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Zoology

DIVERSITY OF HERPETOFAUNA IN RAJGARH DISTRICT OF MADHYA PRADESH

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ABSTRACT The paper present a diversity of Herpetofauna in rajgarh district of Madhya Pradesh. The interaction between the herpetofauna & humans since ancient time is well known. Due to the urbanizing world these animals face a lot of problems to survive. The present study was carried out during 2020 to 2021. During the survey period the active survey was made in monsoon and summers (As the district situated at mp-rajasthan border there is variety of reptiles found in the district). A total of 21 species of reptiles and amphibians were detected belonging to 15 families and four orders were recorded, of which amphibians represented five species belonging to four families and reptiles represented sixteen species belonging to eleven families. In recent times there has been a major decrease in their populations. Habitat loss, loss of breeding ground and fear or false beliefs are likely the most serious threats to herpetofauna. Awareness program must be needed to make people aware of herpetofauna and their importance for balanced ecosystem.

SUMMARY: The present findings concluded that there is a rich population and lot of species of reptiles found in the district rajgarh in comparison to this amphibians are found less. a total of 21 species of herpetofauna are recorded of which amphibians represented 5 species and reptiles represented 16 species.

KEYWORDS : Herpetofauna, amphibians, reptiles, survey.

INTRODUCTION

Herpetofauna is a collective term used for amphibians & reptiles. Herpetology is the branch of zoology concerned with the study of amphibians and reptiles. Amphibians include frogs & toads (order anura), newts & salamanders (order caudata), caecilians (order Gymnophiona), whereas reptiles include crocodiles (order crocodilia) turtles & tortoise (order Testudines), snakes, chameleon & lizards (order squamata). Herpetofauna play an important role in food webs serve as both prey species & predator. Amphibians & reptiles are ectotherms they control their body temperature through external sources. Herpetofauna are declining all over worldwide & along with amphibians; these are considered among the most threatened vertebrate groups (Gibbons et al., 2000; Stuart et al., 1997). There is a rapid decline in abundance & distribution of reptiles & amphibians globally. The threats faced by herpetofauna species is due to the habitat loss climate change degradation, chemical contamination in water, pollution. Human beings affect the survival of reptiles not only by modifying their habitats but by what is worst, killing them because of fear & false beliefs about the injure that same species could cause to humans (Dubey and khare 2013). Studies on herpetofauna of urban areas have been made by several authors but there is no such study on small district like rajgarh (M.P.) Where there are vast variety of amphibians & reptiles are present. So the study was made to explore the diversity of herpetofauna of rajgarh district.

Study Area

Rajgarh district is a district of Madhya Pradesh. The district has an area of 6,154 km² & the population is 1,545,814 (2011 census) the district lies on the northern edge of malwa plateau. The district is bounded by Rajasthan state to the north. Narsinghgarh tehsil of rajgarh district has a wildlife sanctuary known as chidikho wildlife sanctuary. It is rich in flora and fauna. There is wide range of amphibians & reptiles present in chidikho wildlife sanctuary. State bird Dhudhraj mainly seen in this sanctuary.

Rajgarh has latitude of 24°0□28.38"N and longitude of 76°43□ 40. 37"E or 24.007882 and 76.72788 respectively.

MATERIAL AND METHODS

The present study on diversity of herpetofauna in rajgarh district of Madhya Pradesh was conducted from august 2020 to July 2021. The survey was carried out in Day and night. Sometimes late night Surveys are also conducted to find Nocturnal species. Data is collected from both terrestrial and aquatic habitats of rajgarh district. The study was carried out by various methods like direct method observing them directly and indirect methods of questionnaire survey method is also applied, discussions was made with forest officers and guards of forest of rajgarh district and local peoples of villages and towns. Taxonomical nomenclature has been used from the IUCN Red List of Threatened Species (IUCN, 2020), the Reptile Database (Uetz, 2020) and the Amphibian Species of the World 6.0 (Frost, 2020), and conservation status has been assigned according to IUCN Red List (IUCN 2016) and the Indian Wildlife (Protection) Act (1972)

RESULTS

During the study period, a total of 21 species of herpetofauna belonging to 15 families and four orders were recorded, of which amphibians represented five species belonging to four families All recorded amphibians were anurans, and reptiles represented sixteen species belonging to eleven families (table 1). The abundance analysis showed that among 21 species of herpetofauna 11 were common 3 were uncommon and 7 were rarely recorded in the study area. Among amphibians, the family Dicroglossidae recorded maximum two species (Indian Bullfrog Hoplobatrachus tigerinus and Skittering Frog Euphlyctis cyanophlyctis). Bufonidae (Asian Common Toad Duttaphrynus melanostictus), Microhylidae (Ornamented Pygmy Frog Microhyla ornate), and Rhacophoridae (Common Tree Frog Polypedates maculatus) recorded one species each.

Among reptiles family colubridae recorded maximum three number of species (Common Indian Cat Snake Boiga trigonata , Black-Headed Snake Sibynophis subpunctatus , Checkered Keelback Water Snake Xenochrophis piscator) , family Gekkonidae Gray (Hemidactylus gleadowi and Hemidactylus flaviviridis), Boidae (Eryx johnii and Eryx conicus) , Trionychidae (Lissemys punctate and Nilssonia gangetica) recorded two species each and Agamidae (Calotes versicolor) Scincidae (Eutropis carinata) Varanidae (Varanus bengalensis) Elapidae (Naja naja) Viperidae (Daboia russelii) Geomydidae (Melanochelys trijuga) Crocodylidae (Crocodylus palustris) recorded one species each.

Table 1. List Of Herpetofauna Recorded In Rajgarh District

	family	order	common name	scientific name	conservation status (IUCN)	habitat	abundance status

class ambhibians	Bufonidae	Anura	Asian bull frog	Duttaphrynus melanosticus (Schneider 1799)	LC	Marshland	C
	Dicroglossidae	Anura	Indian Bull frog	Hoplobatrachus tigrinus (daudin 1802)	LC	Marshland	C
	Dicroglossidae	Anura	Skittering frog	Euphlyctis cyanophlyctis (Schneider 1799)	LC	Marshland	C
	Microhylidae	Anura	Ornamented pygmy frog	Microhyla ornate (Dymeril &Bibron 1841)	LC	Marshland	U
	Rhacophoridae	Anura	Common tree frog	Polypedates maculatus (Gray 1830)	LC	Woodland	U
CLASS: REPTILES	Agamidae	Squamata	Indian Garden Lizard (girgit)	Calotes versicolor (Daudin 1812)	Not listed	Woodland	C
	Gekkonidae Gray	Squamata	chipkali	Hemidactylus gleadowi (murray 1884)	Not listed	Woodland	C
	Gekkonidae Gray	Squamata	Domestic lizard	Hemidactylus flaviviridis (Ruppell 1835)	Not listed	Woodland	C
	Scincidae	Squamata	Common Keeled Skink	Eutropis carinata (Schneider 1801)	LC	Grassland	R
	Varanidae	Squamata	Indian monitor lizard (goira)	Varanus bengalensis (Daudin, 1802)	LC	Grassland	U
	Boidae	Squamata	Red Sand Boa	Eryx johnii (Russell,1801)	Not Listed	Woodland	R
	Boidae	Squamata	Common Sand Boa	Eryx conicus (Schneider, 1801)	Not Listed	Grassland	C
	Colubridae	Squamata	Common Indian Cat Snake	Boiga trigonata (Bechstein, 1802)	LC	Grassland/ woodland	R
	Colubridae	Squamata	Black-Headed Snake	Sibynophis subpunctatus (Dumeril & Bibron, 1854)	Not Listed	Grassland	R
	Colubridae	Squamata	Checkered Keelback Water Snake	Xenochrophis piscator (Schneider, 1799)	Not Listed	Grassland/ wetland	C
	Elapidae	Squamata	Spectacled Cobra	Naja naja (Linnaeus, 1758)	Not Listed	Woodland	C
	Viperidae	Squamata	Russell's Viper	Daboia russelii (Shaw & Nodder, 1797)	LC	Grassland	C
	Trionychidae	Testudines	Indian Flap-shell Turtle	Lissemys punctata (Bonnaterre, 1789)	LC	Wetland	R
	Trionychidae	Testudines	Indian softshell turtle	Nilssonia gangetica (Cuvier, 1825)	VU	Wetland	R
	Geomydidae	Testudines	Indian black turtle	Melanochelys trijuga (Schweigger, 1812)	LC	Wetland	C
	Crocodylidae	Crocodilia	Mugger	Crocodylus palustris (Lesson, 1831)	VU	Wetland	R

FIG 1. Duttaphrynus melanosticus

FIG 2. Hoplobatrachus tigrinus

FIG 3 Euphlyctis cyanophlyctis

FIG 4 Calotes versicolor

FIG 5 Hemidactylus flaviviridis

FIG 6 Varanus bengalensis

FIG 7 Xenochrophis piscator

FIG 8 Naja naja

FIG 9 Lissemys punctate

FIG 10 Nilssonia gangetica

Major Threats To Herpetofauna

1. Lack of breeding grounds: as residential areas increases in recent times roads are concreted and small temporary water pools are almost absent in rajgarh and the rivers or lakes are polluted because of human activities Thus, amphibians probably failed to find suitable places to breed and this is the main reason for the decline in amphibian sightings in the study area.

2. Hunting of reptiles for their skin: there is illegal hunting of reptiles for their skin it is usually used to make expensive shoes and handbags. Reptile lather come from snakes, lizards, crocodiles and alligators.

3. Fear & False beliefs: this is the worst thing that human kill most of the species of reptiles because of fear that they bite them or false beliefs and superstition.

4. Habitat Destruction: where there were earlier natural areas and agriculture fields it has now becomes buildings and concreted construction takes place this the prime reason for habitat destruction of herpetofauna in the district.

CONCLUSION

The study provides information on the diversity of herpetofaunal species in rajgarh district of Madhya Pradesh. The present study observed 21 species of herpetofauna belonging to 15 families and four orders, of which amphibians represented five species belonging to four families and reptiles represented sixteen species belonging to eleven families. Amphibians and reptiles are good ecological indicators, and in recent times there has been a major decrease in their populations. Habitat loss, loss of breeding ground and fear or false beliefs are likely the most serious threats to herpetofauna, while roads, pesticides, infectious diseases, and climate change are some other threats. Awareness programs are needed to make people aware of herpetofauna and their importance for a balanced ecosystem. Snake bite is another issue so snake bite management must be taken up more seriously among local communities. Illegal hunting and poaching of turtles and reptiles in the area by local communities needs to be taken up seriously by the Forest Department for the conservation of these highly threatened reptiles.

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