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A CHECKLIST OF SAURIAN FAUNA FROM SATARA DISTRICT, MAHARASHTRA INDIA

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ABSTRACT

An updated checklist of saurians is the collected information from survey during September 2013- Dec.2016 on the basis of habitat structure and possibility of availability of the species and known taxonomic references. We find 28 different species of Saurians belonging to six different families of Order Squamata. This information will helps to provide basic diversity information, awareness of this amazing creature and conservation of the fauna of Sauria in Satara district of Maharashtra state.

KEYWORDS: Saurians, Squamata, Satara District

Study of diversity of reptiles has been emphasized many aspects of ecology, food web, pest management and ecosystem maintenance. Reptiles are one of the oldest living species on the planet, having existed in many different forms for millions of years. They fill a critical role both as predator and prey species. Reptiles are so important in pest control. Reptiles are important components of the food webs in most ecosystems. The second most species-rich group of amniotes after birds is reptiles. The world reptile database has reported 9,547 species of reptiles in the world. Most of their 96.3% diversity is concentrated in squamates. In squamates, 59% are lizards followed by 35% snakes, and 2% amphisbaenians (Gray ., 1844) or widely known as worm lizards, Turtles (3.4%), crocodilians (0.3%), and tuataras (0.01%) are far less diverse. In terms of species diversity, most turtles and crocodilians were described earlier, while descriptions of lizards, snakes and amphisbaenians are always changes unpredictably with respect to time. Lizard descriptions reached unprecedented levels during the last decade. (Pincheira-Donoso, D. et.al ., 2013) Zoological survey of London assessed that 19 % of the world's crocodiles, turtles, snakes, lizards and other reptiles are threatened with extinction, 12 percent classified as critically endangered, 41 percent endangered and 47 percent vulnerable (Bohm Monika et.al., 2013). An updated checklist of 518 species of reptiles which includes 3 species of crocodiles, 34 species of turtles and tortoises, 202 species of lizards and 279 species of snakes belonging to 28 families recorded in India till date (Aengals et.al., 2011).

Suborder Sauria (McCartney.,1802) is one of the clade of reptiles that includes all lizards but excludes snakes. Saurians defined as a paraphyletic group. Out of world's reptile species, there are 5,634 species of only saurians. The majority of species distributed in India shows a unique Indian radiation whose members are largely distributed throughout the Indian subcontinent. Hence Indian subcontinent has served as an important arena for diversification of saurian (Karanth, 2010).

Current knowledge of the diversity of saurian in Satara district is woefully inadequate. Therefore, present survey gives an idea about the situation and its species richness of saurian diversity from Satara district.

MATERIALS AND METHODS

Study Area

Satara district (17^0 42′0″N, 74^0 0′ 0″E) of western Maharashtra with an area of 10,480 sq.km. (4,048 sq.miles). The Sahyadri range, or main range of the Western Ghats, runs north and south along the western edge of the district, separating it from Ratnagiri district. Satara shows a contrast of physical geography of immense dimensions and reveals a variety of landscapes influenced by relief, climate and vegetation. The variation in relief ranges from the pinnacles and high plateaus of main Sahyadri range having height over 1,438 m (4500 feet) above mean sea level in Mahabaleshwar (17.92172^0N, 73.6556^0E) to the subdued basin of the Nira river in Phaltan tahsil (17.98^0N, 74.43^0E) with the average height of about 568m (1,864 ft) above mean sea level.

The rainfall in the belt roughly 15 to 20 miles wide, parallel to the crests of the Sahyadri range, is considerably higher than in the rest of the district. The climate of Satara district varies between 11^0C to 37^0C. The climate of Satara district ranges from the rainiest in the Mahabaleshwar region, which has an average annual rainfall over 6000 mm to the driest in Man tahsil where the average annual rainfall is about 500 mm. The average rainfall in the district is around 1426 mm. The minimum temperature in the district average 11.6 degree Celsius whereas the maximum temperature reaches around 37.5

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degree Celsius. The vegetation varies from the typical monsoon forest in the western parts to scrub and poor grass in the eastern parts. (Indian Meteorological Department, Pune, 2006)

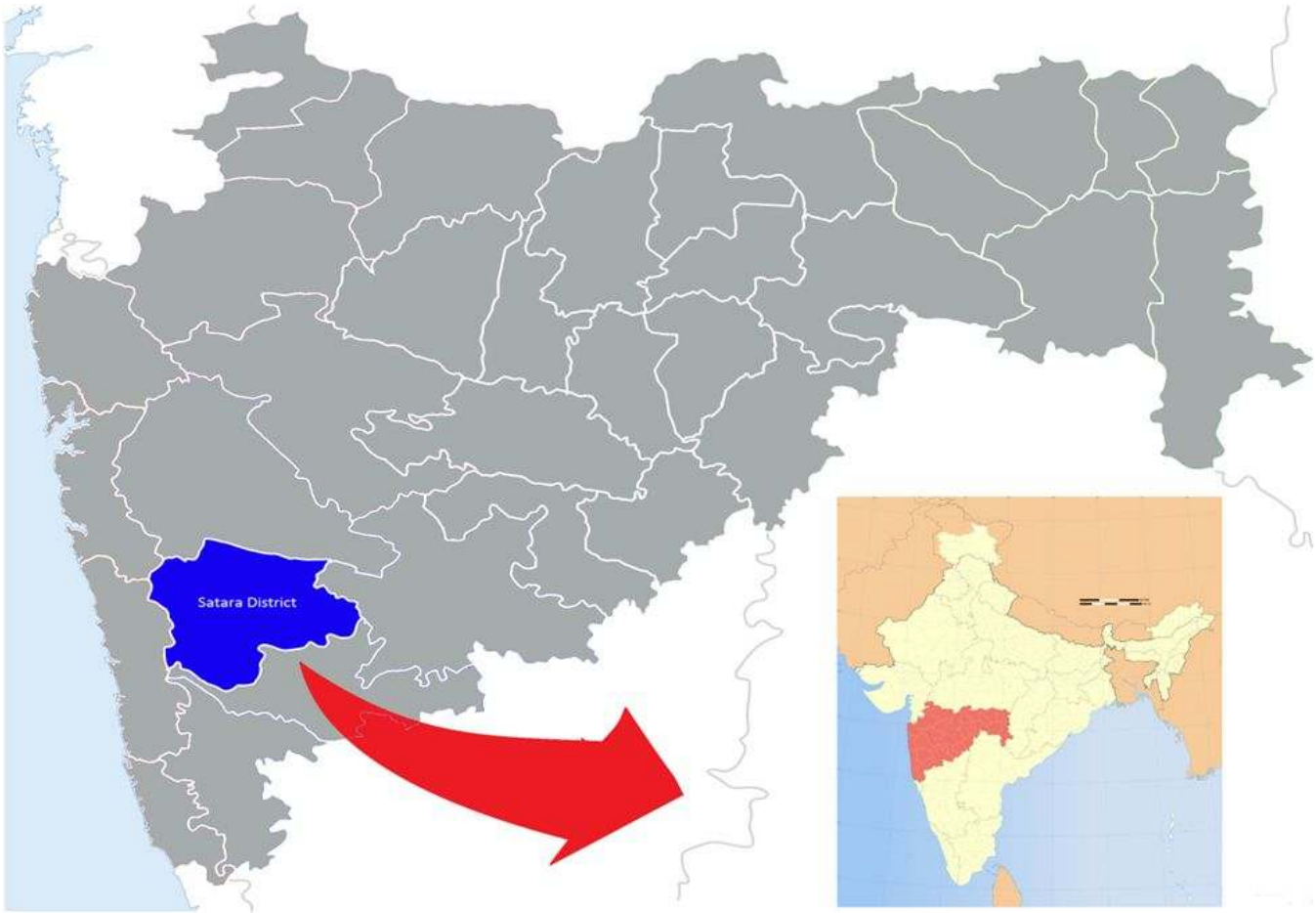

Figure 1: Satara district (Maharashtra, India)

METHODOLOGY

The present study has been carried out in September 2013 to December 2016 of calendar year which covers three different climatic seasons of Indian continent. The part of study area includes in one of the Biodiversity hotspot of India.

STUDY SITES

The sites were selected as Dams, Grasslands, Rocky and stony area, semi arid region, crop fields, Hills, villages and towns as well.

SAMPLING METHODS

A survey of saurians from the Satara district was carried out by visiting habitats twice in a month. Random selection of habitats of saurians according to seasons, geographical conditions and biology of reptiles and the time including day and night also. With the help of Visual encounter survey method (Champbell and Christman., 1982, Crump and Scott., 1994 , Rodda and Dean-Bradley., 2002,Doan T.M., 2003) and randomized walking (Whitakar R. and Captain A., 2008). Correct identification of saurians was done by using many field manuals, by referring taxonomic keys and various books and literatures (Gunther., 1864; Boulengre.,1890; Smith.,1931.,1935a.,1935b,1943., Dutta.,1997., Bossuyt., 2002., Daniels., 2002., Whitakar and Captain., 2008, Ahmed, Das and Dutta., 2009; Aengals et.al.,2012) and by seeking experts opinion.

All the possible macro and microhabitats were checked using safety measure and species were released after taking photographs in their habitat.

RESULTS AND DISCUSSION

Total 28 species of saurian were encountered in the present study of which belong to 6 families and 11 genera. These saurians of , 5 belong to Agamidae, 12 belongs to Gekkonidae, 2 belong to Lacertidae, 7 belong to Scincidae and one species from Varanidae and Chamaeleonidae respectively.

Table 1: List of Saurian species

Family	Name of species	Habitat	Abundance
Agamidae	*Calotes vesicolour* (Daudin,1803)	A,C,F,G,H,T,V,W	A
	Calotes rauxii (Dumeril and Bibron,1844)	A,C,F,G,H,T,V,W	A
	Sarada superb	O,G,H	O
	Sarada darwini	O,G,H	O
	Sitana laticeps (Cuvier, 1829)	O,G,H	C
Gekkonidae	*Cnemaspis girii*	O,G,W,U	O
	Geckoella deccanensis	F,O,G,F,H	O
	Hemidactylus Cf. *brookii* (Gray, 1930)	A,F,G,H,T,U,V,W	C
	Hemidactylus parvimaculatus	A,F,G,H,V,W	C
	Hemidactylus murrayi	A,F,G,H,V,W	C
	Hemidactylus flaviviridis (Rupell,1835)	A,F,G,H,V,W	C
	Hemidactylus frenatus (Dumeril and Bibron, 1844)	A,C,F,G,H,O	C
	Hemidactylus gracilis (Blanford, 1870)	A,C,F,G,H,O	U
	Hemidactylus leschenaultia (Dumeril and Bibron, 1844)	A,C,F,G,H,O	O
	Hemidactylus triedrus (Daudin, 1802)	A,C,F,G,H,O	O
	Hemidactylus sataresnsis	A,C,F,G,H,O	O
	Hemidactylus maculatus	A,C,F,G,H,O	C
Chamaeleonidae	*Chamaeleo zeylanicus* (Laurenti,1768)	F,G,U.	A
Lacertidae	*Ophisops* Cf. *beddomei*	A,F,G,H,V	C
	Ophisops Cf. *jerdonii* (Blyth,1853)	A,F,G,H,	C
	Ophisops sp.	D,F,G,H	
Scincidae	*Eutropis carinata* (Schneider, 1799)	C,D,S,G,H	C
	Eutropis macularia (Blyth,1853)	C,D,S,G,H	C
	Eutropis trivittata (Hardwicke & Gray,1827)	C,D,S,G,H	O
	Eutropis allapallensis	C,D,S,G,H	U
	Lygosoma lineate (Gray, 1839)	C,D,S,G.H	O
	Lygosoma punctata (Gmelin,1799)	C,D,S,G,H	O
	Lygosoma guentheri	C,D,S,G,H	U
Varanidae	*Varanus bengalensis* (Daudin, 1802)	A,C,F,G,H, O,T,V,W	C

Abbrevations:

Habitat: A- agriculture area, C-caves and crevice, D- Dam area, F-Forest, G-Grassland, H-Hilly area, O-open plateau, S-Swamp area, T-Town, U-Uncategorized ,V-Villages, W-Water bodies.

Abundance: A-Abundance, C-Common, O-Occasional, R-Rare and U-uncommon.

CONCLUSION

The checklist we present in Table 1 is the first quantitative and qualitative baseline data for saurians found throughout the Satara District. Because of developmental activities, its ecology and biodiversity is under threat with extensive destruction of natural habitats, degradation of ecosystems and growing burden of pollution. Due to loss of biodiversity, increased human activities, natural or semi-natural habitats being destroyed, overexploited tourism which ultimately causes destabilizing ecosystem in irreversible way.

This study provides a database for policy and planning concerning this amazing land of Saurians. We hope that our survey and checklist will stimulates conservation and management initiatives for the important creature of nature and saurian biodiversity.

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