



Preliminary Survey of Amphibians and Reptiles in and around Shahabad, Kalaburagi District, Karnataka, India

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ABSTRACT

The study was carried out in and around Shahabad from January 2017 to March 2018. The survey methods involved careful visual estimation of amphibians and reptilian in all the possible habitats present in the study area. The objective of the study included evaluate of species composition, relative abundance and distribution of amphibian and reptile of the chosen area. During the survey a total of 13 species of herpetofauna identified belonging to 10 families, of which 7 are snakes, 3 species amphibians, and 3 species of lizards.

Key words: Reptiles, amphibians, Shahabad.

INTRODUCTION

Herpetofauna is a collective term for amphibians and reptiles which are two distinct classes of vertebrates, forming an important constituent of biodiversity. Reptiles and amphibians occupy a diverse range of habitats and microhabitats, found from deserts to grass-lands, from forests to oceans and from hills to our own houses. India is very rich in herpetofaunal diversity (Anukul Nath *et al.*, 2012). There are more than 518 species of reptiles (Aengals *et al.*, 2011) and 314 species of amphibians (Dinesh *et al.*, 2011) found in India.

Globally, reptiles and amphibians have experienced a rapid decline in abundance and distribution, with at least 43% of amphibians exhibiting population declines and 19% of all reptile species threatened with extinction (Lesbarrères *et al.*, 2014). All over the world, herpetofauna species are facing threats due to habitat loss, degradation, fragmentation and alteration, introduced species, climate change, pollution, chemical contamination, and diseases (Böhm *et al.*, 2013; Lesbarrères *et al.*, 2014). Reptile and amphibian species are understudied in comparison to birds and mammals, possibly due to their cryptic nature and often smaller body size (Bhattarai *et al.*, 2017; Vasudevan *et al.*, 2001). Herpetofauna species are indicators of ecological health and biodiversity composition of the forest landscapes (Fulton, 2018). Landscape level changes in habitat and microclimate significantly affect the biodiversity structure and composition. Habitat loss and fragmentation has contributed significantly to the global decline of amphibians and reptiles (Schneider-Maunoury *et al.*, 2016).

Hence, the purpose of this study is to provide species composition of amphibian and reptilian community in and around Shahabad.

STUDY AREA

Shahabad is located in the maiden area of the Deccan region as per the physio agronomic classification. It is basically a plain land with small highly weathered slopes gently from crest to trough and quarries. The topography drains into river Kagina which flows in the west of the city from north to south, apart from this there are also seasonal and some other minor water bodies, etc. which drain the total area. Shahabad has good deposits of minerals like, Shahabad stones, sand stone, Gypsum, limestone and molding sand. All around the Shahabad town is deposit of huge limestone underneath.

The town can be categorized as arid region of the state of Karnataka. The climate of the Shahabad town is characterized by dry weather during the major parts of the year and very hot summer temperatures are experienced during the period from April to May. As a result of which the climate is generally dry and the mercury level goes as high as 42.7° C during April and May and the minimum temperature will be around

13.8°C during the months of December and January. The wind generally blows from south west to north east direction and north east to south west.

The area is generally classified as moderate to low rainfall receiving area. As a result drought and scarcity conditions haunt people of the region. The average rainfall is 688 mm.

METHODOLOGY

Survey work was carried out in the study area (randomly) some of the species of amphibians were done on the vocalization during night hours. Survey was done both during day and night hours, and the species identification was done by using Smith (1943), Daniel (2002) and Daniels (2005).

During the night survey was carried out between 1800hrs to 2200 hrs thrice a week during month January 2017 to March 2018. The species were identified by using Smith (1943) and Das (2002).

OBSERVATIONS & RESULTS

During the study result a total of 13 species of herpetofauna belonging to 10 families, of which 7 are snakes, 3 species of amphibians, 3 species of lizards (Table 1), (Table 2 & Fig - 1). *Duttaphrynus melanostictus* were abundance in the area compare to other two species i.e *Duttaphrynus melanostictus*, *Hoplobatrachus tigrinus*, these species are attracted to the flying insects at a street lights.

Among the lizards, *calotes versicolor* are found abundant, even *Eutropis carinata* were also more common *Ahaetulla nasuta*, *Ptyas mucosa* were more frequently encountered. Species of venomous snakes identified were *Naja naja* and *Daboia russelii*, whereas *D. russelii* was rare compare to other venomous species found in the study area.

DISCUSSION AND CONCLUSIONS

From the present study it indicates the abundance of the herpetofauna. A total of 13 species were identified belonging to 10 families, which includes 7 snakes, 3 species of amphibians, 3 species of lizards. High abundance of *D. melanostictus* compared to other species which may lead to the lower stability in this community. *D. melanostictus* is cosmopolitan in distribution (Dutta, 1997) and is known to occur in a variety of habitats, especially in disturbed areas (Inger et al., 1984). Of the present study 7 species of snakes in around human habitation which initiates human snake quite often. *Naja naja* were more likely to create human-snake conflict in the study area. Due to lack of information non-venomous snakes were found to be the victims in the human-conflicts.

Lack of awareness was the main reason for the killing of snakes (Nath *et al.*, 2011). As more and more awareness and awareness programs should be done in regard to herpetofauna and its importance in ecosystem and also importance of those species in research.

Table 1. List of Amphibians species recorded during 2017-18

S. No	Order	Family	Scientific name
1	Anura	Bufoidea	<i>Duttaphrynus melanostictus</i>
		Dicroglossidae	<i>Hoplobatrachus tigerinus</i>
		Microhylidae	<i>Microhyla ornate</i>

Table 2. List of Reptilians species recorded during 2017-18

S. No	Order	Family	Scientific name
1	Squamata	Agamidae	<i>Calotes versicolor</i>
		Gekkonidae	<i>Hemidactylus frenatus</i>
		Scincidae	<i>Eutropis carinata</i>
		Boidae	<i>Eryx johnii</i>
		Colubridae	<i>Ahaetulla nasuta</i>
			<i>Lycodon striatus</i>
			<i>Oligodon arnensis</i>
			<i>Ptyas mucosa</i>
		Elapidae	<i>Naja naja</i>
	Viperidae	<i>Daboia russelii</i>	

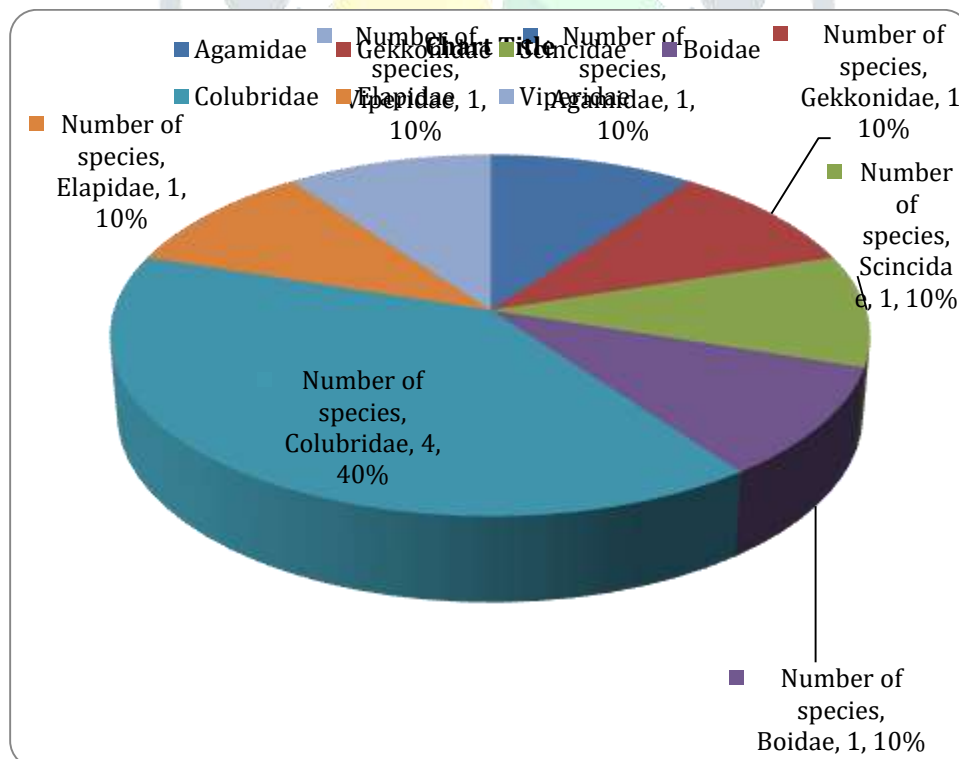


Figure - 1. Pie chart representing Percentage of species in Reptilian represented in families

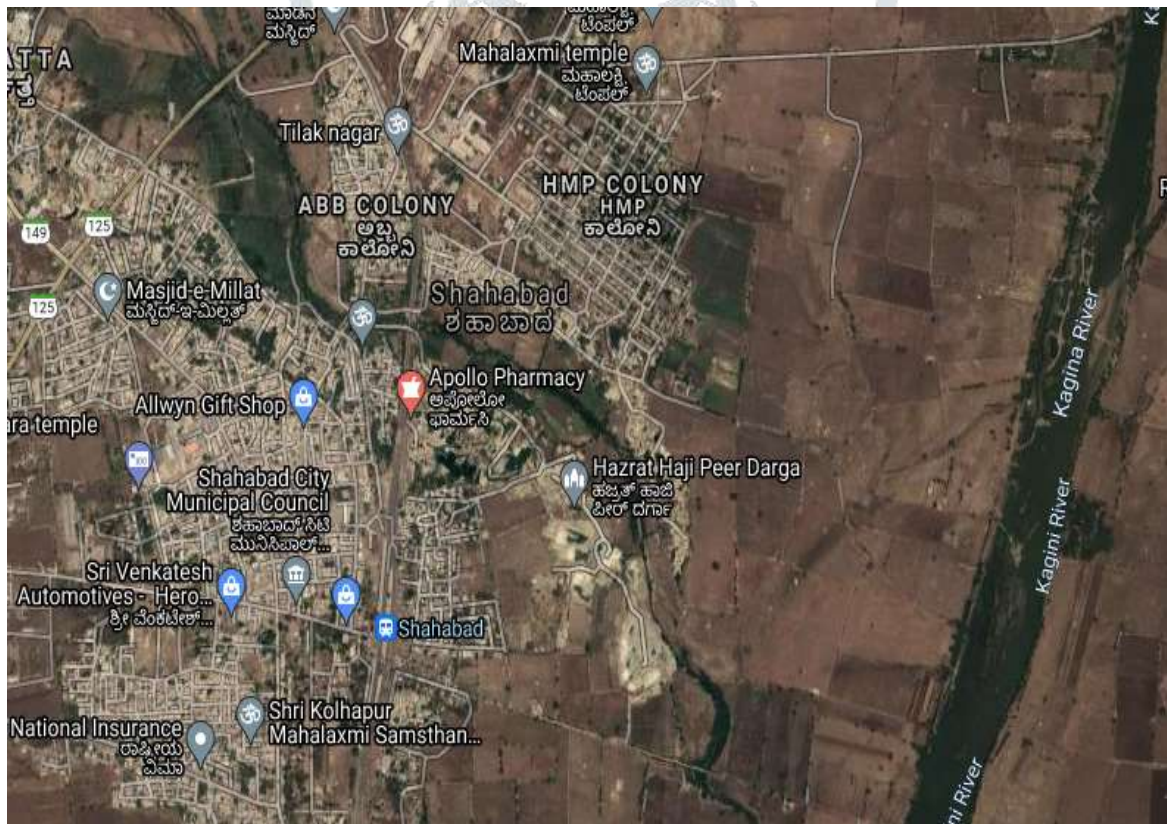


Figure 2. Study area

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