

# Study of Snake Species Diversity in Rural and Semi Urban Areas of Buldhana district of Maharashtra, India

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## ABSTRACT

Snakes plays important ecological role in food chain. Depletion of these animals throughout the globe and their extinction is causing a conscientious and diligent task to the people of all spheres of the society to conserve them. A total number of 25 species of snakes belonging to 6 families, 22 genera were recorded during the study period of six month. Of which 17species belonging to non-venomous, 3 semi-venomous and 5 species were venomous. Among these 2 species were endemic to India and 7 species shows rare status.

**Key words:** Snake of India, Maharashtra Snakes, Khamgaon, Dyanganga, Snakes.

## INTRODUCTION

Snakes are abundant all over the world except Antarctica and some islands. Snakes are extremely well adapted to their habitats and plays important role in food chain and food web. The snakes are integral part of a forest ecosystem as their position in the food chain as predators making them important in the nutrients flow. They play key ecological roles in controlling rodents pests. They maintain the balance of nature. The present study was aimed to determine the diversity distribution and various morphs of the snake species in Khamgaon region of Maharashtra. The study period was August 2018 to January 2019.

## MATERIAL AND METHODS

Khamgaon is located in the Buldhana district, Maharashtra. Dyanganga Wild Life Sanctuary is about 22km from Khamgaon. For the collection Pit-fall trap, direct encounter, snake occurrence calls and following the rescue calls of snake friends these type of methods were used. The collected species were identified by using field guide and books. The collected species then released in their natural habitat. If any injured snake species collected then it were treated with Veterinary Doctors and released in forest after some time.

## RESULTS ANA DISCUSSION

In the present study total snakes comprises six families Typholopidae, Pythonidae, Boidae, Colubridae, Elapidae, Viperidae. Out of this families

Colubridae family shows a dominance and represented in dominance order as Colubridae> Elapidae> Viperidae>=Boidae>Pythonidae>=Typhlopidae.

There were 22genera recorded out of 25 snake species with 6 families during the study period of six month. Of which 17species belonging to non-venomous, 3 semi-venomous and 5 species were venomous. Among the venomous species, Common krait, slender coral snake, spectacled cobra, Russell’s viper and Saw scaled viper were found. Indian cobra-Naja naja was the most abundant followed by Indian krait-Bungarus careuleus. The non-venomous species included Bramhminy worm snake, Indian rock Python, Common sand boa, Red sand boa, Common trinket snake, Indian rat snake, Banded racer, Indian smooth snake, Common kukri, Common bronzeback tree snake, Common wolf snake, Yellow spotted wolf snake, Dumeril’s black headed snake, checkered keelback, striped keelback, Green keelback and Russell’s kukri. Among the semi-venomous species Indian egg eater, Common cat snake and Common vine snake were recorded.

Among these snake species Indian smooth snake- Corenella branchyura and Yellow spotted wolf snake- Lycodon flavomacutus shows endemic status in India.

There were Indian egg eater, Indian Rock python, Yellow spotted wolf snake, Indian smooth snake, Russell’s kukri, Dumerill’s Black headed snake and Slender coral snake shown rare status. Family Typhlopidae was recorded with single species, Pythonidae with 1, Boidae with 2, Colubridae with 16, Elapidae with 3 and Viperidae 2 species. Family Colubridae showed highest percentage 64% and was species rich. While non-venomous category of snakes recorded with highest number of species and semi venomous category found to be poor in species.

The present study is a trial to guage the data regarding differing kinds of snake species and their incidence, abundance and species richness and any assist within the data, awareness and conservation of snake fauna in this region.

**Data analysis:-**

Shannon index (**H**) = - ∑ Pi ln Pi = - (-2.4216) ,  
 H = 2.4216

Simpson index (**D**) = 1/∑Pi² = 1/0.3976 ,  
 D = 2.5150

**Table 1: Data analysis using diversity indices (Shannon and Simpson )**

Sr.no	Family name	No. of species	pi	pi2	In Pi	Pi ln pi
1	<i>Typhlopidae</i>	4	0.0243	0.0005	-7.6009	-0.1847
2	<i>Pythonidae</i>	3	0.0182	0.0003	-8.1117	-0.1477
3	<i>Boidae</i>	11	0.067	0.0044	-5.4261	-0.3635
4	<i>colubridae</i>	95	0.5792	0.3344	-1.0924	-0.6327
5	<i>Elapidae</i>	37	0.2256	0.0508	-2.9798	-0.6722
6	<i>Viperdae</i>	14	0.0853	0.0072	-4.9336	-0.4208
		<b>164</b>		<b>0.3976</b>		<b>-2.4216</b>

**Table 2: Data analysis of No. of species by Family distribution.**

Sr.No.	Family	No. of species recorded	Percentage (%)	π chart %
1	Typhlopidae	1	1/25×100= 4	4×3.6=14.4°
2	Pythonidae	1	1/25×100= 4	4×3.6=14.4°
3	Boidae	2	2/25×100=8	8×3.6=28.8°
4	Colubridae	16	16/25×100= 64	64×3.6=230.4°
5	Elapidae	3	3/25×100= 12	12×3.6=43.2°
6	Viperidae	2	2/25×100= 8	8×3.6=28.8°
Total	25	100%	360°	

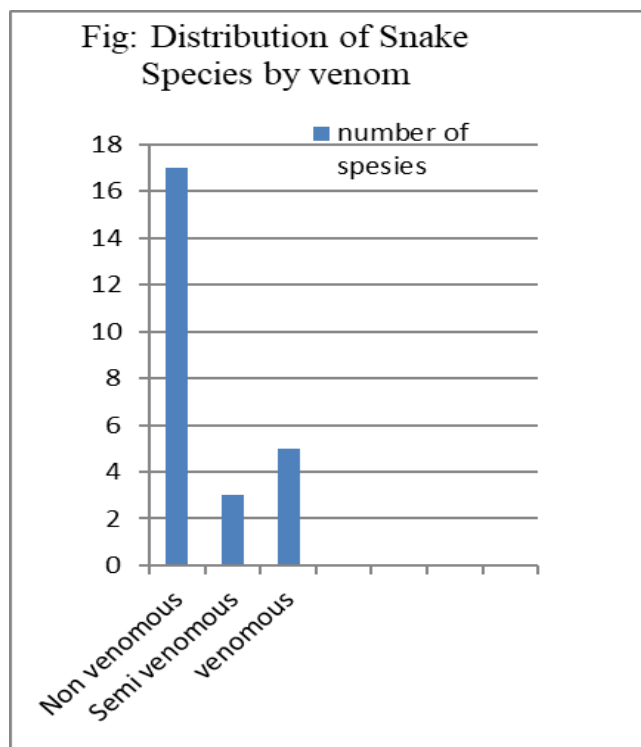
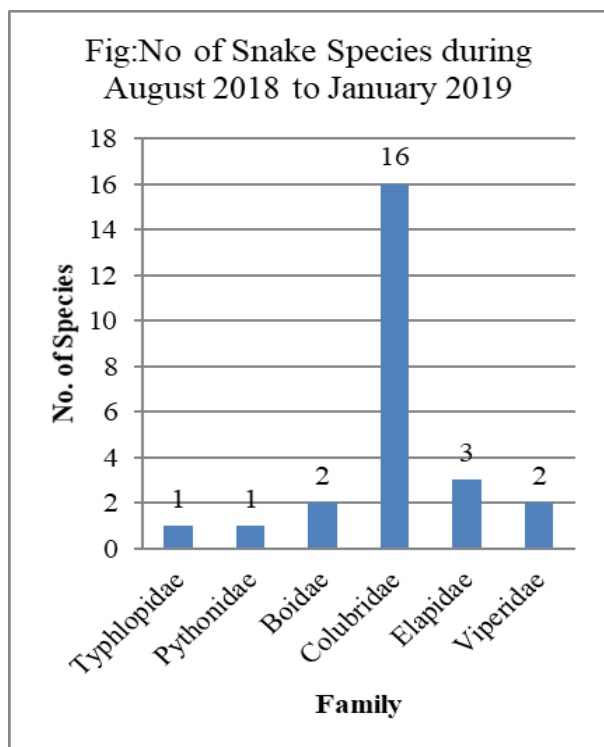


Table.3: Graphical Representation of Data on basis of Family and Venom

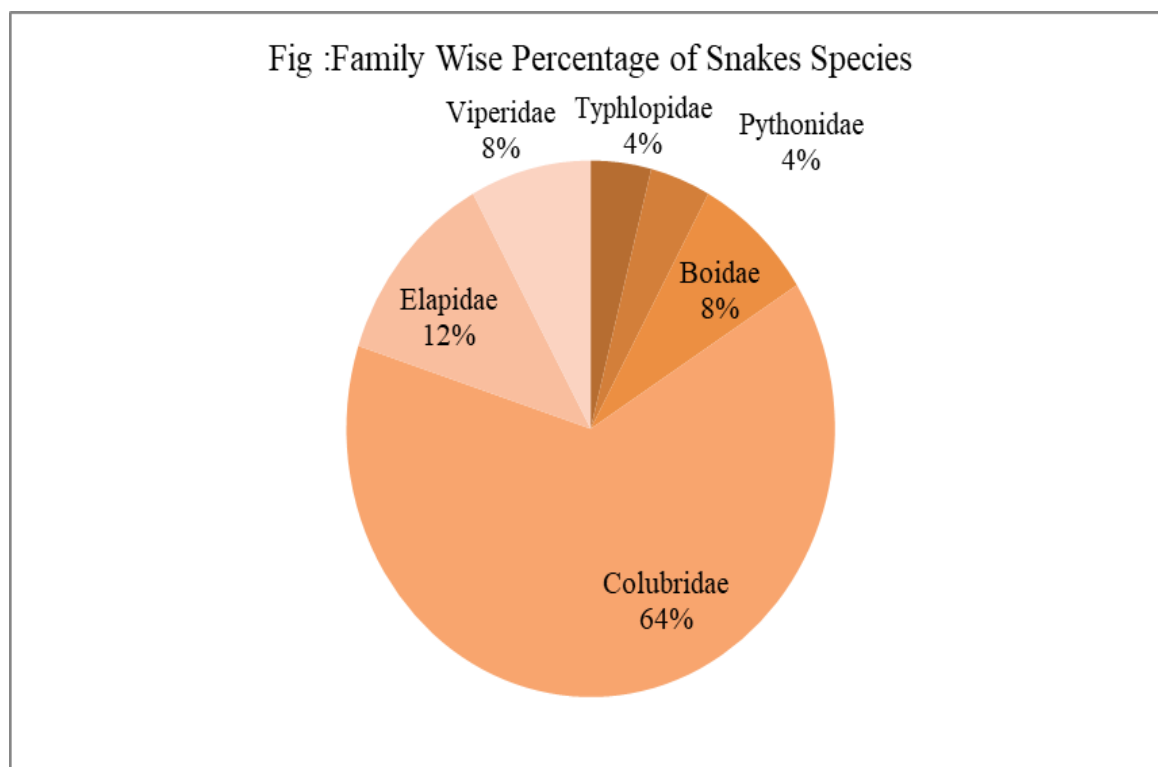


Table.4: Pie Diagram for Family Wise Percentage of Snake Species.



1. Brahminy worm snake Location:- Garadgaon



2. Indian rock python Location:- Tembhurna



3. Common sand Boa Location:- Sutala Bk.



4. Red sand Boa Location:- Shirajgaon Deshmukh



5. Common trinket snake Location:- Area of Garadgaon



6. Indian rat snake Location:- Area of Garadgaon



7. Banded racer Location:- Area of Garadgaon



8. Indian smooth snake Location:- Civil line Khamgaon



9. Indian egg eater Location:- Area of Wadi



10. Common kukri snake Location:- Area of Antraj



11. Common Bronzback snake Location:-Lakkadganj Khamgaon



12. Common wolf snake Location:- Rekha Plot Khamgaon



13. Yellow spotted wolf snake Location:- G.S. college Khamgaon



14. Dumeril's black headed snake Location:- Area of Sutala Khurd



15. Checkered keelback Location:- Area of Garadgaon



16. Striped keelback Location:- Area of Waghali



17.Green keelback Location:-Area of Mathani



18.Russell's kukri snake Location:-Area of Makta



19.Common cat snake Location:-Area of Hiwarkhed



20.Common vine snake Location:-Area of Varna



21.Common krait Location:- Area of Sajanpuri



22.Slender coral snake Location:- Civil lines Khamgaon



23.Specteclad cobra Location :- Vijaylaxmi Petrol Pump Khamgaon



24.Russell's viper Location:- Area of Garadgaon



**25. Saw scaled viper Location:- Area of Shelodi**

**Conflicts of interest:** The authors stated that no conflicts of interest.

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