



Fauna of Annasaheb Magar Mahavidyalaya Hadapsar Campus Pune, M/S, India.

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Abstract:

This study attempts to document the past and present faunal diversity of PDEA's Annasaheb Magar Mahavidyalaya campus located in Hadapsar, Pune, M/S, India. We recorded three invertebrate classes (class Insecta: with members of the family Apidae, Coccinellidae, Nymphalidae, Pieridae, Mantidae, Blattidae, Termitidae, Meloidae, Vespidae, Gryllidae, Gerridae; class Arachnida: with a member of family Uloboridae, Araneidae, Hersiliidae, Thomisidae, Pholcidae, Buthidae, and Scorpionidae and class Chilopoda: with a member of family Scolopendridae) and vertebrate classes (class Amphibia with a member of each family Ranidae and Bufonidae; class Reptilia with a member each of family Gekkonidae, Chamaeleonidae, Colubridae and Scincidae; class Aves: with one member of family Corvidae, Passeridae, Cuculidae, Dicruridae, Ploceidae, Dicruridae, Accipitridae, Sturnidae, Alcedinidae, Apodidae, Dicruridae, Meropidae, Nectariniidae, Threskiornithidae, Pycnonotidae, Pycnonotidae and Estrildidae and class Mammalia with one member of each family of Muridae, Herpestidae, Muridae, Canidae, Pteropodidae and Sciuridae). The study resulted in the documentation of 13 Insect species, 07 Arachnid species, 01 Chilopoda species, 02 Amphibian species, 04 Reptilian species, 19 Bird species and 06 mammalian species reported in Mahavidyalaya campus.

Keywords: Mahavidyalaya campus, Fauna, Diversity, Invertebrates, Vertebrates.

Introduction:

The diversity of life on earth is so enormous. Species diversity is the variety of living organisms found in natural habitat or surrounding environment (Krishnamurthy K.V., 2003). We can go on developing new products from biodiversity for many generations. This can only happen if we manage biodiversity as a precious resource and prevent the extinction of species. Among the biodiversity rich countries, India is listed in the top ten countries for its great diversity of fauna and flora. Recent studies showed that most of the flora and fauna undergo extinction rapidly due to growth of human population, industrialization, urbanization and changes in land use pattern. Biodiversity data is essential for conservation of species. Therefore, it is necessary to first understand the existing diversity in order to monitor and exploit it.

Pune city of western Maharashtra is the eighth-largest metropolis in India with numerous educational and research campuses. These campuses have significant biodiversity, but increasing urbanization is one of the key reasons for declining biodiversity in the form of alteration of habitats and fragmentation of natural vegetation (Nerlekar A.N. et al., 2016). Biodiversity provides a variety of environmental services from its species that are essential at the global, regional, and local level. So, it is important to preserve biological resources for the wellbeing and the long-term survival of humans. There is a lot of demand for databases of plants and animals all over the world, especially from biodiversity rich countries (Rao et al., 2017). Biodiversity brings enormous benefits to mankind from direct harvesting of plants and animals for food, medicine, fuel, construction materials and other uses to aesthetic, cultural, recreational and research values (Kopal Shukla, 2023).

The report on faunal diversity of Annasaheb Magar Mahavidyalaya campus was not available till date. Hence, we undertook the task of assessing and reviewing the faunal diversity of the Annasaheb Magar Mahavidyalaya campus. The present study is focused on preparing the checklist of animals inhabiting Annasaheb Magar Mahavidyalaya campus, also to find out their occurrence, status as well as to create awareness for their conservation. The aim of study was to evaluate the species richness, ecological notes, and threats for the taxa.

Study area:

PDEA's Annasaheb Magar Mahavidyalaya Hadapsar, Pune-28 is selected for present study. The Mahavidyalaya was established in the year of 1971. The Mahavidyalaya has its 21043.7 square meter land with 3100 square meters green campus. It is located about 09 kms East to Pune city of M/S, India (N 18° 30' 9.2664", E 73° 57' 11.5272"). It is an eastern

portion of Western Ghats with an average rainfall of 722 mm. This area is subject to habitat modifications for urbanization and industrialization. Limited knowledge is available about the animal diversity in the eastern portion of Pune city.

MATERIALS AND METHODS:

The present study was carried out during January 2020 to December 2023. Line Transect method was used in a predefined area for the study. A line transect of 1-100 meter was prepared and the animals were observed and recorded by using their local names (Kopal Shukla et al, 2023). The selected sites were surveyed mainly between 7.00 am to 1.00 pm. Animal species were identified visually in the field with the help of field guides followed by photography. Photographs were 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.

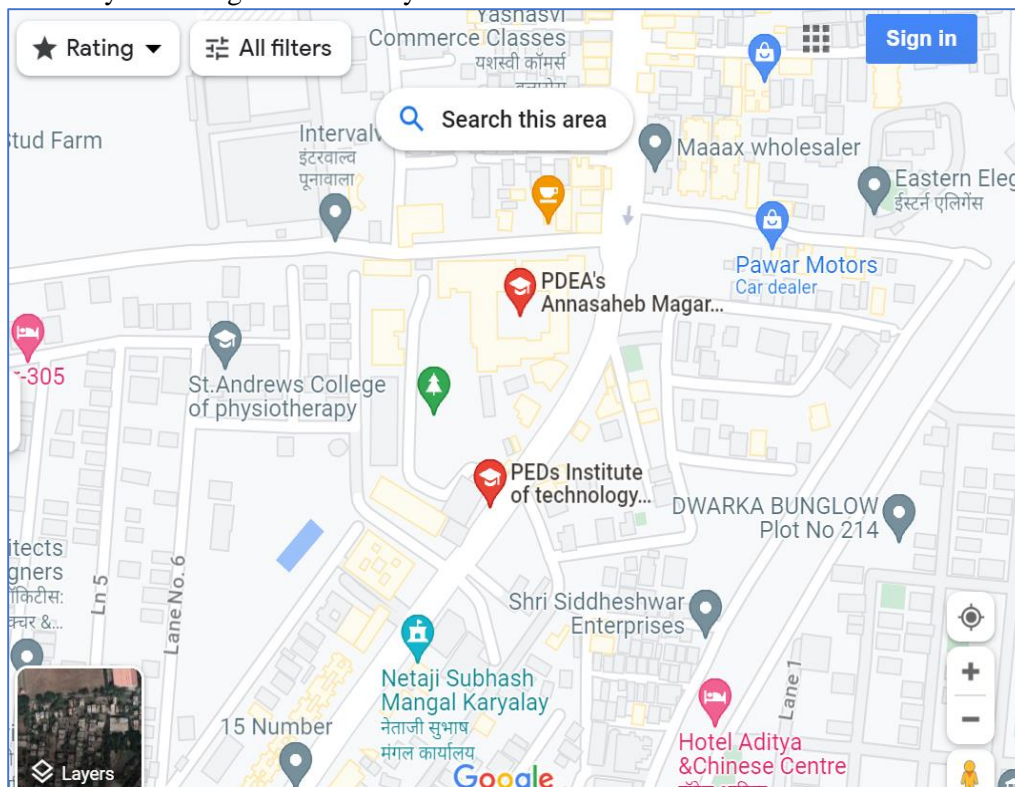


Figure 1: Google map showing location of study area.

RESULTS AND DISCUSSION:

A total of 54 species were observed and recorded under 7 major categories such as insects, Arachnida, Chilopoda, Amphibia, Reptilia, Aves and Mammals. The reported species were 13 species of insect belonging to 11 family; 07 Arachnid species from 06 families; one Chilopoda species from Scolopendridae family; 02 Amphibian species from Ranidae and Bufonidae families; 04 reptilian species from Gekkonidae, Chamaeleonidae, Colubridae, Scincidae families; 19 species of birds belonging to 17 families and 06 species of mammals belonging to 06 families (Table No. 1).

Sr. No.	Class	Family	Local name	Scientific name
1	Insecta	Apidae	Small Honey bees	<i>Apis florea</i>
2			Indian Honey bees	<i>Apis indica</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</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	<i>Acheta domesticus</i>
13		Gerridae	Water striders	--
14	Arachnida	Uloboridae	Spider	<i>Uloborus Spp</i>
15		Araneidae	Spider	<i>Cyclosaspp</i>
16		Hersiliidae	Spider	<i>Hersilia spp</i>
17		Thomisidae	Yellow stripe spider	<i>Thomisus spp</i>
18		Pholcidae	Dady leg spider	<i>Crossopriza spp</i>
19		Buthidae	Little black scorpions	<i>Orthochirus bicolor</i>
20			The Indian red scorpions	<i>Mesobuthus tamulus tamulus</i>
21		Scorpionidae	The Indian red scorpions	<i>Hottentotta pachyurus</i>
22	Burrowing scorpion		<i>Heterometrus xanthopus</i>	
23	Chilopoda	Scolopendridae	Gom	<i>Scolopendra</i>
24	Amphibia	Ranidae	Frogs	<i>Rana spp</i>
25		Bufonidae	Toads	<i>Bufo spp</i>
26	Reptilia	Gekkonidae	Wall lizard	<i>Hemidactylus</i>
27		Chamaeleonidae	Chameleon	<i>Chameleon</i>
28		Colubridae	Indian rat snake	<i>Ptyas mucosa</i>
29		Scincidae	Indian skink	<i>Eutropisspp</i>
30	Aves	Corvidae	House crow	<i>Corvus splendens</i>
31			Jungle Crow	<i>Corvus culminatus</i>
32		Passeridae	Sparrow	<i>Passer domesticus</i>
33		Cuculidae	Asian koel	<i>Eudynamys scolopaceus</i>
34		Dicruridae	Ashy Drongo	<i>Dicrurus leucophaeus</i>
35		Ploceidae	Baya weaver	<i>Ploceus philippinus</i>
36		Dicruridae	Black drongo	<i>Dicrurus macrocercus</i>
37		Accipitridae	Black eared kite	<i>Milvus lineatus</i>
38		Sturnidae	Brahmni starling	<i>Temeluchus pagodarum</i>
39			Common myna	<i>Acridotheres tristis</i>
40		Alcedinidae	White throated kingfisher	<i>Halcyon smyrnensis</i>
41		Apodidae	Swift	<i>Apus</i>
42		Dicruridae	Black drongo	<i>Dicrurus macrocercus</i>
43		Meropidae	Little green bee eater	<i>Merops orientalis</i>
44		Nectariniidae	Purple sunbird	<i>Cinnyris asiaticus</i>
45	Threskiornithidae	Red-naped ibis	<i>Pseudibis spp</i>	

46	Mammalia	Pycnonotidae	Red vented bulbul	<i>Pycnonotus spp 1</i>
47		Pycnonotidae	Red Whiskered bulbul	<i>Pycnonotus spp2</i>
48		Estrildidae	Scaly breasted Munia	<i>Lonchura</i>
49		Muridae	Greater bandicoot rat	<i>Bandicota spp</i>
50		Herpestidae	Mongoose	<i>Herpestes spp</i>
51		Muridae	Rat	<i>Rattus rattus</i>
52		Canidae	Common Dogs	<i>Canis spp</i>
53		Pteropodidae	Indian flying fox	<i>Pteropus spp</i>
54		Sciuridae	Three striped squirrel	<i>Funambulus spp</i>

Table No.1: Checklist of faunal diversity

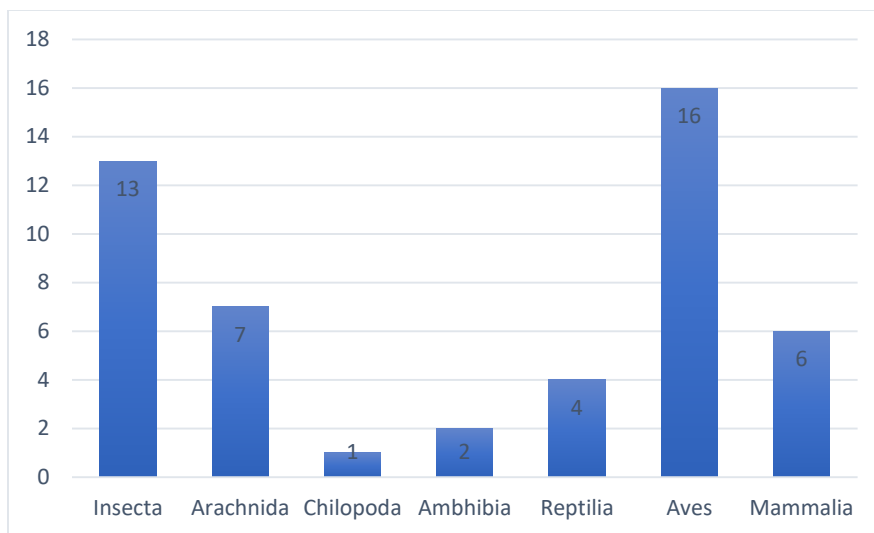


Fig. 01: Chart showing number of species observed during study.

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 March to May. Changes in species abundance might be related to the availability of food plants. Food plants play a vital role in increasing the butterfly diversity and their abundance (Hemalata Karkar, 2020). Variety of spiders were 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). The population of *Orhochirus bicolor* and *Mesobuthus tamulus tamulus* species was observed more prevalent in spring season from the month June to September and less in summer season in the month of March to May while *Heterometrus pachyurus* species abundant during January to April (Giramkar S. V. 2017).

The study area is located in the eastern portion of Western Ghats, but the limited number of amphibians encountered during study. The probable reasons for the limited amphibian diversity inside the campus could be urbanization, loss of habitat and loss of breeding grounds (Nerlekar A.N. et al., 2016). Most of the Ranidae members are distributed widely all over the Western Ghats, most of these living insecurely due to habitat destruction, urbanization, deforestation (Padhye A.D. et al., 2002).

In present study we reported major four species of reptiles namely *Hemidactylus*, *Chameleon*, *Ptyas mucosa* and *Eutropis spp*. 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). Snakes inhabit a wide range of habitats such as fields, forests, farmland, vacant plots, and residential and commercial areas too. *Ptyas mucosa* Linnaeus, 1758 is one of the most common snakes found in the campus (Nerlekar A.N. et al., 2016).

This study reported 19 species of birds belonging to 17 families and 05 species of mammals belonging to 04 families. The avifauna in turn plays a crucial role as scavengers, pollinators, seed dispersal agents and predators of insect pests (Padmavati et al., 2010). Birds are known as ecological indicators of habitat quality (Morelli et al. 2014). Among the global hotspots, the forests of the Western Ghats are highly threatened due to the high density of the human population and anthropogenic activities. The prioritization of areas for conserving and developing the protected area network was attempted in the Western Ghats by considering threat and endemic plants, vertebrate species, forest contiguity and vegetation types (Honnavalli N. et. al, 2023).

CONCLUSION:

In this study, the Faunal Diversity found at the PDEA’s Annasaheb Magar Mahavidyalaya, in Hadapsar, Pune, is highlighted. The present study recorded 54 species under 7 major categories such as insects, Arachnida, Chilopoda, Amphibia, Reptilia, Aves and Mammals. The reported species were 13 species of insect belonging to 11 family; 07 Arachnid species from 06 families; one chilopoda species from Scolopendridae family; 02 Amphibian species from Ranidae and

Bufonidae families; 04 reptilian species from Gekkonidae, Chamaeleonidae, Colubridae, Scincidae families; 19 species of birds belonging to 17 families and 06 species of mammals belonging to 06 families. Every educational institute should preserve a list of flora and fauna found in the institute campus and upload it to the Mahavidyalaya website.

ACKNOWLEDGMENTS:

Authors are thankful to Principal Dr. Nitin Ghorpade (PDEA's Annasaheb Magar Mahavidyalaya Hadapsar, Pune-28) for his continuous support during animal survey. Thanks to Dr. Anju Mudhe, Dr. Mahesh Joshi and all the students who have offered every possible support during the animal survey.

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