



Reptiles of Navalgunda, a semi-arid region of Dharwad District, Karnataka

Reptiles inhabit a wide range of ecosystems, including marshes, grasslands, scrub jungles, woodlands, rivers, and oceans. India's diverse landscape supports a rich variety of reptilian species such as snakes, lizards, turtles, tortoises, and crocodiles. A conservation study by Srinivasulu et al. (2014) identified around 157 reptile species endemic to the Western Ghats and peninsular India. Later, Aengals et al. (2018) updated the national checklist to include 572 species, comprising three crocodile species, 34 turtles and tortoises, 231 lizards, and 304 snakes across 36 families. More recent compilations by Uetz et al. (2025) and Mohapatra et al. (2024) reported a total of 778 species and subspecies across India's states and Union Territories, with 427 species considered endemic.

Navalgunda (15.5605° N, 75.3556° E, 578 m) is a panchayat town located approximately 48 km from Dharwad City of Karnataka, characterized by a semi-arid climate. The region is drought-prone and supports a variety of habitats that sustain diverse animal life. The local climate features temperatures that generally range between 62°F and 97°F throughout the year,



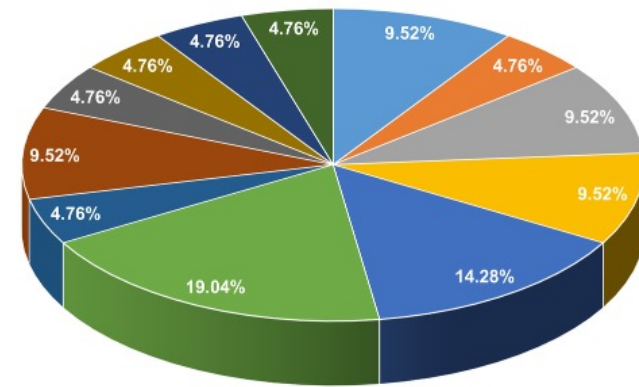
The map of Karnataka (a) showing the study area located at Navalgunda in the Dharwad District (b). A satellite view of Navalgunda (c) study areas: (1) Navalgunda Hill, (2) Neelammanakere, (3) Agriculture fields, and (4) Bennehalla. (Source: Google Maps).

rarely dipping below 56°F or rising above 103°F. Nevertheless, there is currently no published information on the herpetofauna diversity of the area. The present study aims to document the diversity status of reptiles in and around

Navalgunda, Dharwad District, Karnataka.

Field surveys were conducted twice a month over a period of nine months, from November 2023 to July 2024, covering a total area of 1042595.16 m² across four locations: 1) Navalgunda Hill (15.560141° N, 75.345293° E; 386166.18 m²), 2) Neelammanakere (15.555203° N, 75.356109° E; 76131.39 m²), 3) Agricultural Fields (15.562749° N, 75.365978° E; 306330.07 m²), and 4) Bennehalla (15.564072° N, 75.354347° E; 273967.52 m²). The study mainly employed the visual encounter survey method for data collection. Species identification was carried out using established taxonomic references (Daniel 2002; Das & Das 2018; Das 2020). In addition, online resources such as Uetz et al. (2025) and iNaturalist (2025) were also referred for identification of species.

The present study recorded the occurrence of reptilian fauna, including different forms of lizards, snakes, and turtles in Navalgunda town, Dharwad district, Karnataka. In this survey, two orders of



Pie chart showing the distribution of reptilian families in Navalgunda, Dharwad District.

Checklist of reptilian fauna in Navalgunda, Dharwad

	Scientific name	Common name	IUCN Red List status
	Order Squamata		
	Family Agamidae		
1	<i>Calotes versicolor</i>	Oriental Garden Lizard	LC
2	<i>Sitana ponticeriana</i>	Pondicherry Fan-throated Lizard	LC
	Family Boidae		
3	<i>Eryx johnii</i>	Red Sand Boa	NT
	Family Colubridae		
4	<i>Fowlea piscator</i>	Chequered Keelback	LC
5	<i>Ptyas mucosa</i>	Oriental Rat Snake	LC
	Family Elapidae		
6	<i>Bungarus caeruleus</i>	Common Krait	LC
7	<i>Naja naja</i>	Indian Cobra	LC
	Family Gekkonidae		
8	<i>Hemidactylus brookii</i>	Brooke's House Gecko	LC
9	<i>Hemidactylus frenatus</i>	Common House Gecko	LC
10	<i>Hemidactylus leschenaultii</i>	Leschenault's Gecko	LC
	Family Scincidae		
11	<i>Eutropis carinata</i>	Keeled Indian Mabuya	LC
12	<i>Eutropis macularia</i>	Bronze Mabuya	LC
13	<i>Riopa punctata</i>	Common Dotted Garden Skink	NE
14	<i>Sphenomorphus indicus</i>	Indian Forest Skink	LC
	Family Typhlopidae		
15	<i>Indotyphlops braminus</i>	Brahminy Blind Snake	LC
	Family Uropeltidae		
16	<i>Uropeltis rajendrani</i>	Rajendran's Shieldtail Snake	NE
17	<i>Uropeltis jerdoni</i>	Jerdon's Shieldtail Snake	NE
	Family Varanidae		
18	<i>Varanus bengalensis</i>	Bengal Monitor Lizard	NT
	Family Viperidae		
19	<i>Doboia russelii</i>	Russel's Viper	LC
	Order Testudines		
	Family Geoemydidae		
20	<i>Melanochelys trijuga</i>	Indian Black Turtle	LC
	Family Trionychidae		
21	<i>Lissemys punctata</i>	Indian Flapshell Turtle	VU

LC—Least Concern | NE—Not Evaluated | NT—Near Threatened | VU—Vulnerable.



reptiles, namely, Squamata and Testudines were documented, of which squamates comprised 10 families with a total of 19 species, whereas the testudines comprised of two families with a total of two species. Scincidae was the most represented family with four species (19.04%), followed by Gekkonidae with three species (14.28%). Agamidae, Colubridae, Elapidae, and Uropeltidae were each represented by two species (9.52%).

The Garden Lizard, *C. versicolor*, was spotted on trees in both rural and urban environments. Skinks were present in both types of areas, frequently found in house gardens and bushes. Gekkonid lizards like *H. frenatus* were commonly found in urban areas, whereas other gecko species were typically located in rocky regions and trees. The Indian flap shell turtle and Indian black turtle were found near wetlands and in water bodies, respectively.

These observations indicate that the study area offers diverse habitat conditions for different types of reptiles, as noted in the present investigation.

The majority of reptilian fauna in the study area falls within the 'Least Concern' (15 species) status, according to the IUCN Red List. However, some species are listed as 'Vulnerable' (*Lissemys punctata*) and 'Near Threatened' (*Eryx johnii* & *Varanus bengalensis*).

Overall, the abundance of squamate reptiles observed in a small town like Navalgunda can be attributed to favourable environmental conditions, including the semi-arid climate, black soil, hilly regions, and agricultural fields.

However, anthropogenic activities like burning of bushes, drilling of hills, and pollution of water bodies also pose threats to the species. These activities can lead to habitat loss and disrupt animal life. Given the crucial role of reptiles in the ecological system, conservation measures are essential to preserve the reptilian diversity in this area.

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