



CHECKLIST OF ANIMAL DIVERSITY IN AND AROUND LAWALE, M/S, INDIA

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Abstract:

Lawale village of Mulshi tehsil is about 20 km west of Pune District, Maharashtra, Mulshi is located centrally in northern Western Ghats and it is about 70 kms West to Pune District M/S, India. The Western Ghats Mountain range is one of the biodiverse tropical wet evergreen rainforests with unique and endemic species diversity. Animal survey was carried out, observed animals were photographed and identified by using identification keys. A checklist of 63 animals was prepared by a walking survey method. Out of these, 27 animals belong to 22 families of Phylum Arthropoda while 27 animals belong to 29 families of Phylum Chordata. Around 24 bird species were recorded in and around the Lawale village. It indicates the importance of the village as an ecosystem.

Keywords: Lawale, Animal survey, Biodiversity, Western Ghats, Birds, Insects, Animals

I. INTRODUCTION:

Area selected for study was Lawale village and its surrounding area of Mulshi Tehsil, Dist: Pune (M/S, India). The study area is in northern Western Ghats (18.5235° N, 73.7184° E) about 20 km West of Pune District, Maharashtra. This area is subject to habitat modifications for urbanization, and industrialization. Mulshi tehsil forms the crest line of Western Ghats, with hill ranges and gently sloping part bordering the Deccan Plateau and has a total area of 250km (Gaonkar, 1996). The common animals recorded in this region are scorpions, birds, frogs, butterflies, crabs, rabbit, snakes etc. Biodiversity is necessary for all species living on Earth, including humans, to function properly. Animal biodiversity is essential to maintain the stability of the ecosystem. To protect the diversity, there is a need to generate a checklist of animals. Hence the objective of the present study was to prepare a checklist of animal diversity in the study area.

II. MATERIALS AND METHODS:

2.1. STUDY AREA:

Lawale village of Mulshi tehsil of Dist: Pune (M/S, India) is selected for study, it is in western portion of Pune city (18.5115° N, 73.6801° E). This area is subject to habitat modifications for social forestry, urbanization, and industrialization. Limited knowledge is available about the animal diversity in western portion of Pune. Selected survey site comprises different ecosystems such as agricultural, hilly area, water bodies and domestic areas. Economic activities observed in this village were related with agricultural activity, poultry, dairy and tourism.

2.2. Data collection:

Animal biodiversity was documented by walking surveys and photographs. Survey was conducted from February 2019 to January 2020. Walking survey was conducted along all pathways of the village. To study the seasonal patterns and diversity, the entire year is divided into three seasons namely pre-Monsoon (February to May), Monsoon (June to September) and Post-Monsoon (October to January). The study area was visited twice in each season during the study period. The selected sites were surveyed mainly between 7.00 am to 1.00 pm. Animal species were identified directly in the field visually with the help of field guides followed by photography. Photographs are taken with Sony cyber-shot DSC-W230 12 MP Digital Camera with 4x Optical Zoom. Statistical analysis of the data was carried out using Ecological Analysis Package- Biodiversity Pro.

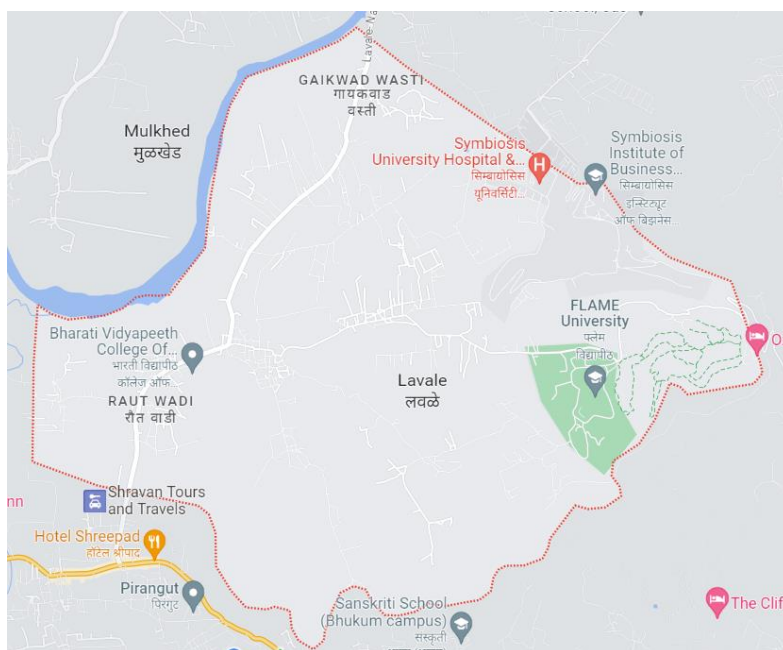


Fig. 1: Google map of study area of Lavale.

III. RESULTS:

It was reported that, study area is the natural habitat of 63 animal species. Agriculture and tourism are the primary activities in the village. The Western Ghats of India, considered as one of the 25 biodiversity hotspots in the world (Myers et.al 2000). During present study, we noted total 63 animals was prepared by a walking survey method. Out of these, 27 animals belong to 22 families of Phylum Arthropoda while 27 animals belong to 29 families of Phylum Chordata. Around 24 bird species were recorded in and around the Lavale village. It indicates the importance of the village as an ecosystem. (Table No. 1).

Sr. No.	Class	Family	Local name	Scientific name
1	Insecta	Apidae	Small Honey bees	<i>Apis florea</i>
2			Giant Honey bees	<i>Apis dorsata</i>
3			Carpenter bees	<i>Xylocopa</i>
4		Coccinellidae	Fungus-eating Ladybird	<i>Illeis galbula</i>
5		Nymphalidae	Common crow butterfly	<i>Euploea core</i>
6		Pieridae	Common yellow butterfly	<i>Eurema</i>
7		Mantidae	Green Praying mantis	<i>Mantis spp</i>
8		Blattidae	Cockroach	<i>Periplaneta americana</i>
9		Termitidae	Termites	<i>Mastotermes spp</i>
10		Meloidae	Blister beetle	<i>Hycleus</i>
11		Vespidae	Wasp	<i>Vespula vulgaris</i>
12		Gryllidae	House cricket nymph	<i>Acheta domesticus</i>
13		Acentropinae	Pond moth	<i>Hygraula nitens</i>
14		Gerridae	Water striders	--
15	Arachnida	Uloboridae	Spider	<i>Uloborus</i>
16		Araneidae	Spider	<i>Cyclosa</i>
17		Hersiliidae	Spider	<i>Hersilia</i>
18		Thomisidae	Yellow stripe spider	<i>Thomisus</i>
19		Pholcidae	Dady leg spider	<i>Crossopriza</i>
20		Buthidae	Little black scorpions	<i>Orthochirus bicolor</i>
21			The Indian red scorpions	<i>Mesobuthus tamulus tamulus</i>
22		Scorpionidae	The Indian red scorpions	<i>Hottentotta pachyurus</i>
23			Burrowing scorpion	<i>Heterometrus xanthopus</i>
24	Chilopoda	Scolopendridae	Gom	<i>Scolopendra</i>
25	Malacostraca	Potamidae	Asian freshwater Crab	<i>Nanhaipotamon</i>
26			lobsters	<i>Panulirus spp</i>
27			Prawn	<i>Macrobrachium spp</i>
28	Amphibia	Ichthyophiidae	Limb-less amphibia	<i>Ichthyophis spp</i>
29		Bufonidae	Frogs and Toads	<i>Bufo spp</i>
30			Bull frogs	<i>Sphaerotheca spp</i>
31	Reptilia	Gekkonidae	Wall lizard	<i>Hemidactylu</i>
32		Chamaeleonidae	Chameleon	<i>Chameleon</i>
33		Colubridae	Indian rat snake	<i>Ptyas</i>
34		Elapidae	Cobra	<i>Naja naja</i>
35	Aves	Corvidae	House crow	<i>Corvus splendens</i>
36			Jungle Crow	<i>Corvus culminatus</i>
37		Passeridae	Sparrow	<i>Passer domesticus</i>
38		Cuculidae	Asian koel	<i>Eudynamys scolopaceus</i>
39		Dicruridae	Ashy Drongo	<i>Dicrurus leucophaeus</i>
40		Ploceidae	Baya weaver	<i>Ploceus philippinus</i>
41		Dicruridae	Black drongo	<i>Dicrurus macrocercus</i>
42		Accipitridae	Black eared kite	<i>Milvus lineatus</i>
43		Sturnidae	Brahmni starling:	<i>Temenuchus pagodarum</i>
44			Common myna	<i>Acridotheres tristis</i>
45		Accipitridae	Hen harrier	<i>Circus cyaneus</i>
46		Acedinidae	White throated kingfisher	<i>Halcyon smyrnensis</i>
47		Apodeidae	Swift	<i>Apus</i>

48		Ardeidae	Indian pond heron	<i>Ardeola grayii</i>	
49			Medium Egret	<i>Egretta intermedia</i>	
50		Dicruridae	Black drongo	<i>Dicrurus macrocercus</i>	
51			Ashy drongo	<i>Dicrurus leucophaeus</i>	
52		Meropidae	Little green bee eater	<i>Merops orientalis</i>	
53		Nectariniidae	Purple sunbird	<i>Cinnyris asiaticus</i>	
54		Coraciidae	Indian roller	<i>Coracias benghalensis</i>	
55		Motacillidae	White wagtail	<i>Motacilla alba</i>	
56		Podicipedidae	Little Grebe	<i>Tachybaptus spp</i>	
57		Phalacrocoracidae	Little Cormorant	<i>Phalacrocorax spp</i>	
58		Ardeidae	Great Egrets	<i>Ardea alba</i>	
59		Threskiornithidae	Glossy Ibis	<i>Plegadis spp</i>	
60		Mammalia	Bovidae	Jersey Cattle	<i>Holstein Friesian</i>
61			Bovidae	Buffalo	<i>Buffalo spp</i>
62			Muridae	Rat	<i>Rattus rattus</i>
63			Canidae	Common Dogs	<i>Canis spp</i>

Table No. 1: Animal checklist

IV. DISCUSSION AND CONCLUSION:

It was observed that insect species abundance increased in the beginning of monsoon season (June to July) and observed species richness in the months from August to November. Species richness decreased continuously from the months December to May. Changes in species abundance was related to the availability of food plants. Plants play a vital role in increasing the Butterfly diversity and their abundance (Hemalata Karkar, 2020). Variety of spiders are observed and recorded in the studied area. Spiders are potential biological indicators of natural habitats and play a role in the balance of nature (Karthikeyani et al. 2017).

Most of the Ranidae members of frogs (except for a few species) are distributed widely all over the Western Ghats, most of these living insecurely due to habitat destruction, urbanization, deforestation (A.D. Padhye et al. 2002).

In present study we reported major four species of reptiles namely *Hemidactylus*, *Chameleon*, *Ptyas* and *Naja naja*. Reptiles are cold blooded animals and inhabitant in most parts of the world. India has representatives of three orders of living reptiles such as Crocodylia, Testudines and Squamata (Aengals et al., 2018).

The present study alone reported 24 species of birds belonging to 20 families and 05 species of mammals belonging to 04 families. Agriculture is a primary activity in the rural area of India and has a rich diversity of mammals (Nameer PO, 2015; Sharma et. al. 2015 and Talmale et al. 2018).

It was observed that detail should be conducted over a longer period in different seasons to understand diversity and variation in habitat associations.

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