An Observe the birds in Periyapandivirichchan area, Madhu, Mannar

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INTRODUCTION:

Birds are one of the most conspicuous groups of animals in the modern world. They are hugely diverse, with more than 10, 000 extant species distributed across the globe, filling a range of ecological richness and ranging in size from the tiny bee humming bird to the ostrich [1]. Birds are considered to be the living direct descendants of dinosaurs. With dinosaur’s birds share most of their ‘bird features’ including the ability of fly as well as other aspects of the skeletal structure. Evidence for this close relationship is available from the fossil records of Europe and China.

In Sri Lanka 501 species have been recorded, out of that 33 endemics. Of this total number 143 species are shared with India, while 81 have evolved into endemic subspecies [2]. An important feature for the identification of a bird is its size. It is useful when describing an unfamiliar bird, to compare its size with that of common species. The shape and size of a bird’s beak largely indicates the nature of its food and manner of feeding. Legs and feet do not show as much diversity as beaks. A bird’s tail is often more visible than its legs. Its main function is to steer the bird during flight and to assist in landing. The shape and size of a bird’s wings are good indicators of the nature of its flight. Colour is most extensively used field characteristic for bird identification. Most birds are associated with certain habitats. There are Dry mixed evergreen forest, Savanna grassland, Mid-elevational evergreen forest, Dry riverine evergreen forest, Lowland wet evergreen forest, Mangrove forest, Dry patina grassland, Montane evergreen forest, Moist mixed evergreen forest, Mud flats, Dry deciduous scrub, Sparse and Open forest, Villu grassland, Wet patina grassland. There are a few indirect features that can be used for the identification of the presence of birds. Such as nests or food pellets [2].

Migratory bird is the movement of birds from their breeding grounds to another area, to avoid seasonally adverse climatic conditions, and the subsequent return to their original breeding ground is referred to as migratory bird. The migrants arriving at the tip of the Indian peninsula enter Sri Lanka at five places. Most of the birds coming along the Western routes cross the Indian Ocean and land in Sri Lanka along the western coast between Puttalama and Kalutara. Birds coming along the Eastern flyway, enter either from the Jaffna Penninsula, flying across from Point Calimere, or from Rameshwaram, via Adams Bridge, to enter at Mannar. Some

species enter Sri Lanka at Devil's Point. The fifth entry point for the birds arriving along the Andaman route is along the north-eastern coast. Of the 500 bird species recorded in Sri Lanka about 169 are migrants [2].

Mannar District is located in the north west of Sri Lanka in the Northern Province. It has an area of 1, 996 square kilometers. Aruvi Aru is the second longest river in Sri Lanka and runs through Mannar and Anuradhapura districts. During the last count of migratory birds, 166,300 individual birds and 66 different kinds of birds were counted in Adam's Bridge, Talaimannar, and Vankalai. Madhu is town in Mannar District, Sri Lanka. The world famous Shrine of Our Lady of Madhu, a major site of Roman Catholic pilgrimage, is located in this town. Madhu Road sanctuary is located in the Mannar, Mullaitivu and Vavuniya districts. At 26, 677 ha, it is the largest sanctuary in the province [3].

Periyapandivirichan area is located near the Shrine of Our Lady of Madhu. This area is very rich in flora and fauna. Birds provide a wide variety of ecosystem services. In the USA alone, the role they play in controlling insect pest populations on commercially valuable crops has been estimated to be worth millions of dollars. Birds also provide key benefits as pollinators and seed dispersers. An observe the birds in our environment will create the observation capacity and relationship between the birds and the environment to the students. Our research will observe and document the birds in this area.

The present study is to observe the birds in Periyapandivirichchan area and find out the scientific names, habitat and structure and motivate the students to observe the environment through the bird watching activity.

MATERIALS AND METHOD:

Point Count Method:

The basic method that has been chosen is based on setting up a single line at each site called a transect. Birds can be identified either visually, or by their calls. This method involves identifying all the birds we see or hear while standing at a series of points along a transect [5].

Materials Required:

- Bird Field guide
- Binoculars
- Plastic files
- Coloured strips
- Bird field data sheets
- Compass
- Small field note book
- Watch
- Flagging tape

METHOD:

- Team contain three members.
- All the members wear the green or brown colour or light colour dress and shoes.
- Position the team at the first sample point on the transect and note the starting time.
- Each sample point along the transect should be marked with flagging tape and the number plate from 50m to 500 m.
- Each sample point should be assigned a unique identification number to be entered onto the bird field data sheet.
- The position of each sample point on the transect (in meters) and its sample area identification number should be written onto the flagging tape. This tape must be removed when the survey is finished.
- Areas are divided up as 0 - 15 meters, then 15 - 30 meters and finally 30 - 50 meters from the middle of the sample point.
- For 10 minutes on the appropriate position to identify the birds seen or heard.
- By the end of the recording period the bird names should be transcribed to the observation table and field note book.
- All birds entirely outside the bullseye area but within the same habitat are recorded as opportunistic.

- Data entry should be completed for all the observations for the first recording period before moving on to the next sample point.
- When data transcription is completed, the team moves quietly to the next point on the transect.
- Note any birds you observe while walking on the opportunistic sightings field data sheet.
- Repeat all the steps in sample points on a transect have been completed.

BIRD FIELD DATA SHEET

Table-01

Survey area: Periyapandivirichchan

Team Leader: N. Michael Anjalo

Date	**Starting time**	**Finishing time**	**Sample along the transect (0m- 500 m)**	**Name of the bird**	**No of Individuals**			**Description**
					0-15 m	**15-30 m**	**30-50 m**	
3/8/19	7 am	9.30 am	0- 50 m	Peacock	1	-	-	Blue green plumage, brown body feathers and 2.5-3 kg.
3/8/19	7 am	9.30 am	50-150	Solaipadi/Oriental Magpie		2		Black and white plumage, head is black small size bird
3/8/19	7 am	9.30 am	50-150 m	Cattle egret			4	White plumage, bill is stout, neck is short and

								legs are dull brown.
3/8/19	7 am	9.30 am	150-250m	Plain Prinia	2		1	Small bird, brown above, white below, bill is black and legs are flesh colour.
3/8/19	7 am	9.30 am	250-350m	nil	-	-	-	-
3/8/19	7 am	9. 30 am	350-450 m	Cattle egret		1		
3/8/19	7 am	9.30 am	450-500 m	Oriental magpie	2			

OPPORTUNISTIC BIRD SIGHTINGS FIELD DATA SHEET

Table-02

Survey area_____

Team Leader_____

Date	Time	Name of the species	Habitat	Number observed	Description


50m

RESULTS:

The results of the present study an observe the birds in Periyapandivirichchan area are given below.

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Birds in Periyapandivirichchan were identified and analyzed. There are fifty birds are identified. To find out the scientific names, habitat and structure from the different sources. Birds identification was done in the morning, evenings and afternoon for some time also. Point count method was used for bird's identification.

Table-03: An observe the birds in Periyapandivirichchan area

S. No	Scientific Name	Vernacular Name	Habitat	Structure
1.	*Pavo cistatus*	Peacock 	Indian peacock has iridescent blue and green plumage, mostly metallic blue and green. But it has bronze body feathers. These feathers are marked with eyespots. It is larger size bird with a length from bill to tail of 100-115cm and weight 2.75kg. It is in the wild live for up to 20 years.	Indian peacock has iridescent blue and green plumage, mostly metallic blue and green. But it has bronze body feathers. These feathers are marked with eyespots. It is larger size bird with a length from bill to tail of 100-115cm and weight 2.75kg. It is in the wild live for up to 20 years [4].
2.	*Copsychus saularis*	Keelaitheya solai padi	It lives in forest, garden and close to	Black and white plumage. 19-21 cm; 29-41 g. Glossy black

			human habitation. Lives in all the zones.	head, throat, upper breast. Females are duller and greyer.
3.	*Bubulcus ibis*	Cattle egret 	By day grasslands, usually with large game mammals or domestic stock; in evening usually around shorelines of inland water.	Small, stocky, all white when not breeding; white with pinkish buff plumes on crown, back and breast when breeding; bill stout, neck shorter, not curved into S-shape as in larger white egrets; bill yellow or orange; legs dull brownish or yellow.
4.	*Prinia inornata*	Kathirkuruvi 	It lives in grasslands, paddy fields and scrub.	11 cm long and 6-9 gm weight. Brown above and buffish white below. Tail feathers are tipped below with dark greyish black. Bill is black and flesh coloured legs [4].
5.	*Columba livia*	Rock dove	It lives in villages, urban areas, cultivation.	It has a dark bluish-grey head, neck and chest, neck and feathers. The iris is orange, red. The bill is

				grey-black and the feet are purplish-red. The wing chord is 22.3cm, the tail is 9.5-11cm, the bill is around 1.8cm and the tarsus is 2.6-3.5cm.
6.	*Psittacula eupatria*	Alexandrine parakeet 	It is lives in woodlands, farmlands, forest, garden and cultivations.	50-62 cm long. Green plumage. Large red hooked bill. Female has green throat.
7.	*Francolinus pondicerianus*	Sambal kowdhari 	It is found in grass land, open land, coast and scrub land.	Male is 30-35 cm and 255-418 g. Female is 200-365 g. Greyish brown in colour. Head is brown in colour. Yellowish brown throat patch with black margin [4].

8.	*Gallus lafayettii*	Sri Lanka Jungle fowl/Kaatu kozhi 	is common in forests and scrub habitats.	Male is 70 cm and 790-1140 g. Plumage is reddish orange to yellow. Metallic blue black tail. It contains large comb. Red with a large yellow central patch.
9.	*Anas platyrhynchos*	Domestic duck 	Domesticated.	It contains whiter feathers. Bill and claws are yellow in colour. Eyes are black in colour.
10.	*Ardeola grayii*	Indiya Mudayan 	It is lives in wet lands and paddy fields.	It is 39-46 cm long and 230-276 gm. Wingspan is 75-90 cm. Ashy brown upper back. Underparts dirty white often streaked brown. Bill and legs are yellow-green in colour. During the flight appears mostly white.

11.	*Vanellus indicus*	Sigappu mooku Aatkaati 	It is a ground bird. Lives in dry mud flats and grass lands.	Length is 35 cm long. The wings and back are light brown with a purple to green sheen, but the head, a bib on the front and back of the neck are black. Short tail is tipped black. A red fleshy wattle in front of each eye, black-tipped red bill, and the long legs are yellow.
12.	*Passer domesticus*	Chittu kuruvi/House sparrow 	It is widely distributed. Frequents the vicinity of human habitation.	Length is 16 cm and weight is 24-39.5g. It is pale brown and grey colour. Its bill is stout and conical, grey to black in colour. White cheeks and side of neck. Tail is short, 5.2-6.5 cm long [4].

13.	*Spilopelia suratensis*	Western Spotted Dove/Pullipura 	It lives in cultivated lands and gardens	It is 30 cm long and 106-198 gm. Blue grey with a pinkish brown tinge spotted with white above. A black and white checker board pattern on hind neck. Bill is brown to black. Feet is red in colour .
14.	*Ixobrychus sinensis*	Yellow brittern/Manchal kuruhu 	It lives in paddy fields, canals and marshes with tall grass.	It is 30-40 cm long and 86-104 g weight. Yellow brown upper parts and buffy underparts. In juvenile heavily streaked underparts.
15.	*Haliastur indus*	Brahminy kite/Semparunthu 	It lives near the ponds, tanks and coasts.	It is 44-52 cm long and 409-650g weight. Wingspan is 110-125 cm. Bright reddish brown plumage with white head, neck and breast.

16.	*Corvus splendens*	House Crow/Kaham 	It is widely distributed. It lives in urban, rural areas, and human habitation.	Length is 40 cm and weight is 245-371 g. Colour is black. Neck and breast are light grey brown in colour.
17.	*Ardea interrmedia*	Intermediate Egret/Nadhuthara kokku 	It lives in paddy fields, wetlands and marshes.	It is 56-72 cm long and 400-500 g weight. Completely white in colour. Bill is black with yellow base. Leg is dark green to black in colour.
18.	*Egretta garzetta*	Little egret/Chinna kokku 	It is found in paddy fields, lagoons, tank edges and marshes	Length is 55-65 cm and 280-710 g weight. Completely white plumage. Black bill and legs. Feet is yellow-green
19.	*Turdoides rufescens*	Sri Lanka Orange billed Babbler/Semmanchal algu silamban	It is found in forest and cultivation	It is 25 cm long. Plumage is reddish brown. Bill and legs are

				orange in colour.
20.	*Acridotheres tristis*	*Mybah* 	It is closely associated with human habitation. In the evening large groups of common mynas gather in bridges, large trees etc.	It is brown with a black head. It has a yellow bill, legs and bare skin. In flight it shows large white wing patches.
21.	*Saxicolides fulicatus*	*Indian Robin/Solai padi* 	It is found in forest margins, gardens, scrub, open areas and around human habitation.	It is 16 cm long and 17-20 g weight. Entire body plumage is glossy black. Reddish brown vent and under tail coverts.
22.	*Meleagri gallopavo*	Turkey 	Domesticated	The male is larger and much more colorful than the female. It has long reddish yellow to grayish 0green legs. Body feathers are blackish. It has large featherless, reddish head,

				red throat and red wattles on the throat and neck. Head has fleshy growths called caruncles.
23.	*Alcedo atthis*	Common king fisher/Neela meen kothi 	It is found in fresh water wetlands.	It is 16 cm long and 23-35 g weight. Blue back and rump. Wings are dark blue with bars. Bright orange-brown underparts. Reddish brown cheeks.
24.	*Ploceus philippinus*	Baya weaver/Mara thookanankuruvi 	It lives in paddy fields, wetlands and reed beds.	It is 15 cm long and 18-28 g weight. It has yellow crown, brown streaked with yellowish lines upperparts. Breast is yellow, remaining underparts is creamy buff yellow.

25.	*Chrysocolaptes stricklandi*	Greater Sri Lanka Flameback/Marankothi 	It lives in humid forests	It is 29-30 cm long. Head with crimson crest. Tail is black. Underparts contain black and white scale like pattern. Cheeks and chin with white and black stripes running down face. Bill is paler at tip.
26.	*Platalea leucorodia*	Eurasian Spoon bill/Karandi vayan 	It is a migratory bird. It is found in tanks, marshes, paddy fields and lagoons.	It is 70-95 cm long and 1130-1960 g weight. It has white body plumage. Bill is long and spoon shaped. Wing span is 115-135 cm.
27.	*Pelecanus onocrotalus*	Great White Pelican/Vellai Koolaikada 	It is found in lagoons and ponds.	Male is 175 cm long, bill is 347-471 mm and 9-15 kg weight. Female is 148 cm long, 5-9 kg weight. Wingspan is 226-360 cm. Plumage is white. Bill is longer and legs are pink in colour.

28.	*Ciconia ciconia*	White stork/Ven narai 	It is found in marshes, paddy fields and wet lands.	It is 100-102 cm long and 2300-4400 g weight. Wing span is 155-165 cm. It has white plumage and black flight feathers with white coverts. It has straight bill. Legs and bill is red.
29.	*Ardea cinerea*	Grey Heron/Sambal kokku 	It is found in marshes, paddy fields, tanks, rivers, mangroves and lagoons.	It is 90-98 cm long and 1020-2073 g weight. Wingspan is 175-195 cm. Head and neck is white and mantle is grey. Underparts are white. Shoulder and outer margin of folded wig is blackish.

30.	*Gallinula chloropus*	Common Moorhen 	This is a common breeding bird in marsh environments, well-vegetated lakes and ponds.	It is 30-38 cm long and 249-493 g weight. Wing span is 50 55 cm. Bck is slaty grey with dark brown. Bill is red with yellow tip. A clear white line on flanks.
31.	*Eudynamys scolopaceus*	Common koel 	It is found in home gardens.	It is 39-46 cm long and 136-190 g weight. Male is metallic black tinged with blue. It has long tail. Eyes are red. Bill is yellowish green.
32.	*Dicrurus macrocercus*	Black Drongo/Karunkarichan 	It is found in forest, scrub and open country.	It is 30-31 cm long. Plumage is dull black and tail is long forked. No crest on forehead.
33.	*Threskiornis melanocephalus*	Black headed ibis	It is found in marshes, tank fringes, paddy fields and lagoons.	It is 65-76 cm long. White body plumage. Beak, head and upper neck region is black.

				Bill is black. Legs also black.
34.	*Pycnonotus penicillatus*	Sri Lanka yellow eared bulbul/Manchal sevi chinnan 	It is found in forest; gardens close to forest.	It is 20 cm long and 36-37 g weight. It has dark yellow green upperparts and yellow below. Chin is white and head and bill is black.
35.	*Lanius schach*	Long tailed shrike/Neela val keechan 	It is found in open country, forests and scrub.	It is 20-25 cm long and 50-53 g weight. It has hooked beak and relatively large grey head. It has black mask. Wings and tail is black.
36.	*Chrysomma sinense*	Yellow eyed babbler 	It is found in scrub and grass land.	It is 18-23 cm long and 20-24 g weight. Upperparts is greyish brown. underparts is whitish. Fore head is dark brown. Eye ring is orange yellow ring. It has long tail.

37.	*Oriolus xanthornus*	Black hooded oriole/Karunthalai maankuyil 	It is found in forest, gardens and cultivations.	It is 23-25 cm long and 46-79 g weight. General plumage is yellow. Head and parts of wing is black. Bill and feet is bright orangish pink. Underparts is yellow.
38.	*Anastomus oscitans*	Asian open bill/Nathaikuthi naarai 	It is found in marshes, tanks, rivers, paddy fields and lagoons.	It is 81 cm long. It has bill with prominent gap at midpoint between mandibles. Plumage is white general and darker above. und in marshes, tanks, rivers, paddy fields and lagoons.

39.	*Phoenicopterus roseus*	Greater flamingo/Periya poonaarai 	It is found in brackish lagoons and paddy fields.	It is 120-155 cm long and 2100-4100g weight. Wing span is 140-165 cm. It has white plumage suffused with pink and scarlet. Upper and under wings coverts rose pink to bright scarlet. It has long pinkish red legs. Bill is bent downwards from approximately mid-point.
40.	*Anthraceros coronatus*	Malabar Pied Horn bill/Kondai karuppu vellai irattai chondukuruvi 	It is found in forest and park lands.	It is found in It is 65 cm long. Upperparts and neck is white black. Long tail with white outer feathers. It has large cream coloured bill with prominent cream and black casque.

41.	*Mycteria leucocephala*	Painted Stork/Manchal mooku naarai 	It is found in fresh water land, rivers, crop fields, irrigation canals and rice fields.	It i It is 93-102 cm long and 2000-3500g weight. It has white plumage, black primaries, black stripes across breast. Head is yellow in colour. Bill is long, curved at the tip and yellow. It has pinkish tinge on greater wing coverts.
42.	*Threskiornis melanocephalus*	Black Headed Ibis 	It is found in marshes, tank fringes, paddy fields and lagoons and in fresh water land, rivers, crop fields, irrigation canals and rice fields.	It is 65-76 cm long. It has white body plumage. Beak, head, upper neck region is black. Legs also black in colour.
43.	*Ciconia episcopus*	Asian woolly neck/Venkaluthu Naarai 	It is found in wetlands, open grasslands and wooded areas close to water bodies.	It is 86-95 cm long. General body plumage, wing and crown is black. Neck have white feathers with wooly appearance.

44.	*Leptoptilos javanicus*	Lesser adjutant/Siriya potha 	It is found in wetlands and forest areas close to water.	It is 110-120 cm long. Upperpart is blackish, white breast and belly. Neck, head and bill are large and yellowish.
45.	*Centropus bengalensis*	Lesser Coucal/ Siriya Shenbagam 	It is found in grasslands, marshes and forest.	It is 31-34 cm long and 88-108 g weight. It has black plumage and chestnut wings. It has brown eyes and blackish bill.
46.	*Himantopus himantopus*	Black winged stilt 	It is found in wetlands, marshes, mud flats and lagoons.	It is 35-40 cm long and 166-205 g weight. It has black back, wings and thin, long black bill. It has long, dark pink to red legs. Heads are often sullied with grey.
47.	*Lanius schach*	Long tailed strike/Neela vaal keechan	It is found in forest, scrub and open country.	It is 20-25 cm long and 50-53 g weight. It has hooked beak and large grey

				head. Upper back is greyish lower back is reddish brown. Wings and tail is black.
48.	*Cecropis hyperythra*	Sri Lanka Swallow/ Ceylon Thakaivilan 	It is found in grass lands, villages and town areas.	It is 16-17 m long and 19-29 g weight. Dark metallic blue above and rump is reddish brown. Underpart is reddish brown to white.
49.	*Cisticola juncidis*	Zitiing cisticola/ Visirivaal Kathirkuruvi 	It is found in paddy fields, tall grasses and reed beds.	It is 10 cm long and 5-8 g weight. It has buffish brown with black streaks above and below dirty white. It has the tail with white tips
50.	*Dicrurus caerulescens*	White bellied drongo/ Ven Vayitru karichaan 	It is found in forest, gardens and open country.	It is 24 cm long and 39-41 g weight. General plumage is black. It has folked tail, breast to upper belly dark [4].

DISCUSSION:

Almost fifty birds are identified in Periyapandivirichchan area. There are different types of birds are here. These birds also enrich our biodiversity. Birds are important but ecologically little known actors in many eco-systems. Avian seed dispersal might be the ecological function. Birds are very useful in agriculture sector. In the USA alone, the role they play in controlling insect pest populations on commercially valuable crops has been estimated to be worth millions of dollars. Birds also provide key benefits as pollinators and seed dispersers.

Scavenging birds recycle carcasses, lead other scavengers to dead animals, maintain energy flows higher in food webs and limit the spread of diseases. Birds are an ecosystem engineers, mainly via the construction of cavity and burrow nests. Birds are acting as a resource linker. It transport minerals and nutrients in their guano, particularly between marine and terrestrial and between terrestrial and wetland eco systems [5].

This ecological function provides the ecosystem services of crop fertilization, which can occur, thousands of kilometers away from the original source of the nutrients. The ecological function of predation is considered an eco-system service if avian predators reduce agricultural pests and increase yields or if they limit pest activity through fear. It acts as a genetic linker. They transport plant genetic material via seed dispersal and pollination. Birds are important to continue ecologic circle, especially in food chain. We observe the birds in our environment, analyze and serve it.

CONCLUSION:

Birds are one of the best known and most highly valued elements of the natural world. Each species is unique, in its appearance, in its habits and in where it is found. Birds are important economically, providing substantial amounts of food, especially protein, largely but not exclusively from the domestic chicken, feathers and down are used for bedding, insulation, and other purposes. The current study is an observe the birds in Periyapandivirichchan area. There are fifty birds are identified in Periyapandivirichchan. It is very useful to our environment. It is necessary for the bird conservation in Periyapandivirichchan and everywhere.

Humans have had a profound effect on many bird species. Birds face a number of threats. Pollution has led to serious declines in some species. Increasingly large volumes of plastic waste are being transported by wind and ocean currents throughout the planet, and mistaken ingestion by many species is eventually fatal. Birds are also threatened by high rise buildings, communications towers, and other human-related activities and structures.

The largest source of human-related bird death is due to glass windows, which kill 100–900 million birds a year. The next largest sources of human-caused death are hunting, house cats, cars and trucks, electric power lines, and pesticides. Birds are also killed in large quantities by flying into communication tower guidelines, usually after being attracted by tower lights. According to World Watch Institute, many bird populations are currently declining worldwide, with 1,200 species facing extinction in the next century.

The biggest cited reason surrounds habitat loss. As the loss and destruction of habitat is the most serious threat facing many bird species, conservation organizations and government agencies tasked with protecting birds work to protect areas of natural habitat. Governments, along with numerous conservation charities, work to protect birds in various ways, including legislation, preserving and restoring bird habitat, and establishing captive populations for reintroductions. This can be achieved through purchasing land of conservation importance, setting aside land or gazetting it as a national park. Lastly, a systematic monitoring mechanism of the bird species, important bird habitats and large breeding colonies needs to be established for Sri Lanka.

So we conclude to create the awareness about the birds in Periyapandivirichchan area through the Science Club among the students and parents. An observe the birds in

Periyapandivirichchan also encourage the more researches in this field. The current study is the way for bird watching activity in different areas in future.

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Students

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