



AVIFAUNA DIVERSITY OF AMARKANTAK, MP (INDIA)

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AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Amarkantak is a holy place according to the Hindu religion. It is the origin place of the Narmada River; local people call it "Maa Narmada" with great respect. The tropical deciduous forest of Amarkantak is the natural habitat of many birds; there are dams, agriculture fields, and grassland, which are the best spots for bird watching. During fieldwork, it has identified 85 species of birds belonging to 15 orders and 48 families in 6 different areas- Jamunadhada, Kapilasangam, Sonmuda, Mai ki bagiya, Main mandir, and Chakrathirth, from 7 February 2021 to 12 March 2021. In this study morning and evening hours of each day has selected to identification and observation in different spots like dam, agriculture field, grassland, and forest area of sites. Jamunadhada has the richest avian fauna diversity with 60 species, followed by Chakrathirth having 54 species, then Sonmuda having 39 species and the least number of avian fauna recorded was 11 at Main Mandir. In Jamunadhada; Dam, agriculture field, small ponds and grass- lands serve as a better habitat for different type of birds. Spotted creeper (*Salpornis spilotus*) sighted at Jamunadhada and Sonmuda. It was not recorded in previous year survey of Achanakmar-Amarkantak Biosphere Reserve. Red naped Ibis (*Pseudibis papillosa*) is another bird which was not sighted in Amarkantak in previous survey, this bird in Jamunadhada and Chakrathirth and Kapilasangam has seen in this study.

Keywords: Avifauna; Amarkantak; Jamunadhada; Kapilasangam; Sonmuda; Mai ki Bagiya; Chakrathirth.

1. INTRODUCTION

Birds are flying animals hence they travel considerable distance their flying ability help to distribution in different areas [1-4]. The diversity of avian fauna in any area directly depends on the

abundant availability of food and safe habitat [5] that indicate a particular area's pollution and ecological condition [6]. Aves also play an essential role in the food chain. Some birds like crows and vultures are natural clean-up crew that keeps the ecosystem clean [7-11].

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Birds are beneficial for human beings because they help with Biopesticides, plant pollination, and seed dispersal [12,13]. They maintain a population of insects in the natural system. Owl, Crow, and crow-pheasant are very helpful for farmers [14,15,16]. They prey on small rats and mouse which are agricultural pests. They often protect human beings, especially villagers, from dangerous animals like lions, cheetah, and poisonous snakes by producing different sounds when they see the dangerous animals [17-19]; in other words, birds and birds' eggs also serve as food for other animals' raccoons, snakes, and fox. Different colorful birds are essential and beautiful elements of an ecosystem [20-22]. The population of aquatic birds in any area indicates that area's water quality [23]. In our ancient culture birds' sounds were a good source to search for water in the forest zone. The presence of aquatic birds indicates the presence of water in the forest [24,25, 26].

Some birds like crow, eagle, and Indian peafowl have a religious effect. According to the Hindu religion, a crow is the vehicle of God Shani Dev, an eagle for God Vishnu, and feathers of Indian peafowl is the favorite ornament of God Shree Krishna; many times, this type of mentality become more favorable for birds' protection [27-30]. People avoid hunting birds, especially in temples and other holy places, which are suitable for birds.

This fieldwork study has identified 85 bird species of 48 families belonging to 15 orders in 6 different areas of Amarkantak – Jamunadhada, Sonmuda, Mai ki Bagiya, Kapilasangam, Main mandir, and Chakratirth. In Chakratirth, found two migratory birds, Wood snip (*Gallinago nemoricola*) and Sandpiper (*Tringa totinus*) they are winter migratory birds; wood snip is listed as vulnerable in the IUCN Red List, IUCN 2008 [31].

they breed in the Himalayas of north-eastern India and in winter visit to central and southern India, Sri Lanka and Bangladesh [32]. Sandpiper breed in western European countries and in winter visit India, especially in January – February [33].

2. MATERIALS AND METHODS

2.1 Study Areas

Amarkantak is a holy place according to the Hindu religion. It is the origin place of the Narmada River; local people call it "Maa Narmada" with great respect. It is one of the best tourist places in Madhya Pradesh, the incredible architecture of old temples and fascinating natural beauty attract tourists. Ancient Kalchuri temples and other old temples serve as

habitats for many birds like pigeons, crows, and sparrows.

Amarkantak comes under the buffer zone of Achanakmar- Amarkantak Biosphere Reserve. Geologically Amarkantak is located between latitude 22°15 to 22°58 N and longitude 81°25 to 81°75 E on the Meikal range eastern of Satpura plateau in Anuppur district of Madhya Pradesh. There is a tropical moist deciduous forest which is the natural habitat of many faunae and flora, Sal is the dominant tree in Amarkantak forest. Other trees are Arjun, banyan, peepal, and mango. Due to the high elevation, about 1000 m above MSL, the tropical forest climate remains cool; throughout the year, the mean temperature ranges from 10.9°C (January) to 39.1°C (May). Running water of Narmada from the midline of the forest is more favorable for wildlife animals. Many colonies in Amarkantak are settled in forest areas, so; it is easy to identify the avifauna in colonies; some birds like a crow (*Corvus macrorhynchos*), Purple sunbird (*Nectarinia asiatica*), the house sparrow (*Passer domesticus*), Common Myna (*Acridotheres tristis*), Hoopoes (*Upupa epops*), Indian spotted dove (*Streptopelia chinensis*), Rock pigeon (*Columba livia*), Cattle Egret (*Bubulcus ibis*) and Yellow Checked tit (*Macholophas spilonotus*) are common in most of the colonies.

Two colonies have been selected for fieldwork - Jamunadhada, Kapilasangam, and four tourist places - Sonmuda, Mai ki Bagiya, Chakratirth, and Main mandir.

Jamuna Dhadar

It is a large colony; there are forests, agricultural fields, dams, and grassland. Sal (*Shorea robusta*) is the dominant tree in the forest.

Sonmuda

There are forests, grassland, and running water. Sal (*Shorea robusta*) is dominant in forest.

Mai ki Bagiya

There is forest and running water; Sal is the dominant tree.

Main Mandir

There are old kalchurian temples, Main Mandir, a small pond, and a water canal behind the Main Mandir. Main flora is peepal tree (*Ficus religiosa*), Mango tree (*Mangifera indica*) and sal tree (*Shorea robusta*).

Chakratirth

There is grassland, running water, and forest, sal trees (*Shorea robusta*) are dominant, another tree is Mango (*Mangifera indica*), peepal tree (*Ficus religiosa*), and Banyan tree (*Ficus benghalensis*).

Kapilasangam

There is a dam, agriculture field, grassland, and forest; Sal is the dominant tree.

Observation period

During 7 February 2021 to 12 March 2021 which showing in this table

Name of the Place	Date and study duration	Time duration & Length	
Jamunadhadar	7/2/2021 – 12/2/2021	7am – 10:30am	3:30pm – 6pm
Sonmuda	13/2/2021 -18/2/2021	7am -10:30am	3:30pm – 6pm
Mai ki Bagiya	20/2/2021 – 25/2/2021	7am – 10:30am	3:30pm – 6pm
Chakratirth	26/2/2021 – 3/3/2021	7am – 10:30am	3:30pm – 6pm
Kapilasangam	4/3/2021 – 9/3/2021	7 am – 10:30am	3:30pm – 6pm
Main Mandir	10/3/2021 – 12/3/2021	7 am – 9 am	3:30pm – 6pm

My observation area -



Study site Image 1: Jamunadhadar; 2: Sonmuda; 3: Mai ki bagiya ; 4 :Chakratirth; 5: Kapilasangam; 6 :Mainmandir

In this study, thoroughly read the previous informations of various wild study and survey like the avian fauna diversity of Satpura National Park.

Achanakmark - Amarkantak Biosphere Reserve, Kanha National Park, Indoor and Jabalpur district. The list of avifauna was prepared and then found out the best pictures of listed birds, also prepared a PPT of 142 birds' species with their best pictures for the correct identification from different resources before visited study areas and also study zoological aves classification and scientific name during fieldwork for

identification of the birds. For better identification of the birds during fieldvisit of first day, it was observed the whole area and chosen some important places for bird watching like dams, agriculture fields, grass-land, and forest areas. Here morning and evening hour/day in each place till the fifth day was spent to observing birds which is mentioned in table; this method was followed in most six selected areas.

2.2 Used Instrument

40x60 Monocular (Field of view: 1500m/9500m)

2.3 Observaton

In the present fieldwork, 85 species were identified belonging to 48 families of 15 orders.

Spatial variation in Jamunadhadar	Spatial variation in Sonmuda	Spatial variation in Mai ki Bagiya –	Spatial variation in Chakratirth –	Spatial variation in Kapilashangam	Spatial variation in Main Mandir –
Order – 15	Order – 8	Order – 5	Order – 13	Order – 10	Order – 2
Family – 36	Family – 26	Family – 20	Family – 36	Family – 24	Family – 6
Species – 60	Species – 39	Species – 24	Species – 54	Species – 35	Species – 11

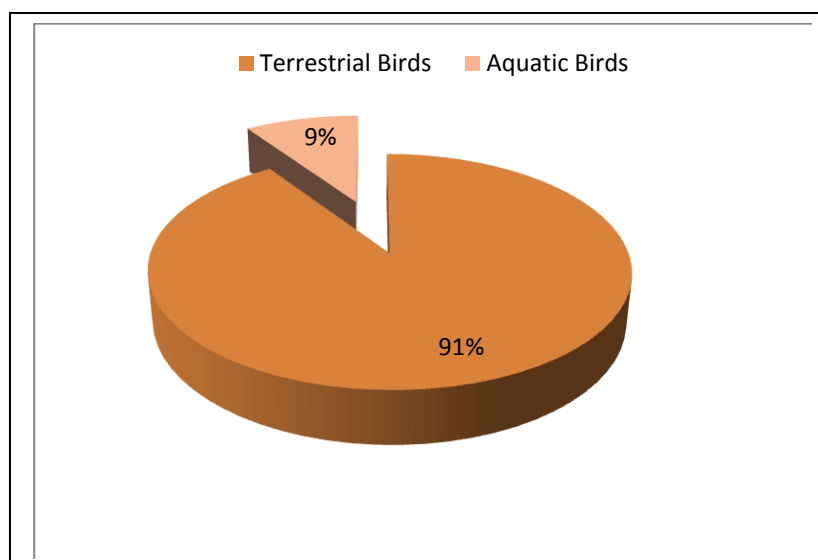


Image 1. Percentage of Terrestrial and Aquatic birds

List of Aquatic Birds (Out of 85 birds) –

1. Common kingfisher -*Alcedo sthis*
2. Lesser- pied kingfisher -*Ceryle rudis*
3. The white- breasted kingfisher -*Halcyon smyrnensis*
4. The Indian Pond Heron -*Ardeola grayii*
5. Little Erget -*Ergetta garzetta*
6. Sand piper -*Tringa totanus*
7. Little cormorant-*Microcarbo niger*
8. The White- Breasted Waterhen- *Amauronis phenicarus*

Table 1. List of birds in Jamunadhada during 7 February 2021 – 12 February 2021 –

SN	Common Name	Scientific Name	Local Name	Order	Family	IUCN STATUS	Habitat
1	Northern Roller	<i>Caracias benghalensis</i>	Neelkanth	Coraciiformes	Coraciidae	LC	T
2	Indian Jungle Crow	<i>Corvus macrorhynchos</i>	Jungly couva	Passeriformes	Corvidae	LC	T
3	The house Crow	<i>Corvus splendens</i>	Couva	Passeriformes	Corvidae	LC	T
4	The Tree- Pie	<i>Dendrocitta vagabunda</i>	Tenva	Passeriformes	Corvidae	LC	T
5	Common Hawk- cuckoo	<i>Cuculus varius</i>	koili	Cuculiformes	Cuculidae	LC	T
6	The Crow- Pheasant or Coacal	<i>Cetropus sinensis</i>	Kummagor	Cuculiformes	Cuculidae	LC	T
7	Jungle Wren - Warbler	<i>Prinia sylvatica</i>	Litaiya	Passeriformes	Cisticolidae	LC	T
8	The Indian Robin	<i>Saxicoloides fulicata</i>	fullichiraiya	Passeriformes	Muscicapidae	LC	T
9	Purple Sunbird	<i>Nectarinia asiatica</i>	Sui chiraiya	Passeriformes	Nectariniidae	LC	T
10	Purple – Rumped sunbird	<i>Nectarinia zeylonica</i>	Sui chiraiya	Passeriformes	Nectariniidae	LC	T
11	Indian Grey Tit	<i>Parus major</i>	Panndu	Passeriformes	Paridae	LC	T
12	Southern Blossom – headed Parakeet	<i>Psittacula cyanocephala</i>	Mittu	psittaciformes	psittaculidae	LC	T
13	Red – Vented Bulbul	<i>Pycnonotus cafer</i>	Pilpade	Passeriformes	Pycnontidae	LC	T
14	The White Breasted Waterhen	<i>Amaurornis phoenicurus</i>	Nadhaiyakukri	Gruiformes	Rallidae	LC	A
15	Little Cormorant	<i>Microcarbo niger</i>	Kirri	Saliformes	Phalacrocoracidae	LC	A
16	The House Sparrow	<i>Passer domesticus</i>	Garlaiya	Passeriformes	Passeridae	LC	T
17	The Baya or common Weaver bird	<i>Ploceus philippinus</i>	Jhulni	Passeriformes	Ploceidae	LC	T
18	Indian Silver bill	<i>Lonchura malabarica</i>	Uroa	Passeriformes	Estrididae	LC	T
19	Spotted Munia	<i>Lonchura punctulate</i>	Chekti	Passeriformes	Estrididae	LC	T
20	The Chestnut – bellied Nuthatch	<i>Sitta castanea</i>	Kutturu	Passeriformes	Sittidae	LC	T
21	The Common Myna	<i>Acridotheres tristis</i>	Myna	Passeriformes	Sturnidae	LC	T
22	Black headed Myna	<i>Sturnus pagodarum</i>	Pahadi myna	Passeriformes	Sturnidae	LC	T
23	Large Grey babbler	<i>Turdoides malcolmi</i>	Khasarre	Passeriformes	Leiothrichidae	LC	T
24	Peninsular Jungle Babbler	<i>Turdoides striatus</i>	Khasarre	Passeriformes	Leiothrichidae	LC	T
25	Black Ibis	<i>Pseudibis papillosa</i>	Kokarkhoda	Pelecaniformes	Threskiornithidae	LC	T
26	The Hoopoe	<i>Upupa epops</i>	Kidarri	Bucerotiformes	Upupidae	LC	T
27	Indian Spotted Dove	<i>Streptopelia chinensis</i>	Phodki	Columbiformes	Columbidae	LC	T
28	Nothern or Lesser Golden – backed Woodpecker	<i>Dinopium benghalense</i>	Kothaphodava	Piciformes	Picidae	LC	T
29	King Crow	<i>Dicrurus adsimilis</i>	Hurchi	Passeriformes	Dicruridae	LC	T
30	Rock Pigeon	<i>Columba livia</i>	Phakta	Columbiformes	Columbidae	LC	T

SN	Common Name	Scientific Name	Local Name	Order	Family	IUCN STATUS	Habitat
31	Pied Myna	<i>Gracupica contra</i>	Galri	Passeriformes	Sturnidae	LC	T
32	Common Green Pigeon	<i>Treron phoenicoptera</i>	Hariyar phakta	Columbiformes	Columbidae	LC	T
33	Large Green Burtet	<i>Magalaima zeylamica</i>	Parbhat	Piciformes	Ramphastidae	LC	T
34	Indian Spotted Creeper	<i>Salpornis spilonotus</i>	Uilli	Passeriformes	Certhiidae	LC	T
35	Common Kingfisher	<i>Alcedo atthis</i>	Maccharikhava	Coraciiformes	Alcedinidae	LC	A
36	Indian pond Heron	<i>Aredeola grayii</i>	Panbilva	Pelecaniformes	Ardeidae	LC	A
37	Cattle Erget	<i>Babulus ibis</i>	Bokli	Pelecaniformes	Ardeidae	LC	T
38	Red wattled Lapwing	<i>Venellus indicus</i>	Titehii	Charadriiformes	Charadriidae	LC	T
39	The Yellow wattled Lapwing	<i>Vanellus malabaricus</i>	Kattu	Charadriiformes	Charadriidae	LC	T
40	Little Erget	<i>Egretta garzetta</i>	patkher	Pelecaniformes	Ardeidae	LC	A
41	Crimson- Throated barbet	<i>Megalaima haemacephala</i>	Ulnii	Piciformes	Megalaimidae	LC	T
42	the Brown Fish Owl	<i>Bubo zeylenensis</i>	Gora	Strigiformes	Strigidae	LC	T
43	Common Green Bee- eater	<i>Merop orientalis</i>	uchai	Coraciiformes	Meropidae	LC	T
44	White wagtail	<i>Motacilla alba</i>	Lohari	Passeriformes	Motacillida	LC	T
45	Blacked – winged Kite	<i>Elanus caeruleus</i>	Saphed Cheel	Accipitriformes	Accipitridae	LC	T
46	Common Pariah kite	<i>Milvus migrans</i>	Cheel	Accipitriformes	Accipitridae	LC	T
47	Indian Wire – Tailed Swallow	<i>Hirundo smithii</i>	Pirri	Passeriformes	Hirunndinidae	LC	T
48	Brown Shrike	<i>Lalius cristatus</i>	Fatehi	Passeriformes	Laniidae	LC	T
49	Paddy field Pipit	<i>Anthus novaeseelandiae</i>	Tiltilli	Passeriformes	Motacillidae	LC	T
50	Yellow Headed Wagtail	<i>Motacilla citreola</i>	Karond	Passeriformes	Motacillidae	LC	T
51	the maypie- robin	<i>Copsychus saularis</i>	Kalifullichiraiya	Passeriformes	Muscicapidae	LC	T
52	Tailor Bird	<i>Orthotomus sutorius</i>	Litehii	Passeriformes	Cisticolidae	LC	T
53	The red Jungle fowl	<i>Gallus gallus</i>	Murgaa	Gallifprmes	Phasianidae	LC	T
54	Yellow throated sparrow	<i>Pentronia xanthocollis</i>	Pargalaiya	Passeriformes	Passeridae	LC	T
55	Red breasted Flycatcher	<i>Ficedula parva</i>	Pilva	Passeriformes	Muscicapidae	LC	T
56	Grey waytail	<i>Motacilla cinerea</i>	Pipi	Passeriformes	Motacillidae	LC	T
57	Yellow checked tit	<i>Machlolopus spilonotus</i>	Kuvar	Passeriformes	Paridae	LC	T
58	The Kestrel	<i>Falco tinnunculus</i>	Phodaki Baj	Falconiformes	Falconidae	LC	T
59	Southern mottled wood- owl	<i>Stix ocelluta</i>	Gugja	Strigiformes	Strigidae	LC	T
60	Common Grey Hornbill	<i>Tokus birostris</i>	Gainti	Bucerotiformes	Bucerotidae	LC	T

LC – Least Concern, T – Terrestrial, A – Aquatic

Table 2. List of birds in Sonmuda during 13 February 2021 – 18 February 2021

SN	Common Name	Scientific Name	Local Name	Order	Family	IUCN STATUS	Habitat
1	Northern Roller	<i>Caracias benghalensis</i>	Neelkanth	Coraciiformes	Coraciidae	LC	T
2	Indian Jungle Crow	<i>Corvus macrorhynchos</i>	Jungly couva	Passeriformes	Corvidae	LC	T
3	The house Crow	<i>Corvus splendens</i>	Couva	Passeriformes	Corvidae	LC	T
4	The Tree- Pie	<i>Dendrocitta vagabunda</i>	Tenva	Passeriformes	Corvidae	LC	T
5	Indian cuckoo	<i>Cuculus micropterus</i>	Kokii	Cuculiformes	Cuculidae	LC	T
6	The Crow- Pheasant or Coacal	<i>Cetropus sinensis</i>	Kummagor	Cuculiformes	Cuculidae	LC	T
7	Jungle Wren - Warbler	<i>Prinia sylvatica</i>	Litaiya	Passeriformes	Cisticolidae	LC	T
8	Pied Crested Cuckoo	<i>Clamator jacobinus</i>	Pareva	Cuculiformes	Cuculidae	LC	T
9	Purple Sunbird	<i>Nectarinia asiatica</i>	Sui chiraiya	Passeriformes	Nectariniidae	LC	T
10	The rose- ringed Parakeet	<i>Psittacula kramera</i>	Karan shua	Psittaciformes	Psittaculidae	LC	T
11	Indian Grey Tit	<i>Parus major</i>	Panndu	Passeriformes	Paridae	LC	T
12	Southern Blossom – headed Parakeet	<i>Psittacula cyanocephala</i>	Mittu	Psittaciformes	psittaculidae	LC	T
13	Red – Vented Bulbul	<i>Pycnonotus cafer</i>	Pilpade	Passeriformes	Pycnontidae	LC	T
14	The House Sparrow	<i>Passer domesticus</i>	Garlaiya	Passeriformes	Passeridae	LC	T
15	The Shama	<i>Copsychus malabaricus</i>	Jungly fullichiraiya	Passeriformes	Muscicapidae	LC	T
16	Indian Pitta	<i>Pitta brachyura</i>	Paknar	Passeriformes	Pittidae	LC	T
17	The Chestnut – bellied Nuthatch	<i>Sitta castanea</i>	Kutturu	Passeriformes	Sittidae	LC	T
18	The Common Myna	<i>Acridotheres tristis</i>	Myna	Passeriformes	Sturnidae	LC	T
19	Black headed Myna	<i>Sturnus pagodarum</i>	Pahadi myna	Passeriformes	Sturnidae	LC	T
20	Orange Minivet	<i>Pericrocotus flammeus</i>	Lalhi	Passeriformes	Leiothrichidae	LC	T
21	Peninsular Jungle Babbler	<i>Turdoides striatus</i>	Khasarre	Passeriformes	Leiothrichidae	LC	T
22	Large Cockoo Shrike	<i>Coracina nivaehollandia</i>	Hafit	Passeriformes	Campephagidae	LC	T
23	The Hoopoe	<i>Upupa epops</i>	Kidarri	Bucerotiformes	Upupidae	LC	T
24	Indian Spotted Dove	<i>Streptopelia chinensis</i>	Phodki	Columbiformes	Columbidae	LC	T
25	Nothern or Lesser Golden – backed Woodpecker	<i>Dinopium benghalense</i>	Kothaphodava	Piciformes	Picidae	LC	T
26	King Crow	<i>Dicrurus adsimilis</i>	Hurchi	Passeriformes	Dicruridae	LC	T
27	Rock Pigeon	<i>Columba livia</i>	Phakta	Columbiformes	Columbidae	LC	T
28	Gold fronted Bulbul	<i>Chloropsis aurifrons</i>	Harei	Passeriformes	Irenidae	LC	T
29	Common Green Pigeon	<i>Treron phoenicoptera</i>	Hariyar phakta	Columbiformes	Columbidae	LC	T
30	Large Green Burbet	<i>Magalaima zeylamica</i>	Parbhat	Piciformes	Ramphastidae	LC	T

SN	Common Name	Scientific Name	Local Name	Order	Family	IUCN STATUS	Habitat
31	Indian Spotted Creeper	<i>Salpornis spilonotus</i>	Uilli	Passeriformes	Certhiidae		T
32	Cattle Erget	<i>Babulus ibis</i>	Bokli	Pelecaniformes	Ardeidae	LC	T
33	Indian Wire – Tailed Swallow	<i>Hirundo smithii</i>	Pirri	Passeriformes	Hirundinidae	LC	T
34	Brown Shrike	<i>Lalrus cristatus</i>	Fatehi	Passeriformes	Laniidae	LC	T
35	Paddy field Pipit	<i>Anthus novaeseelandiae</i>	Tiltilli	Passeriformes	Motacillidae	LC	T
36	the maypie- robin	<i>Copsychus saularis</i>	Kalifullichiraiya	Passeriformes	Muscicapidae	LC	T
37	Tailor Bird	<i>Orthotomus sutorius</i>	Litehii	Passeriformes	Cisticolidae	LC	T
38	Yellow checked tit	<i>Macholopus spilonotus</i>	Kuvar	Passeriformes	Paridae	LC	T
39	Southern mottled wood- owl	<i>Stix ocellata</i>	Gugja	Strigiformes	Strigidae	LC	T

LC – Least Concern, T-Terrestrial

Table 3. List of birds in Mai ki Bagiya during 20 February 2021 – 25 February 2021

SN	Common Name	Scientific Name	Local Name	Order	Family	IUCN STATUS	Habitat
1	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	Chunchun	Passeriformes	Phylloscopidae	LC	T
2	Indian Jungle Crow	<i>Corvus macrorhynchos</i>	Jungly couva	Passeriformes	Corvidae	LC	T
3	The Shama	<i>Copsychus malabaricus</i>	Jungly fullichiraiya	Passeriformes	Muscicapidae	LC	T
4	Purple Sunbird	<i>Nectarinia asiatica</i>	Sui chiraiya	Passeriformes	Nectariniidae	LC	T
5	Indian Grey Tit	<i>Parus major</i>	Panndu	Passeriformes	Paridae	LC	T
6	The White Breasted Waterhen	<i>Amaurornis phoenicurus</i>	Nadhaiyakukri	Gruiformes	Rallidae	LC	T
7	The House Sparrow	<i>Passer domesticus</i>	Garlaiya	Passeriformes	Passeridae	LC	T
8	The Chestnut – bellied Nuthatch	<i>Sitta castanea</i>	Kutturu	Passeriformes	Sittidae	LC	T
9	The Common Myna	<i>Acridotheres tristis</i>	Myna	Passeriformes	Sturnidae	LC	T
10	The White Eye	<i>Zosterops palpebrosa</i>	Pilli	Passeriformes	Zosteropidae	LC	T
11	The Hoopoe	<i>Upupa epops</i>	Kidarri	Bucerotiformes	Upupidae	LC	T
12	Indian Spotted Dove	<i>Streptopelia chinensis</i>	Phodki	Columbiformes	Columbidae	LC	T
13	Rock Pigeon	<i>Columba livia</i>	Phakta	Columbiformes	Columbidae	LC	T
14	Grey Headed canary flycatcher	<i>Culicicapa ceylenensis</i>	Hubu	Passeriformes	Sturnidae	LC	T
15	Indian Pitta	<i>Pitta brachyura</i>	Paknar	Passeriformes	Pittidae	LC	T
16	Lagre Cuckoo Shrike	<i>Coracina novaehollandia</i>	Hafit	Passeriformes	Campephagidae	LC	T
17	Cattle Erget	<i>Babulus ibis</i>	Bokli	Pelecaniformes	Ardeidae	LC	T
18	Brown Shrike	<i>Lalrus cristatus</i>	Fatehi	Passeriformes	Laniidae	LC	T
19	Tailor Bird	<i>Orthotomus sutorius</i>	Litehii	Passeriformes	Cisticolidae	LC	T

SN	Common Name	Scientific Name	Local Name	Order	Family	IUCN STATUS	Habitat
20	Grey waytail	<i>Motacilla cinerea</i>	Pipi	Passeriformes	Motacillidae	LC	T
21	Yellow checked tit	<i>Machlolopus spilonotus</i>	Kuvar	Passeriformes	Paridae	LC	T
22	Indian spotted Creeper	<i>Salpornis spilonotus</i>	Uilli	Passeriformes	Certhiidae	LC	T
23	Southern mottled wood- owl	<i>Stix ocelluta</i>	Gugja	Strigiformes	Strigidae	LC	T
24	The Indian Robin	<i>Saxicoloides fulicata</i>	Fullichiraiya	Passeriformes	Muscicapidae	LC	T

LC – Least Concern, T- Terrestrial

Table 4. List of birds in Chakratirth during 26 February 2021 – 3 March 2021

SN	Common Name	Scientific Name	Local Name	Order	Family	IUCN STATUS	Habitat
1	Indian Jungle Crow	<i>Corvus macrorhynchos</i>	Jungly couva	Passeriformes	Corvidae	LC	T
2	The Pied Bush - chat	<i>Saxicola caprata</i>	Palva	Passeriformes	Muscicapidae	LC	T
3	The Tree- Pie	<i>Dendrocitta vagabunda</i>	Tenva	Passeriformes	Corvidae	LC	T
4	Common Hawk- cuckoo	<i>Cuculus varius</i>	Koili	Cuculiformes	Cuculidae	LC	T
5	The Ashy Wren - Warbler	<i>Prinia socialis</i>	Phitirri	Passeriformes	Cisticolidae	LC	T
6	Jungle Wren - Warbler	<i>Prinia sylvatica</i>	Litaiya	Passeriformes	Cisticolidae	LC	T
7	The Rose – ringed Parakeet	<i>Psittacula krameria</i>	Karan shua	Psittaciformes	Psittaculidae	LC	T
8	Purple – Rumped sunbird	<i>Nectarinia zeylonica</i>	Sui chiraiya	Passeriformes	Nectariniidae	LC	T
9	Indian Grey Tit	<i>Parus major</i>	Panndu	Passeriformes	Paridae	LC	T
10	Southern Blossom – headed Parakeet	<i>Psittacula cyanocephala</i>	Mittu	psittaciformes	psittaculidae	LC	T
11	Wood Snipe	<i>Gallinago nemoricola</i>	Huruthu	Charadriiformes	Scolopacidae	VU	T
12	Little Cormorant	<i>Microcarbo niger</i>	Kirri	Saliformes	Phalacrocoracidae	LC	A
13	The House Sparrow	<i>Passer domesticus</i>	Garlaiya	Passeriformes	Passeridae	LC	T
14	The Baya or common Weaver bird	<i>Ploceus philippinus</i>	Jhulni	Passeriformes	Ploceidae	LC	T
15	White – throated Munia	<i>Lonchura malabarica</i>	Uroa	Passeriformes	Estrididae	LC	T
16	Spotted Munia	<i>Lonchura punctulata</i>	Chekti	Passeriformes	Estrididae	LC	T
17	Large Grey babbler	<i>Turdoides malcolmi</i>	Khasarre	Passeriformes	Leiothrichidae	LC	T
18	The Barn or Screech owl	<i>Tyto alba</i>	Khushra	Strigiformes	Leiothrichidae	LC	T
19	Black Ibis	<i>Pseudibis papillosa</i>	Kokarkhoda	Pelecaniformes	Threskiornithidae	LC	T
20	The Hoopoe	<i>Upupa epops</i>	Kidarri	Bucerotiformes	Upupidae	LC	T
21	Indian Spotted Dove	<i>Streptopelia chinensis</i>	Phodki	Columbiformes	Columbidae	LC	T
22	Nothern or Lesser Golden – backed Woodpecker	<i>Dinopium benghalense</i>	Kothaphodava	Piciformes	Picidae	LC	T

SN	Common Name	Scientific Name	Local Name	Order	Family	IUCN STATUS	Habitat
23	King Crow	<i>Dicrurus adsimilis</i>	Hurchi	Passeriformes	Dicruridae	LC	T
24	Rock Dove	<i>Columba livia</i>	Phakta	Columbiformes	Columbidae	LC	T
25	Common Green Pigeon	<i>Treron phoenicoptera</i>	Hariyar phakta	Columbiformes	Columbidae	LC	T
26	Common Kingfisher	<i>Alcedo atthis</i>	Maccharikhava	Coraciiformes	Alcedinidae	LC	A
27	Indian pond Heron	<i>Ardeola grayii</i>	Panbilva	Pelecaniformes	Ardeidae	LC	A
28	Cattle Erget	<i>Babulus ibis</i>	Bokli	Pelecaniformes	Ardeidae	LC	T
29	Red wattled Lapwing	<i>Venellus indicus</i>	Titehii	Charadriiformes	Charadriidae	LC	T
30	Crimson- Throated barbet	<i>Megalaima haemacephala</i>	Ulnii	Piciformes	Megalaimidae	LC	T
31	the Brown Fish Owl	<i>Bubo zeylenensis</i>	Gora	Strigiformes	Strigidae	LC	T
32	Common Green Bee- eater	<i>Merop orientalis</i>	Uchai	Coraciiformes	Meropidae	LC	T
33	Southern Large racket- Tailed Drongo	<i>Dicrurus paradiseus</i>	Chhot Hurchi	Passeriformes	Dicruridae	LC	T
34	Blacked – winged Kite	<i>Elanus caeruleus</i>	Saphed Cheel	Accipitriformes	Accipitridae	LC	T
35	Indian Couser	<i>Cursorius coromanddeliues</i>	Matiaha	Charadriiformes	Glareolidae	LC	T
36	Indian Wire – Tailed Swallow	<i>Hirundo smithii</i>	Pirri	Passeriformes	Hirundinidae	LC	T
37	Ashy – Crown finch Lark	<i>Eremopterix grisea</i>	Ban Galaiya	Passeriformes	Alaudidae	LC	T
38	Paddy field Pipit	<i>Anthus novaeseelandiae</i>	Tiltilli	Passeriformes	Motacillidae	LC	T
39	Yellow Headed Wagtail	<i>Motacilla citreola</i>	Karond	Passeriformes	Motacillidae	LC	T
40	the maypie- robin	<i>Copsychus saularis</i>	Kalifullichiraiya	Passeriformes	Muscicapidae	LC	T
41	Orang Minivet	<i>Pericrocotus flammeus</i>	Lalhi	Passeriformes	Campephagidae	LC	T
42	Sand piper	<i>Tringa totanus</i>	Nadaiya	Charadriiformes	Scolopacidae	LC	A
43	The Gold- fronted Bulbul	<i>Chloropsis aurifrons</i>	Hrei	Passeriformes	Irenidae	LC	T
44	The Rufous Backed Shrike	<i>Lanius schach</i>	Fatehi	Passeriformes	Laniidae	LC	T
45	Large Cuckoo shrike	<i>Coracina novaehollandia</i>	Hafit	Passeriformes	Campephagidae	LC	T
46	Rufous- Woodpecker	<i>Micropternus brachyurus</i>	Khotkhota	Piciformes	Picidae	LC	T
47	Hill pigeon	<i>Columba rupestris</i>	Phakta	Columbiformes	Columbidae	LC	T
48	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	Chunchun	Passeriformes	Phylloscopidae	LC	T
49	Red – Whiskered Bulbul	<i>Pycnonotus jocosus</i>	Puhap	Passeriformes	Pycnonotidae	LC	T
50	Yellow throated sparrow	<i>Pentronia xanthocollis</i>	Pargalaiya	Passeriformes	Passeridae	LC	T
51	Jungly Myna	<i>Acridotheres fuscus</i>	Jungly Myna	Passeriformes	Sturnidae	LC	T
52	Grey waytail	<i>Motacilla cinerea</i>	Pipi	Passeriformes	Motacillidae	LC	T
53	Yellow checked tit	<i>Macholopus spilonotus</i>	Kuvar	Passeriformes	Paridae	LC	T
54	The Kestrel	<i>Falco tinnunculus</i>	Phodaki Baj	Falconiformes	Falconidae	LC	T

LC- Least Concern, VU – Vulnerable, T- Terrestrial, A – Aquatic

Table 5. List of birds in Kapilasangam during 4 March 2021 – 9 March 2021

SN	Common Name	Scientific Name	Local Name	Order	Family	IUCN STATUS	Habitat
1	Indian Jungle Crow	<i>Corvus macrorhynchos</i>	Jungly couva	Passeriformes	Corvidae	LC	T
2	The house Crow	<i>Corvus splendens</i>	Couva	Passeriformes	Corvidae	LC	T
3	The Crow- Pheasant or Coacal	<i>Cetropus sinensis</i>	Kummagor	Cuculiformes	Cuculidae	LC	T
4	Jungle Wren - Warbler	<i>Prinia sylvatica</i>	Litaiya	Passeriformes	Cisticolidae	LC	T
5	Purple Sunbird	<i>Nectarinia asiatica</i>	Sui chiraiya	Passeriformes	Nectariniidae	LC	T
6	Red – Vented Bulbul	<i>Pycnonotus cafer</i>	Pilpade	Passeriformes	Pycnontidae	LC	T
7	Little Cormorant	<i>Microcarbo niger</i>	Kirri	Saliformes	Phalacrocoracidae	LC	A
8	The House Sparrow	<i>Passer domesticus</i>	Garlaiya	Passeriformes	Passeridae	LC	T
9	The Baya or common Weaver bird	<i>Ploceus philippinus</i>	Jhulni	Passeriformes	Ploceidae	LC	T
10	The Common Myna	<i>Acridotheres tristis</i>	Myna	Passeriformes	Sturnidae	LC	T
11	Black headed Myna	<i>Sturnus pagodarum</i>	Pahadi myna	Passeriformes	Sturnidae	LC	T
12	Large Grey babbler	<i>Turdoides malcolmi</i>	Khasarre	Passeriformes	Leiothrichidae	LC	T
13	Peninsular Jungle Babbler	<i>Turdoides striatus</i>	Khasarre	Passeriformes	Leiothrichidae	LC	T
14	Black Ibis	<i>Pseudibis papillosa</i>	Kokarkhoda	Pelecaniformes	Threskiornithidae	LC	T
15	The Hoopoe	<i>Upupa epops</i>	Kidarri	Bucerotiformes	Upupidae	LC	T
16	Indian Spotted Dove	<i>Streptopelia chinensis</i>	Phodki	Columbiformes	Columbidae	LC	T
17	Nothorn or Lesser Golden – backed Woodpecker	<i>Dinopium benghalense</i>	Kothaphodava	Piciformes	Picidae	LC	T
18	King Crow	<i>Dicrurus adsimilis</i>	Hurchi	Passeriformes	Dicruridae	LC	T
19	Pied Myna	<i>Gracupica contra</i>	Galri	Passeriformes	Sturnidae	LC	T
20	Lesser – pied kingfisher	<i>Ceryle rudis</i>	Dudhuru	Coraciiformes	Alcedinidae	LC	A
21	Common Kingfisher	<i>Alcedo atthis</i>	Maccharikhava	Coraciiformes	Alcedinidae	LC	A
22	Indian pond Heron	<i>Ardeola grayii</i>	Panbilva	Pelecaniformes	Ardeidae	LC	A
23	Cattle Erget	<i>Babulus ibis</i>	Bokli	Pelecaniformes	Ardeidae	LC	T
24	Red wattled Lapwing	<i>Venellus indicus</i>	Titehii	Charadriiformes	Charadriidae	LC	T
25	Little Erget	<i>Egretta garzetta</i>	Patkher	Pelecaniformes	Ardeidae	LC	T
26	The White – Breasted Kingfisher	<i>Halcyon smyrnensis</i>	Machharaha	Coraciiformes	Alcedinidae	LC	A
27	Common Green Bee- eater	<i>Merop orientalis</i>	Uchai	Coraciiformes	Meropidae	LC	T
28	The White wagtail	<i>Motacilla alba</i>	Lohari	Passeriformes	Motacillidae	LC	T
29	The Rufous backed Shrike	<i>Lanius schach</i>	Fatehi	Passeriformes	Laniidae	LC	T
30	Indian Wire – Tailed Swallow	<i>Hirundo smithii</i>	Pirri	Passeriformes	Hirundinidae	LC	T
31	Paddy field Pipit	<i>Anthus novaeseelandiae</i>	Titilli	Passeriformes	Motacillidae	LC	T

SN	Common Name	Scientific Name	Local Name	Order	Family	IUCN STATUS	Habitat
32	The maypie- robin	<i>Copsychus saularis</i>	Kalifullchiraiya	Passeriformes	Muscicapidae	LC	T
33	Tailor Bird	<i>Orthotomus sutorius</i>	Litehii	Passeriformes	Cisticolidae	LC	T
34	The red Jungle fowl	<i>Gallus gallus</i>	Murgaa	Galliformes	Phasianidae	LC	T
35	Yellow checked tit	<i>Machlolopus spilonotus</i>	Kuvar	Passeriformes	Paridae	LC	T

LC – Least Concern, T- Terrestrial, A – Aquatic

Table 6. List of birds in Main Mandir during 10 March 2021 – 12 March 2021

SN	Common Name	Scientific Name	Local Name	Order	Family	IUCN STATUS	Habitat
1	Indian Jungle Crow	<i>Corvus macrorhynchos</i>	Jungly couva	Passeriformes	Corvidae	LC	T
2	The house Crow	<i>Corvus splendens</i>	Couva	Passeriformes	Corvidae	LC	T
3	Purple Sunbird	<i>Nectarinia asiatica</i>	Sui chiraiya	Passeriformes	Nectariniidae	LC	T
4	The House Sparrow	<i>Passer domesticus</i>	Garlaiya	Passeriformes	Passeridae	LC	T
5	The Common Myna	<i>Acridotheres tristis</i>	Myna	Passeriformes	Sturnidae	LC	T
6	Indian Spotted Dove	<i>Streptopelia chinensis</i>	Phodki	Columbiformes	Columbidae	LC	T
7	Rock Pigeon	<i>Columba livia</i>	Phakta	Columbiformes	Columbidae	LC	T
8	Pied Myna	<i>Gracupica contra</i>	Galri	Passeriformes	Sturnidae	LC	T
9	Cattle Erget	<i>Babulus ibis</i>	Bokli	Pelecaniformes	Ardeidae	LC	T
10	Tailor Bird	<i>Orthotomus sutorius</i>	Litehii	Passeriformes	Cisticolidae	LC	T
11	Hill pigeon	<i>Columba rupestris</i>	Phakta	Columbiformes	Columbidae	LC	T

LC – Least Concern, T – Terrestrial

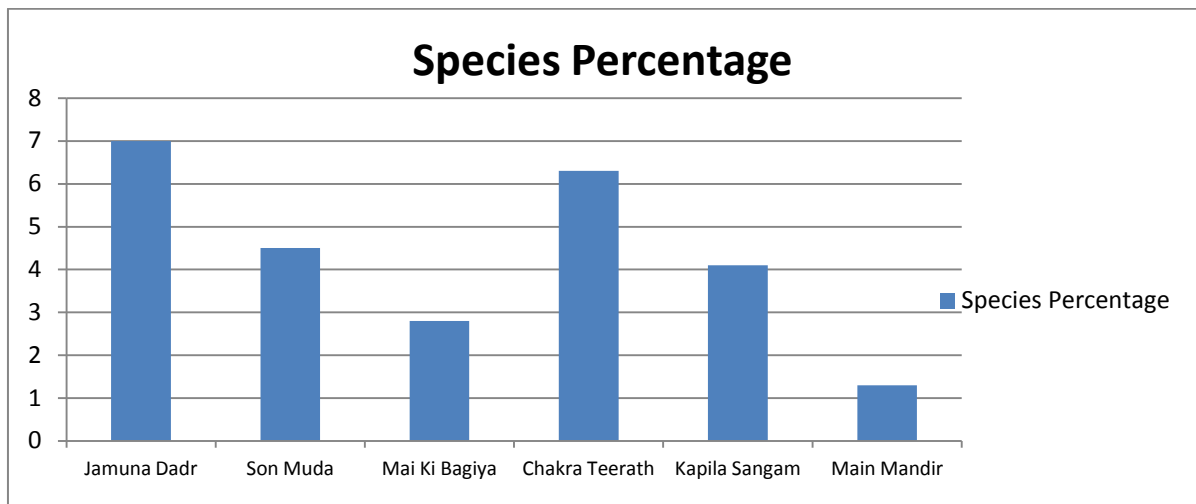


Fig. 2. Avian fauna diversity in 6 different areas of Amarkantak

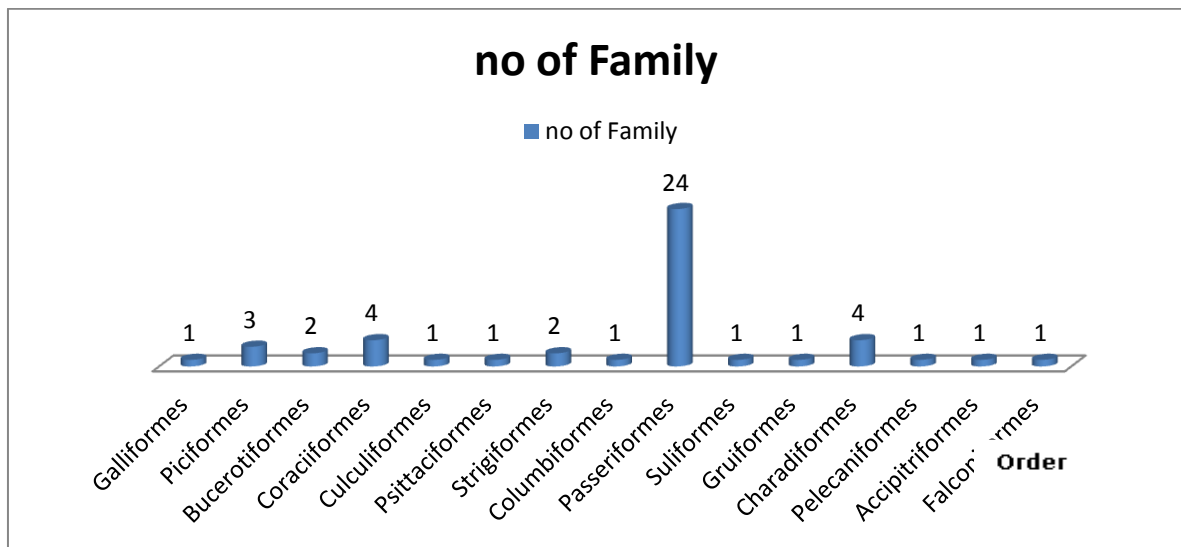


Fig. 3. Number of bird Families in Amarkantak

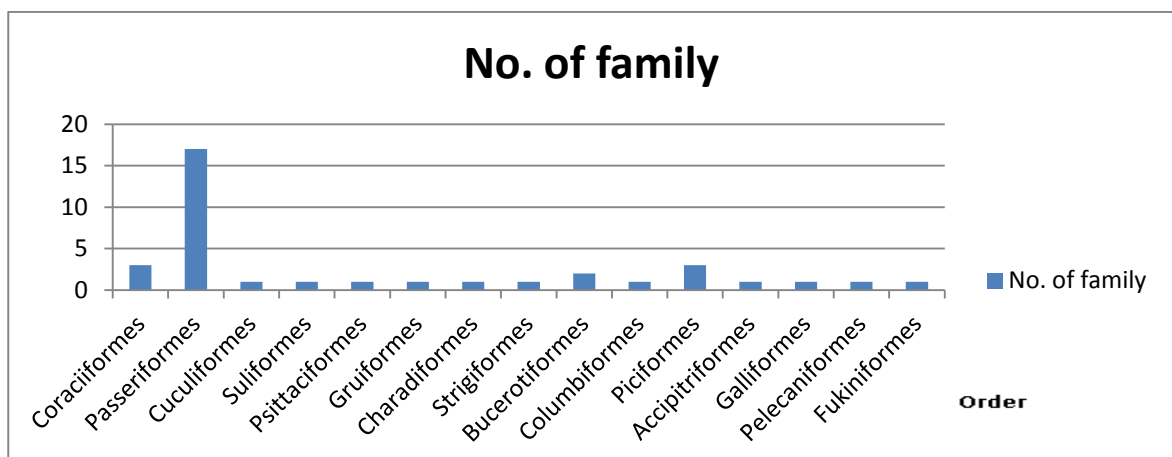


Fig. 4. Graphical representation of Bird's families in Jamunadhadar

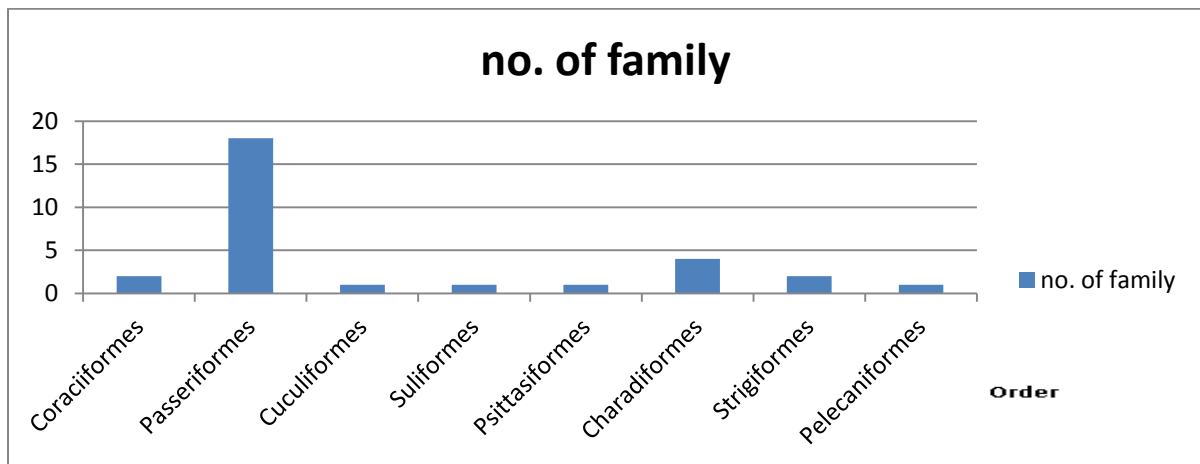


Fig. 5. Graphical representation of Bird's family in Sonmuda

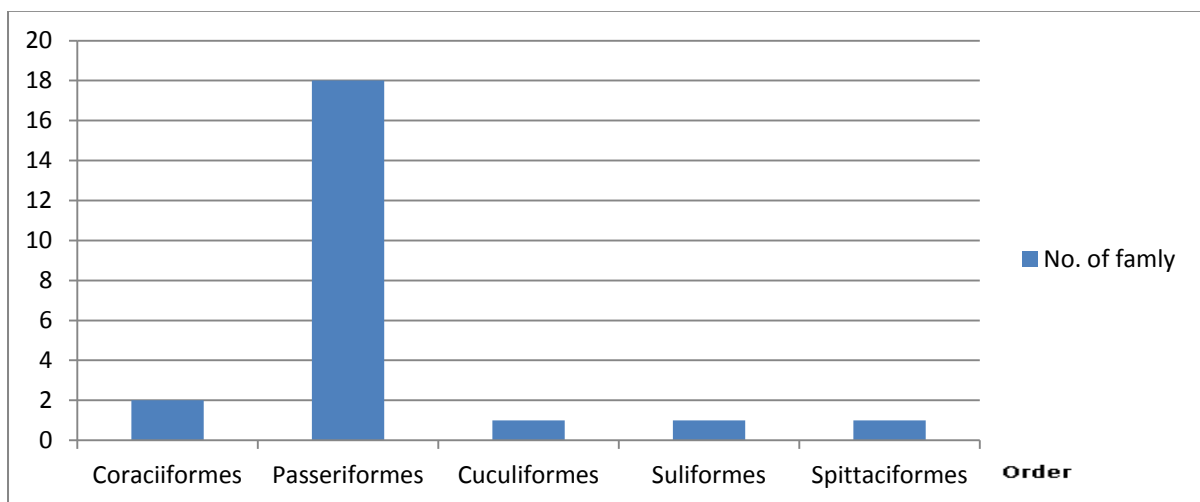


Fig. 6. Graphical representation of Bird's family in Mai ki Bagiya

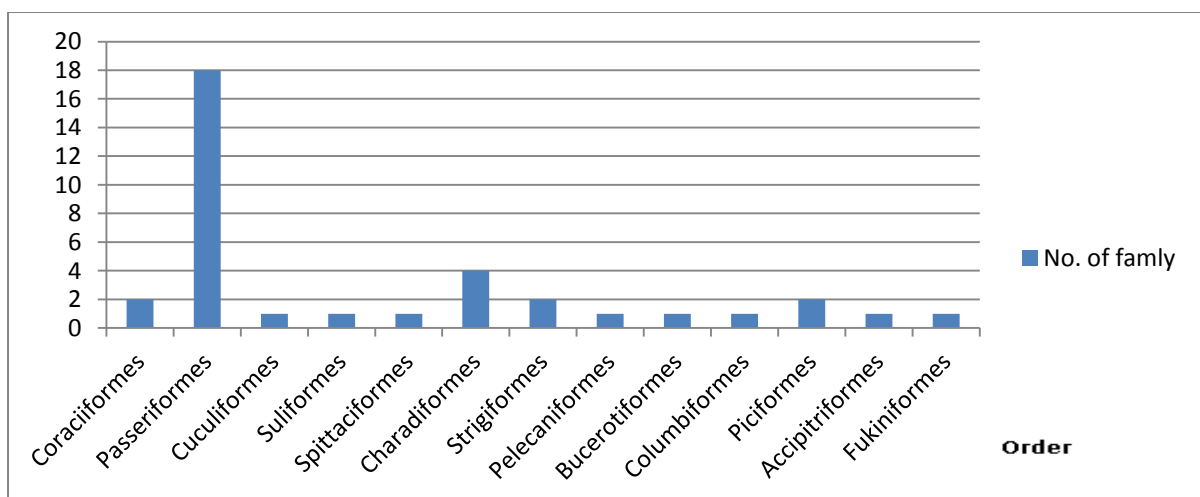


Fig. 7. Graphical representation of Bird's family in Chakratirth

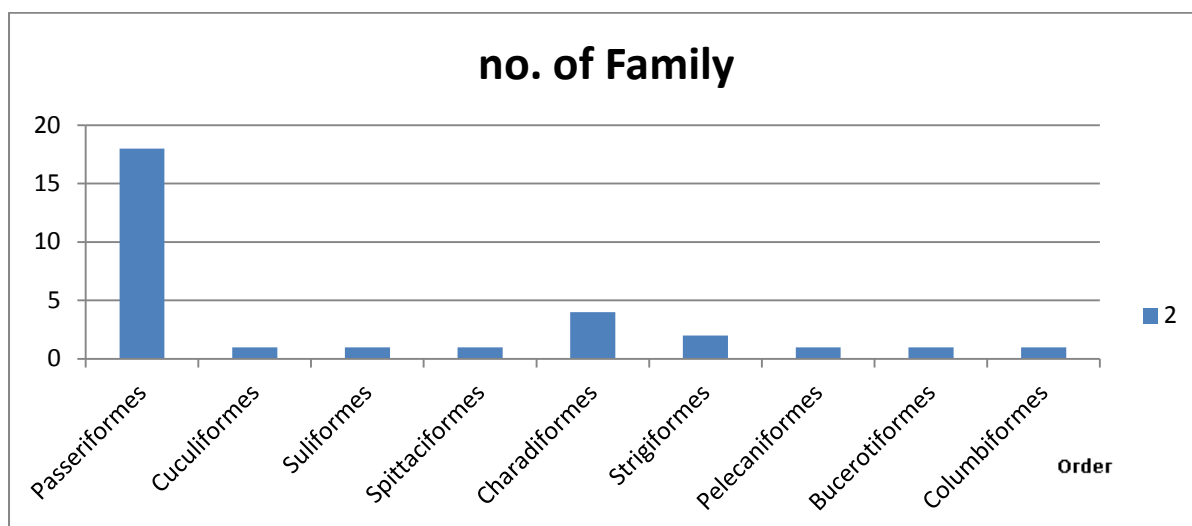


Fig. 8. Graphical representation of Bird's family in Kapilasangam

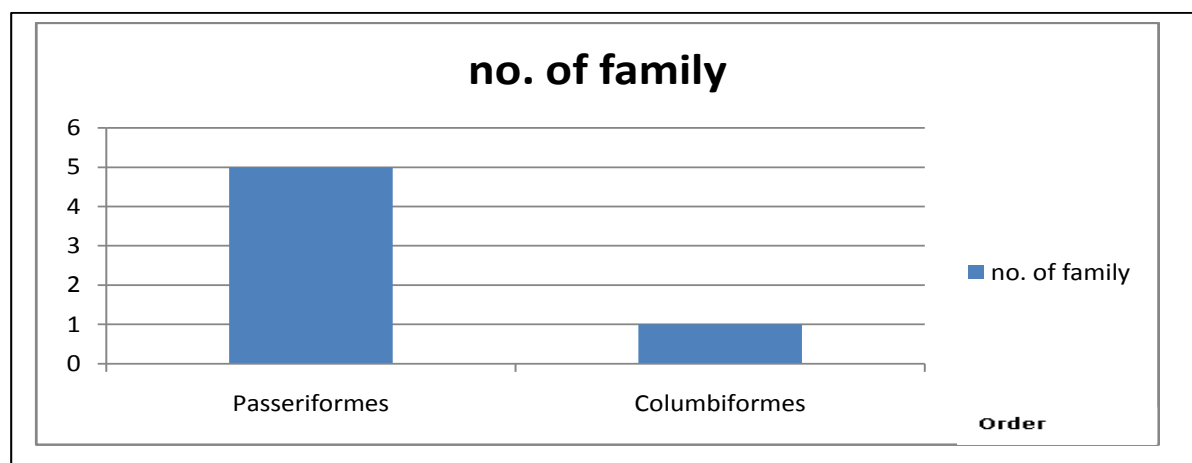


Fig. 9. Graphical representation of Bird's family in Maim Mandir

3. RESULTS AND DISCUSSION

In Six different areas, 85 species belonging to 15 orders and 48 families were identified during fieldwork. Jamunadhadar has the richest avian fauna diversity with 60 species (Table 1), followed by Chakratirth having 54 species (Table 4), then Sonmuda having 39 species (Table 2), and the least number of avian fauna recorded was 11 at Main Mandir (Table 6).

Out of 85 species, 44 species belonging to 24 families of Passeriformes, five species belonging to 3 families of Coraciiformes, four species belonging to 2 families of Cuculiformes, five species belonging to 3 families of Charadriiformes, four species belonging to 2 families of Strigiformes, two species belonging to 2 families of Bucerotiformes, two species belonging to 1 family of Accipitriformes, three species belonging

to 1 family of Columbiformes, two species belonging to 1 family of Suliformes, one species belonging to Pelecaniformes, one species belonging to Galliformes, one species belonging to Falconiformes, three species belonging to 2 families of Psittaciformes, five species belonging to 2 families of Gruiformes, three species belonging to 3 families of Piciformes.

Indian crow (*Corvus macrorhynchos*), Purple sunbird (*Nectarinia asiatica*), the house sparrow (*Passer domesticus*), Common Myna (*Acridotheres tristis*), Hoopoes (*Upupa epops*), Indian spotted dove (*Streptopelia chinensis*), Rock pigeon (*Columba livia*), Cattle Erget (*Bubulcus ibis*) and Yellow Checked tit (*Machlolophas spilonotus*) are most common birds of Amarkantak which may be easily seen in most areas of Amarkantak.

Except for the one species, spotted creeper (*Salpornis spilonotus*), All my recorded birds are common in Achanakmar – Amarkantak Biosphere Reserve [34]. In their survey, 48 birds were sighted in different areas of Amarkantak. These birds are also listed in the previous year's survey of Kanha Tiger Reserve, M.P. [35]. Red-naped ibis (*Pseudibis papillosa*) was not recorded in Amarkantak by Joshi [34]. In the present finding, this bird was sighted in 3 areas – Jamunadhader (Table 1), Chakrartirth (Table 4), and Kapilasangam (Table 5). They prefer rural areas and the tallest tree for nesting [36]. Tree height varies from 4.81 to 13.00m, and that requirement is fulfilled by sal tree (*Shorea robusta*) and Pine tree (*Pinus roxburghii*) of Amarkantak forest. Another species is the Spotted creeper (*Salpornis spilonotus*) which is not listed in any area of Achanakmar – Amarkantak Biosphere Reserve by Tiple [37] while common in Kanha Tiger Reserve [35]. I sighted this bird in 2 areas – Jamunadhader (Table 1), Somuda (Table 2).

In the Present time, Anthropogenic activities directly affect on density and diversity of birds in any particular area [38]. Many pesticides used by farmers decrease the number of birds [23]. Many birds feed on grain, fruits green vegetation of the crop plants; hence some time they create a negative effect on agriculture activities [39]. The study on "Damage to agriculture yield due to farmland Birds, present repelling techniques and its impact" [40], reveal that the techniques like drum sticking, models of scares (statues like a man), and birds repelling like neem powder are not effective for repelling the birds. In this condition, the farmer gives priority to killing the birds to free the problem of birds. Urbanization is another problem for birds. The high rate of urbanization reduces habitat and food availability, resulting in low population levels such as the Vulture in India [41].

The survey conducted by Kushwaha, 10) in Orchha reveals that rapid urbanization in tourist places supports the biodiversity in tourist places in many aspects. Old temples provide a nesting place and habitat to birds and local people, and tourists also indirectly support the biodiversity by providing grain and avoiding hunting. During fieldwork, two species of Pigeon (*Columba rupestris*, *Columba livia*) were recorded in temples with high density [42-46].

Deforestation for increasing agriculture field is a burning problem for Biodiversity in Amarkantak. As it comes under the buffer zone of Achanakmar – Amarkantak Biosphere Reserve, many activities are going on to conserve Biodiversity in that area under the control of the Government [47-51]. In 2014, under the guidance of Madhya Pradesh Pollution Control Board, Bhopal, the Southeastern Coalfield Limited

[52] Sohagpur company has planted multiple plants in the unusual open land of many areas of Amarkantak that include many colonies like the Main mandir, Jamuna dhader, Tikaritola, Kapilasangam, Sonmuda and Mai ki Bagiya (SECL annual report 2015-16). It is an effective effort to increase Fauna and Flora diversity in Amarkantak, especially in colonies.

4. CONCLUSION

With 60 bird species, Jamunadhader is the wealthiest area of avian fauna; Dam, agriculture fields, small ponds, and grasslands serve as a better habitat for different birds. Some tribal people are hunting the birds, so there is unequal diversity of birds in Jamunadhader as it is a big colony. Tribal people occupy some areas with shallow diversity of birds even though there is more greenery than other areas of the same colony. Gardening and replanting in Jamunadhader and other areas may be the best way to increase avian diversity.

Spotted creeper (*Salpornis spilotus*) sighted at Jamunadhader and Sonmuda. It was not recorded in previous year survey of Achanakmar-Amarkantak Biosphere Reserve. Red naped Ibis (*Pseudibis papillosa*) is another bird which was not sighted in Amarkantak in previous survey, this bird in Jamunadhader and Chakrartirth and Kapilasangam has seen in this study.

Due to the absence of Ornithological activities and continuous surveys in previous years, the actual diversity of Avian fauna in Amarkantak in the current time is unknown.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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