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Study of avian diversity and nesting ecology of Pimpaldari forest, Hingoli District (M.S.)

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Abstract

The Pimpaldari forest area is rich in bird diversity. The Pimpaldari forest provide vital role for present avian fauna and flora with great place to eat rest and breed. This forest are the part of the ecosystem and environment birds are the great way to monitor the environment for the conservation and protection of bird species and their ecology is to important to understand their life cycle, habitat and ecosystem. This study was conducted to explore the bird diversity and nesting ecology of Pimpaldari forest area of Hingoli district of Maharashtra. Observations were made in the Pimpaldari forest and its surrounding areas from January 2023 to January 2024 for 2 hours after sunrise and 2 hours before sunset at each location in the Pimpaldari forest and its surrounding areas. During the study period, 68 species of birds belonging to 34 different families were recorded and a total of 86 nests were recorded. The highest numbers of nests were made by the House Sparrow 16, followed by Common Myna 09, Baya weavers 07 Rose Ringed Parakeet 6 and Jungle Crow 5, etc. Apart from this, it was observed that the birds used the trees and shrubs adjacent to the forest area for nesting. Maximum birds species were sighted during the winter season some were found to be migratory and most being resident. The species recorded include 36 Residential common, 9 Residential uncommon, 6 Residential, 3 Winter migrant common, 3 Winter migrant, 2 Migratory, 3 Residential migrant common, 1 Migrant uncommon, 1 Resident common rare and 2 Residential rare are observed.

Keywords: Avian diversity and nesting ecology, Pimpaldari forest, Hingoli

Introduction

Hingoli district in Maharashtra has a forest area of approximately 2.32% of its total geographical area, which is about 4.827sq km and approximately 275 sq km of forest area. The major forest area in the district is in Aundha taluka which is about 10432 hectares Aundha Nagnath is one of the taluka of Hingoli district (M.S.) is 25 k.m.away from Hingoli and pimpaldari village and forest area located in the Aundha taluka of Hingoli district of Maharashtra. The present study served part chosen sides at pimpaldari forest within 5 km radius of the organisation for pimpaldari village and forest the selected spots and sites are largely fully covered by different trees like teak trees, fruits trees small different types of bushes, grasses, dry deciduous area Present many type of trees available for the nesting of birds. Besides area mixed agriculture, plots, fields, native vegetation.

Forest provide the essential resources necessary for the completion of life cycle including food for adult nesting and nesting sides their demands for food are higher and are likely to be more sensitive to changes in forest resources Jeffery. A. *et al* 2015 we represent in this paper Avian diversity and nesting ecology of pimpaldari forest district Hingoli There is a no scientific data available on the Avian fauna and nesting ecology of pimpaldari forest

Materials and Methods

The observation was carried out by using a field binocular, digital photo camera which is later analyse and identified to bird species with the help of standard literature and direct count method was used to record the avian diversity and nesting ecology monitored by using a pair of 10X50 binocular. Fieldwork was carried out during the time period January 2023 to January 2024 also direct observation and species noting was made by walking on grassland, tracking on road sides in and around forest areas and behaviour and nesting ecology observed during the study period The plant species also identified and recorded.

Table 1: Check list of Birds recording in and around Pimpaldari Forest area.

Sr. No.	Common Name/Family	Scientific Name	Habitat Status	Count
1	Pelecaniformes Ardeidae			
1	Indian pond heron	<i>Ardeola grayii</i> (Skyles, 1832)	RC	10
2	Perple heron	<i>Ardea purpurea</i> (Linnaeus, 1766)	RC	3
3	Grey heron	<i>Ardea cinerea</i> (Linnaeus, 1758)	RC	11
4	Cattle egret	<i>Bubulcus ibis</i> (Linnaeus, 1758)	RC	14
5	Little egret	<i>Egretta garletta</i> (Linnaeus, 1766)	RC	30
2	Suliformes Phalacrocoracidae			
6	Little cormorant	<i>Phalacrocorax niger</i> (Vieillot, 1817)	RMc	50
7	Indian Shag	<i>Phalacrocorax niger fuscicollis</i> (Stephens, 1826)	RMc	4
3	Threskiornithidae			
8	Black headed ibis	<i>Threskiornis melanocephalus</i> (Latham, 1790)	RU	6
9	Red naped ibis	<i>Pseudibis Papillosa</i> (Temminck, 1824)	RU	4
10	Eurasian spoonbill	<i>Platalea leucordia</i> (Linnaeus, 1758)	WMu	6
4	Anseriformes Anatidae			
11	Indian spot billed duck	<i>Anas poecilorhyncha</i> (Forster JR, 1781)	RC	52
12	Common teal	<i>Anas crecca</i> (Linnaeus, 1758)	RC	20
13	Brahminy Shelduck	<i>Tadorna ferruginea</i> (Pallas, 1764)	WM	25
14	Red crested pochard	<i>Neeta rufina</i> (Pallas, 1773)	M	2
15	Common Pochard	<i>Aythya ferina</i> (Linnaeus, 1758)	M	4
5	Gruiformes Rallidae			
16	Euracian coot	<i>fulica atra</i> (Linnaeus, 1758)	RC	52
17	Purple Moorhen	<i>Porphyrio porphyrio</i> (Linnaeus, 1758)	RC	8
18	White breasted waterhen	<i>Amauornis phoenicurus</i> (Pennant, T 1769)	RC	5
6	Coraciiformes Alcedinida			
19	White throated kingfisher	<i>Halcyon smyrnensis</i> (Linnaeus, 1758)	RC	30
20	Blue eared kingfisher	<i>Alcedo meninting</i> (Horsfield, 1821)	RU	6
21	Lesser pied kingfisher	<i>Ceryle rudis</i> (Linnaeus, 1758)	RC	2
7	Meropidae			
22	Green bee eater	<i>Merops orientalis</i> (Latham, 1801)	RC	34
23	Little bee-eater	<i>Merops pusillus</i> Müller, PLS, 1776	RC	30
8	Coraciidae			
24	Indian Roller	<i>Coracias benghalensis</i> (Linnaeus, 1758)	Rr	3
9	Characriiformes charadriidae			
25	Red wattled lapwing	<i>Vanellus indicus</i> (Boddaert, 1783)	RCr	58
26	Little ringed plover	<i>Charadrius dubius</i> (Scopoli, 1786)	WMc	8
27	Green sand plover	<i>Charadrius mongolus</i> (Lesson, 1826)	WM	21
10	Recurlirostridae			
28	Black winged stilt	<i>Himantopus himantopus</i> (Linnaeus, 1758)	WMc	18
11	Scolopacidae			
29	Broad billed sandpiper	<i>Calidris falcinellus</i> (Pontoppidan, 1763)	WM	8
30	Common Sandpiper	<i>Actitis hypoleucos</i> (Linnaeus, 1758)	WMc	10
12	Laridae			
31	River tern	<i>Sterna aurantia</i> (Gray, JE, 1831)	RU	2
13	Glareolidae			
32	Small pratincole	<i>Glareola lactea</i> (Temminck, 1820)	RC	2
14	Podicipediformes Podicipedidae			
33	Black necked grabe	<i>podiceps nigricollis</i> (Brehm, 1831)	RC	13
34	Little grabe	<i>Tachybaptus ruficollis</i> (Pallas, 1764)	RC	8
15	Ciconiiformes ciconidae			
35	White necked stork	<i>Ciconia episcopus</i> (Boddaert, 1783)	RC	10
16	Columbiformes Columbidae			
36	Little brown dove	<i>Spilopelia senegalensis</i> (Linnaeus, 1766)	RC	3
37	Eurasian collared dove	<i>Streptopelia decaocto</i> (Frisvaldszky, 1838)	RC	8
38	Spotted dove	<i>Spilopelia Chinensis</i> (Scopoli, 1768)	RC	12
39	Blue Rock pigeon	<i>Columba livia</i> (Gmelin, JF, 1789)	RC	24
17	Passeriformes Nectariniidae			
40	Purple sunbird	<i>Cinnyris asiaticus</i> (Latham, 1790)	R	2
41	Common Swallow	<i>Hirundo rustica</i> Hirundinidae (Rafinesque, 1815)	RMc	2
42	House Swallow	<i>Hirundo tahitica</i> (Hirundo rustica Linnaeus, 1758)	RC	2
18	Pycnonotidae			
43	Red vented bulbul	<i>Pycnonotus cafer</i> (Linnaeus, 1766)	RC	54
44	Black Bulbul	<i>Hypsipetes leucocephalus</i> (Gmelin, JF, 1789)	Rr	50
19	Estrildidae			
45	Scaly-breasted munia	<i>Lonchura punctulata</i> (Linnaeus, 1758)	R	4
20	Alaudidae			
46	Ashy crowned finch lork	<i>Erenopterix griseus</i> (Scopoli, 1786)	RU	10
21	Dicruridae			

47	Black drongo	<i>Dicrurus macrocercus</i> (Vieillot, 1817)	RC	14
48	White-bellied drongo	<i>Dicrurus caeruleus</i> (Linnaeus, 1758)	RC	8
22	Passeridae			
49	House sparrow	<i>Passer domesticus</i> (Linnaeus, 1758)	RC	106
23	Corvidae			
50	House crow	<i>Corvus splendens</i> (Vieillot, 1817)	RC	51
51	Jungle crow	<i>Corvus macrorhynchos</i> (Wagler, 1827)	RC	14
24	Sturnidae			
52	Common myna	<i>Acridotheres tristis</i> (Linnaeus, 1766)	RC	25
53	Brahminy starling myna	<i>Sturnia pagodarum</i> (Gmelin, JF, 1789)	RC	10
54	Asian Pied starling	<i>Sturnus contra</i> Gracupica contra (Linnaeus, 1758)	RC	6
55	Indian pied myna	<i>Gracupica contra</i> (Linnaeus, 1758)	RC	4
25	Aegithinidae			
56	Common iora	<i>Aegithina tiphia</i> (Linnaeus, 1758)	RU	2
26	Cisticolidae			
57	Common tailorbird	<i>Orthotomus sutorius</i> (Pennant, 1769)	R	2
27	Muscicapidae			
58	Indian robin	<i>Copsychus fulicatus</i> (Linnaeus, 1766)	RU	10
28	Motacillidae			
59	Western yellow wagtail	<i>Motacilla flava</i> (Linnaeus, 1758)	WMC	10
60	White wagtail	<i>Motacilla alba</i> (Linnaeus, 1758)	MU	4
29	Hirundinidae			
61	Wire-tailed Swallow	<i>Hirundo smithii</i> (Leach, 1818)	RU	22
30	Galliformes Phasianidae			
62	Indian peafowl	<i>Pavo cristatus</i> (Linnaeus, 1758)	R	8
31	Accipitriformes Accipitridae			
63	Black winged kite	<i>Elanus careuleus</i> (Desfontaines, 1789)	R	6
64	Black kite	<i>Milvus migrans</i> (Boddaert, 1783)	R	4
32	Cuculiformes Cuculidae			
65	Asian koel	<i>Eudynamis scolopacea</i> (Linnaeus, 1758)	RC	18
33	Psittaciformes Psittaculidae			
66	Rose ringed parakeet	<i>Psittacula krameri</i> (Scopoli, 1769)	RC	52
34	Alcedinidae			
67	Small Blue Kingfisher	<i>Alcedo atthis</i> (Linnaeus, 1758)	RU	8
68	White-throated Kingfisher	<i>Halcyon smyrnensis</i> (Linnaeus, 1758)	RC	6

Abbreviation in Habitat Status R= Resident, RC= Resident Common, RMc = Residential Migrant Common, RU = Resident Uncommon, WMu = Winter Migrant Uncommon, WM = Winter Migrant, M = Migrant, MU = Migrant Uncommon, WMr = Winter Migrant Rare, RCr = Resident Common Rare, Rr = Resident Rare, WMc = Winter Migrant Common.

Table 2: List of Birds Species, Nest sites, Nest types & No. Of Nests.

Sr. No.	Birds Species	Nest site	Nest type	No of Nests
1	White-breasted Waterhen	Bushes	Cup Nest	02
2	Red wattled lapwing	Ground	Ground Nest	03
3	Little brown dove	Bushes, Tree	Platform Nest	01
4	Spotted dove	Bushes, Small tree	Platform Nest	03
5	Blue Rock pigeon	Towers	Platform Nest	02
6	Red vented bulbul	Tree	Cup Nest	04
7	Black drongo	Tree	Cup Nest	04
8	House sparrow	Tree	Platform Nest	16
9	House crow	Tree	Platform nest	04
10	Jungle crow	Tree	Platform Nest	05
11	Common myna	Cavity, Tree Hole	Hole Nest	09
12	Brahminy starling myna	Tree Hole	Hole Nest	02
13	Common iora	Tree	Cup Nest	01
14	Common tailorbird	Tree	Cup Nest	01
15	Indian robin	Tree Hole, Wall	Hole Nest	02
16	Rose ringed parakeet	Tree Holes	Hole Nest	06
17	Cattle egret	Bushes, Tree	Platform Nest	05
18	Baya weavers	Tree	Pendent Nest	07
19	Black kite	Tree canopy	Platform Nest	03
20	Common woodshrike	Trees	Cup Nest	06

Results and Discussion

In total 68 birds species belonging to 34 families were recorded during the study period (table 01) of these 20 species were observed nesting in the areas (table 02) in total 86 nests were recorded the highest number of nests were by House sparrow 16, Common myna 09, Baya weaver 07 Rose

ringed parakeet 6, Jungle crow 5, Red vented bulbul 4, House crow 4, Black drongo 4, Spotted dove 3, Red wattled lapwing 3, Indian robin 2, Brahminy starling myna 2, Blue Rock pigeon 2, White breasted Waterhen 2, Common tailorbird 1, Common iora 1 & Little brown dove 1. Also, during the study period, 4 types of nests of different birds

were observed, including these: Platform Nest 46, Hole Nest 19, Cup Nest 18 & Ground Nests 3 are observed and recorded during field work. In generally the nesting behaviour of the birds in Pimpaldari forest area indicates that most of the terrestrial birds prefer either large canopy trees are thorny bushes for nesting, probably to avoid predation.

Since the Pimpaldari forest is rich in bird diversity, no scientific data is available on nests and hence the biodiversity of birds and nests is currently being studied. Apart from this, the trees and shrubs adjacent to the forest area include Neem (*Azadirachta indica*), Mango (*Mangifera Indica*), Chinch (*Tamarindus indica*), Palas (*Butea monospemea*), Jambhul (*Syzygium cumini*), Banyan (*Ficus benghalensis*), Ber (*Ziziphus mauritiana*), Kauth (*Limonia acidissima*), Bael (*Aegle marmelos*), Mahua (*Madhuca longifolia*), Guava (*Psidium guajava*), (*Psidium guajava*), Ashoka (*Saraca asoca*), Karanja (*Millettia pinnata*), Lemon (*Citrus limon*), Gulmohar (*Delonix regia*), Amla (*Phyllanthus emblica*), Almond (*Terminalia catappa*), Babul (*Vachellia nilotica*), Eucalypt (*Eucalyptus obliqua*) etc. Various bird nests were found on the trees.

Also, agriculture was seen around the Pimpaldari forest. Farmers were found to be growing various types of seasonal crops in these fields are include Kalachana (*Cicer arietinum*), Wheat (*Triticum aestivum*), Bajara (*Pennisetum glaucum*), Jawar (*Sorghum bicolor*), Cotton (*Gossypium arboreum*), Tur (*Cajanus cajan*), Turmeric (*Curcuma longa*), Vigna radiate (*Mung bean*), lady's fingers (*Abelmoschus esculentus*), Black eye pea (*Vigna unguiculata*), Brinjal (*Solanum melongena*) and Chillies (*Capsicum annum*) etc.

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