

## Survey Paper

# A Survey of Fishes and Birds of Kollidam River in Anaikarai, Tamil Nadu State, India

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**Abstract**— From November 2021 to April 2022, an ecological assessment of the species variety of birds and fish was carried out in and around the Kollidam River in Anaikarai, Kumbakonam Taluk, Tamil Nadu. The abundance of birds was investigated using point and count methods. Perception was periodically guided by short strolls along the review area early in the morning and late in the early evening. An all out 19 Bird species, Request 8, 14 families. 16 fishes, 8 request, 8 families. Cypriniformes 6 species, trailed by Anabantiformes 3 species, and Cypriniformes, Cyprinodontiformes, Gobiiformes, Mugiliformes, Siluriformes, Cichliformes these request are just a single animal groups. The outcome additionally shows that the Waterway close by region, agribusiness land and encompassing vegetation are great ecological circumstances appropriate for the transient, occupant as well as the compromised types of birds. Be that as it may, aside from this, the obstruction of human exercises for example agribusiness, deforestation is additionally expanding day by day.

**Keywords**— Fish diversity, avifauna, Cauvery River, Kumbakonam. Tamil Nadu.

## 1. Introduction

The phrase "biodiversity" refers to the range and variety of life on the globe. It combines a range of traits, species, and practical aspects. In terms of lavishness, equality, and variety among living things, it is often approximated. [3]. [13] perceived arrangement, design and capability as fundamental credits of biodiversity and reinforced those ascribes progressively into settled structure by including other association levels: territorial scene, local area environment, populace habitat with animals. The genetic diversity, species attributes (uniqueness, quantity, and collection), biotic networks, their cycles, and construction may all be used to estimate biodiversity.

When compared to a system with limited biodiversity, an ecosystem with abundant biodiversity offers more possibilities than transporting energy and is also better able to withstand shocks like fire, flood, and soon. [6]. [3] inferred that biodiversity harm changes the biological system working and furthermore their capacity to convey better labor and products expected to thrive a general public. India, an organically 7.6% of all mammalian in 12.6% of all avian, 6.2% of all reptile, 4.4% of all land and water adept, 11.7% of every piscine, and 6.0% of all species of flowering plants have been identified in a single country [16].

India is the world's second-largest producer of fish grown in hydroponic systems and the third-largest fish producer overall. About 7% of the world's fish are produced in India. Additionally, the country, which is one of the 17 super biodiversity rich countries, is home to about 10% of the world's fish species. Fishing and related activities are participated in by over 14 million people. Almost everyone enjoys the beauty of architectural shade, development, and light, pleasant songs, even birds. Birds are great model organisms for understanding key issues in ecology, animal behaviour, developmental research, and preservation [17]. Birds are among nature's most beautiful creatures overall, and without a doubt, climate changes and swift human influence have a significant impact on bird habitat, particularly inside lake regions. One of the important types of wetlands are freshwater lakes, which play a crucial role in the financial affairs of their respective districts, particularly when it comes to the administration of local water supplies and the maintenance of domesticated animals, agriculture, and fishing operations. The location of a wetland due to the destruction of natural habitats and disturbing human impacts [1].

Birds assume a critical part in numerous food networks of oceanic framework supplement cycles. In any case, wetlands are confronting colossal anthropogenic strain brought about by an increment of human aggravations. Accordingly, these aggravations compromise these environments and can

significantly impact the populace construction and variety of the bird local area (Bird Life Global 2003). Somewhat recently, More than half of the world's wetlands were destroyed, and those that remained have undergone varying degrees of degradation as a result of harmful anthropogenic activities. [5].

Thus, to accomplish feasible use of these assets, having suitable making arrangements for biodiversity protection and the board strategies is basic. Subsequently, it is of most extreme significance to have logical data about the species as well as their environments for moving towards biodiversity preservation. In order to identify the species variety of the Cauvery River at anaikarai located in Kumbakonam, Tamil Nadu, the current study was undertaken.

## 2. Materials and methods

### Study area

The village panchayat of Anaikarai is located in the Tanjavur district of Tamil Nadu, India's Thiruvudaimarudur Taluk. Two significant bridges link with Anaikarai. over a km long on each side. It is an island located in the Cauvery River basin. It is 25 kilometres from Kumbakonam and 260 kilometres from Chennai away. The Lower Anaicut, which Sir Arthur Cotton constructed over Coleroon, a key Cauvery distributary, is thought to be a copy of Kallanai's plan. Anaikarai is home to around 2000 households, with agriculture and fishing serving as the main economic drivers. Notable and a popular location for stream fish (Figure 2).

**Data were collected using three methods:** From November 2021 to April 2022, transect walks, point transects, and direct observations will be conducted. The bird survey was conducted using the line transect method. Regarding data collecting per unit effort, this approach proved to be the most effective. [18]. In this census, a spectator walks slowly down the courses and notes every bird they see on either side of the course. The length of transitions varies depending on the type of review, but is usually constrained by availability and hence may not be fixed. When compared to point cuts, line cutting is more productive since it allows for the recording of more birds per unit of time in vast, open areas.



Figure 1. study area of Kollidam river of anaikarai.



Figure 2. Showing a fisher man fishing in kollidam river in anaikarai.

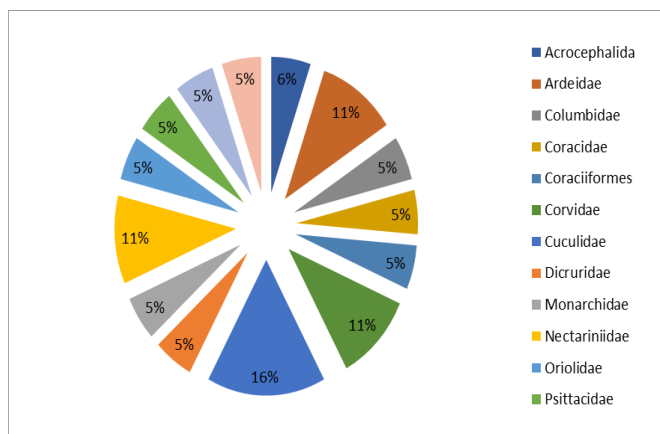


Figure 3. Family wise distribution of birds in Cauvery river of anaikarai, Kumbakonam Taluk, Thanjavur District.

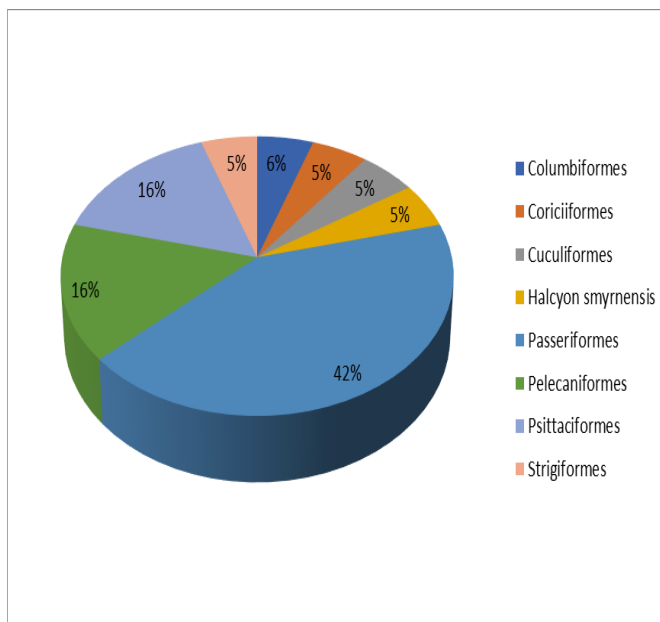
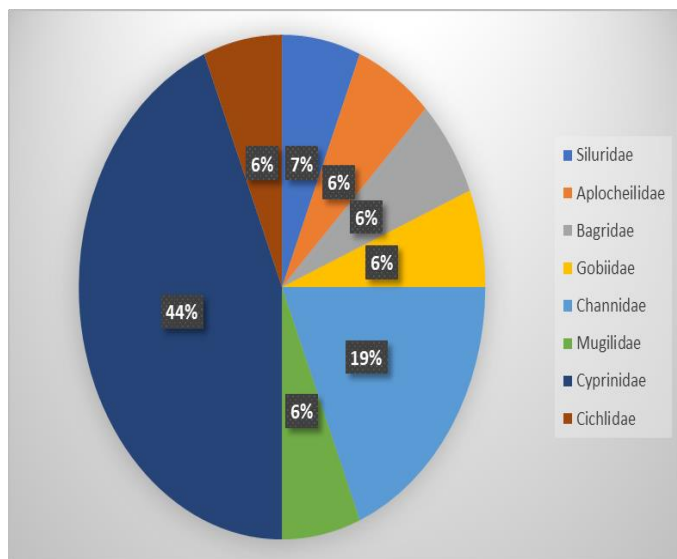


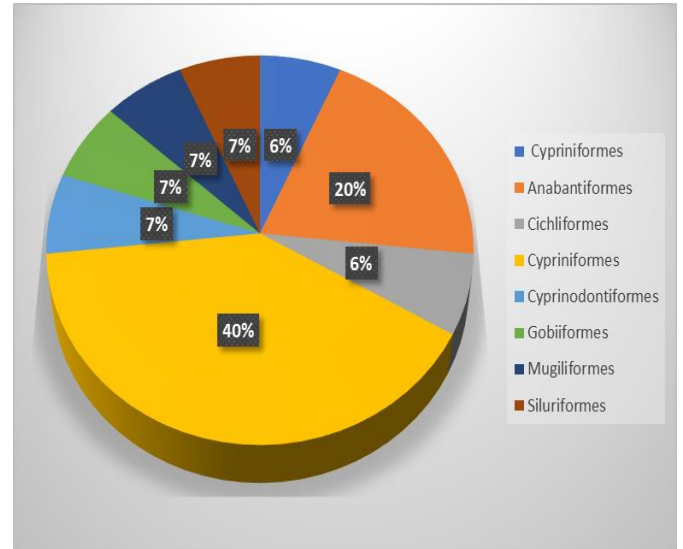
Figure 4. Order wise distribution of birds in cauey river of anaikarai, Kumbakonam Taluk, Thanjavur District.

**Table 1.** birds status in Cauvery river in anaikarai, Kumbakonam, Thanjavur, Tamil Nadu

S.no	Common name	Scientific name	order	Family
1	Greater coucal	<i>Centropus sinensis</i>	Cuculiformes	Cuculidae
2	Golden Oriole	<i>Oriolus kundoo</i>	Passeriformes	Oriolidae
3	Ibis	<i>Threskiornis aethiopicus</i>	Pelecaniformes	Threskiornithidae
4	Indian Roller	<i>Coracias benghalensis</i>	Coraciiformes	Coraciidae
5	Common Crow	<i>Corvus splendens</i>	Passeriformes	Corvidae
6	Common Hawk Cuckoo	<i>Hierococcyx varius</i>	Cuculiformes	Cuculidae
7	Common Koel	<i>Eudynamys scolopacea</i>	Cuculiformes	Cuculidae
8	Common Myna	<i>Acridotheres tirstis</i>	Passeriformes	Acrocephalida
9	Rose ringed Parakeet	<i>Psittacula krameri</i>	Psittaciformes	Psittacidae
10	Rufous Tree pie	<i>Dendrocitta vagabunda</i>	Passeriformes	Corvidae
11	Spotted Owl	<i>Athene brama</i>	Strigiformes	Stridae
12	Asian Paradise Flycatche	<i>Terpsiphone paradise</i>	Passeriformes	Monarchidae
13	Black drongo	<i>Dicrurus macrocercus</i>	Passeriformes	Dicruidae
14	Blue rock pigeon	<i>Columbalivia</i>	Columbiformes	Columbidae
15	Night heron	<i>Nycticorax nycticorax</i>	Pelecaniformes	Ardeidae
16	Pond heron	<i>Ardeola grayii</i>	Pelecaniformes	Ardeidae
17	Purple rumbed sunbird	<i>Leptocoma zeylonica</i>	Passeriformes	Nectariniidae
18	Purple sunbird	<i>Cinnyris asiaticus</i>	Passeriformes	Nectariniidae
19	White throated kingfisher	<i>Halcyon smyrnesis</i>	Halcyon smyrnensis	Coraciiformes



**Figure 5.** Family wise distribution of Fish in Cauvery river of anaikarai, Kumbakonam Taluk, Thanjavur District..



**Figure 6.** Order wise distribution of Fish in Cauvery River of anaikarai, Kumbakonam Taluk, Thanjavur District..

**Table 2.** Fish status in Cauvery river in anaikarai, Kumbakonam, Thanjavur district, Tamil Nadu

S. No	Family	Order	Scientific name	Common name
1	Cyprinidae	Cypriniformes	Catla catla	Catla
2	Cyprinidae	Cypriniformes	Cirrhinus mrigala	Mrigal carp
3	Cyprinidae	Cypriniformes	Cirrhinus reba	Reba carp
4	Cyprinidae	Cypriniformes	Ctenopharyngodon idella	Grass carp
5	Cyprinidae	Cypriniformes	Cyprinus carpio	Common carp
6	Cyprinidae	Cypriniformes	Hypophthalmichthys molitrix	Silver carp
7	Cyprinidae	Cypriniformes	Labeo rohita	Rohu
8	Siluridae	Siluriformes	Ompok bimaculatus	butter catfish
9	Bagridae	Siluriformes	Mystus vittatus	Striped dwarf catfish
10	Channidae	Anabantiformes	Channa punctatus	Spotted snake head
11	Channidae	Anabantiformes	Channa striatus	Spotted snake head
12	Aplocheilidae	Cyprinodontiformes	Aplocheilichthys lineatus	killifish
13	Gobiidae	Gobiiformes	Glossogobius aureus	Tank goby
14	Cichlidae	Cichliformes	Oreochromis mossambicus	Mozambique tilapia
15	Mugilidae	Mugiliformes	Rhinomugil corsula	corsula
16	Channidae	Anabantiformes	Channa striata	snakehead murrel

### 3. Results and discussions

Fishing is a form of economic activity that involves catching fish or other aquatic organisms in the wild (capture fishing) or rearing them in captivity (aquaculture/culture fishing). Traditional/ Small Scale Fisheries (SSF) or large-scale/ commercial fishing are two possible types. Fish (in general) are classified as finfish and shellfish and are cold-blooded

aquatic organisms that breathe through gills and swim with fins. The aquatic vertebrates known as finfish are cold-blooded and have gills, fins with rays, and scales covering their bodies. Cold-blooded aquatic invertebrates called shellfish contain gills, a variety of locomotory organs, and a covering called an exoskeleton or shell on their bodies. They consist of mollusks and crustaceans (Table 2). Mentioned of total 16 fishes and 8 order and 8 family were recorded during Study period on November -2021 to April -2022 from Cauvery river Anaikarai at Kumbakonam Tamil Nadu state in India.

The Jhelum, Chenab, Ravi, Beas, and Sutlej are the principal tributaries of the Indus River system in India. [11] investigated the fish variety in the Harike wetlands, where the Sutlej and Beas rivers meet, and discovered 37 fish species, distributed among 25 genera and 14 families. Cyprinid family. (16) was the leading family, then came Bagridae (4), Siluridae (3) etc. [14] 32 fish species were detected in the Ichthyofauna of the Basantar River, a tributary of the Ravi in India, with Cypriniformes (18 spp) predominating. [14] investigated the fish richness of Jammu's Ujh River, a tributary of the Ravi, and recorded 42 fish species from 5 Orders. They discovered that Cypriniformes was the predominate order. They also linked anthropogenic activities to the river's rapidly declining fish diversity.

[4] inspected the Ganges River's ichthyofauna richness, distribution, and community structure, as well as assessed the riverine stretch's ecological soundness. According to their research, there are 143 species over 40 families and 92 genera, with the Cyprinidae family accounting for 38% of all species. They discovered that the variety and number of fish species increase as river width and depth rise. For instance, [15] examined the fish richness, distribution, and abundance patterns in the River Ken, a significant tributary of the River Yamuna, and discovered 57 species, spanning 42 genera and 20 families. According to a conservation status assessment, 7 fish species are endangered, 13 are vulnerable, and 20 are at low risk. Previous researchers came to the conclusion that destructive fishing practices, siltation, and dams significantly reduce the ichthyofauna of the river, necessitating the urgent implementation of a conservation strategy in the river Ken. Furthermore [8] Under the effect of changed hydro-ecological circumstances, an analysis of the ichthyofauna diversity, distribution pattern, and invasion of alien fish species in the Yamuna River indicated the presence of 112 species in 73 genera, 29 families, and 10 orders. Six of the 112 species in total were exotics. Ten species were considered to be near threatened, while 15 species were classified as threatened. The discharge of untreated residential and industrial effluents caused the river segments to be in a contaminated state, according to the water quality indicators.

This river has been a main source of water for recharging the surrounding bore wells and agricultural fields around it. During the present study, most of the migratory species recorded were winter visitors and the resident birds were observed throughout the year. Most of the winter migrants exhibited a distinct species-specific pattern of arrival and

departure from the river. Table 1. Mentioned of total 19 Bird species, Order 8, 14 families were recorded during Study period on November -2021 to April -2022 from Cauvery river Anaikarai at Kumbakonam Tamil Nadu state in India.

Due to the abundance of food present in the reservoir water, 19 different species of birds have been observed feeding and nesting along the Kollidam River in the Anaikarai region throughout the year. Only during the winter months were migrant (species that migrate from the northern hemisphere) and local (species that travel locally within the nation) species present in the study region. According to recent research, the river region is home to a variety of wildlife that draws both migratory and non-migratory birds, demonstrating how extremely productive and favourable the entire Kollidam river basin is for all species of birds.

Comparison with the works of [10] and [9], demonstrates that there are more summer migrants (17 species) in Srinagar than in the Jammu region (two species), but that there are about the same number of winter migrants (12 species) in both locations, although some of the species were different. This demonstrates how more temperate locations receive summer visitors.

#### 4. Conclusions

Subsequently, it is obvious that a large portion of the species are occupants, earthbound and intermittent. The explanations behind additional various species in earthly territory are that the earthbound region of the city is bigger than the sea-going environment, the food things are bountiful when contrasted with oceanic and shore natural surroundings, and besides, the human exercises have corrupted the sea-going living space generally. The focus also reveals that there are many different kinds of birds in the Anaikarai river, but that few people care for the majority of them and that the environment has to be given proper consideration in order to increase the number of birds.

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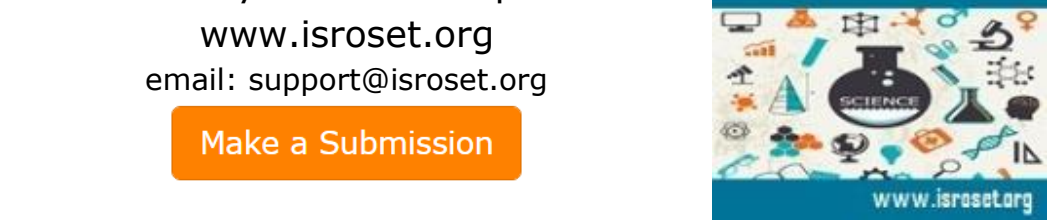
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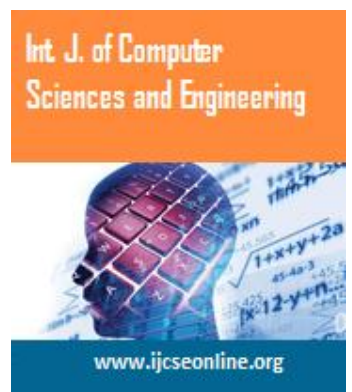
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