

Kodaikanal Wildlife Sanctuary Bird Census Report, 2024

By Tamil Nadu Forest Department, Kodaikanal Division

in collaboration with

Kodaikanal International School Center for Environment and Humanity



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Introduction

Birds are one of the most dynamic and ecologically significant groups in ecosystems, serving as practical bioindicators for monitoring biodiversity. Their wide distribution and ease of observation make them effective barometers for environmental health, while their sensitivity to changes in their surroundings provides insight into broader habitat and ecosystem shifts. The national report *State of India's Birds – 2020* highlights that numerous bird species across India, especially in the Western Ghats, are experiencing population declines, primarily due to habitat loss and land-use changes. The population of 12 bird species endemic to the Western Ghats has shown a particularly steep decline, with a significant drop in abundance compared to pre-2000 levels. These alarming trends underscore the urgent need for systematic monitoring, including bird censuses and surveys, to better understand avian behaviour, population trends, and habitats.

The **Tamil Nadu Forest Department**, in collaboration with **Kodaikanal International School's Center for Environment and Humanity** jointly conducted the **Synchronized Tamil Nadu Bird Census** in the Kodaikanal Wildlife Sanctuary in 2024. The collaboration resulted in standardized methods, logistical support, expertise, resources, and planning to implement the initiative. The primary goal was to assess bird species distribution within the Kodaikanal Wildlife Sanctuary, which spans seven forest ranges, and to identify species of conservation concern as per the IUCN Red List. Additionally, the team developed a procedural framework for future surveys and recommendations for conservation efforts targeting at-risk bird species.

Census Area

The **Kodaikanal Wildlife Sanctuary** is located in one of the world's "hottest biodiversity hotspots", in the Palani Hills range of the southern Western Ghats, in Tamil Nadu. Temperatures in this region can range from 30° C in the summers, to 5 ° C in the winters. The mean maximum temperature is 21° C and mean minimum temperature is 11° C. The Sanctuary covers an area of 621.8 sq.km, spreading across Dindigul and Theni districts of Tamil Nadu and running along the Kerala state boundary. The Palani Hills range from 100 to 2,550 meters above mean sea level, with Shola-grasslands and timber plantations predominantly occurring at altitudes between 1,700 and 2,550 meters.

Kodaikanal Wildlife Sanctuary is noted for its luxuriant greenery, dozens of waterfalls, vast green valleys, rolling hillocks and meadows speckled with stretches of dense Shola forests. The Kodaikanal Wildlife Sanctuary hosts a rich diversity of flora and fauna, including mammals, birds, reptiles, amphibians, and insects. This sanctuary represents a biodiversity hotspot supports thriving ecosystems.

Sky Island Birds

Shola forests are montane evergreen forests that occur at the highest elevations of the Western Ghats. These forests are part of the globally recognized "sky island" systems, found in geographically

isolated high-altitude regions. Each "island" consists of a mosaic of natural grasslands and forest patches. Approximately 12 bird species are endemic to the Shola Sky Island ecosystem. For these species, migration is challenging due to physical barriers like valleys, such as the Palakkad Gap, which hinder movement between mountain peaks. As a result, these birds are restricted to their specific bioregions.

The Palani Hills landscape is under threat. The loss of grasslands to timber plantations of Eucalyptus, Pine, and Wattle, over the past century has led to a decline in biodiversity, disrupted habitats, and puts endemic species at significant risk. Proximity to human settlements and the expansion of tourism exacerbates this threat, increasing the likelihood of habitat degradation and population decline of species dependent on the Shola-Grassland ecosystems.

Survey Site Types

The Census was conducted in Kodaikanal Wildlife Sanctuary, which includes 7 ranges:

No.	Range
1	Devathanapatti/Genguarpatti
2	Berijam
3	Poombarai
4	Mannavanur
5	Kodaikanal
6	Perumpallam
7	Palani

The land-use and types of areas surveyed include the following:

1. **Wetlands** – Lakes and dams
2. **Shola Forests** – Montane evergreen forests
3. **Timber Plantations** – Pine, Eucalyptus, and Wattle monocultures
4. **Invasive Species Areas** – Lantana-dominated regions
5. **Urban Forests** – Forested areas within or adjacent to urban environments
6. **Plantations** – Agroforestry systems with coffee, spices, or other tropical fruit cultivation
7. **Fruit Orchards** – Agricultural areas primarily focused on fruit production
8. **Foothills** – Terrain at the base of mountains

Census Participants

At the head of Bird Census is the **District Forest Officer (DFO)** supervising and guiding **Range Officers** and **Forest Guards**. Additional participants for the Census were a combination of Kodaikanal International School (KIS) staff including ecologists, biologists, environmentalists, and experienced birders, KIS Center for Environment and Humanity (KIS CEH) Junior Naturalists, and KIS CEH volunteers – Birding experts sourced from all over India.

There were 14 teams and a total of 68 participants. Each field team comprised of 5-7 people per group, with one bird expert, one intermediate birder, 2-3 Junior Naturalists and 2 Forest Guards. Range officers and foresters from each range were on call to monitor the survey.

Volunteers

A social media campaign was initiated by the Kodaikanal International School Center for Environment and Humanity (CEH) to invite expert birders to participate in the bird survey. The campaign received approximately 160 applications from a diverse group of individuals, including professors, bird enthusiasts, amateur and intermediate birders, and bird census experts from various regions such as Delhi, Mumbai, Madhya Pradesh, Gujarat, Tamil Nadu, and Kerala.

The selection process prioritized applicants who had experience in the Western Ghats, particularly at high elevations. Following an evaluation process of phone interviews, the most qualified applicants were chosen.

Out of the 45 candidates who were shortlisted and received confirmation emails, 33 team leaders were ultimately selected due to logistical and budgetary constraints. Each survey team consisted of one team leader with the ability to independently identify all bird species, one intermediate birder from the Junior Naturalist Action Network (JNAN), one wildlife photographer, and two forest guards responsible for assisting with navigation and counting.

KIS Center for Environment and Humanity Junior Naturalist Action Network (JNAN)

The 2023-2024 JNAN cohort comprises 50 students from 15 local schools in the Palani Hills, ranging from Perumalmalai to Poombarai. JNAN is a place-based environmental education program tailored to the local community. Over the course of 23 weeks and 160 hours, Junior Naturalists engage in an intensive curriculum specifically designed for the Kodaikanal region and its immediate environment. The curriculum covers a broad spectrum of topics, including natural resources, conservation, environmental pollution, biodiversity, global warming, and climate change, with a focus on local issues such as Shola forests, Shola grasslands, and marshlands. Students learn about the interconnections between ecological services and goods, and the human impact on these ecosystems. **Participation in the Tamil Nadu Synchronized Bird Census provided the Junior Naturalists with practical experience beyond the classroom.** They interacted with forest authorities and external experts, gaining insights into wildlife ecology and management. This training aimed to develop their skills in fieldwork, including field ecology, data recording, and conducting scientific surveys, thereby preparing them to become future experts in ornithology and related fields.

Objectives

The objective of the census is to monitor bird populations in order to advance the conservation of avian species and their habitats within and surrounding the Kodaikanal Wildlife Sanctuary. The specific objectives are as follows:

- **Data collection of bird diversity and abundance** within and around the Kodaikanal Wildlife Sanctuary
- Collaboration with diverse stakeholders, including the **Forest Department, experts, students, and the Junior Naturalist Action Network**, to strengthen conservation initiatives
- Enhancing bird monitoring, data management, and **habitat conservation** planning
- **Empowering citizen scientists** with comprehensive knowledge and skills related to bird conservation and habitat preservation, promoting active participation in conservation efforts

Methodology

Point Count Method: The survey employed the point count method, a standard technique in avian research. This involved establishing fixed observation points where observers recorded the number of bird species and individuals detected within a specified time frame.

Transect Walks: Transect walks were conducted by traversing several kilometers through the study area. These walks were guided by the local knowledge of forest guards to maximize the likelihood of detecting diverse bird species. During the transects, both visual observations and auditory detections (bird calls) were recorded.

Census Timings: Surveys were conducted during the following time frames: 06:00 to 11:00 AM and 16:00 to 18:30. These timings were chosen to ensure comprehensive coverage of the study area throughout different parts of the day.

Spatial Sampling to Avoid Duplicate Counts: To mitigate the risk of duplicate counts, each survey session was conducted at distinct locations within the same ecological range. This strategy ensured that the data collected were spatially independent and reduced redundancy in species counts.

Equipment and Identification: Each survey team was equipped with tools for accurate bird identification and documentation, including field guides, binoculars, cameras, bird call recorders, and recognition apps. Additionally, a checklist of known bird species for the area, developed by the Tamil Nadu Forest Department, and a localized version of the checklist developed by KIS CEH, was used to record sightings.

Consensus on Sightings: Post-survey, all teams convened to discuss and review their observations. This collaborative approach was used to address any uncertainties and reach a consensus on the validity of certain sightings, ensuring data reliability and consistency.

Bird Survey Stages

Stage 1: Synchronized Wetland Bird Census, January 27-28, 2024

This stage focused on conducting a synchronized census of wetland birds. Surveys were carried out across 8 wetlands of 4 forest ranges.

Stage 2: Synchronized Terrestrial Bird Census, March 1-3, 2024

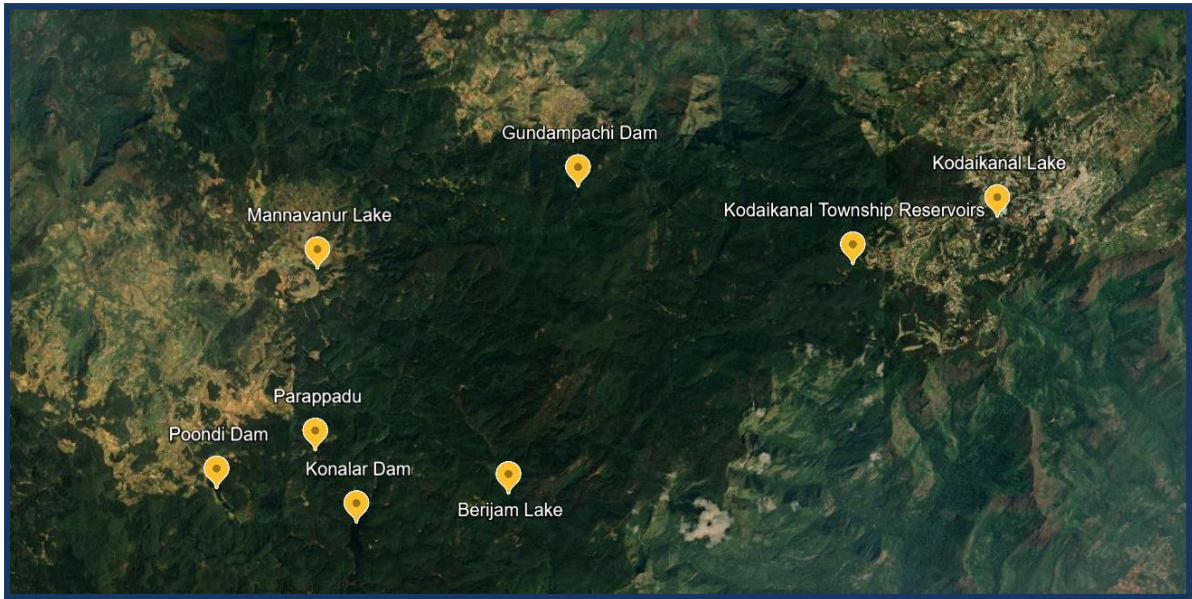
The second stage involved a synchronized estimate of terrestrial bird species, covering forested and forest-associated landscapes. 14 survey teams covered 39 survey locations across 7 forest ranges.

SYNCHRONIZED WETLAND BIRD CENSUS, JANUARY 27-28, 2024

In preparation for the survey, Junior Naturalists from JNAN underwent two days of training at the Kodaikanal International School Center for Environment and Humanity (CEH). This training covered field protocols, observation techniques, and data recording methods, providing essential groundwork for the survey.

Three days prior to the survey, a half-day workshop was held at CEH with approximately 45 forest officials, including the District Forest Officer (DFO). The workshop focused on logistical planning, including survey methodologies, team organization, responsibility assignments, and arrangements for accommodation, food, first aid, and route planning. The goal was to develop a comprehensive prototype for future surveys.

On the day of the survey, the team commenced operations at 5:30 am from KIS CEH and dispersed to eight designated wetland sites. The survey was conducted in two shifts: from 6:00 to 10:30 am and from 4:00 to 6:00 pm.



8 Wetland Sites



Press Conference at Berijam Lake with KIS CEH, Junior Naturalist, and Forest Department Staff



Debriefing Session at Berijam Lake



Junior Naturalists at Berijam Lake

Results of Synchronized Wetland Bird Census

A total of 67 bird species were recorded across eight wetlands in the Palani Hills, with 1,095 individual birds counted. The abundance and distribution of bird species by location and range are presented in Tables 1 and 2 below. **Manavanur Lake** exhibited the highest diversity, with 24 distinct species identified. **Konalar Dam** recorded the lowest species diversity and abundance, with eight species and 41 individuals counted. **Kodaikanal Lake** had the highest number of individuals, with **House Crow** and **Jungle Myna** comprising 61% of the total individuals observed. Table 3 below lists all 67 species identified.

Table 1 – Number of Species and Individuals by Wetland

Number of Bird Species and Individual Counts by Wetland Tamil Nadu Synchronized Bird Census, 2024				
	Location	Range	Number of Bird Species by Wetland	Total Number of Individuals by Wetland
1	Berijam Lake	Berijam	20	167
2	Konalar Dam	Berijam	8	41
3	Municipality Reservoir	Kodaikanal	21	153
4	Kodaikanal Star Lake	Kodaikanal	28	318
5	Arangadu Dam	Manavanur	17	59
6	Parappadu	Manavanur	0	0
7	Manavanur Lake	Manavanur	24	129
8	Gundampachi Dam	Poombarai	27	143
	Total Number of Individuals			1095

Table 2 – Number of Species and Individuals by Range

Number of Bird Species and Individual Counts by Range Tamil Nadu Synchronized Wetland Bird Census, 2024			
	Range	Number of Species by Range	Number of Individuals by Range
1	Berijam	28	208
2	Kodaikanal	49	471
3	Manavanur	41	188
4	Poombarai	27	143
	Total Number of Individuals		1095

Table 3 – Species and Abundance

No.	Species	Number of Individuals
1	Yellow-billed Babbler	3
2	White-throated Kingfisher	9
3	White-cheeked Barbet	10
4	White-browed Wagtail	25
5	White-breasted Waterhen	13
6	White-bellied Sholakili	1
7	Velvet-fronted Nuthatch	5
8	Tickell's Blue Flycatcher	3
9	Thick-billed Flowerpecker	1
10	Stork-billed Kingfisher	5
11	Square-tailed Bulbul	7
12	Spotted Dove	38
13	Small Minivet	1
14	Short-toed Snake Eagle	2

15	Shikra	1
16	Rock Eagle-Owl	1
17	Red-whiskered Bulbul	41
18	Red-wattled Lapwing	9
19	Red-vented Bulbul	3
20	Pied Bushchat	39
21	Palni Laughingthrush	23
22	Painted Bush-Quail	6
23	Oriental Magpie Robin	1
24	Oriental Honey-buzzard	4
25	Nilgiri Wood-Pigeon	1
26	Nilgiri Flycatcher	14
27	Nilgiri Flowerpecker	7
28	Malabar Whistling Thrush	1
29	Long-tailed Shrike	32
30	Little Grebe	32
31	Little Egret	20
32	Little Cormorant	4
33	Large-billed Leaf Warbler	8
34	Jungle Myna	160
35	Indian Yellow Tit	27
36	Indian White-eye	82
37	Indian Spot-billed Duck	13
38	Indian Pond-Heron	58
39	Indian Peafowl	2
40	Indian Paradise-Flycatcher	1
41	Indian Jungle Crow	26
42	Indian Blue Robin	1
43	Indian Blackbird	5
44	House Sparrow	19
45	House Crow	147
46	Hill Swallow	31
47	Greenish Warbler	6
48	Green Warbler	1
49	Greater Coucal	4
50	Gray-headed Canary-Flycatcher	50
51	Gray Wagtail	18
52	Gray Junglefowl	3
53	Eurasian Sparrowhawk	1
54	Eurasian Moorhen	18
55	Eurasian Hoopoe	2
56	Crimson-backed Sunbird	2

57	Crested Serpent-Eagle	2
58	Crested Goshawk	1
59	Common Rosefinch	4
60	Common Kingfisher	10
61	Cinereous Tit	4
62	Booted Warbler	2
63	Blyth's Reed Warbler	2
64	Black Eagle	3
65	Black and Orange Flycatcher	15
66	Barn Owl	1
67	Ashy Prinia	4
		1095 Individuals



Indian Pond Heron at Kodaikanal Star Lake



Eurasian Moorhen at Kodaikanal Star Lake



Nilgiri Pipit at Berijam Lake



Pied Bushchat at Kodaikanal Star Lake

SYNCHRONIZED TERRESTRIAL BIRD CENSUS, MARCH 1-3, 2024

During the Terrestrial Bird Census, the Forest Department had identified 39 locations across 7 ranges to be surveyed. The ranges and locations are outlined in Table 4 below. The day before the survey, 33 volunteers arrived and received an orientation on the Kodaikanal Wildlife Sanctuary. The briefing covered details about the survey teams, 39 locations, and expected observations and conditions at each site. Survey teams were formed, and data sheets were distributed in preparation for the survey. They were introduced to 35 students from the Junior Naturalist Action Network (JNAN), and the survey methodology was thoroughly discussed. That evening, teams assigned to distant locations, such as Berijam, Ganduvarpatti, Pallani, Pannaikadu, Thandikudi, and Mannavanur, departed for their respective campsites.

Table 4 – List of Ranges and Locations

7 Ranges	39 Locations
Berijam	Berijam Lake
	Mathikettan Shola
	Zamindar Shola
Devathanapatti	Adukkam (Pulikudu)
	Devathanapatti Forest Guest House
	Echamalai (Vallati)
	Thalaiyaru
Kodaikanal	Adukkam
	Anjuveedu
	Bear Shola
	Bombay Shola
	Kovilaru Odai
	Mayiladumparai View Point
	Moonnu Thundu
	Nellivarai
	Palamalai
	Pallangi, Kombai
	Seeradum Kaanal
	Senthatti Shola
	Tiger Shola
	Vattakanal
Mannavanur	Berijam to Mannavanur Road
	Kavunji
	Rettai Post
Palani	Palar Dam
	Perunthalar Dam
	Vanasool Pannai
Perumpallam	Arunkanal

	Dolmens Cave
	G. Kallupatti
	Kovilpatti
	Oothu
	Poolathur
	Puliyur
	Thandikudi
Poombarai	Engineering Road
	Gundampachi Dam
	Poombarai Camp
	Poombarai to Mannavanur Road




Results of Terrestrial Bird Census

A total of 225 bird species were identified, with 6,978 individual birds recorded. Across all surveyed ranges, the most commonly observed species were the **Red-whiskered Bulbul**, **Indian White-eye**, and **White-cheeked Barbet**—species that are highly adaptable and can thrive in diverse habitats, including forests, plantations, urban areas, and residential environments.

The **Kodaikanal Range**, which spans elevations from 600 m to 2,400 m, exhibited the highest species diversity and abundance, with a large number of high-elevation, valley, and mid-elevation birds recorded. Fourteen locations within this range were identified as key birding hotspots. Additionally, 22 **Western Ghats endemic** species were recorded, including four species classified as **Vulnerable** or **Near Threatened**.

OVERVIEW OF SYNCHRONIZED TAMIL NADU TERRESTRIAL BIRD CENSUS

KODAIKANAL WILDLIFE SANCTUARY
MARCH 1-3, 2024

7 Forest
Ranges

39
Locations

68
Participants

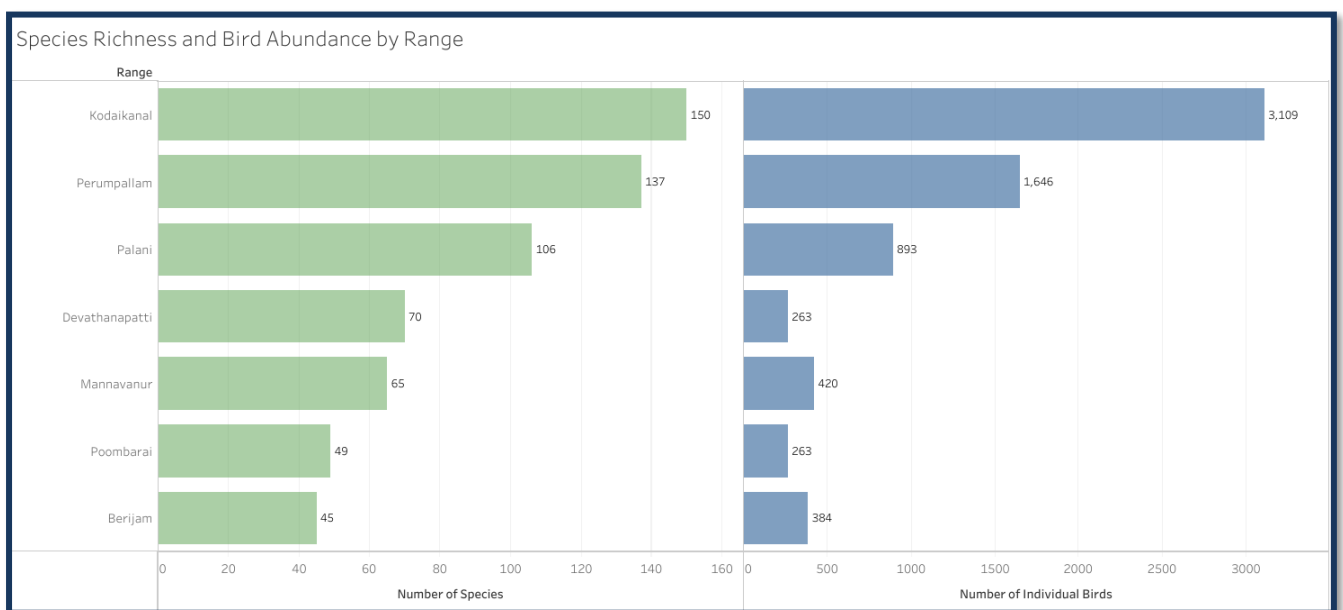
225
Species

6978
Individuals

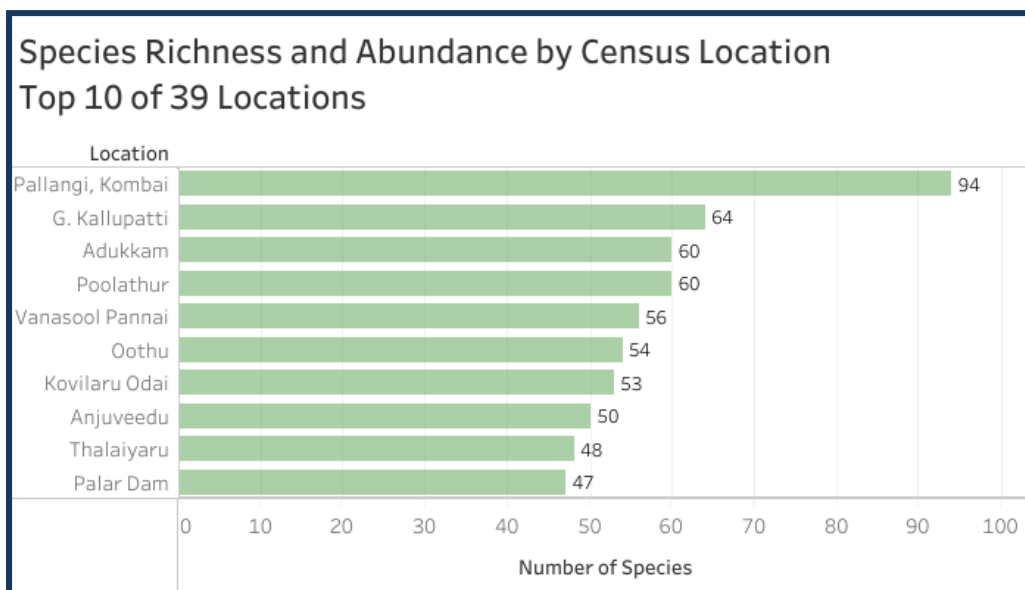
The **Berijam Range** had the lowest avian diversity, with 45 species identified, while the **Debathanapatti Range** reported the lowest abundance, with 263 individuals sighted. Graph 1 and the accompanying map illustrate the number of species and individual birds counted by range and elevation.

In the **Berijam Range**, a core protected area of the Kodaikanal Wildlife Sanctuary, the most abundant species were the **Indian White-eye, Hill Swallow, Jungle Myna, Nilgiri Flowerpecker, and Red-vented Bulbul**. In **Bombay Shola**, a protected forest surrounded by urbanization in Kodaikanal town, the most abundant species were the **Large-billed Crow, Indian White-eye, Indian Yellow Tit, Red-whiskered Bulbul, and Square-tailed Bulbul**. [Appendix 1](#) provides a complete list of species and their abundance by forest range.

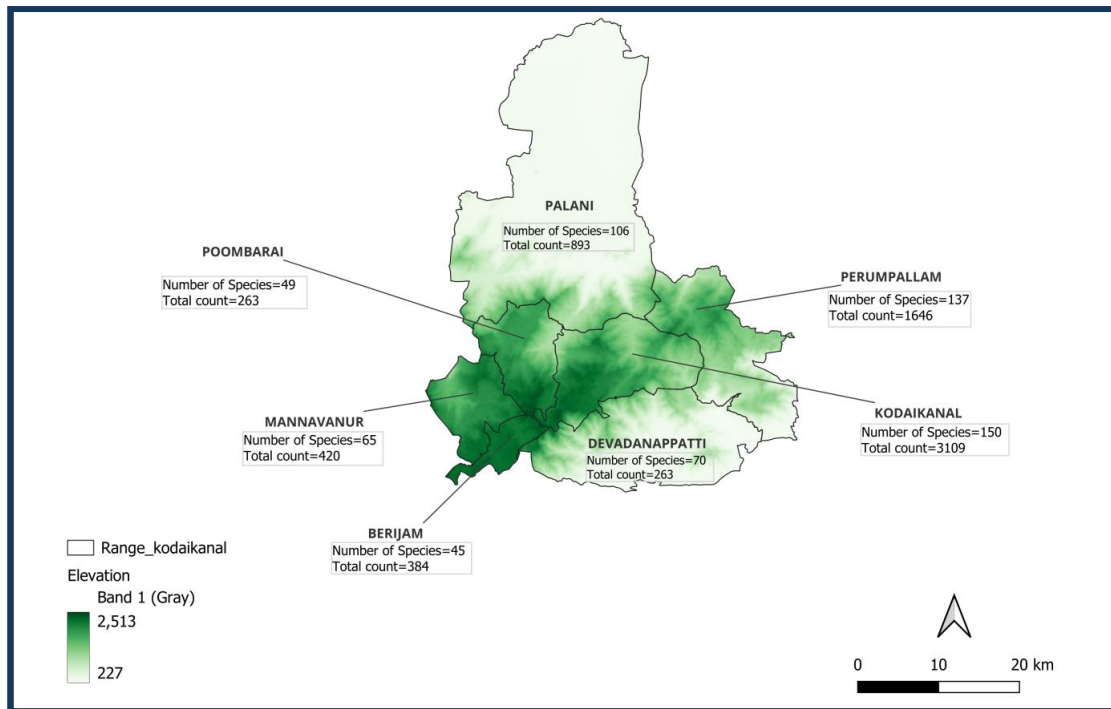
Graph 1 – Species Richness and Abundance by Range



Graph 2 – Species Richness and Abundance by Location



Map 1: Number of Species and Total Count by Range and Elevation



The **Pallangi Kombai Valley**, within the Kodaikanal is a significant bird habitat. The area supports various agricultural practices, which attract a wide range of frugivorous, granivorous, and nectarivores bird species. The combination of abundant food resources, a relatively low presence of predators, and the predominance of tribal settlements over urban development further contributes to the high biodiversity in this region.

The top 10 bird diversity hotspots across the seven ranges and 39 survey locations were concentrated in mid-elevation and foothill landscapes, as shown in Graph 2 above. The foothills and mid-elevation zones exhibit the highest biodiversity, likely due to the valley's steep terrain, diverse land use, and the presence of forests, farmland, and plantations interspersed with streams and rivers. Furthermore, a list of the top 10 species by abundance across all ranges and locations is in Table 5 below.

Table 5: Top 10 Species by Abundance across all ranges and locations

No.	Species	Abundance
1	Red Whiskered Bulbul	503
2	Indian White Eye	427
3	White Cheeked Barbet	299
4	Indian Swiftlet	226
5	Red Vented Bulbul	221
6	Jungle Myna	211
7	Great Cormorant	204
8	Vernal Hanging Parrot	195
9	Grey Headed Canary Flycatcher	151
10	Greenish Warbler	134

Western Ghats Endemic Species with IUCN status of concern

During the data collection and analysis, endemic species of the western Ghats were identified and compared to their IUCN status. The Nilgiri Pipit, Nilgiri wood pigeon, Palani laughingthrush, and Palani Sholaikili are 4 species that fall under the vulnerable or near threatened category. The table below indicates all the Western Ghats endemic species spotted during the census, and the ranges they were spotted in, in alphabetic order.

Table 3: IUCN Status of Western Ghats Endemic Species

#	Western Ghats Endemic Species	Ranges	IUCN Status
1	Black and Orange Flycatcher	Berijam Kodaikanal Mannavanur Poombarai	Least Concern
2	Crimson Backed Sunbird	Kodaikanal Perumpallam	Least Concern
3	Emerald Dove	Devathanapatti Kodaikanal Perumpallam	Least Concern
4	Grey Fronted Green Pigeon	Devathanapatti Kodaikanal Palani Perumpallam	Least Concern
5	Grey Headed Canary Flycatcher	Berijam Kodaikanal Mannavanur Perumpallam Poombarai	Least Concern
6	Indian Blackbird	Kodaikaanl Mannavanur Poombarai	Least Concern
7	Jungle Babbler	Kodaikanal Palani Perumpallam	Least Concern
8	Malabar Flameback	Kodaikaanl Mannavanur Palani Perumpallam	Not Evaluated
9	Malabar Parakeet	Kodaikanal Perumpallam	Least Concern
10	Malabar Whistling Thrush	Kodaikanal Mannavanur Perumpallam	Least Concern
11	Nilgiri Flowerpecker	Berijam Devathanapatti Kodaikanal Mannavanur Perumpallam Poombarai	Least Concern

12	Nilgiri Flycatcher	Berijam Kodaikanal Mannavanur	Least Concern
13	Nilgiri Pipit	Berijam Mannavanur	Vulnerable
14	Nilgiri Thrush	Kodaikanal	Not Evaluated
15	Nilgiri Wood Pigeon	Kodaikanal Perumpallam Poombarai	Vulnerable
16	Orange Minivet	Devathanapatti Kodaikanal Mannavanur Palani Perumpallam	Least Concern
17	Palani Laughingthrush	Berijam Kodaikanal Mannavanur Perumpallam Poombarai	Near Threatened
18	Palani Sholakili	Berijam Kodaikanal Mannavanur Poombarai	Vulnerable
19	Rufous Babbler	Kodaikanal Palani Perumpallam	Least Concern
20	Square Tailed Bulbul	Berijam Kodaikanal Mannavanur Poombarai	Least Concern
21	Wayanad Laughing Thrush	Kodaikanal	Least Concern
22	White Bellied Blue Flycatcher	Kodaikanal Perumpallam	Least Concern

Field Notes and Special Sightings

At Berijam, a diverse array of bird species was observed, including the Black and Orange Flycatcher, Canary Flycatcher, Common Rosefinch, Bar-winged Cuckoo Shrike, White-cheeked Barbet, and Palani Laughing Thrush. The forest environment was also active with the calls of Nightjars, the presence of Brown Wood Owls, Jungle Hares, and Barn Owls.

At Mathikettan Shola, sightings included Nilgiri Wood Pigeons and various owls, along with Warblers, Nuthatches, White-eyes, Red-whiskered Bulbuls, Long-tailed Shrikes, Magpie Robins, Indian Blue Robins, and Hill Swallows. Notably, a male Peacock was observed at an altitude of 2,300 meters.

In the Rettai Post area of the Mannavanur Range, despite significant habitat degradation, over 40 bird species were identified.

The adjacent **Berijam region** revealed a notable aggregation of 24 Palani Laughing Thrushes in a single location, along with sightings of three Palani Sholaikillis.

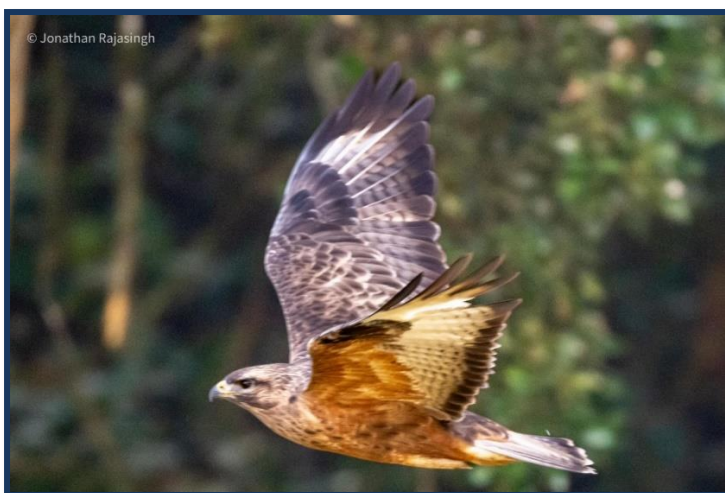
At Bombay and Bear Shola, notable observations included Nilgiri Wood Pigeons, Crested Goshawks, Oriental White-eyes, and Leaf Warblers. Additional highlights were Lime's Reed, flocks of Palani Laughing Thrushes, Yellow Tits, and a Nilgiri Flycatcher.

At Pannaikadu and Oothu, significant sightings comprised the Brown Fish Owl, Nightjar, Hoopoe, Grey Hornbill, Hill Swallow, Honey Buzzard, Common Rosefinch, Velvet-fronted Nuthatch, and Black Oriole.

Photos of Birds and Census Activities



Crimson-backed Sunbird



Common Buzzard



Indian White Eye



Hill Swallow



Indian Scimitar Babbler



Tickell's Blue Flycatcher



Asian Fairy Bluebird



Long Tailed Shrike



Indian Blackbird



Jungle Nightjar



Eurasian Hoopoe



Palani Sholakili



Crested Serpent Eagle



Nilgiri Flowerpecker



Common Rosefinch (Female)



Yellow-browed bulbul



Oriental Honey Buzzard



Velvet fronted Nuthatch



Black and Orange Fly catcher



Nilgiri Flycatcher



Palani Laughingthrush



Instructions from District Forest Officer



Preparatory Briefing at KIS CEH for Volunteers



Preparatory Briefing TN Forest Department and KIS CEH for Forest Guards



Team of 68 Participants



Team at Palangi Kombai, Kodaikanal Range



Team at Berijam, Kodaikanal Range



Team at Berijam, Kodaikanal Range

Interpretation and Recommendations

The data from the survey serves as a foundational reference for subsequent surveys, which are crucial for assessing overall bird status, identifying key hotspots, and determining indicators for environmental action.

The IUCN status of the surveyed species provides critical information for the Forest Department, municipal authorities, and relevant governmental bodies to implement conservation measures aimed at preserving and enhancing the wildlife sanctuary. The survey establishes a baseline dataset that supports further research and informs data-driven applications.

The results indicate that **Poombarai and Manavanur are disturbed regions**. Therefore, targeted restoration efforts are necessary to rehabilitate these areas, creating suitable environments where bird populations can thrive and ecosystems can recover.

Regular monitoring at these locations will help track fluctuations in bird populations, identify the causes of these changes, and guide habitat management strategies to improve population stability.

The survey also offered **valuable experience for KIS CEH Junior Naturalist students**, positioning them to become knowledgeable guides and advocates for environmental conservation. Their involvement is pivotal in fostering local and tourist awareness of environmental and biodiversity issues.

The survey highlights the need to identify vulnerable species and their habitats, forming the basis for awareness campaigns and habitat restoration efforts. Given the critical ecological services provided by birds and their role in maintaining ecosystem stability, it is imperative to develop a long-term conservation plan. This plan should focus on safeguarding avian biodiversity and their habitats, **especially for threatened species such as the Nilgiri Pipit, Nilgiri Wood Pigeon, and Palani Sholakili**.

Appendix 1: Terrestrial Bird Census

Species and their Abundance by Range

Species	Range								Grand Total
	Berijam	Devathanap..	Kodaikanal	Mannavanur	Palani	Perumpallam	Poombarai		
Grand Total	384	263	3,109	420	893	1,646	263		6,978
Red Whiskered Bulbul	15	8	253	22	3	184	18		503
Indian White Eye	55		192	43		100	37		427
White Cheeked Barbet	20		146	12	5	106	10		299
Indian Swiftlet			157	63		1	5		226
Red Vented Bulbul		28	101	2	18	60	12		221
Jungle Myna	32		142	1		35	1		211
Great Cormorant					204				204
Vernal Hanging Parrot		3	78			114			195
Grey Headed Canary Flycatcher	14		82	3		25	27		151
Greenish Warbler		1	76	23	1	15	18		134
Large Billed Crow		8	55	14	14	17	8		116
Palani Laughingthrush	16		55	27		2	12		112
Nilgiri Flowerpecker	28	2	52	1		21	1		105
Velvet Fronted Nuthatch	14		70	6		12	2		104
Pied Bushchat	10	2	29	18	3	33	9		104
Rosy Starling					100		1		101
Grey Jungle Fowl	6	1	54	5	6	22	3		97
Purple Rumped Sunbird		6	30	1	11	47			95
Orange Minivet		8	44	5	7	29			93
Spotted Dove	2	9	29	2	14	28	1		85
Indian Yellow Tit	6		60	4		14			84
House Crow			56	7	2	13			78
Oriental Magpie Robin	1		39		6	27	2		75
Hill Swallow	44		22	2		5			73
Indian Scimitar Babbler	1		46	5	6	2	6		66
House Sparrow			43		11	10			64
Jungle Crow	17		46						63
Common Myna		2	31		9	20	1		63
Cinereous Tit (Great Tit)		2	20	17	4	15	2		60
Yellow Browed Bulbul		2	29			28			59
White Browed Bulbul		11	10	1	17	15			54
Square Tailed Bulbul	1		30	6			17		54
Chestnut Headed Bee Eater		8	20			23			51
Black And Orange Flycatcher	14		20	11			6		51
Coppersmith Barbet		3	34		6	7			50
Grey Wagtail	2	5	23	3	8	7	1		49
Common Rosefinch	1		20	2		26			49
Red Wattled Lapwing	6			2	34	5			47
Greater Coucal		1	21	4	3	17	1		47
Plum Headed Parakeet		2	28			16			46
Yellow Throated Sparrow			19			25			44
Nilgiri Flycatcher	12		25	7					44
Malabar Parakeet			17			25			42
Indian Peafowl	1	2	18	5	6	10			42
Purple Sunbird		4	10		7	19	1		41
Indian Pond Heron			12	7	10	10	2		41
Common Iora			19		10	12			41
Tickells Blue Flycatcher		2	33			5			40
Malabar Whistling Thrush			27	1		11			39
Long Tailed Shrike	2		24	2		10	1		39
Hill Myna	11		4			24			39
Bar Winged Flycatcher Shrike	6	1	21	6		5			39
Common Tailorbird			15	2	8	12	1		38
Blyth Reed Warbler	1	1	27	4	1	4			38
Black Hooded Oriole		7	9		4	17			37
Little Swift			20		10		5		35

Species	Range							Grand Total
	Berijam	Devathanap..	Kodaikanal	Mannavanur	Palani	Perumpallam	Poombarai	
Indian Blackbird			16	12			7	35
White Rumped Munia		2	31					33
Palani Sholakili	6		14	2			10	32
Painted Stork					31			31
Bronze Drongo		6	9		2	14		31
Black Drongo		2	1		12	14	2	31
Southern Hill Myna			24			6		30
Loten's Sunbird			1		4	24		29
Jungle Babbler			7		4	18		29
Ashy Wood Swallow			19		3	7		29
Puff Throated Babbler		4	6			18		28
Asian Fairy Blue Bird		9	11			6		26
Rufous Babbler			14		4	7		25
Oriental Honey Buzzard	5		7	3	2	2	5	24
Pale Billed Flowerpecker			13		4	6		23
Paddyfield Pipit				4	17	2		23
Grey Fronted Green Pigeon		4	11		7	1		23
White Bellied Drongo	2	6	9		1	4		22
Rose Ringed Parakeet		6	2		7	7		22
Emerald Dove		10	11			1		22
Red Rumped Swallow		2	10			9		21
Ashy Prinia			10	4		1	6	21
Wood Sandpiper					20			20
Tawny Bellied Babbler			10			10		20
Common Hoopoe			9		1	10		20
Black Headed Ibis					20			20
Asian Palm Swift		5	11				4	20
Nilgiri Wood Pigeon			16			1	2	19
Golden Fronted Leafbird		4	8		6	1		19
Malabar Flameback			11	1	2	4		18
Feral Pigeon					18			18
Barn Swallow			6		6	6		18
Ashy Drongo			14	2		2		18
Crimson Backed Sunbird			10			7		17
Common Hawk Cuckoo		3	9		3	2		17
Black Naped Monarch		2	7			8		17
Asian Brown Flycatcher		1	12		1	3		17
Crested Serpent Eagle	2	3	7		1	3		16
Brown Cheeked Fulvetta			9		1	6		16
Small Minivet			7		6	2		15
Malabar Imperial Pigeon			13		2			15
Little Grebe	3			3	9			15
Greater Racket Tailed Drongo		2			1	12		15
Brown Headed Barbet		8	1		2	4		15
Large Billed Leaf Warbler		1	9	1		3		14
Black Winged Stilt					14			14
Little Ringed Plover					13			13
Indian Paradise Flycatcher		4	1		3	5		13
Eastern Cattle Egret					9	4		13
Dusky Crag Martin			13					13
White Throated Kingfisher	3	1	2		2	3	1	12
Small Blue Kingfisher	5		1	3	2	1		12
Jungle Prinia			5	2	2	3		12
Green Bee Eater		4				8		12
Yellow Billed Babbler		2			9			11
White Browed Wagtail	1		4		1	3	2	11
Streak Throated Woodpecker			9	1			1	11

Species	Range							Grand Total
	Berijam	Devathanap..	Kodaikanal	Mannavanur	Palani	Perumpallam	Poombarai	
Crested Treeswift			9			2		11
Black Rumped Flameback		1	3		6	1		11
Black Eagle			5			6		11
Shikra			7		1	2		10
Rufous Treepie		1	2		3	4		10
Rock Pigeon			10					10
Little Egret					10			10
Black Headed Cuckooshrike		2	6		1	1		10
White Browed Fantail			4			5		9
Western yellow Wagtail					9			9
Spot Billed Duck	2			7				9
Oriental Skylark					9			9
Little Cormorant			1	5	2	1		9
Jeardon'S Nightjar			4	3		2		9
Indian Robin		2			4	3		9
Grey Breasted Prinia			8		1			9
Nilgiri Pipit	6			2				8
Grey Bellied Cuckoo			6			2		8
Wayanad Laughing Thrush			7					7
Little Spiderhunter			2			5		7
Golden Oriole		4	2			1		7
Flame Throated Bulbul		6				1		7
White Bellied Blue Flycatcher			3			3		6
Tickells Leaf Warbler	1		1	1	1	1	1	6
Thick Billed Flower Pecker			5		1			6
Large Cuckooshrike		2	1		2	1		6
Greater Flameback						4	2	6
Black Throated Munia						6		6
Asian Koel		3	2	1				6
Scimitar Babbler			3			2		5
Red Spurfowl		2	3					5
Pond Heron						5		5
Malabar Grey Hornbill		3				2		5
Lesser Yellownape						5		5
Jerdons Leafbird		4			1			5
Brown Capped Pygmy Woodpecker			2	1	1	1		5
White Breasted Waterhen				2	1	1		4
Verditer Flycatcher			4					4
Purple Heron					4			4
Medium Egret				4				4
Laughing Dove					1	3		4
Large Pied Wagtail	4							4
Large Grey Warbler					4			4
Grey Francolin					2	2		4
Great Egret					4			4
Eurasian Moorhen				4				4
Common Buzard	1		1			2		4
Blue Throated Blue Flycatcher			3		1			4
Blue Faced Malkoha		1	1		1	1		4
Alpine Swift						4		4
White Rumped Shama		1	1			1		3
Spider Hunter						3		3
Short Toed Snake Eagle		2				1		3
River Tern					3			3
Plain Prinia				1			2	3
Northern Pintail					3			3
Malabar Barbet			2			1		3

Species	Range							Grand Total
	Berijam	Devathanap..	Kodaikanal	Mannavanur	Palani	Perumpallam	Poombarai	
Striated Heron					1			1
Rufous Woodpecker			1					1
Rufous Bellied Eagle						1		1
Pied Cuckoo						1		1
Peregrine Falcon		1						1
Olive Backed Pipit				1				1
Nilgiri Thrush			1					1
Monarch Flycatcher					1			1
Jungle Wood Owl	1							1
Jungle Owlet			1					1
Indian roller					1			1
Indian Moor Hen	1							1
Indian Cormorant							1	1
Heart Spotted Woodpecker			1					1
Hair crested drongo			1					1
Grey Heron					1			1
Grey Headed Bulbul			1					1
Greater Painted Snipe			1					1
Flame Back Woodpecker						1		1
Eurasian Kestrel			1					1
Eurasian Collared Dove					1			1
Dark Fronted Babbler			1					1
Changeable Hawk Eagle		1						1
Cattle Egret			1					1
Blue Bearded Bee Eater					1			1
Bay Backed Shrike							1	1
Asian Openbill					1			1
Ashy Crowned Sparrow Lark			1					1
Accipiter Sp				1				1
Maggie Robin		3						3
Jerdons Bushlark		1				1	1	3
Jeardon'S Leafbird			2				1	3
Citrine Wagtail					3			3
Brown Shrike			1	1			1	3
Booted Warbler			2		1			3
Blue Tailed Bee Eater					3			3
Black Winged Kite			2			1		3
Yellow Crowned Woodpecker			2					2
Warbler Sp						2		2
Stork Billed Kingfisher		1			1			2
Oriental Scops Owl		1	1					2
Indian Jungle Nightjar	1		1					2
Crested Goshawk			2					2
Common Woodshrike		1				1		2
Brown Wood Owl			1				1	2
Brown Fish Owl			1			1		2
Bonnelli'S Eagle			1			1		2
Black Kite				1			1	2
Banded Bay Cuckoo			1			1		2
Asian Woolly Necked Stork					2			2
Woodpecker Sp				1				1
White Bellied Woodpecker						1		1
Unidentified Warbler	1							1
Unidentified Flycatcher	1							1
Taiga Flycatcher						1		1

Appendix 2: Participants list

S. No	Name	Experience
1	Mr. Veeresh R	5 years of professional experience in Birdwatching and photography of endemic bird species in Kodaikanal
2	Mr. Prajwal	Pursuing M.Sc. Wildlife Science program at Amity Institute of Forestry and Wildlife. Researcher on slender lorries in Tamil Nadu (Dindigul).
3	Mr. Naveen Swamy	15+ years of birding. This has largely been birding locally around Bangalore and some of the jungles of South India. eBird ID: nswamy
4	Mr. Shashank	Taken part in bird surveys across India Active birdwatcher for more than a decade. eBird ID: mbshank03.
5	Mr .Shravan Kumar	Birder watcher for the last few years
6	Mr. Chandrashekar. M	Birder for a decade. Encountered over 400 different species of birds.
7	Mr. Satish M	Active bird watcher from January 2019 in Bangalore, the Western Ghats of Kerala and Karnataka, the Eastern Ghats of Andhra Pradesh and Telangana, Knowledgeable about Himalayan bird species. Identified 455 bird species in India. ebird bird profile ID: https://ebird.org/profile/MTUxMzY3M
8	Mr. Jonathan Pradeep	Birder and Wildlife photographer.
9	Dr. Vinod kumar Saranathan	Associate Professor of Biological Sciences at Krea University. Avid ornithologist and birder for several decades. eBird profile ID: https://ebird.org/profile/MTA2NDI4Nw/IN
10	Mr. Ahmed Omar Haroon	Birder Experience in working on the Shola Sky Island birds project at IISER Tirupati.
11	Ms. Kalyani Kapdi	Interested in call identification
12	Dr. Felicia	Have done a lot of birding and bird photography in Kodaikanal for the last 10 years and can identify the birds of Kodaikanal.

13	Mr. Manoj ponnus	Birder and Wildlife photographer.
14	Mr. Sukumaran	Professional birder and wildlife photographer with 8 years field experience.
15	Mr. Vivek S	Birder and Wildlife photographer
16	Ms. Varsha	Avid birder, regular and meticulous contributor to eBird data. Familiar with the birds of the Western Ghats region.
17	Mr. Srinivas P	Retiree from central government service. Professional expert in bird surveys. Recent surveys done at Sunderbans, Pench Maharashtra, Bandhavgarh and Corbett Ebird ID: srinip0513 with record over 500 bird species.
18	Mr. NS Pushkar	As a seasoned birder and wildlife photographer, I've extensively traversed India, documenting over 400 bird species. Featured in the Forest Department of India's book on birds in the marshland of Pallikaranai, with over 5 captivating images published.
19	Mr. Samil Mohammed	Birdwatcher. Degree in Forestry Interned at the Munnar Wildlife Division
20	Mr. Subramania Sivam	Conducted bird surveys in the Western Ghats region and Bramagiri Coorg Survey
21	Ms. Vijayarani	Birder Conducted Coorg bird survey.
22	Mrs. Rosita Vasanthi	Volunteered in Bird/Butterfly Surveys conducted by the FD of the Govts of TN and Kerala for the past 10 year.
23	Mr. Priyank Pradeep	Naturalist in Kodaikanal
24	Mr. Kamal C Kishinani	Participated in bird surveys at Sathyamangalam & Nagarhole. Regular Birding in Coonoor and Kotagiri forests in the Nilgiris. Also done birding in Wayanad, Kerala. Have participated in Pench, Corbett, Kanha, Navegaon Nagzira conducted by the respective forest department. Also done the Great Himalayan Bird count in Uttarakhand 4 times.

25	Mr. Ravi Gopalakrishnan	Birding in the Nilgiris and Karnataka. Completed 11 bird surveys in collaboration with the Forest Department in Nagarhole, Kanha Tiger Reserve, Pench Tiger Reserve, Jim Corbett Tiger Reserve, Nagzira Navegaon Tiger Reserve, and Bandhavgarh Tiger Reserve.
26	Ms. Poornima K P	Participated in surveys at: Terai arch landscape study Ratapani wildlife sanctuary Kuno wildlife sanctuary Ghandhisagar wildlife sanctuary Salem bird and butterfly census study birds/bats/butterflies/bees in relation to trees and plants
27	Dr. Antony P U	Ph. D was on the bird communities in the forests of Wayanad. Organized a bird survey in North Wayanad Forest Division last year.
28	Dr. Arun Kumar	Birding last 20-25 years along with my friends in BNHS , WWF , MSN(Madras Naturalist Society) and a number of other like-minded groups. Volunteer for Forest Dept & other NGO conducted census every year including the GHBC (Great Himalayan Bird Count) in Uttarakhand, Annual Waterfowl census , HSBC bird race. familiar with a good number of the Western Ghats & Shola species.
29	Lekshmi R	Ecologist and birder from 2017 at Kodaikanal, former Director of KIS CEH. Explored most parts of Kodaikanal and have clear data on birds of Kodaikanal. Being part of several birds and butterfly surveys across India.
30	Mr. Surendhar Boobalan	Educator and avid bird enthusiast from 2013 Co-ordinator for annual Pongal Bird Count and Campus Bird Counts in Puducherry
31	Mr. Andras Jo	Explored various habitats and documented most of the birds in and around Kodaikanal and the lower ranges of the Palani hills. Including montane forests, shola and grassland, semi-agricultural land, wetlands, etc.
32	Mr. Muhammedali. V.C	Birder
33	Dr.M.Uma Maheswari	Birder

34	Ms. Thrinisha	Team lead in AWC Trivandrum Trivandrum Bird race 2022 PTR Survey 2023&2024 Attappady Survey 2022 Ebird Id: https://ebird.org/profile/MTgyMDk4MA "
35	Mr. Ramesh	Birder
36	Dr. Christopher	Organized few surveys across TN and Kerala Forests. Conducted first shore bird survey for Gulf of Mannar.
37	Ms. Dona Reji	Participated in the EIA Biodiversity assessments as a trainee.
38	Nishita Vasanth	Lived in the western Ghats for the last 12 years and an avid bird watcher. school children on birding trips in the forest.