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(IV)

HERPETOFAUNA INVENTORY OF THE FOREST RESEARCH INSTITUTE, NEW FOREST, DEHRADUN UTTARAKHAND, INDIA

The campus of Forest Research Institute is located at New Forest in Dehradun in the state of Uttarakhand, India. It is very close to the eastern tributaries of the Asan river. The herpetofauna of this campus has never been properly investigated. This study is important as it is the first such attempt at obtaining base line data on the herpetofauna of this large campus and is useful in understanding the response of reptile diversity to a campus which is a transition zone between extensive forested and riparian areas to the north of it and complete urbanization to the south of it.

Study site

The Institute's campus lies from 30°21'07.20''N to 30°19'55.98'' N and 77°59'00.33'' E to 78°01'03.46'' E. The campus lies at an altitude of 641 amsl. The campus covers an area of 470 hectares . This area experiences an annual rainfall of 2120 mm and relative humidity of 60% during the monsoons. Temperatures vary between a maximum of 43.8^{0}C in summer and a minimum of 1.2 °C in winter. The campus has a mixed managed forest. There is also an arboretum, a bamboo-cetum having a variety of indigenous and exotic species. There is also a large botanical garden and two orchards as well as a few monoculture tree plantations in the campus. Just south of the campus lie sprawling urban residential complexes. To the north lies the Tons river, the eastern most tributary of the Asan river which joins up with other tributaries to form the Asan river within a few kilometers from the campus. Around this eastern extent of the Asan river, just north of the campus, lies large expanses of sal forest with a small village at the borders of the forest expanse and patches of agriculture around that village. The study area is in the Western Himalayan Biogeographical Zone. The forests of the area and around it are sub-tropical.

A study was carried out from August 2009 to February 2011 to ascertain the herpetofauna species richness of New Forest Campus. Surveys were conducted in the various parts of the campus for herpetofauna at different times of day and night during various seasons. Different vegetated regions of the campus were surveyed along randomly placed transects from August 2009 to April 2010 followed by opportunistic observations for the rest of the study period. The herpetofauna found were captured and contained in plastic containers, photographed and released. Dead specimens that were found were collected and preserved. Other students of the Institute on the campus also contributed to this study with photos of specimens they found. All the individuals captured or photographed were identified using Smith (1935); Das (2008); Tikader and Sharma (1992) and Chand (2002). The relative abundance of the different species on the campus is indicated by a subjective assessment of the local populations in the different habitats in which they were found. Classes used to describe relative abundance are : Common – Individuals of the species were observed on 9-10 out of 10 visits to the habitat, Fairly Common – Individuals of the species were observed on 6-8 out of 10 visits to the habitat, Uncommon - Individuals of the species were observed on 3-5 out of 10 visits to the habitat, Rare - Individuals of the species were observed on 1-2 out of 10 visits, Irregular – Occurrence was too irregular to assign the species to any of the other categories.

A total of 7 species of amphibians representing 6 genera and 3 families, and 17 species of reptiles representing 14 genera and 6 families, were found during the study period Table 1 and Fig. 1). The Herpetological collection of the Wildlife Institute of India, also has specimens of some species that were found in the area

Fig. 1. : A. *Bufo stomaticus*, B. *Duttaphrynus melanostictus*, C. *Sphaerotheca breviceps*, D. *Varanus bengalensis*, E. *Assymblepharus himalayanum*, F. H*emidactylus leschenaulti*.

Table 1 : List of Amphibians and Reptiles Found on the Campus of the Forest Research Institute

Sl. No.	Scientific name	Common Name	Subjective relative abundance	Occurrence
	AMPHIBIANS			
	Family- Bufonidae			
1.	*Duttaphrynus melanostictus* (Schneider, 1799)	Common Asian Toad	Rare	Mixed Forest
2.	*Bufo stomaticus* (Lütken, 1864)	Marbled Toad	Common	All habitats, but predominantly grassy and herbaceous.
	Family Ranidae -			
3.	*Hoplobatrachus tigerinus* (Daudin, 1802)	Indian Bullfrog	Irregular	Open air water reservoirs.
4.	*Sphaerotheca maskeyi* (Schleich & Anders, 1998)	Maskeyi's Burrowing Frog	Irregular	Mixed Forest
5.	*Sphaerotheca breviceps* (Schneider 1799)	Indian Burrowing Frog	Rare	Mixed Forest
	Family Microhylidae -			
6.	*Microhyla ornata* (Boulenger 1890)	Ornate Narrow Mouthed Frog	Irregular	Mixed Forest
	REPTILES			
	Order Lacertilia -			
	Family Gekkonidae -			
7.	*Hemidactylus flaviviridis* (Ruppell, 1835)	Northern House Gecko	Common	Urban Structures such as Buildings
8.	*Hemidactylus brooki* (Gray,1845)	Brook's Gecko	Common	Urban Structures such as Buildings, Walls and Mixed Forest
9.	*Hemidactylus leschenaulti* (Duméril & Bibron, 1836)	Leschenault's Gecko	Fairly Common	Urban Structures such as Walls.
	Family Agamidae -			
10.	*Calotes versicolor* (Daudin, 1802)	Oriental Garden Lizard	Fairly common	Orchards and Grassy or herbaceous areas.
	Family Scincidae -			
11.	*Asymblepharus himalayanus* (Günther, 1864)	Himalayan Rock Skink	Uncommon	Mixed Forest
12.	*Riopa punctata* (Gmelin, 1799)	Dotted Garden Skink	Rare	Grassy areas.
13.	*Eutropis macularia* (Blyth, 1853)	Bronze Grass Skink	Common	Grassy areas and Forested areas with leaf litter.
14.	*Eutropis carinata* (Schneider, 1801)	Keeled Grass Skink	Irregular	Mixed Forest
	Family Varanidae -			
15.	*Varanus bengalensis* (Daudin 1802)	Indian Monitor	Irregular	Mixed Forest
	Order Ophidia -			
	Family Elapidae -			
16.	*Bungarus caeruleus* (Schneider, 1801)	Common Krait	Irregular	Mixed Forest
17.	*Naja naja* (Linnaeus 1758)	Binocellate Cobra	Irregular	Mixed Forest
	Family Colubridae			
18.	*Xenochropis piscator* (Schneider, 1801)	Checkered Keelback	Irregular	Mixed Forest
19.	*Ptyas mucosa* (Linnaeus 1758)	Indian Rat Snake	Irregular	Mixed Forest
20.	*Lycodon jara* (Shaw 1802)	Yellow Speckled Wolf Snake	Irregular	Mixed Forest
21.	*Coelognathus Helena* (Daudin 1803)	Common Trinket Snake	Irregular	Grassy regions
	Family Viperidae -			
22.	*Daboia russelli* (Shaw and Nodder 1797)	Russell's Viper	Irregular	Mixed Forest
	Family Typhlopidae -			
23.	*Ramphotyphlops braminus* (Daudin 1803)	Brahminy Worm Snake	Irregular	Mixed Forest

Table 2 : List of voucher specimens collected by the Wildlife Institute of India from the Forest Research Institute's Campus from 1985-1990, representing species not found during the current survey.

Sl No.	Scientific Name	Common Name	Registration No.
1.	*Eutropis dissimilis* (Hallowell, 1857)	Variegated grass skink	WIIM 38.7.4.3
2.	*Sitana sivalensis* (Schleich, Kästle & Shah, 1998)	Indian fan throated lizard	WIIM 38.7.4.2
3.	*Sibynophis sagittarius* (Cantor 1839)	Cantor's black headed snake	WIIM 38.7.4.4
4.	*Oligodon arnensis* (Shaw 1802)	Banded kukri snake	WIIM 38.7.4.7
5.	*Amphiesma stolata* (Linnaeus 1758)	Striped Keelback snake	WIIM 38.7.4.5
9.	*Lycodon aulicus* (Linnaeus 1758)	Common wolf snake	WIIM 38.7.4.12

Table 3 : List of species found in the Forest Research Institute by staff of the Zoological Museum, prior to 1990 that were not found during the current survey.

Sl. No.	Scientific Name	Common Name	Registration No. of the latest specimen obtained	Year the latest specimen was obtained
1.	*Ahaetulla nasuta* (Lacépède, 1789)	Green vine snake	Z.577	1986
2.	*Ophiophagus hanna* (Cantor 1836)	King cobra.	Z.356	1953

from 1985 to 1990, which were not found during the current study but may still exist in the area (Table 2). The herpetological collection of the Forest Research Institute's Museum also has specimens of two more species that were found in the area in the past (Table 3).

The campus of the Forest Research Institute has 23 of the 79 species of herpetofauna known to be found in the state of Uttarakhand. This includes rare species such as *Lycodon jara* and *Varanus bengalensis*. Since two juvenile *V. bengalensis* have also been found on the campus during the study period (one of them with a snout vent length of less than a foot long) it is quite possible that one or more mating pairs may be breeding on the campus itself, though this has not been confirmed. Since the campus has a reserved forest which is protected from trespassers and rarely disturbed (being an experimental forest area) it could serve as an ideal habitat for the above mentioned rare and endangered species, which is important considering that increasing habitat destruction through overgrazing, illicit felling and gravel quarrying is damaging the wilderness and large forested expanse lying nearby to the north of the campus. Voucher specimens from the herpetological collections of the Wildlife Institute and the Forest Research Institute's Museum indicate that the diversity of the herpetofauna was much greater at the study site in the past. Eight species, representing almost a third of the total herpetofauna diversity recorded over time in the area, have not been observed during the current study. Development of the campus and the surrounding areas resulting in habitat fragmentation may be the chief reason for the fall in herpetofauna species diversity over time.

References

Chand. S.K. (2002). *Hand Book Indian Amphibians* , Published – The Director, Zoological Survey of India.

Das, I. (2008). *Snakes and Other Reptiles of India*.- New Holland Publishers UK Ltd.

Smith, M.A. (1935). *The Fauna of British India - Reptilia and Amphibia Volume 2*. Publisher – Taylor and Francis (Original Publisher), Today and Tomorrows Printers and Publishers (Indian reprints).

Tikader, B.K. and Sharma, R.C. (1992). *Handbook: Indian Lizards*. The Director, Zoological Survey of India, Calcutta.

Omkar Dhavale
Junior Research Fellow in the Department of Endangered Species,
Wildlife Institute of India Dehradun Uttarakhand India.
Email- omkarsdhavale@gmail.com