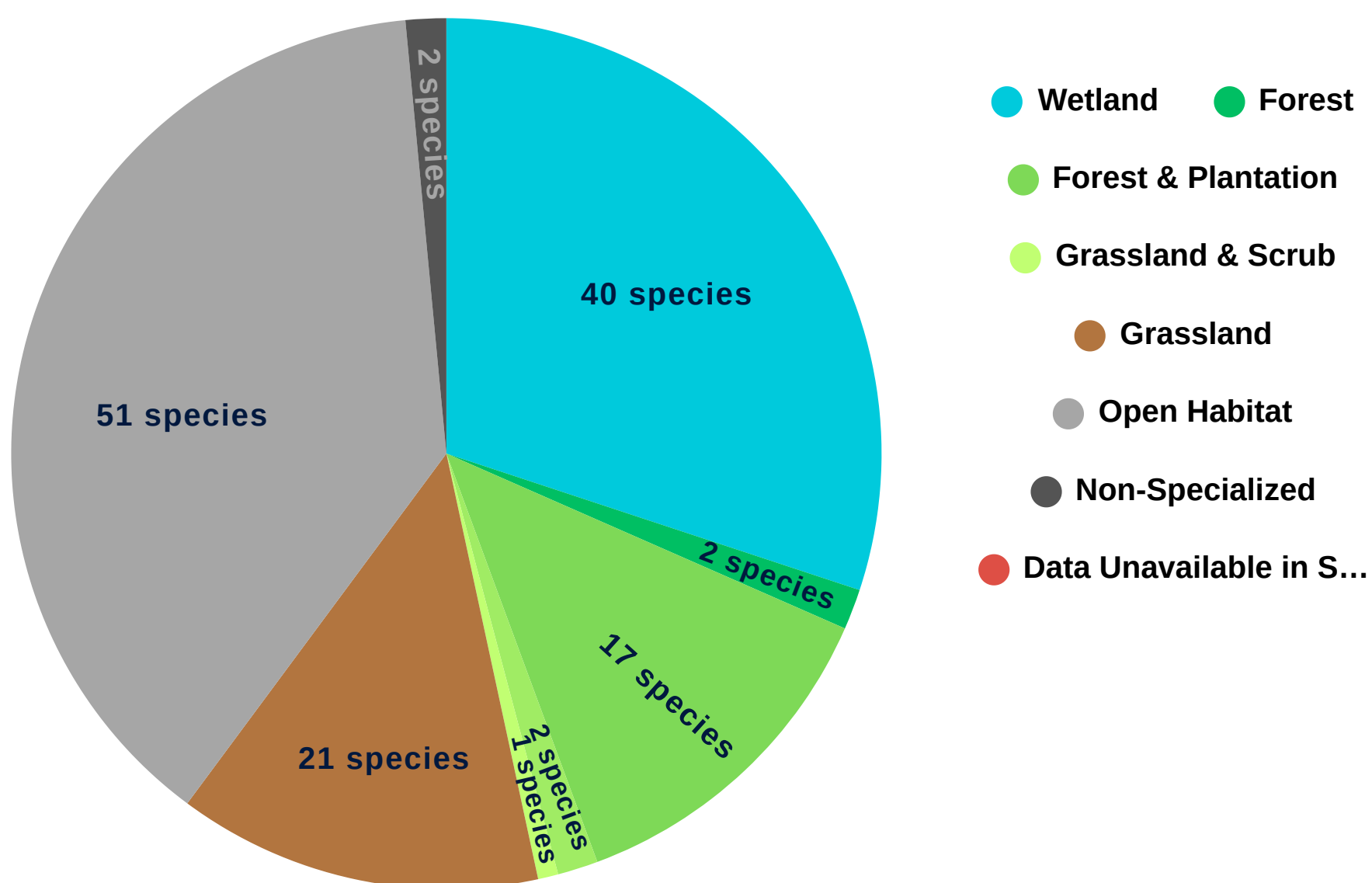
Data Unavailable in SoIB (2): Indian Nightjar, Spotted Owlet.



HABITAT SPECIALIZATION OF BIRDS

Habitat specialization in birds refers to the adaptation of certain bird species to specific types of habitats or ecological niches. Birds exhibit a wide range of habitat preferences, with some species being highly specialized, meaning they are adapted to thrive in a narrow range of environmental conditions, while others are more generalized and can inhabit a variety of habitats. Habitat specialization can influence a bird species' distribution, population dynamics, and vulnerability to environmental changes, making it an important consideration in conservation planning and management strategies.

The habitat specialization of the bird species documented in wetlands under Project Nanneer was **categorized based on State of India's Birds 2023 report**.



Note: Some of the similar species were combinedly assessed in the SolB 2023. Green Warbler was combined with Greenish Warbler. The pie chart here reflects 133 bird species from Wetlands under Project Nanneer.

Wetland (40): Lesser Whistling-Duck, Knob-billed Duck, Cotton Pygmy-Goose, Garganey, Northern Shoveler, Indian Spot-billed Duck, Little Grebe, Eurasian Coot, Black-winged Stilt, Pheasant-tailed Jacana, Temminck's Stint, Little Stint, Common Snipe, Common Sandpiper, Green Sandpiper, Marsh Sandpiper, Wood Sandpiper, Common Greenshank, Brown-headed Gull, Whiskered Tern, Asian Openbill, Oriental Darter, Little Cormorant, Indian Cormorant, Black Bittern, Black-crowned Night Heron, Little Egret, Striated Heron, Eastern Cattle Egret, Great Egret, Medium Egret, Grey Heron, Purple Heron, Glossy Ibis, Black-headed Ibis, Osprey, Brahminy Kite, Common Kingfisher, Pied Kingfisher, Citrine Wagtail.

Open Habitat (18): Grey Francolin, Yellow-wattled Lapwing, Little Ringed Plover, Asian Woolly-necked Stork, Short-toed Snake-Eagle, Greater Spotted Eagle, Blue-tailed Bee-eater, Indian Roller, Red-necked Falcon, Black Drongo, Ashy-crowned Sparrow-Lark, Jerdon's Bushlark, Zitting Cisticola, Pied Bushchat, Indian Silverbill, Western Yellow Wagtail, Paddyfield Pipit, Blyth's Pipit.

Forest & Plantation (17): Blue-faced Malkoha, Common Hawk-Cuckoo, Oriental Honey-buzzard, Coppersmith Barbet, Small Minivet, Black-headed Cuckooshrike, Common Woodshrike, Common Iora, Ashy Drongo, Indian Paradise-Flycatcher, Brown Shrike, White-browed Bulbul, Green Warbler, Asian Brown Flycatcher, Blue-throated Flycatcher, Loten's Sunbird, Yellow-throated Sparrow.

Forest (2): Crested Serpent-Eagle, Jungle Prinia.

Grassland (2): Chestnut-bellied Sandgrouse, Montagu's Harrier.

Grassland & Scrub (1): Tricolored Munia.

Non-Specialized (51): Indian Peafowl, Rock Pigeon (Feral Pigeon), Eurasian Collared-Dove, Spotted Dove, Laughing Dove, Greater Coucal, Pied Cuckoo, Asian Koel, Grey-bellied Cuckoo, Asian Palm Swift, White-breasted Waterhen, Red-wattled Lapwing, Indian Pond-Heron, Red-naped Ibis, Booted Eagle, White-eyed Buzzard, Shikra, Black Kite, Common Buzzard, Eurasian Hoopoe, White-throated Kingfisher, Asian Green Bee-eater, Black-rumped Flameback, Rose-ringed Parakeet, Indian Golden Oriole, Ashy Woodswallow, Rufous Treepie, House Crow, Large-billed Crow, Common Tailorbird, Ashy Prinia, Plain Prinia, Blyth's Reed Warbler, Barn Swallow, Red-rumped Swallow, Red-vented Bulbul, Large Gray Babbler, Yellow-billed Babbler, Rosy Starling, Brahminy Starling, Common Myna, Indian Robin, Oriental Magpie-Robin, Pale-billed Flowerpecker, Purple-rumped Sunbird, Purple Sunbird, Baya Weaver, Scaly-breasted Munia, White-rumped Munia, House Sparrow, White-browed Wagtail.

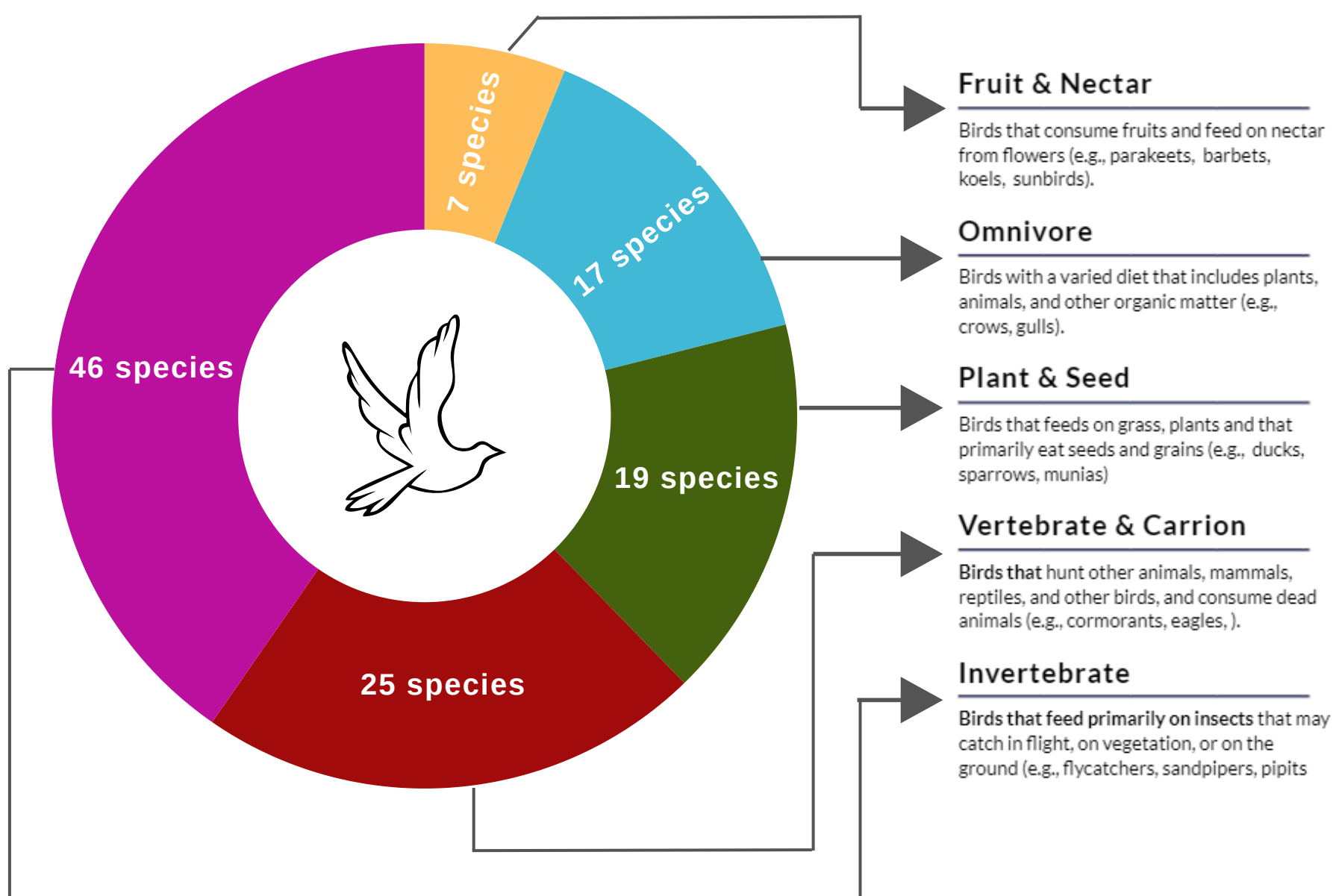
Data Unavailable in SoIB 2023 (2): Indian Nightjar, Spotted Owlet.



DIET GUILD

Diet guild in birds refers to a group of bird species with similar dietary habits and food preferences. Diet guilds in birds are categorized according to their main food sources and feeding habits. This classification is based on the types of food they eat, their foraging methods, and their ecological roles. Understanding diet guilds helps in understanding the roles birds play in the ecosystems, such as seed dispersal, pollination, pest control, and carrion cleanup. It also aids in identifying the specific needs of different bird species for habitat protection and restoration.

The Diet guild of the bird species documented in wetlands under Project Nanneer was **categorized based on State of India's Birds 2020 & 2023 report.**



Note: The pie chart here reflects only 114 of 133 bird species at Wetlands under Project Nanneer.

Fruit & Nectar (7): Asian Koel, Rose-ringed Parakeet, Coppersmith Barbet, Pale-billed Flowerpecker, Purple-rumped Sunbird, Purple Sunbird, Loten's Sunbird.

Invertebrate (46): Little Ringed Plover, Little Stint, Common Greenshank, Marsh Sandpiper, Temminck's Stint, Eurasian Hoopoe, Rosy Starling, Pied Cuckoo, Common Hawk-Cuckoo, Blue-faced Malkoha, Grey-bellied Cuckoo, Asian Palm Swift, Yellow-wattled Lapwing, Red-wattled Lapwing, Green Sandpiper, Asian Openbill, Great Egret, Intermediate Egret, Glossy Ibis, Asian Green Bee-eater, Blue-tailed Bee-eater, Ashy Drongo, Large Grey Babbler, Brown Shrike, Bay-backed Shrike, Small Minivet, Black-headed Cuckooshrike, Ashy Woodswallow, Common Woodshrike, Common Iora, Common Tailorbird, Jungle Prinia, Ashy Prinia, Plain Prinia, Zitting Cisticola, Blyth's Reed Warbler, Red-rumped Swallow, Barn Swallow, Indian Paradise-Flycatcher, Asian Brown Flycatcher, Indian Robin, Oriental Magpie-Robin, Pied Bushchat, Paddyfield Pipit, Western Yellow Wagtail, White-browed Wagtail.

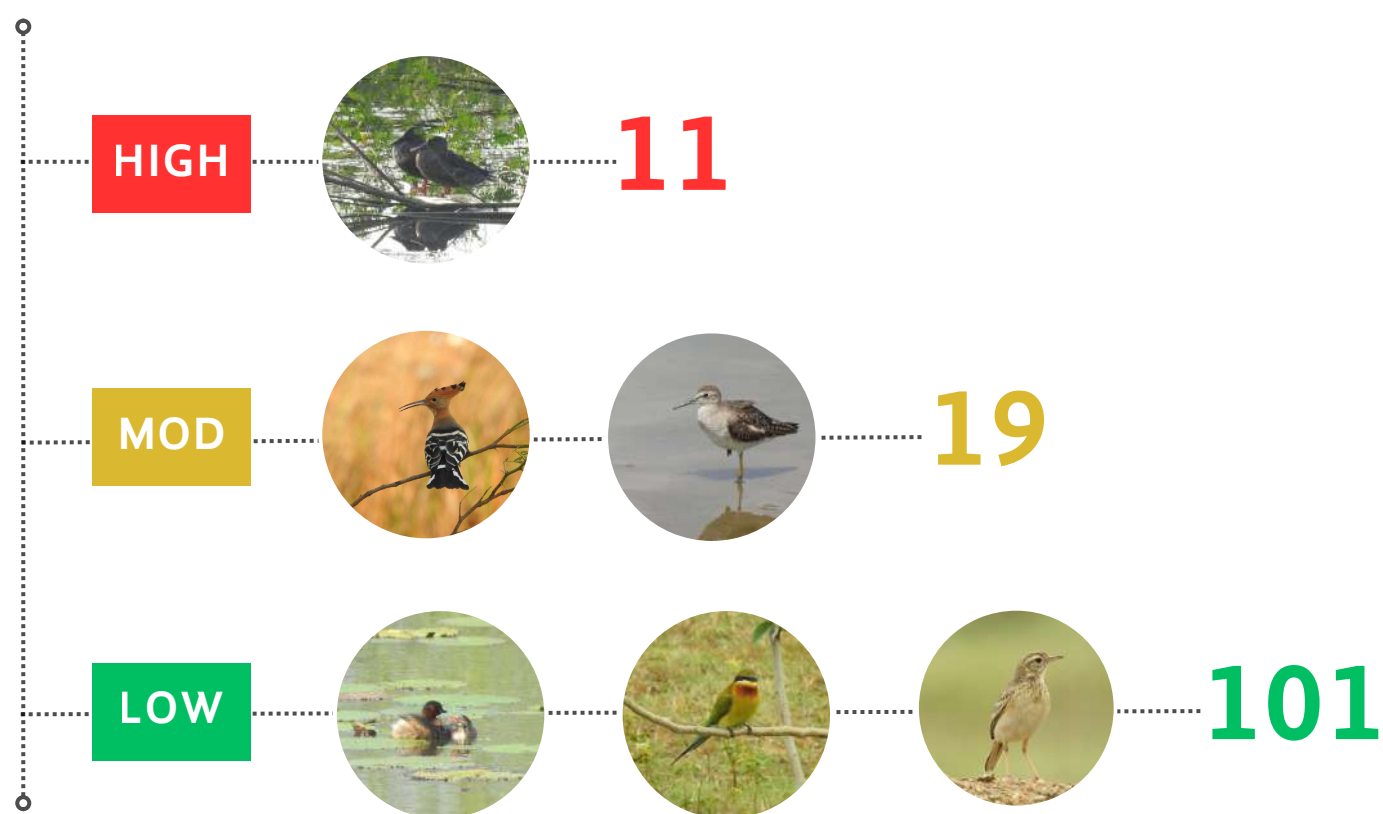
Omnivore (17): Brown-headed Gull, Common Sandpiper, Indian Roller, Greater Coucal, White-breasted Waterhen, Indian Pond-Heron, Red-naped Ibis, Jerdon's Bushlark, Red-vented Bulbul, Yellow-billed Babbler, Common Myna, Brahminy Starling, Indian Golden Oriole, Black Drongo, Rufous Treepie, Large-billed Crow, Yellow-throated Sparrow.

Plant & Seed (19): Indian Peafowl, Grey Francolin, Garganey, Northern Shoveler, Cotton Pygmy Goose, Ashy-crowned Sparrow Lark, Lesser Whistling Duck, Rock Pigeon, Eurasian Collared-Dove, Spotted Dove, Laughing Dove, Chestnut-bellied Sandgrouse, Eurasian Coot, Baya Weaver, Indian Silverbill, Scaly-breasted Munia, White-rumped Munia, Tricolored Munia, House Sparrow.

Vertebrate & Carrion (25): Whiskered Tern, Osprey, Short-toed Snake Eagle, Montagu's Harrier, Asian Woolly-necked Stork, Striated Heron, Black-winged Kite, White-throated Kingfisher, Pied Kingfisher, Red-necked Falcon, Little Cormorant, Indian Cormorant, Purple Heron, Black-crowned Night Heron, Black-headed Ibis, Oriental Honey Buzzard, Crested Serpent Eagle, Greater Spotted Eagle, Booted Eagle, Shikra, Black Kite, Brahminy Kite, Common Buzzard, White-eyed Buzzard, House Crow.



CONSERVATION PRIORITY STATUS OF BIRDS



Species of High Priority (11)

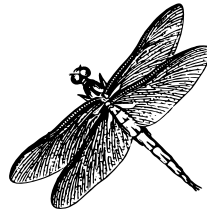
List of birds documented at Wetlands under Project Nanneer that are placed in the '*High Priority*' category of SolB 2023 based on India trends:

Garganey, Northern Shoveler, Little Ringed Plover, Little Stint, Marsh Sandpiper, Common Greenshank, Brown-headed Gull, Whiskered Tern, Osprey, Short-toed Snake-Eagle, Montagu's Harrier.

Species of Moderate Priority (19)

List of birds documented at Wetlands under Project Nanneer that are placed in the '*Moderate Priority*' category of SolB 2023 based on India trends:

Cotton Pygmy-Goose, Pheasant-tailed Jacana, Temminck's Stint, Common Sandpiper, Wood Sandpiper, Asian Woolly-necked Stork, Striated Heron, White-eyed Buzzard, Eurasian Hoopoe, Pied Kingfisher, Indian Roller, Red-necked Falcon, Common Woodshrike, Ashy-crowned Sparrow-Lark, Barn Swallow, Rosy Starling, House Sparrow, Western Yellow Wagtail, Citrine Wagtail.



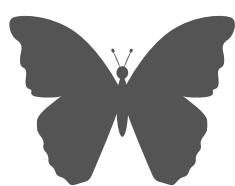
CHECKLIST

ODONATA (DRAGONFLIES & DAMSELFLIES)

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Gomphidae						
1	Indian Common Clubtail	<i>Ictinogomphus rapax</i>	✓	✓	✓	✓
2	Common Hooktail	<i>Paragomphus lineatus</i>	X	✓	X	X
Family: Libellulidae						
3	Variegated Flutterer	<i>Rhyothemis variegata</i>	✓	✓	✓	✓
4	Ditch Jewel	<i>Brachythemis contaminata</i>	✓	✓	✓	✓
5	Green Marsh Hawk	<i>Orthetrum sabina</i>	✓	✓	✓	✓
6	Wandering Glider	<i>Pantala flavescens</i>	✓	✓	✓	✓
7	Long-legged Marsh Glider	<i>Trithemis pallidinervis</i>	✓	✓	✓	✓
8	Ground Skimmer	<i>Diplacodes trivialis</i>	✓	✓	✓	✓
9	Ruddy Marsh Skimmer	<i>Crocothemis servilia</i>	X	✓	✓	X
10	Black Marsh Trotter	<i>Tamea limbata</i>	X	X	X	X
11	Yellow-tailed Ashy Skimmer	<i>Potamarcha congener</i>	✓	X	X	X
12	Trumpet Tail	<i>Aciscoma panorpoides</i>	✓	✓	✓	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai





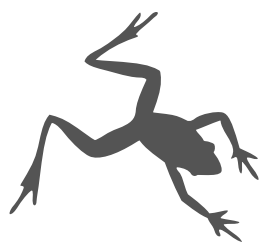
BUTTERFLIES

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Hesperidae						
1	Common Banded Awl	<i>Hasora chromus</i>	✓	✓	X	✓
2	Small Branded Swift	<i>Pelopidas mathias</i>	✓	X	X	X
3	Indian Palm Bob	<i>Suastus gremius</i>	✓	X	X	X
4	Indian Grizzled Skipper	<i>Spialia galba</i>	✓	✓	X	✓
Family: Papilionidae						
5	Blue Mormon	<i>Papilio polymnestor</i>	X	✓	X	✓
6	Common Mormon	<i>Papilio polytes</i>	✓	✓	✓	✓
7	Lime Swallowtail	<i>Papilio demoleus</i>	✓	✓	✓	✓
8	Common Banded Peacock	<i>Papilio crino</i>	X	✓	X	✓
9	Crimson Rose	<i>Pachliopta hector</i>	✓	✓	✓	✓
10	Common Rose	<i>Pachliopta aristolochiae</i>	✓	✓	✓	✓
Family: Pieridae						
11	Small Grass Yellow	<i>Eurema brigitta</i>	✓	✓	X	X
12	Common Grass Yellow	<i>Eurema hecabe</i>	✓	✓	✓	✓
13	Common Gull	<i>Cepora nerissa</i>	✓	✓	✓	✓
14	Common Jezebel	<i>Delias eucharis</i>	✓	✓	✓	✓
15	Common Emigrant	<i>Catopsilia pomona</i>	✓	✓	✓	✓
16	Crimson Tip	<i>Colotis danae</i>	✓	✓	✓	✓
17	Plain Orange Tip	<i>Colotis aurora</i>	✓	✓	X	X
18	Small Orange Tip	<i>Colotis etrida</i>	✓	✓	X	X
19	Mottled Emigrant	<i>Catopsilia pyranthe</i>	✓	✓	✓	✓
20	Small Salmon Arab	<i>Colotis amata</i>	X	✓	X	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
21	Pioneer	<i>Belenois aurota</i>	✓	✓	X	✓
Family: Lycaenidae						
22	Grass Jewel	<i>Freyeria putli</i>	✓	✓	✓	✓
23	Lesser Grass Blue	<i>Zizina otis</i>	✓	X	✓	X
24	Dark Grass Blue	<i>Zizeeria karsandra</i>	✓	X	X	✓
25	Zebra Blue	<i>Leptotes plinius</i>	✓	✓	X	✓
26	Small Cupid	<i>Chilades parrhasius</i>	✓	✓	X	X
27	Common Pierrot	<i>Castalius rosimon</i>	X	X	X	X
28	Common Silverline	<i>Spindasis vulcanus</i>	✓	X	X	X
29	Forget-Me-Not	<i>Catochrysops strabo</i>	X	X	✓	X
30	Common Sunbeam	<i>Curetis thetis</i>	✓	X	X	X
Family: Nymphalidae						
31	Blue Tiger	<i>Tirumala limniace</i>	✓	✓	✓	✓
32	Plain Tiger	<i>Danaus chrysippus</i>	✓	✓	✓	✓
33	Striped Tiger	<i>Danaus genutia</i>	✓	✓	X	✓
34	Tawny Coster	<i>Acraea terpsicore</i>	✓	✓	X	X
35	Angled Castor	<i>Ariadne ariadne</i>	✓	X	X	X
36	Common Crow	<i>Euploea core</i>	✓	✓	✓	✓
37	Common Sailer	<i>Neptis hylas</i>	✓	✓	X	X
38	Blue Pansy	<i>Junonia orithya</i>	✓	✓	✓	✓
39	Grey Pansy	<i>Junonia atlites</i>	✓	✓	X	X
40	Lemon Pansy	<i>Junonia lemonias</i>	✓	✓	✓	✓
41	Joker	<i>Byblia ilithyia</i>	✓	X	X	✓
42	Black Rajah	<i>Charaxes solon</i>	✓	X	X	X
43	Common Leopard	<i>Phalanta phalantha</i>	✓	X	X	X
44	Common Evening Brown	<i>Melanitis leda</i>	✓	✓	X	X
45	Danaid Eggfly	<i>Hypolimnas misippus</i>	✓	X	X	X

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai



AMPHIBIANS

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Bufonidae						
1	Asian Common Toad	<i>Duttaphrynus melanostictus</i>	✓	✓	✓	✓
Family: Dicroglossidae						
2	Common Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	X	✓	X	X
3	Indian Five-fingered Frog	<i>Euphlyctis hexadactylus</i>	X	✓	X	X



MAMMALS

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Sciuridae						
1	Three-striped Palm Squirrel	<i>Funambulus palmarum</i>	✓	✓	✓	✓
Family: Cercopithecidae						
2	Bonnet Macaque	<i>Macaca radiata</i>	✓	✓	✓	✓
Family: Herpestidae						
3	Indian Grey Mongoose	<i>Urva edwardsii</i>	✓	✓	✓	✓
Family: Leporidae						
4	Black-naped Hare	<i>Lepus nigricollis</i>	X	✓	X	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai



REPTILES

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Agamidae						
1	Oriental Garden Lizard	<i>Calotes versicolor</i>	✓	✓	✓	✓
Family: Agamidae						
2	Fan-throated Lizard	<i>Sitana sp.</i>	✓	X	X	X
Family: Trionychidae						
3	Keeled Indian Mabuya	<i>Eutropis carinata</i>	✓	✓	✓	✓
Family: Colubridae						
4	Indian Rat Snake	<i>Ptyas mucosa</i>	✓	✓	X	✓
5	Buff Striped Keelback	<i>Amphiesma stolatum</i>	✓	✓	X	X
6	Checkered Keelback	<i>Xenochrophis piscator</i>	✓	✓	✓	✓
7	Common Bronzeback	<i>Dendrelaphis tristis</i>	✓	X	X	X



MOTHS

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Erebidae						
1	Sandalwood Defoliator	<i>Amata passalis</i>	✓	✓	X	X

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai



ANTS

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Formicidae						
1	Indian Back Ant	<i>Camponotus compressus</i>	✓	✓	✓	✓
2	Silky Sugar Ant	<i>Camponotus sericeus</i>	✓	✓	✓	✓
3	Bi-coloured Arboreal ant	<i>Tetraponera rufonigra</i>	✓	✓	✓	✓
4	Asian Weaver Ant	<i>Oecophylla smaragdina</i>	✓	✓	✓	✓



FUNGI

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
1	Mottlegills	<i>Genus Panaeolus</i>	X	✓	X	X
2	Brittlestems and Allies	<i>Family Psathyrellaceae</i>	X	✓	X	X
3	Conecaps	<i>Genus Conocybe</i>	X	✓	X	X

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai



OTHER INSECTS

S.No.	Species
1	Delta bonellii
2	Genus Neorthacris
3	Mason Wasp <i>Delta conoideum</i>
4	Slender-scaped Carpenter Bee <i>Xylocopa tenuiscapa</i>
5	Genus Chrotogonus
6	Genus Chrysocoris
7	Ropalidia marginata
8	Dung Rollers Genus Canthon
9	Termites Epifamily Termitoidae
10	Horse and Deer Flies Family Tabanidae
11	Darth Maul Bug <i>Spilostethus hospes</i>
12	Red-spined Millipede <i>Xenobolus carnifex</i>





BIRDS

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Anatidae						
1	Lesser Whistling-Duck	<i>Dendrocygna javanica</i>	✓	✓	✓	✓
2	Knob-billed Duck	<i>Sarkidiornis melanotos</i>	X	✓	✓	✓
3	Cotton Pygmy-Goose	<i>Nettapus coromandelianus</i>	X	✓	X	✓
4	Garganey	<i>Spatula querquedula</i>	X	X	X	✓
5	Northern Shoveler	<i>Spatula clypeata</i>	X	X	✓	X
6	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	✓	✓	✓	✓
Family: Phasianidae						
7	Indian Peafowl	<i>Pavo cristatus</i>	✓	✓	✓	✓
8	Grey Francolin	<i>Ortygornis pondicerianus</i>	✓	✓	✓	✓
Family: Podicipedidae						
9	Little Grebe	<i>Tachybaptus ruficollis</i>	✓	✓	✓	✓
Family: Columbidae						
10	Rock Pigeon (Feral)	<i>Columba livia</i>	✓	✓	✓	✓
11	Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	✓	✓	✓	✓
12	Spotted Dove	<i>Spilopelia chinensis</i>	✓	✓	✓	✓
13	Laughing Dove	<i>Spilopelia senegalensis</i>	✓	✓	✓	✓
Family: Pteroclididae						
14	Chestnut-bellied Sandgrouse	<i>Pterocles exustus</i>	✓	✓	✓	X
Family: Cuculidae						
15	Greater Coucal	<i>Centropus sinensis</i>	✓	✓	✓	✓
16	Blue-faced Malkoha	<i>Phaenicophaeus viridirostris</i>	✓	✓	X	X

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Cuculidae						
17	Pied Cuckoo	<i>Clamator jacobinus</i>	✓	✓	✓	✓
18	Asian Koel	<i>Eudynamys scolopaceus</i>	✓	✓	✓	✓
19	Grey-bellied Cuckoo	<i>Cacomantis passerinus</i>	X	✓	X	X
20	Common Hawk-Cuckoo	<i>Hierococcyx varius</i>	✓	✓	✓	✓
Family: Caprimulgidae						
21	Indian Nightjar	<i>Caprimulgus asiaticus</i>	✓	✓	X	✓
Family: Apodidae						
22	Asian Palm-Swift	<i>Cypsiurus balasiensis</i>	✓	✓	✓	✓
Family: Rallidae						
23	Eurasian Coot	<i>Fulica atra</i>	X	X	X	✓
24	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	✓	✓	✓	✓
Family: Recurvirostridae						
25	Black-winged Stilt	<i>Himantopus himantopus</i>	X	✓	✓	✓
Family: Charadriidae						
26	Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>	✓	✓	X	✓
27	Red-wattled Lapwing	<i>Vanellus indicus</i>	✓	✓	✓	✓
28	Little Ringed Plover	<i>Charadrius dubius</i>	✓	✓	✓	✓
Family: Jacanidae						
29	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	X	✓	X	✓
Family: Scolopacidae						
30	Temminck's Stint	<i>Calidris temminckii</i>	X	✓	✓	✓
31	Little Stint	<i>Calidris minuta</i>	X	X	✓	X
32	Common Snipe	<i>Gallinago gallinago</i>	X	✓	X	X
33	Common Sandpiper	<i>Actitis hypoleucos</i>	✓	✓	✓	✓
34	Green Sandpiper	<i>Tringa ochropus</i>	✓	✓	✓	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
35	Marsh Sandpiper	<i>Tringa stagnatilis</i>	X	✓	X	X
36	Wood Sandpiper	<i>Tringa glareola</i>	✓	✓	✓	✓
37	Common Greenshank	<i>Tringa nebularia</i>	X	✓	✓	✓
Family: Laridae						
38	Brown-headed Gull	<i>Chroicocephalus brunnicephalus</i>	X	X	✓	X
39	Whiskered Tern	<i>Chlidonias hybrida</i>	X	✓	✓	✓
Family: Ciconiidae						
40	Asian Openbill	<i>Anastomus oscitans</i>	✓	✓	✓	✓
41	Asian Woolly-necked Stork	<i>Ciconia episcopus</i>	✓	X	✓	✓
Family: Anhingidae						
42	Oriental Darter	<i>Anhinga melanogaster</i>	X	✓	✓	✓
Family: Phalacrocoracidae						
43	Little Cormorant	<i>Microcarbo niger</i>	✓	✓	✓	✓
44	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	X	✓	✓	✓
Family: Ardeidae						
45	Black Bittern	<i>Ixobrychus flavicollis</i>	X	X	X	✓
46	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	X	✓	X	X
47	Little Egret	<i>Egretta garzetta</i>	✓	✓	✓	✓
48	Striated Heron	<i>Butorides striata</i>	X	✓	X	X
49	Indian Pond-Heron	<i>Ardeola grayii</i>	✓	✓	✓	✓
50	Eastern Cattle Egret	<i>Bubulcus ibis</i>	✓	✓	✓	✓
51	Great Egret	<i>Ardea alba</i>	✓	✓	✓	✓
52	Intermediate Egret	<i>Ardea intermedia</i>	✓	✓	✓	✓
53	Grey Heron	<i>Ardea cinerea</i>	✓	✓	✓	✓
54	Purple Heron	<i>Ardea purpurea</i>	✓	✓	✓	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Threskiornithidae						
55	Glossy Ibis	<i>Plegadis falcinellus</i>	✓	✓	✓	✓
56	Black-headed Ibis	<i>Threskiornis melanocephalus</i>	✓	✓	✓	✓
57	Red-naped Ibis	<i>Pseudibis papillosa</i>	✓	✓	✓	✓
Family: Pandionidae						
58	Osprey	<i>Pandion haliaetus</i>	X	X	✓	X
Family: Accipitridae						
59	Oriental Honey-buzzard	<i>Pernis ptilorhynchus</i>	✓	✓	✓	✓
60	Crested Serpent Eagle	<i>Spilornis cheela</i>	✓	✓	✓	✓
61	Short-toed Snake Eagle	<i>Circaetus gallicus</i>	X	X	✓	X
62	Greater Spotted Eagle	<i>Clanga clanga</i>	X	X	✓	X
63	Booted Eagle	<i>Hieraaetus pennatus</i>	X	X	✓	X
64	White-eyed Buzzard	<i>Butastur teesa</i>	✓	✓	X	✓
65	Montagu's Harrier	<i>Circus pygargus</i>	X	✓	X	X
66	Shikra	<i>Accipiter badius</i>	✓	✓	✓	✓
67	Black Kite	<i>Milvus migrans</i>	✓	X	X	X
68	Brahminy Kite	<i>Haliastur indus</i>	✓	✓	✓	✓
69	Common Buzzard	<i>Buteo buteo</i>	✓	X	X	X
Family: Strigidae						
70	Spotted Owlet	<i>Athene brama</i>	✓	✓	✓	✓
Family: Upupidae						
71	Eurasian Hoopoe	<i>Upupa epops</i>	✓	✓	✓	✓
Family: Alcedinidae						
72	Common Kingfisher	<i>Alcedo atthis</i>	✓	✓	✓	✓
73	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	✓	✓	✓	✓
74	Pied Kingfisher	<i>Ceryle rudis</i>	✓	✓	✓	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Meropidae						
75	Asian Green Bee-eater	<i>Merops orientalis</i>	✓	✓	✓	✓
76	Blue-tailed Bee-eater	<i>Merops philippinus</i>	✓	✓	✓	✓
Family: Coraciidae						
77	Indian Roller	<i>Coracias benghalensis</i>	✓	✓	✓	✓
Family: Megalaimidae						
78	Coppersmith Barbet	<i>Psilopogon haemacephalus</i>	✓	✓	✓	✓
Family: Picidae						
79	Black-rumped Flameback	<i>Dinopium benghalense</i>	✓	✓	✓	✓
Family: Falconidae						
80	Red-necked Falcon	<i>Falco chicquera</i>	X	✓	X	X
Family: Psittacidae						
81	Rose-ringed Parakeet	<i>Psittacula krameri</i>	✓	✓	✓	✓
Family: Campephagidae						
82	Small Minivet	<i>Pericrocotus cinnamomeus</i>	✓	X	X	X
83	Black-headed Cuckooshrike	<i>Lalage melanoptera</i>	✓	X	X	X
Family: Oriolidae						
84	Indian Golden Oriole	<i>Oriolus kundoo</i>	✓	✓	✓	✓
Family: Artamidae						
85	Ashy Woodswallow	<i>Artamus fuscus</i>	✓	✓	✓	✓
Family: Vangidae						
86	Common Woodshrike	<i>Tephrodornis pondicerianus</i>	✓	✓	✓	✓
Family: Aegithinidae						
87	Common Iora	<i>Aegithina tiphia</i>	X	✓	X	X
Family: Dicruridae						
88	Black Drongo	<i>Dicrurus macrocercus</i>	✓	✓	✓	✓
89	Ashy Drongo	<i>Dicrurus leucophaeus</i>	X	✓	X	X

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Monarchidae						
90	Indian Paradise-Flycatcher	<i>Terpsiphone paradisi</i>	✓	✓	✓	✓
Family: Laniidae						
91	Brown Shrike	<i>Lanius cristatus</i>	✓	✓	✓	✓
Family: Corvidae						
92	Rufous Treepie	<i>Dendrocitta vagabunda</i>	✓	✓	✓	✓
93	House Crow	<i>Corvus splendens</i>	✓	✓	✓	✓
94	Large-billed Crow	<i>Corvus macrorhynchos</i>	✓	✓	✓	✓
Family: Alaudidae						
95	Ashy-crowned Sparrow-Lark	<i>Eremopterix griseus</i>	✓	✓	✓	✓
96	Jerdon's Bushlark	<i>Mirafr affinis</i>	✓	✓	✓	✓
Family: Cisticolidae						
97	Common Tailorbird	<i>Orthotomus sutorius</i>	✓	✓	✓	✓
98	Jungle Prinia	<i>Prinia sylvatica</i>	✓	✓	✓	✓
99	Ashy Prinia	<i>Prinia socialis</i>	✓	✓	✓	✓
100	Plain Prinia	<i>Prinia inornata</i>	✓	✓	✓	✓
101	Zitting Cisticola	<i>Cisticola juncidis</i>	✓	✓	✓	✓
Family: Acrocephalidae						
102	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	✓	✓	✓	✓
Family: Hirundinidae						
103	Barn Swallow	<i>Hirundo rustica</i>	✓	✓	✓	✓
104	Red-rumped Swallow	<i>Cecropis daurica</i>	✓	✓	✓	X
Family: Pycnonotidae						
105	White-browed Bulbul	<i>Pycnonotus luteolus</i>	✓	✓	✓	✓
106	Red-vented Bulbul	<i>Pycnonotus cafer</i>	✓	✓	✓	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Phylloscopidae						
107	Green Warbler	<i>Phylloscopus nitidus</i>	X	X	✓	X
Family: Leiothrichidae						
108	Large Grey Babbler	<i>Argya malcolmi</i>	X	X	X	✓
109	Yellow-billed Babbler	<i>Argya affinis</i>	✓	✓	✓	✓
1Family: Sturnidae						
110	Rosy Starling	<i>Pastor roseus</i>	✓	✓	X	X
111	Brahminy Starling	<i>Sturnia pagodarum</i>	✓	✓	✓	✓
112	Common Myna	<i>Acridotheres tristis</i>	✓	✓	✓	✓
Family: Muscicapidae						
113	Asian Brown Flycatcher	<i>Muscicapa dauurica</i>	✓	X	✓	X
114	Indian Robin	<i>Copsychus fulicatus</i>	✓	✓	✓	✓
115	Oriental Magpie-Robin	<i>Copsychus saularis</i>	✓	✓	✓	✓
116	Blue-throated Flycatcher	<i>Cyornis rubeculoides</i>	✓	✓	X	X
117	Pied Bushchat	<i>Saxicola caprata</i>	✓	✓	✓	✓
Family: Dicaeidae						
118	Pale-billed Flowerpecker	<i>Dicaeum erythrorhynchos</i>	✓	✓	✓	✓
Family: Necatariniidae						
119	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	✓	✓	✓	✓
120	Purple Sunbird	<i>Cinnyris asiaticus</i>	✓	✓	✓	✓
121	Loten's Sunbird	<i>Cinnyris lotenius</i>	✓	✓	✓	✓
Family: Ploceidae						
122	Baya Weaver	<i>Ploceus philippinus</i>	✓	✓	✓	✓
Family: Estrildidae						
123	Indian Silverbill	<i>Euodice malabarica</i>	✓	✓	X	✓
124	Scaly-breasted Munia	<i>Lonchura punctulata</i>	✓	✓	✓	✓
125	White-rumped Munia	<i>Lonchura striata</i>	✓	✓	X	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
126	Tricolored Munia	<i>Lonchura malacca</i>	✓	✓	✓	✓
Family: Passeridae						
127	House Sparrow	<i>Passer domesticus</i>	✓	✓	✓	X
128	Yellow-throated Sparrow	<i>Gymnoris xanthocollis</i>	X	✓	✓	X
Family: Motacillidae						
129	Western Yellow Wagtail	<i>Motacilla flava</i>	✓	✓	✓	X
130	Citrine Wagtail	<i>Motacilla citreola</i>	X	✓	X	X
131	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	✓	✓	✓	✓
132	Paddyfield Pipit	<i>Anthus rufulus</i>	✓	✓	✓	✓
133	Blyth's Pipit	<i>Anthus godlewskii</i>	✓	X	X	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

The taxonomic order of birds listed above is based on The Clements Checklist of Birds of the World.





PLANTS

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Acanthaceae						
1	Prostrated Ruellia	<i>Ruellia prostrata</i>	✓	X	✓	X
2	Porcupine Flower	<i>Barleria prionitis</i>	X	X	X	X
3	Popping Pod	<i>Ruellia tuberosa</i>	X	X	✓	X
4	Asian Coromandel	<i>Asystasia gangetica</i>	✓	X	X	X
Family: Amaranthaceae						
5	Prostrate Globe-Amaranth	<i>Gomphrena celosioides</i>	✓	X	✓	✓
6	Green Amaranth	<i>Amaranthus viridis</i>	X	✓	X	X
7	Palmer's Amaranth	<i>Amaranthus palmeri</i>	X	X	X	✓
Family: Anacardiaceae						
8	Indian Mango	<i>Mangifera indica</i>	✓	X	X	X
Family: Apocynaceae						
9	Crown Flower	<i>Calotropis gigantea</i>	✓	✓	X	X
Family: Araceae						
10	Creeping Cradle Plant	<i>Cyanotis axillaris</i>	X	✓	X	X
Family: Arecaceae						
11	Asian Palmyra Palm	<i>Borassus flabellifer</i>	✓	✓	✓	✓
12	Sugar Date Palm	<i>Phoenix sylvestris</i>	X	✓	X	X
Family: Asteraceae						
13	Tridax Daisy	<i>Tridax procumbens</i>	✓	✓	✓	✓
14	Siam Weed	<i>Chromolaena odorata</i>	✓	✓	X	X
15	East Indian Globe Thistle	<i>Sphaeranthus indicus</i>	X	✓	X	X
16	Santa Maria Feverfew	<i>Parthenium hysterophorus</i>	X	X	✓	X
Family: Bignoniaceae						
17	Sausage Tree	<i>Kigelia africana</i>	X	X	X	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappetta Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Boraginaceae						
18	Indian Heliotrope	<i>Heliotropium indicum</i>	✓	✓	X	X
19	Creeping Coldenia	<i>Coldenia procumbens</i>	X	✓	✓	X
Family: Caprifoliaceae						
20	Wide Spikenard	<i>Mesosphaerum suaveolens</i>	✓	X	X	X
Family: Cleomaceae						
21	Asian Spiderflower	<i>Cleome viscosa</i>	X	X	✓	X
Family: Combretaceae						
22	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	✓	X	X	X
Family: Commelinaceae						
23	Tropical Spiderwart	<i>Commelina benghalensis</i>	X	X	✓	X
Family: Convolvulaceae						
24	Narrow-leaved Merremia	<i>Xenostegia tridentata</i>	X	✓	✓	X
25	Roundleaf Bindweed	<i>Evolvulus nummularius</i>	✓	✓	X	X
26	Bush Morning Glory	<i>Ipomoea carnea</i>	✓	✓	X	✓
27	Sleepy Morning	<i>Waltheria indica</i>	X	X	X	✓
28	Arrow-leaved Morning Glory	<i>Ipomoea sagittifolia</i>	✓	X	✓	X
Family: Cucurbitaceae						
29	Squash	<i>Cucurbita moschata</i>	✓	X	X	X
30	Muskmelon	<i>Cucumis melo</i>	X	✓	X	X
31	Madras Pea Pumpkin	<i>Cucumis maderaspatanus</i>	✓	X	X	X
32	Colocynth	<i>Citrullus colocynthis</i>	X	✓	X	X
Family: Cyperaceae						
33	Durban Crowfoot	<i>Dactyloctenium aegyptium</i>	✓	X	X	X
34	Bunchy Flats-Edge	<i>Cyperus polystachyos</i>	X	X	✓	X
35	Jointed Flatsedge	<i>Cyperus articulatus</i>	X	X	X	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Euphorbiaceae						
36	Bonpland's Croton	<i>Croton bonplandianus</i>	✓	✓	✓	✓
37	Castor Bean	<i>Ricinus communis</i>	X	✓	✓	X
38	Bellyache Bush	<i>Jatropha gossypifolia</i>	✓	X	✓	✓
39	Antique Spurge	<i>Euphorbia antiquorum</i>	✓	✓	X	X
40	Cassava	<i>Manihot esculenta</i>	✓	X	X	X
41	Matted Sandmat	<i>Euphorbia serpens</i>	X	X	X	✓
Family: Fabaceae						
42	Oneleaf Senna	<i>Senna uniflora</i>	X	✓	X	✓
43	Sickle Senna	<i>Senna tora</i>	✓	✓	X	X
44	Purple Hoarypea	<i>Tephrosia purpurea</i>	✓	X	X	X
45	Sensitive Plant	<i>Mimosa pudica</i>	✓	X	X	X
46	Pink Shower Tree	<i>Cassia grandis</i>	✓	✓	X	✓
47	Blue Rattlepod	<i>Crotalaria verrucosa</i>	X	✓	X	X
48	Coffee Senna	<i>Senna occidentalis</i>	X	X	✓	✓
49	Bush Plum	<i>Carissa spinarum</i>	✓	X	X	X
50	Egyptian Acacia	<i>Vachellia nilotica</i>	X	X	X	X
51	White Bark Acacia	<i>Vachellia leucophloea</i>	✓	✓	X	✓
52	Tamarind	<i>Tamarindus indica</i>	✓	X	X	X
53	Birdsville Indigo	<i>Indigofera linnaei</i>	X	✓	X	✓
54	Monkeypod Tree	<i>Pithecellobium dulce</i>	✓	X	X	X
55	Common Bean	<i>Phaseolus vulgaris</i>	X	✓	X	X
56	Asian Bushbeech	<i>Gmelina asiatica</i>	✓	X	X	X
57	Roxburgh's Cassia	<i>Cassia roxburghii</i>	✓	X	X	X
58	Jaundice Curative Tree	<i>Wrightia tinctoria</i>	X	X	X	✓
59	Indian Beech Tree	<i>Millettia pinnata</i>	X	X	X	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Lamiaceae						
60	Thumbai	<i>Leucas aspera</i>	✓	✓	✓	✓
Family: Malvaceae						
61	Chocolateweed	<i>Melochia corchorifolia</i>	X	X	✓	X
62	Spade Flower	<i>Pigea enneasperma</i>	X	✓	X	✓
63	Indian Mallow	<i>Abutilon indicum</i>	X	X	✓	X
64	Portia Tree	<i>Thespesia populnea</i>	✓	X	X	X
65	Spinyhead Sida	<i>Sida acuta</i>	X	✓	X	X
66	Tiny White Wild Hibiscus	<i>Hibiscus micranthus</i>	X	✓	X	X
Family: Marsileaceae						
67	Water Clover	<i>Marsilea minuta</i>	X	X	X	✓
Family: Meliaceae						
68	Neem	<i>Azadirachta indica</i>	✓	✓	X	X
69	Indian Ash	<i>Lannea coromandelica</i>	✓	X	X	X
Family: Molluginaceae						
70	Smooth Carpetweed	<i>Paramollugo nudicaulis</i>	✓	X	X	X
Family: Moraceae						
71	Indian Banyan	<i>Ficus benghalensis</i>	✓	X	X	X
Family: Myrtaceae						
72	Matura Tea Tree	<i>Senna auriculata</i>	✓	✓	✓	✓
73	Java Plum	<i>Syzygium cumini</i>	✓	X	X	X
Family: Nymphaeaceae						
74	Red Water Lily	<i>Nymphaea rubra</i>	X	✓	X	X
75	Egyptian White Water-Lily	<i>Nymphaea lotus</i>	X	✓	X	X
Family: Oleaceae						
76	Wild Jasmine	<i>Jasminum multipartitum</i>	X	✓	X	X

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Passifloraceae						
77	Stinking Passionflower	<i>Passiflora vesicaria</i>	✓	X	X	X
Family: Phyllanthaceae						
78	Gale of the Wind	<i>Phyllanthus amarus</i>	✓	X	X	X
79	Seed-Under-Leaf	<i>Phyllanthus virgatus</i>	X	✓	X	X
Family: Plantaginaceae						
80	Tropical Speedwell	<i>Evolvulus alsinoides</i>	✓	✓	✓	✓
81	Herb-of-Grace	<i>Bacopa monnieri</i>	X	✓	X	X
Family: Poaceae						
82	Finger Grass	<i>Chloris barbata</i>	✓	X	X	X
83	Wild Cane	<i>Saccharum spontaneum</i>	✓	X	X	X
84	Vetiver	<i>Chrysopogon zizanioides</i>	✓	X	X	X
Family: Polygonaceae						
85	Mountain Knotgrass	<i>Oureta lanata</i>	✓	X	X	✓
Family: Portulacaceae						
86	Desert Horse Purslane	<i>Trianthema portulacastrum</i>	X	X	✓	X
Family: Rhamnaceae						
87	Akeake	<i>Dodonaea viscosa</i>	✓	✓	X	X
Family: Rubiaceae						
88	Asiatic Tarenna	<i>Tarenna asiatica</i>	✓	X	X	X
89	Indian Mulberry	<i>Morinda coreia</i>	✓	X	✓	X
90	Creeping Dentella	<i>Dentella repens</i>	✓	X	X	X
Family: Salicaceae						
91	False Ashoka	<i>Monoon longifolium</i>	✓	X	X	X
Family: Santalaceae						
92	Indian Sandalwood	<i>Santalum album</i>	✓	X	✓	X

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai

S.No.	Common Name	Scientific Name	CK	VK	KK	PK
Family: Sapindaceae						
93	Lesser Balloon Vine	<i>Cardiospermum halicacabum</i>	X	✓	X	X
Family: Solanaceae						
94	Yellow Berried Nightshade	<i>Solanum virginianum</i>	X	✓	✓	X
95	Purple Fruited Pea Eggplant	<i>Solanum trilobatum</i>	✓	✓	X	X
96	Wild Eggplant	<i>Solanum insanum</i>	✓	✓	X	X
Family: Verbenaceae						
97	Turkey Tangle Frogfruit	<i>Phyla nodiflora</i>	X	X	✓	X
98	Common Lantana	<i>Lantana camara</i>	X	X	✓	X
Family: Vitaceae						
99	Single-stemmed Wild Grape	<i>Cissus quadrangularis</i>	✓	✓	X	✓
Family: Zygophyllaceae						
100	Large Caltrops	<i>Pedaliun murex</i>	X	✓	X	X
101	Puncture Vine	<i>Tribulus terrestris</i>	X	X	X	✓

*CK - Chettiyan Kanmai, VK - Vadakudipatti Kanmai, KK - Kanappettai Kanmai, PK - Panangudi Kanmai



PHOTOGRAPHS BIRDS



சின்ன சீழ்க்கை சிறகி
LESSER WHISTLING-DUCK



செண்டு வாத்து
KNOB-BILLED DUCK



அல்லிச் சிறகி
COTTON PYGMY-GOOSE



வெண்பருவ வாத்து
GARGANEY



தட்டைவாயன்
NORTHERN SHOVELER



புள்ளிமூக்கு வாத்து
INDIAN SPOT-BILLED DUCK



மயில்
INDIAN PEAFOWL



கவுதாரி
GREY FRANCOLIN



முக்குளிப்பான்
LITTLE GREBE



மாடப்புறா
ROCK PIGEON (FERAL PIGEON)



கள்ளிப்புறா
EURASIAN COLLARED-DOVE



மணிப்புறா
SPOTTED DOVE



தவிட்டுப்புறா
LAUGHING DOVE



கல்கவுதாரி
CHESTNUT-BELLIED SANDGROUSE



செண்பகம்
GREATER COUCAL



நீலக்கண்ணி
BLUE-FACED MALKOHA



சுடலைக்குயில்
PIED CUCKOO



குயில்
ASIAN KOEL



சின்ன சாம்பல் குயில்
GREY-BELLIED CUCKOO



அக்காகுயில்
COMMON HAWK-CUCKOO



சின்ன இராப்பாடி
INDIAN NIGHTJAR



பனை உழவாரன்
ASIAN PALM SWIFT



நாமக்கோழி
EURASIAN COOT



வெண்மார்பு கானாங்கோழி
WHITE-BREASTED WATERHEN



பவளக்கால் உள்ளான்
BLACK-WINGED STILT



மஞ்சள்மூக்கு ஆள்காட்டி
YELLOW-WATTLED LAPWING



செம்மூக்கு ஆள்காட்டி
RED-WATTLED LAPWING



பட்டாணி உப்புகொத்தி
LITTLE RINGED PLOVER



தாமரைக்கோழி
PHEASANT-TAILED JACANA (Br)



மஞ்சள்கால் கொசு உள்ளான்
TEMMINCK'S STINT



கொசு உள்ளான்
LITTLE STINT



மண்கொத்தி
COMMON SANDPIPER



ஆற்று மண்கொத்தி
GREEN SANDPIPER



சதுப்பு மண்கொத்தி
MARSH SANDPIPER



பொரி மண்கொத்தி
WOOD SANDPIPER



பச்சைக்கால் உள்ளான்
COMMON GREENSHANK



பழுப்புத்தலை கடல்காகம்
BROWN-HEADED GULL



மீசை ஆலா
WHISKERED TERN



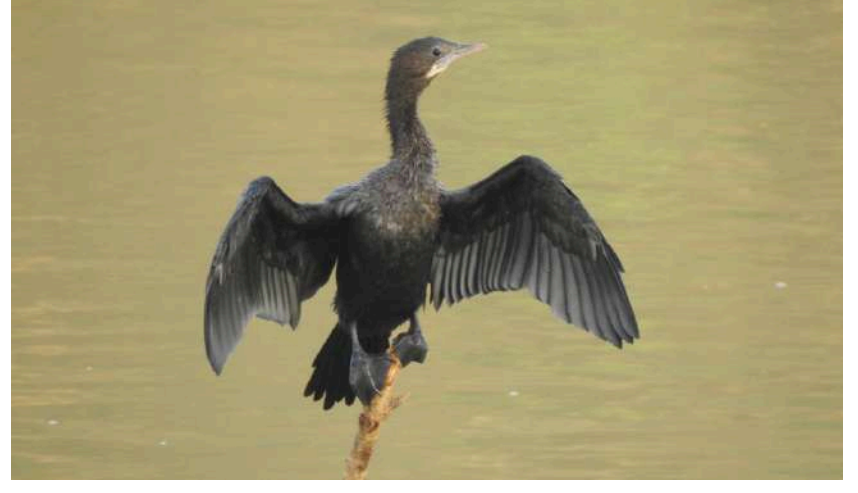
நத்தைகுத்தி நாரை
ASIAN OPENBILL



வெண்கழுத்து நாரை
ASIAN WOOLLY-NECK STORK



பாம்புத்தாரா
ORIENTAL DARTER



சின்ன நீர்க்காகம்
LITTLE CORMORANT



இந்திய நீர்க்காகம்
INDIAN CORMORANT



இராக்கொக்கு
BLACK-CROWNED NIGHT-HERON



சின்னக் கொக்கு
LITTLE EGRET



சின்ன பச்சைக் கொக்கு
STRIATED HERON



மடையான்
INDIAN POND-HERON



உண்ணிக் கொக்கு
EASTERN CATTLE EGRET



நெடலைக் கொக்கு
GREAT EGRET



நடுவாந்தரக் கொக்கு
INTERMEDIATE EGRET



சாம்பல் கொக்கு
GREY HERON



செந்நீலக் கொக்கு
PURPLE HERON



சின்ன அன்றில்
GLOSSY IBIS



கருந்தலை அன்றில்
BLACK-HEADED IBIS



செந்தலை அன்றில்
RED-NAPED IBIS



விராலடிப்பான்
OSPREY



தேன் பருந்து
ORIENTAL HONEY-BUZZARD



காட்டுப் பாம்புக்கமுகு
CRESTED SERPENT-EAGLE



பழுப்புத்தலை பாம்புக்கமுகு
SHORT-TOED SNAKE-EAGLE



பெரிய புள்ளி கமுகு
GREATER SPOTTED EAGLE



வெண்தோள் கமுகு
BOOTED EAGLE



வெள்ளைக்கண் வைரி
WHITE-EYED BUZZARD



வெண்முதுகு பூனைப்பருந்து
MONTAGU'S HARRIER



வல்லூறு
SHIKRA



கரும்பருந்து
BLACK KITE



செம்பருந்து
RED-BACKED KITE (BRAHMINY KITE)



ஐரோப்பிய பருந்து
COMMON BUZZARD (not common for us)



புள்ளி ஆந்தை
SPOTTED OWLET



கொண்டலாத்தி
EURASIAN HOOPOE



சிறிய நீல மீன்கொத்தி
COMMON KINGFISHER



வெண்மார்பு மீன்கொத்தி
WHITE-THROATED KINGFISHER



கருப்பு வெள்ளை மீன்கொத்தி
PIED KINGFISHER



சிறிய பஞ்சுருட்டான்
ASIAN GREEN BEE-EATER



நீலவால் பஞ்சுருட்டான்
BLUE-TAILED BEE-EATER



பனங்காடை
INDIAN ROLLER



செம்மார்பு குக்குறுவான்
COPPERSMITH BARBET



ஊர் மரங்கொத்தி
BLACK-RUMPED FLAMEBACK



செந்தலை வல்லூறு
RED-NECKED FALCON



பச்சைக்கிளி
ROSE-RINGED PARAKEET



சின்ன மின்சிட்டு
SMALL MINIVET



கருந்தலை குயில்கீச்சான்
BLACK-HEADED CUCKOOSHRIKE



மாங்குயில்
INDIAN GOLDEN ORIOLE



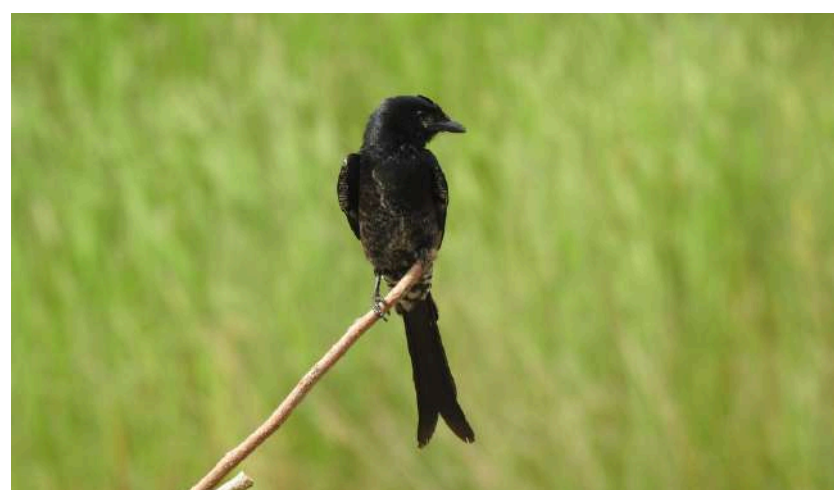
காட்டுத் தகைவிலான்
ASHY WOODSWALLOW



காட்டுக் கீச்சான்
COMMON WOODSHRIKE



மாம்பழச்சிட்டு
COMMON IORA



கரிச்சான்
BLACK DRONGO



சாம்பல் கரிச்சான்
ASHY DRONGO



வேதிவால் குருவி
INDIAN PARADISE-FLYCATCHER



பழுப்புக் கீச்சான்
BROWN SHRIKE



வால்காக்கை
RUFIOUS TREEPIE



காகம்
HOUSE CROW



அண்டங்காக்கை
LARGE-BILLED CROW



சாம்பல்தலை வானம்பாடி
ASHY-CROWNED SPARROW-LARK (M)



தெற்கத்தி புதர்பாடி
JERDON'S BUSHLARK



தையல்சிட்டு
COMMON TAILORBIRD



காட்டுக் கதிர்க்குருவி
JUNGLE PRINIA



சாம்பல் கதிர்க்குருவி
ASHY PRINIA



கதிர்க்குருவி
PLAIN PRINIA



விசிறிவால் கதிர்க்குருவி
ZITTING CISTICOLA



தகைவிலான்
BARN SWALLOW



செம்முதுகு தகைவிலான்
RED-RUMPED SWALLOW



வெண்புருவ சின்னான்
WHITE-BROWED BULBUL



சின்னான்
RED-VENTED BULBUL



சாம்பல் சிலம்பன்
LARGE GREY BABBLER



தவிட்டுக்குருவி
YELLOW-BILLED BABBLER



சூரமாறி
ROSY STARLING



கருந்தலை மைனா
BRAHMINY STARLING



மைனா
COMMON MYNA



பழுப்பு பூச்சிபிடிப்பான்
ASIAN BROWN FLYCATCHER



கருஞ்சிட்டு
INDIAN ROBIN



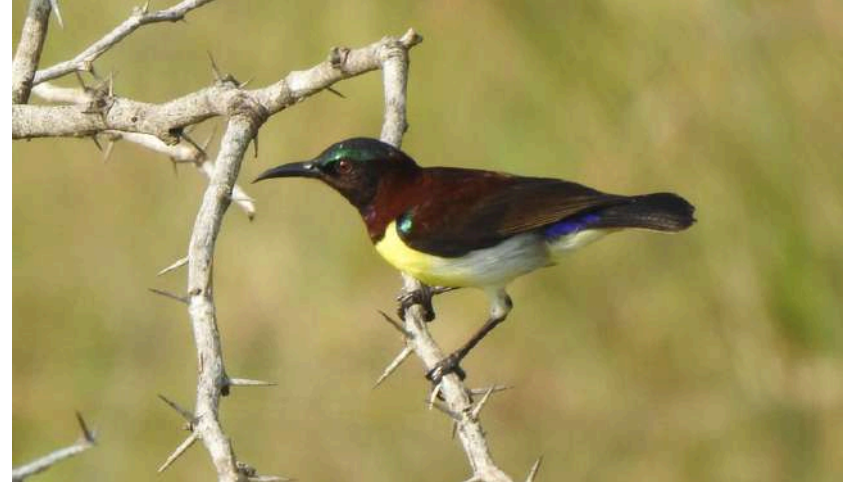
குண்டுக் கரிச்சான்
ORIENTAL MAGPIE-ROBIN



புதர்ச்சிட்டு
PIED BUSHCHAT



செவ்வலகுப் பூஞ்சிட்டு
PALE-BILLED FLOWERPECKER



ஊர்த் தேன்சிட்டு
PURPLE-RUMPED SUNBIRD



ஊதா தேன்சிட்டு
PURPLE SUNBIRD



பெரிய தேன்சிட்டு
LOTEN'S SUNBIRD



தூக்கணாங்குருவி
BAYA WEAVER



வெண்தொண்டைச் சில்லை
INDIAN SILVERBILL



புள்ளிச்சில்லை
SCALY-BREASTED MUNIA



வெண்முதுகுச் சில்லை
WHITE-RUMPED MUNIA



கருந்தலைச் சில்லை
TRICOLORED MUNIA



சிட்டுக்குருவி
HOUSE SPARROW



மஞ்சள்தொண்டை சிட்டுக்குருவி
YELLOW-THROATED SPARROW



மஞ்சள் வாலாட்டி
WESTERN YELLOW WAGTAIL



எலுமிச்சை வாலாட்டி
CITRINE WAGTAIL



வெண்புருவ வாலாட்டி
WHITE-BROWED WAGTAIL



வயல் நெட்டைக்காலி
PADDYFIELD PIPIT



பிளைத் நெட்டைக்காலி
BLYTH'S PIPIT

BUTTERFLIES AND MOTHS



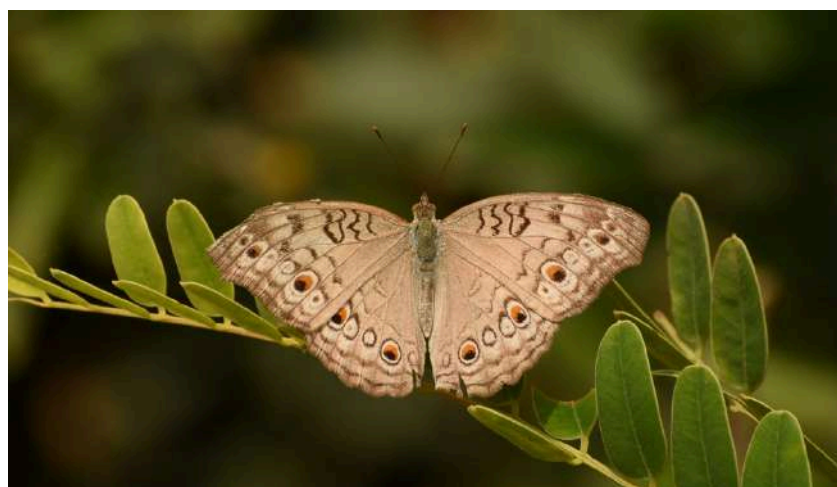
சிறிய கருவேல நீலன்
SMALL CUPID



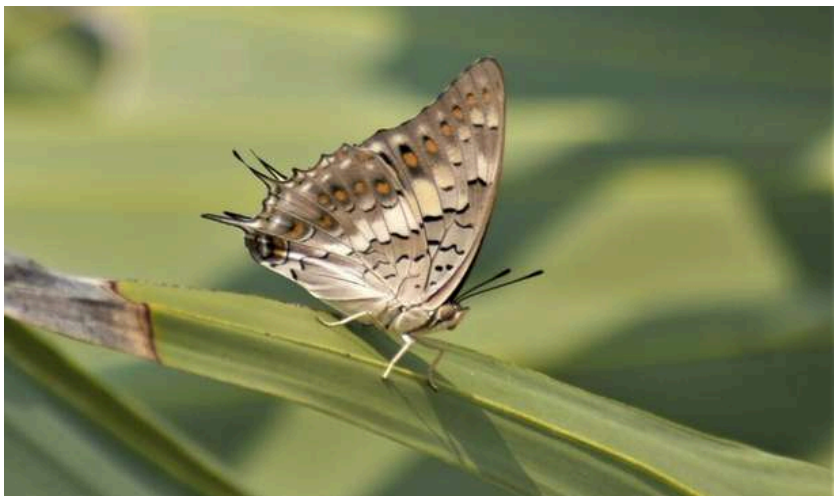
எலுமிச்சை அழகி
LIME SWALLOWTAIL



பழுப்பு வசீகரன்
LEMON PANSY



சாம்பல் வசீகரன்
GREY PANSY



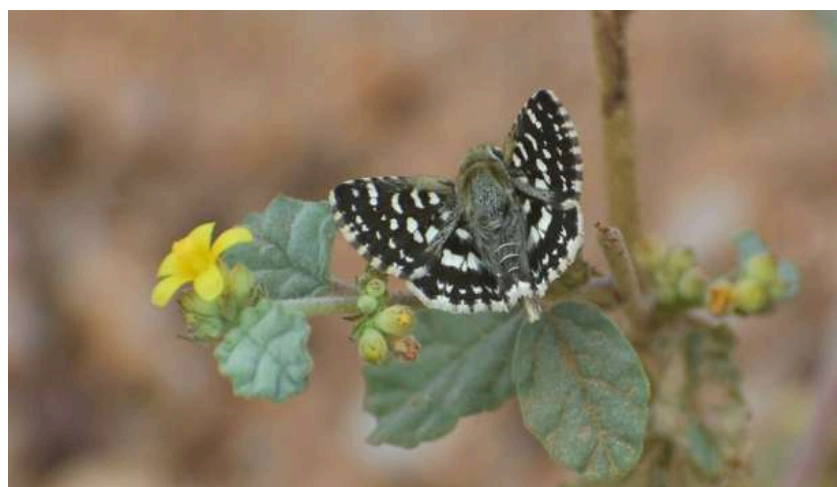
கருப்புச் சிறகன்
BLACK RAJAH



செவ்வந்தி சிறகன்
TAWNY COSTER



பனைத்தாவி
INDIAN PALM BOB



நரைச்சிறகு தாவி
INDIAN GRIZZLED SKIPPER



கரும்புல் நீலன்
DARK GRASS BLUE



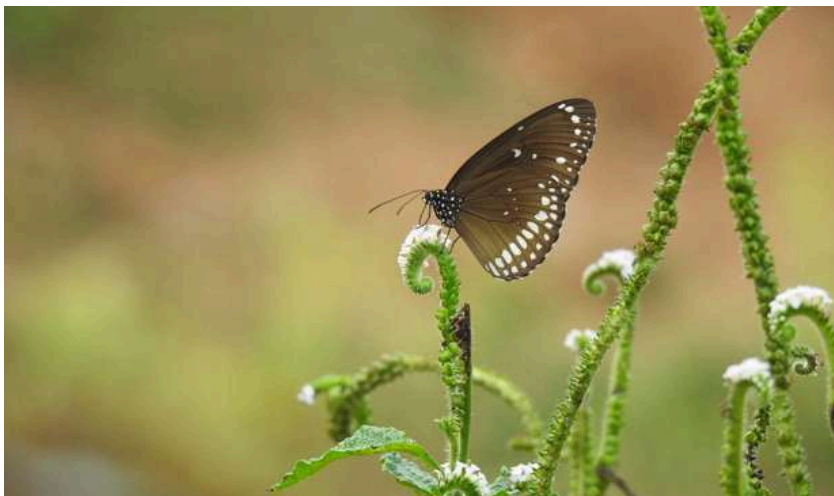
வெந்தய வரியன்
PLAIN TIGER



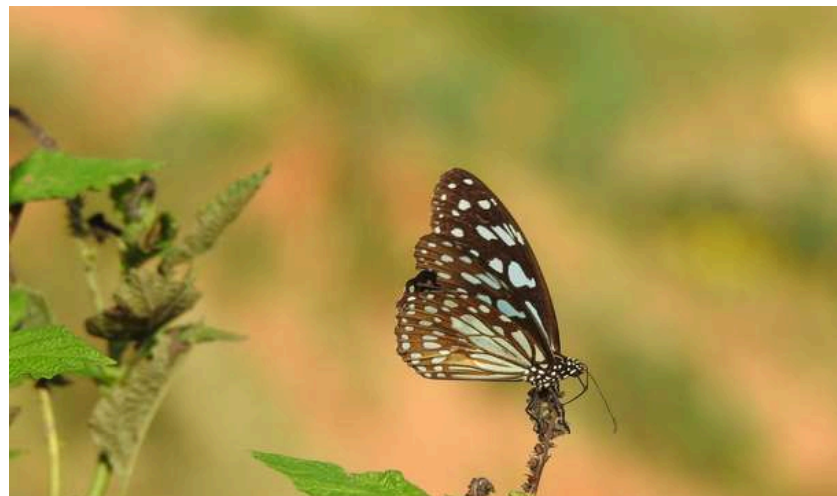
காஞ்சொறிச் சிறகன்
JOKER



வரி ஆமணக்குச் சிறகன்
ANGLED CASTOR



வெண்புள்ளிக் கருப்பன்
COMMON CROW



நீல வரியன்
BLUE TIGER



புல்நீலன்
LESSER GRASS BLUE



பருப்பு நீலன்
FORGET-ME-NOT

ODONATES (DRAGONFLIES AND DAMSELFLIES)



பச்சை சதுப்பன்
GREEN MARSH HAWK



நெட்டைக்கால் தட்டான்
LONG-LEGGED MARSH GLIDER



தரைத் தட்டான்
GROUND SKIMMER



செண்டுவால் தட்டான்
COMMON CLUBTAIL



குங்குமத் தட்டான்
RUDDY MARSH SKIMMER



தேன் தட்டான்
DITCH JEWEL



ஓவியச் சிறகன்
COMMON PICTURE WING



அம்புக் கருப்பன்
BLACK MARSH TROTTER

OTHER FAUNA



SLENDER-SCAPED CARPENTER BEE



DARTH MAUL BUG



RED SPINED MILLIPEDE



ORIENTAL GARDEN LIZARD



THREE-STRIPED PALM SQUIRREL



BUFF-STRIPED KEELBACK



INDIAN BLACK ANT



SILKY SUGAR ANT



HORSE AND DEER FLIES



TERMITES



DUNG ROLLER



ROPALIDIA MARGINATA



DELTA CONOIDEUM



GENUS NEORTHACRIS



GENUS CHRYSOCORIS



GENUS CHROTOGONUS



KEELED INDIAN MABUYA



FAN-THROATED LIZARD



GENUS CONOCYBE



MOTTLEGILLS



BONNET MACAQUE

PLANTS



HERB-OF-GRACE



PALMER'S AMARANTH



TROPICAL SPIDERWORT



TROPICAL SPEEDWELL



ROXBURGH'S CASSIA



PURPLE FRUITED PEA EGGPLANT



PURPLE HOARYPEA



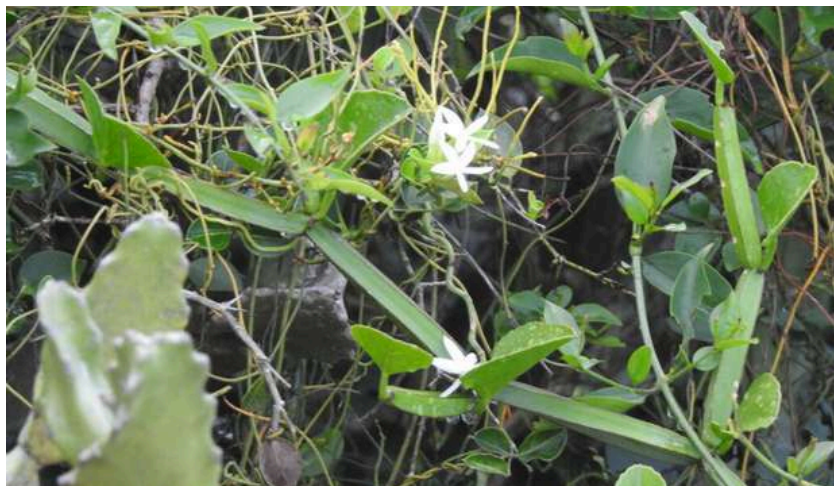
WHITE BARK ACACIA



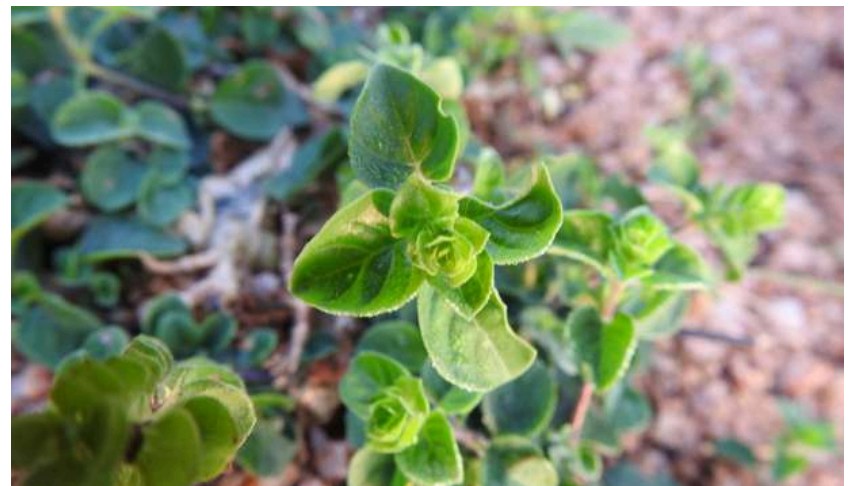
SPINYHEAD SIDA



MATTED SANDMAT



WILD JASMINE



ASIAN COROMANDEL



SMOOTH CARPETWEED



COMMON BEAN



INDIAN ASH



DESERT HORSE PURSLANE



EGYPTIAN WHITE WATER LILY



RED WATER LILY



ASIAN PALMYRA PALM



ASIATIC TARENNA



SAUSAGE TREE



SINGLE-STEMMED WILD GRAPE



MATURA TEA TREE



YELLOW BERRIED NIGHTSHADE



SENSITIVE PLANT



PROSTRATED RUELLIA



PORCUPINE FLOWER



DURBAN CROWFOOT



SPADE FLOWER



THUMBAI



LARGE CALTROPS



INDIAN HELIOTROPE



PROSTRATE-GLOBE AMARANTH



NARROW-LEAVED MERREMIA



WILD CANE



TURKEY TANGLE FROGFRUIT



LESSER BALLOON VINE



BUSH MORNING GLORY



STINKING PASSION FLOWER



EAST INDIAN GLOBE THISTLE



CROWN FLOWER



FINGER GRASS



AKEAKE



TRIDAX DAISY



MOUNTAIN KNOTGRASS



GALE OF THE WIND



BLUE RATTLEPOD



POPPING POD



SICKLE SENNA



CHOCOLATE WEED



BELLYACHE BUSH



INDIAN MALLOW



COFFEE SENNA



ONELEAF SENNA



ANTIQUE SPURGE



JOINTED FLATSEDGE

REFERENCES

- eBird. (2024). **eBird: An online database of bird distribution and abundance** [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: <http://www.ebird.org>. [Accessed on 30 June 2024].
- eBird. (2024). **Chettiyan Kanmai**. eBird Hotspot. <https://ebird.org/india/hotspot/L4747523>. [Accessed on 30 June 2024].
- eBird. (2024). **Vadakudipatti Kanmai**. eBird Hotspot. <https://ebird.org/india/hotspot/L4747523>. [Accessed on 30 June 2024].
- eBird. (2024). **Kanappettai Kanmai**. eBird Hotspot. <https://ebird.org/india/hotspot/L4747523>. [Accessed on 30 June 2024].
- eBird. (2024). **Panangudi Kanmai**. eBird Hotspot. <https://ebird.org/india/hotspot/L4747523>. [Accessed on 30 June 2024].
- eBird. (2024). **Ooaniyur Big Tank**. eBird Hotspot. <https://ebird.org/india/hotspot/L4747523>. [Accessed on 30 June 2024].
- **iNaturalist**. Available from <https://www.inaturalist.org>. [Accessed on 30 June 2024].
- Grimmet, R., Inskipp, C & Inskipp, T. (2011). **Birds of the Indian Subcontinent**. Second Edition. Oxford University Press. UK.
- Praveen J., & Jayapal, R., 2023. **Checklist of the birds of India (v7.3)**. Website: <http://www.indianbirds.in/india/> [Date of publication: 20 December 2023].
- SolB 2023. **State of India's Birds, 2023: Range, trends, and conservation status**. The SolB Partnership. Pp. 119.
- Jeganathan P., & Asai., 2013. Paravaikal: Arimugak Kaiyedu, a field guide on **birds** in Tamil. Cre-A publication.

- Bhanumathi R., 2015. Vannaththuppoochigal: Arimugak Kaiyedu, a field guide on **butterflies** in Tamil. Cre-A publication.
- Jeganathan P., & Bhanumathi R., 2016. Thattangal, Usithattangal, a field guide in Tamil on **dragonflies and damselflies**. Cre-A publication.

This report comes under the Attribution-NonCommercial-NonDerivatives 4.0 International (CC-BY-NC-ND 4.0) license. Salem Ornithological Foundation has prepared this report for A.M.M. Foundation and Parry Nutraceutical Ltd. for their wetland restoration initiative, Project Nanneer.

**LET US CONTRIBUTE TO CITIZEN SCIENCE INITIATIVES
AND HELP IN THE CONSERVATION OF BIRDS & NATURE!**

Recommended Citation: Salem Ornithological Foundation (SOF) 2024. Systematic Bird Monitoring and Biodiversity Documentation of Wetlands under Project Nanneer by AMM Foundation and Parry Nutraceuticals Ltd.

Project Funding: A.M.M Foundation

Project Lead: Ganeshwar S V, Salem Ornithological Foundation

Project Assistant: Angeline Mano M, Salem Ornithological Foundation

Field Support: Bharathi Balan G and Vinoth Kumar J, Parry Nutraceuticals Ltd.

Data Analysis: Ganeshwar S V, Salem Ornithological Foundation, Venkatesh S, ATREE

Data Collection, Photos and Assistance in report preparation: Angeline Mano M, Salem Ornithological Foundation.

Data Collection, Photos, Text and Report: Ganeshwar S V, Salem Ornithological Foundation.



