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A SURVEY OF FAUNAL DIVERSITY OF GOVT. K.R.G P.G (AUTO.) COLLEGE CAMPUS , GWALIOR, MADHYA PRADESH, INDIA

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Abstract: Present paper deal study of fauna in Govt. Kamla Raja Girls P.G. Autonomous College, Gwalior. Faunal diversity refers to the diversity of animal that are native to indigenous to that particular place and that live there. In the present study, a survey of fauna was done for a period of one year from January 2023 to January 2024 in Kamla Raja Girls P.G. (Auto.) College, Gwalior. Campus of K.R.G. are the richest for fauna. It includes Annelids (1%), Arthropods (36%), Mollusca (2%), Chordata (61%). In this campus Dominance fauna are chordates. Total 106 species were found belonging to various orders and families were identifying by using point count and Line transect methods. The phylum Chordata has the highest species abundance with a total (61%) species accounting for all species. According to the observation during study period, the presence of greeneries, variety of vegetation and water facilities made it a significant home for various animal species. The goal of study was to identify and catalogue the many families, genera, and species of animals that can be found in the area, as well as their distribution and habitats and it emphasizes the value of preserving or expanding green spaces at educational institutions to support biodiversity conservation efforts and provide habitat for animal species.

Keyword*: Faunal diversity, K.R.G.P.G. College, distribution and habitats, species abundance, green spaces, educational institutions, flora*

INTRODUCTION

Biological diversity, or biodiversity, encompasses the variety of all life forms on Earth, including the genetic differences within species, the variety of species themselves, and the range of ecosystems in which these species live and interact (Amala Mary *et al.*, 2023). Biodiversity is crucial for maintaining the resilience and functionality of ecosystems, as it supports processes such as nutrient cycling, pollination, and habitat formation. In recent years, the study of biodiversity has gained increasing significance due to the rapid environmental changes caused by human activities, such as habitat destruction, pollution, and climate change (Gardner *et al*., 2008).

Urbanization is one of the most significant drivers of biodiversity loss, as it leads to habitat fragmentation and alteration, resulting in reduced native species populations and increased local extinction rates (Tratalos et al., 2007). Despite these challenges, urban areas can still harbor significant biodiversity, particularly in green spaces such as parks, gardens, and campuses. These urban green areas can provide essential ecosystem services and serve as refuges for various species (Savard *et al*., 2000).

Previous research has shown that well-managed urban green spaces can support diverse and abundant animal populations, even within highly urbanized landscapes (Clergeau et al., 2001). Documenting the local fauna involves creating detailed records of the species present, their numbers, and their ecological relationships, which is essential for developing effective conservation strategies (Savard *et al.*, 2000).

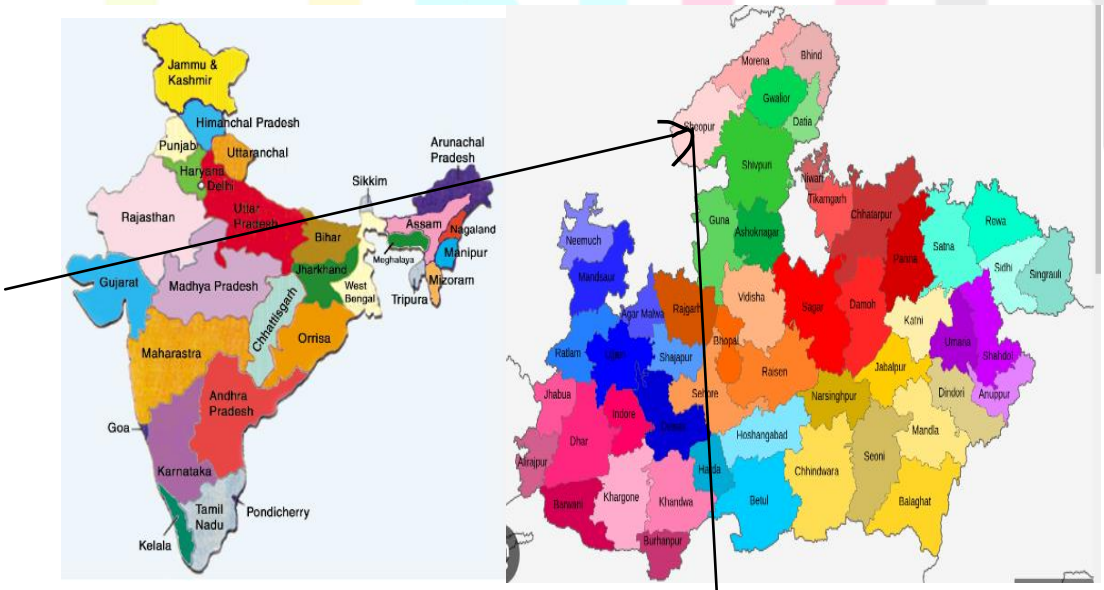
However, urban green spaces such as parks, gardens, and college campuses can serve as important refuges for bird populations. These areas can mitigate some of the negative impacts of urbanization by providing critical habitats and resources (Savard, Clergeau, & Mennechez, 2000). Research has shown that the diversity and abundance of bird species in urban environments are closely linked to the quality and management of these green spaces (Miller & Hobbs, 2002).

Bird communities in urban areas are influenced by various factors, including the presence of mature trees, availability of food resources, and water bodies. Studies have demonstrated that areas with higher vegetation cover and structural complexity tend to support greater bird diversity (Sandström, Angelstam, & Mikusiński, 2006; Clergeau et al., 2001). Additionally, connectivity between green spaces can enhance bird diversity by allowing movement and dispersal across the urban landscape (Fernández-Juricic & Jokimäki, 2001).

STUDY AREA

Govt. Kamla raja girls post graduate (autonomous) college, Gwalior was established in 1937AD, campus sprawling over 13ha. It is situated in front of Kamla raja hospital Kampoo Lashkar Gwalior. The college occupies a prominent place and has wide reputation among the institute of higher education not only in the state of Madhya Pradesh but also in other states of Northern India, because academic achievements, the infrastructure properties and the financial richness of the college. The Campus of Govt. Kamla Raja Girls Post Graduate College, Gwalior lies between 26◦ 11' 26.37" N latitude and 78◦ 9' 16.15" E longitude. The Campus of the College spreads in area 53714 sq. meters in which 22484 sq. meters is constructed area and covered with buildings. Total 13892 sq. meters area is covered with greenery which is approximately 25% of the campus. 13525 sq. meters area of the campus is used as playground and reaming 5740 sq. meters area is used for miscellaneous purposes. The college is affiliated to Jiwaji university, Gwalior and Recognized by UGC under Section 2(f) and 12 (b) of the Act, 1956. The National assessment and accreditation commission awarded the college "B" grade in 2010 and it is also re accredited awarded the college grade "A" in 2016. Govt. Kamla raja girls post graduate (autonomous) college, Gwalior is a biggest girl's college of Chambal Shambhag in (M.P) about more than 12,000 girls are study in different stream like that Art, Commerce, Science and Law. The campus of the college rich in fauna and flora. The campus of K.R.G college in the second position of the greenery of city Gwalior and also oxygen pool. In the Campus of K.R.G.P.G. richest fauna of Chordates is present.

Fig : 1 Map of K.R.G.P.G. College



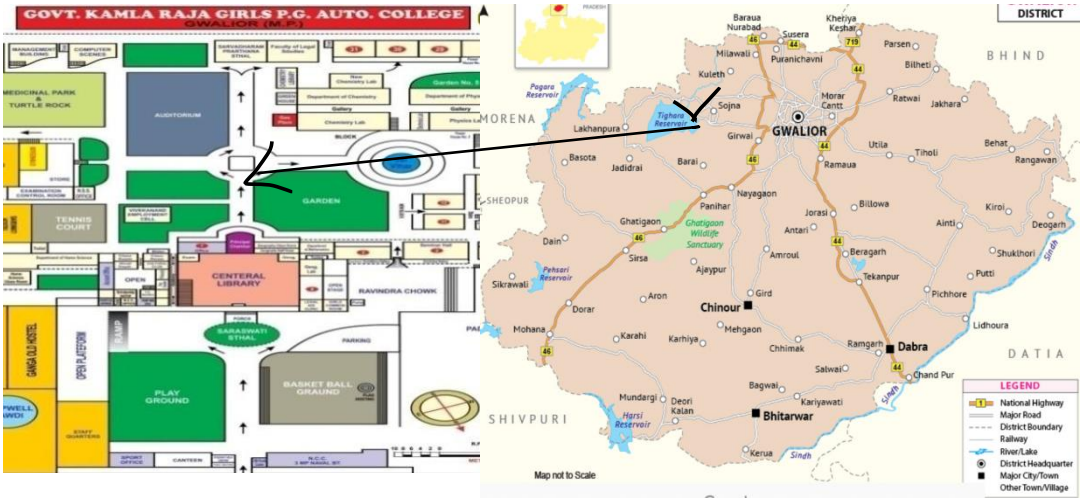


Fig: 2 Location of K.R.G.P.G. (Auto.) College:

MATERIALS AND METHOD

Line Transect Method was used in a pre-defined area for the Study. A line transect of 1-100 meter was Prepared and the birds were monitored on both the sides of transect by close end transect up to 2km. without stopping. It works well for observable birds in open environments. Additionally, identification was accomplished with the aid of websites, books; photography by camera canon EOS 100D (super zoom lenses).

RESULT AND DISCUSSION

The survey conducted on the K.R.G.P.G. Autonomous College, campus documented a rich diversity of fauna, encompassing a total of 106 species across various taxa. The recorded species included in Annelida: (01) Earthworm species, Arthropoda: (38) insect species, (02) Mollusca, Chordata: (01) Fish Species, (04) Amphibian species, (06) Reptiles Species, (48) Bird Species, (06) Mammals Species. Among the birds, the most commonly observed were the Indian Peafowl (Pavo cristatus), House Crow (Corvus splendens), and Common Myna (Acridotheres tristis). Notable insect species included the Common Houseflies (Anthomyia illocata genutia) and the Honey Bee (Apis mellifera). The biggest reason for having richest faunal diversity in the campus is the presence of greenery. 25 % of the area here is covered with greenery. The campus has patches of many gardens, grasslands, shrub land and also medical gardens. Hence the campus is richest for the faunal diversity.

OBSERVATION TABLES:

Checklist of the Faunal Diversity Observed in K.R.G.P.G. college, Gwalior

1.Checklist of Annelida

S.no.	Order	Family	Scientific Name	Common Name	IUCN
1.	Opisthopora	Lumbricidae	*Eisenia Fetida*	Red worm	NA

2.Checklist of Arthropoda

Checklist of Arthropoda					
S.no	**Order**	**Family**	**Scientific Name**	**Common name**	**IUCN**
1.	Hymenoptera	Formicidae	*Anoplolepis gracilipes*	Yellow crazy ant	NA
2.		Vespidae	*Polistes versicolor*	Yellow paper wasp	NA
3.			*Oriental hornet*	Hornet	NA
4.		Apidae	*Apis mellifera*	Honeybee	NA
5.		Megachilidae	*Megachile lanata*	Woolly wall bee	NA
6.		Formicinae	*Trichomyrmex destructor*	destructive trailing ant	NA
7.		Formicidae	*Solenopsis invicta*	Red imported fire ant	NA
8.	Orthoptera	Acrididae	*Zubovskya banatica*	Banat Grasshopper	CR

9.		Pyrgomorphidae	*Poekilocerus pictus*	Painted grasshopper	NA
10.	Blattoda	Corydiidae	*Blattodea*	Cockroach	NA
11.	Hemiptera	Pentatomidae	*Chinavia hilaris*	Green stink bug	NA
12.		Lygaeidae	*Spilostethus pandurus*	seed bugs	NA
13.	Odonatan	Libellulidae	*Libellula saturata*	Flame Skimmer	NA
14.		Libellulidae	*Rhyothemis variegata*	common picture wing	LC
15.		Libellulidae	*Crocothemis servilia*	scarlet skimmer	LC
16.		Libellulidae	*Bradinopyga geminata*	granite ghost	LC
17.		Libellulidae	*Diplacodes trivialis*	ground skimmer	LC
18.	Diptera	Culicidae	*Aedes taeniorhynchus*	Black saltmarsh mosquito	NA
19.			*Culex pipiens*	Common house mosquito	NA
20.		Anthomyiidae	*Anthomyia illocata*	houseflies	NA
21.		Muscidae	*Limnophora helenae*	Housefly	LC
22.	Lepidoptera	Pieridae	*Catopsilia pomona*	lemon emigrant	NA
23.		Nymphalidae	*Danaus plexippus*	Monarch butterfly	NA
24.		Nymphalidae	*Danaus chrysippus*	Plain Tiger Male	LC
25.		Nymphalidae	*Junonia orithya*	blue pans	LC
26.		Pieridae	*Cepora nerissa*	common gull	NA
27.		Crambidae	*Diaphania indica*	cucumber moth	NA
28.		Nymphalidae	*Acraea terpsicore*	tawny coster	NA
29.		Pieridae	*Colotis fausta*	large salmon Arab	LC
30.		Nymphalidae	*Ariadne merione*	common castor	NA
31.		Lycaenidae	*Lampides boeticus*	long-tailed blue	LC
32.		Pieridae	*Ixias marianne*	white orange tip	NA
33.		Nymphalidae	*Junonia lemonias*	lemon pansy	NA
34.		Sphingidae	*Hippotion celerio*	vine hawk-moth	NA
35.		Papilionidae	*Papilio anchisiades*	Red spotted swallowtail	NA
36.	Coleoptera	Chrysomelidae	*Disonycha xanthomelas*	Three Flea beetles	NA
37.		Coccinellidae	*Coccinella septempunctata*	seven-spotted ladybug	NA
38.	Scutigeromorpha	Geophilidae	*Chilopoda*	centipede	NA

3.Checklist of Mollusca

Checklist of Mollusca					
S.no	**Order**	**Family**	**Scientific Name**	**Common Name**	**IUCN**
1.	Stylommatophora	Achatinoidea	*Lissachatina fulica*	African giant snail	NA
2.	Cypriniformes	Cyprinidae	*Cyprinuscarpio*	Common Carp	NA

4.. Checklist of Chordata

Checklist of Fish					
S.no	**Order**	**Family**	**Scientific Name**	**Common Name**	**IUCN**
1.	Siluriformes	Heteropneustidae	*Heteropneustes fossilis*	Singee	LC

Checklist of Amphibian					
S.no	**Order**	**Family**	**Scientific Name**	**Common Name**	**IUCN**
1.	Anura	Ranidae	*Rana tigrina*	Bullfrog	NA
2.		Hylidae	*Hyla*	Tree frog	NA
3.		Phrynobatrachidae	*Phrynobatrachus krefftii*	Toad	EN

4.		Bufonidae	*Bufo*	Frog	NA

Checklist of Reptiles					
S.no	**Order**	**Family**	**Scientific Name**	**Common Name**	**IUCN**
1.	Chiroptera	Rhinopomatidae	*Rhinopoma hardwickii*	Lesser mouse-tailed bat	LC
2.	Squamata	Elapidae	*Bungarus caeruleus*	Indian krait	LC
3.		Scincidae	*Eutropis carinata*	Many-keeled Grass Skink	LC
4.		Varanidae	*Varanus bengalensis*	common Indian monitor	NT
5.		Scincidae	*Riopa punctata*	Common Dotted Garden Skink	NA
6.		Agamidae	*Calotes versicolor*	Oriental	LC

Checklist of Aves							
s. no.	**order**	**family**	**scientific name**	**species name**	**hindi name**	**iucn status**	**res./ mig status**
1.	Passeriformes	Passeridae	*Passer montanus*	Eurasian Tree Sparrow	Gauraiya	LC	R
2.			*Passer domesticus*	House Sparrow	Gharelu-chidiya	LC	R
3.		Leiotrichidae	*Argya striata*	Jungle Babbler	Sath bhai	LC	R
4.			*Argya affinis*	Yellow-billed Babbler	Chilchil, Genga	LC	R
5.		Oriolidae	*Oriolus oriolus*	Eurasian Golden Oriole	Peelak	LC	M
6.		Sturnidae	*Acridotheres ginginianus*	Bank Myna	Ganga Myna	LC	R
7.		Corvidae	*Corvus splendens*	House Crow	Desi Kowwa	LC	R
8.			*Corvus macrorhynchos*	Large-billed Crow	Jungli Kowwa	LC	R
9.		Pycnonotidae	*Pycnonotus cafer*	Red-vented Bulbul	Bulbul,Guldum	LC	R
10.		Leiotrichidae	*Argya caudata*	Common Babbler	Dumri	LC	R
11.		Acrocephalidae	*Arundinax aedon*	Thick-billed Warbler	Moti choch wala barbler	LC	M
12..		Muscicapidae	*Copsychus saularis*	Oriental Magpie-robin	Dhaiyal	LC	R
13.			*Oenanthe fusca*	Brown Rockchat	Shama	LC	R
14.			*Copsychus fulicatus*	Indian Robin	Kalchuri	LC	R
15.			*Motacilla flava*	Western Yellow Wagtail	Pilkya	LC	M
16.			*Motacilla alba*	White Wagtail	Dhoban	LC	M
17..		Nectariniidae	*Cinnyris asiaticus*	Purple Sunbird	Shaker-Khora	LC	R

18.		Dicruridae	*Dicrurus macrocerus*	Black Drongo	Kolsa, Bhujanga	LC	NA
19.		Sturnidae	*Sturnus pagodaram*	Brahiminy starling	Brahimini, myna	LC	NA
20.			*Sturnus contra*	Pied starling	Ablaki myna	LC	NA
21.		Corvidae	*Dendrocetta vagabunda*	Indian Treepie	Mahalat	LC	NA
22.		Turdinae	*Cercomela fusca*	Indian Chat	Dauma	LC	R
23.			*Saxicolodides fulicata*	Indian Robin	Kalchuri	LC	NA
24.		Motacillidae	*Motacilla flava*	Yellow Wagtail	Pilkya	LC	M
25.		Sturnidae	*Acridotheres tristis*	Common Myna	Desi myna	LC	R
26.	Columbiformes	Columbidae	*Patagioenas oenops*	Peruvian Pigeon	Maranon kabutar	NT	M
27.			*Streptopelia decaocto*	Eurasian Collared-dove	Dhor,Fakhta	LC	R
28.			*Columba livia*	Rock Dove	Desi kabutar	LC	R
29.			*Treron phoenicopterus*	Yellow-footed Green-pigeon	Harial	LC	R
30.			*Sreptopelia senegalensis*	Little Brown Dove	Chhota fakhta, Parki, Tortra, Panduk	LC	R
31.	Charadriiformes	Charadriidae	*Vanellus indicus*	Red-wattled Lapwing	Titeeri,Titai	LC	R
32.	Coraciiformes	Alcedinidae	*Halcyon smyrnensis*	White-breasted Kingfisher	Kilkila, Kourilla	LC	R
33.		Meropidae	*Merops orientalis*	Asian Green Bee-eater	Patringa, Harrial	LC	M
34.		Coraciidae	*Coracias benghalensis*	Indian Roller	Tas, Neelkanth	LC	R
35.	Psittaciformes	Psittacidae	*Alexandrinus krameri*	Rose-ringed Parakeet	Tota,Suva,Mittu	LC	R
36.	Strigiformes	Tytonidae	*Tyto alba*	Common Barn-owl	Kuraya,Karali, Buri churi	LC	R
37.		Strigidae	*Athene brama*	Spotted Owlet	Oolloo, Khakusat, Chughad	LC	R
38.	Bucerotiformes	Upupidae	*Upupa epops*	Common Hoopoe	Hudhud	LC	M
39.		Bucerotidae	*Ocyceros birostris*	Indian Grey Hornbill	Dhanesh, selagilli	LC	R
40.	Piciformes	Megalaimidae	*Psilopogon zeylanicus*	Brown-headed Barbet	Bada basant	LC	R
41.			*Dinopium benghalense*	Black-rumped Flame back	Katphorba	LC	R
42.			*Dinopium benghalense*	Lesser Golden - Backed woodpecker	Katphora	LC	R
43.			*Eudynamys scolopaceus*	Western Koel	Koel,kokila	LC	M
44.			*Centropus sinensis*	Greater Coucal	Mahoka	LC	R
45.	Galliformes	Phasianidae	*Pavo cristatus*	Indian Peafowl	Mor, Mayura	LC	R
46.	Apodiformes	Apodidae	*Apus affinis*	House Swift	Ababeel, Babeela	LC	M

47.	Accipitriformes	Accipitridae	*Accipiter badius*	Shikra	Shikra, Cheepak	LC	M
48.	Falconiformes	Falconidae	*Falco peregrinus*	Peregrine Falcon	Bihiri	LC	M

Checklist of Mammal					
S.no	**Order**	**Family**	**Scientific Name**	**Common name**	**IUCN**
1.	Carnivora	Felidae	*Felis catus*	domestic cat	
2.		Viverridae	*Paradoxurus hermaphroditus*	Asian palm civet	LC
3.		Canidae	*Canis lupus familiaris*	domestic dog	NA
4.	Primates	Cercopithecidae	*Macaca mulatta*	rhesus macaque	LC
5.	Rodentia	Sciuridae	*Funambulus pennantii*	five-striped palm squirrel	LC
6.	Chiroptera	Emballonuridae	*Taphozous nudiventris*	naked-rumped tomb bat	LC

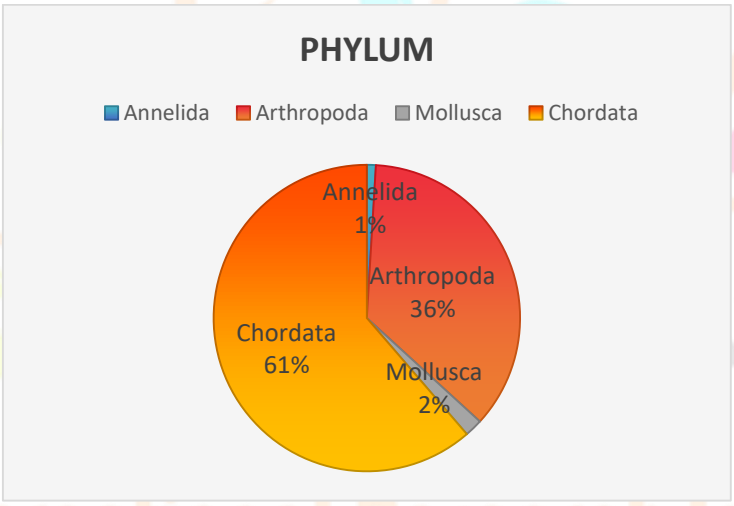


Fig:3 Phylum wise species composition

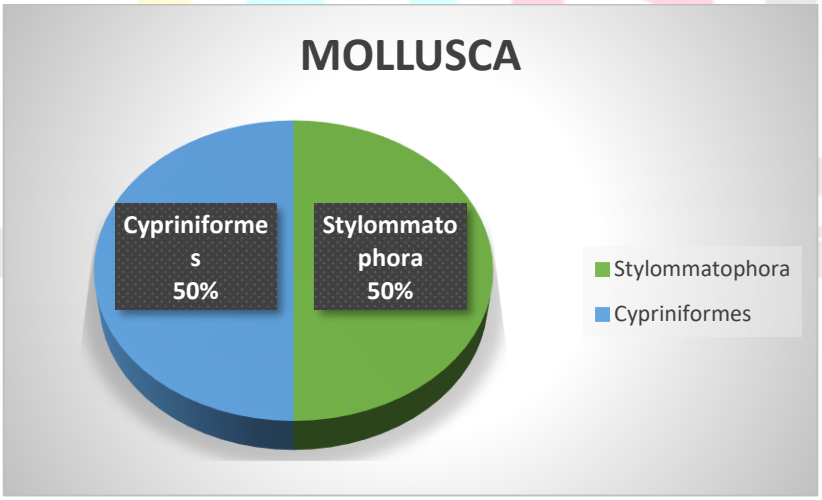


Fig:4 Order wise species composition

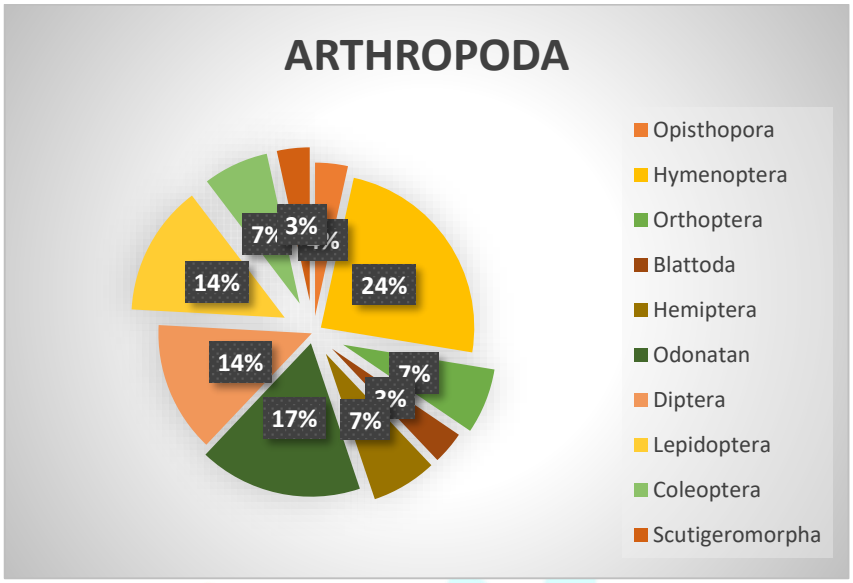


Fig : 5 Order wise species composition

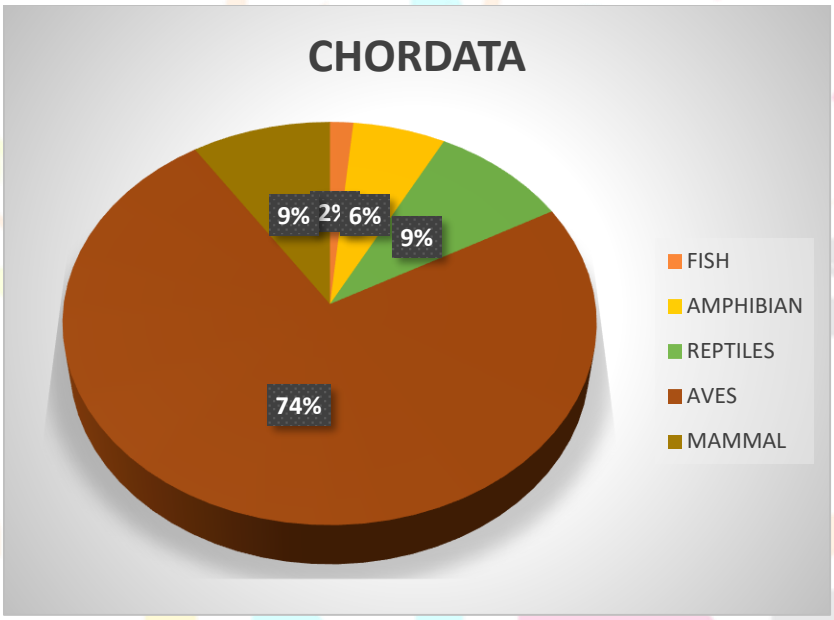


Fig :6 Class wise Chordata composition

CONCLUSION

In this study the faunal diversity found at Govt. Kamla raja girls p.g. autonomous college Gwalior is highlighted. The study includes a total of 106 species, which were detected during a period of one year from January 2023 to January 2024. These species belonged to Phylum Chordata has the highest species abundance, with a total of 65 species accounting 61% of all phylum. Thus, action can be taken to increase and protect wildlife and utilize their management methods in numerous ways. This research suggests ways to preserve natural habitats, manage pollution, and oversee human actions to ensure the measures are appropriate for all birds and other fauna and animals to flourish naturally.

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