



A preliminary report on reptiles of Khirasara Vidi, Rajkot District, Gujarat, India

There is growing evidence about the rich herpetofaunal diversity of India. Among the herpetofauna reported, 518 species of reptiles (Aengals et al. 2011) were higher in India as compared to 314 species of amphibians (Dinesh et al. 2011). There are recorded 112 reptilian species in Gujarat state, including 61 species of snakes (Desai 2017), 39 species of lizards (Patankar et al. 2014), 11 species of turtles (Vyas 2015) and 1 crocodile species. There are 34 reptiles and 8 amphibians species recorded in Rajkot district (Singh & Tatu 1999; Vyas 2000; Ardesana et al. 2017).

Study Area

The Khirasara *vidi* is located at (22°12'N & 70°39'E) near Khirasara village, in Lodhika taluka, Rajkot district, Gujarat, India. The open thorny scrub forest with graminoid ground cover, commonly referred to as tropical scrubland savanna, which gradually changes to dry savanna in the process of continuous degradation known locally as “Vidi” is a major habitat of Saurashtra peninsula of Western India (Jadav 2010). An area of *Vidi* is more than 450 hectares and supports rich diversity of grassland. It is one of the wide spread savanna grassland in this region. The *Vidi* was declared as reserved forest by government of Gujarat in 1971. *Vidi* is provide ecological niche for community like Striped Hyena (*Hyaena hyaena*), Golden Jackal (*Canis aureus*), Indian Fox (*Vulpes bengalensis*), Jungle Cat (*Felis chaus*), Blue Bull (*Boselaphus tragocamelus*), Wild Boar (*Sus scrofa*), Porcupine (*Hystrix indica*), Harriers (*Circus* sp.), Kestrel (*Falco* sp.), Eagle Owl (*Bubo* sp.), Francolins (*Francolinus* sp.), Quails (*Cotumix* sp.), Larks (*Galerida* sp.) etc.

Methodology

The study was carried out from January 2013 to December 2015. Reptiles encountered and recorded during extensive field trips by random survey including direct sighting, roadkills. The survey was conducted randomly in total 90 day & night. Time was after immediate sunrise to 10am and 5pm to two hour after sunset, so as to cover diurnal as well as nocturnal species. We have used of relevant literature for identification of species (Sharma 1982; Editor-Director 2000; Daniel 2002; Das 2002; Murthy 2010; Vyas 2011; Patankar et al. 2014). Thorough searches were made in all the seasons and all the possible habitats. During the study, species have been documented with the photographs when possible. The status of each species was observed in three categories on the basis of species encountered or sighted. The category values were: rare (1-5), Uncommon (6-15), common (greater than 15).



Results and Observation

We have recorded total 20 species of reptiles (Table 1), among of 12 species of 5 snake families (Boidae, Pythonidae, Colubridae, Elapidae and Viperidae), 7 species of 4 lizard families (Agamidae, Gekkonidae, Scincidae, Varanidae) and *Lissemys punctata* in Khirasara *Vidi*. According to IUCN criteria most of species are Least Concern.

Indian Flapshell Turtle (*Lissemys punctata*) was commonly seen in Lake of Khirasara *Vidi* near Chibhda village.

Garden Lizard (*Calotes versicolor*) and Spiny-headed Fan-throated Lizard, *Sitana spinaecephalus* (Deepak et al. 2016) were observed commonly and were seen on rocks, plants, roadside, etc. Indian Monitor Lizard (*Varanus bengalensis*) was uncommonly spotted in all habitats. Among of the geckos, three species were found in study area. Two species were identified as Northern House Gecko (*Hemidactylus flaviviridis*) which was commonly observed on wall of construction and Termite Hill Gecko (*H. triedrus*) which was uncommonly spotted between fissure of rocks, barrow and on trail. Third specimen seems to be *Hemidactylus* sp.. This unidentified gecko species is the found in behind the temple of *Vidi*. On examination, the specimens looked like *Hemidactylus brookii* species but recently four species of geckos are described from India within the *H. brookii* complex. It needs further detailed study for identification, especially DNA fingerprinting (Vyas 2011). Keeled Grass Snake Skink (*Eutropis carinata*) was spotted in grass. In recent past, there was record of Indian Spiny-tailed Lizard (*Saara hardwickii*) both side of Balsar-Vagudad road in 2006, after that this species hasn't seen because of habitat fragmentation. Due to this habitat fragmentation, there are many species near extinction globally.

Rough-tailed Sand Boa (*Gongylophis conicus*) was commonly seen on trail and roadkill. There was one rescue record of Indian Rock Python (*Python molurus*) in temple compound near Khirasara village, Kalavad road in 2013 (Ardesana et al. 2017). Among serpents *Colubridae* family members were dominating and most of them were terrestrial, Checkered Keelback (*Xenochrophis piscator*) was seen occasionally in water habitat. Oriental Rat Snake (*Ptyas mucosa*) was commonly spotted on trail and shrub area near check dam in the study area throughout. Indian Wolf Snake (*Lycodon aulicus*) was seen near Forest chowki in Khirasara *Vidi*. Common Trinket (*Coelognathus helena*) was seen adjoining agriculture field. Black-headed Snake (*Sibynophis subpunctatus*) was found with roadkill near Khirasara village on Kalavad road in 27th August, 2013. Earlier, the species was reported from various parts of Gujarat, including Dangs, South Gujarat (Daniel & Shall 1963), Vadodara, Bhavanagar (Vyas 1986) and further Desai (2017) mentioned distribution of the species is scattered in Gujarat. However the species is not reported from Rajkot district (Sharma 1982; Singh & Tatu 1999; Vyas 2000). Thus present record of *S. subpanucatus* from Khirasara *vidi* is first record from the Rajkot District. Banded Kukri (*Oligodon arnesis*) and Streaked Kukri (*O. taeniolatus*) were uncommonly seen on trails.

Only three venomous species, Spectacled Cobra (*Naja naja*), Indian Krait

Table 1: A preliminary list of Reptiles of Khirasara Vidi

Sno	Family	Scientific name	Common English name	Status in study area	WPA status	IUCN status
1	Trionychidae	<i>Lissemys punctata</i>	Indian Flapshell Turtle	C	I	LC
2	Agamidae	<i>Calotes versicolor</i>	Indian Garden Lizard	C	NA	NA
3		<i>Sitana spinaecephalus</i>	Spiny-headed Fan-throated Lizard	C	NA	LC
4	Gekkonidae	<i>Hemidactylus</i> sp.	Unidentified Gecko	C	NA	NA
5		<i>Hemidactylus flaviviridis</i>	Northern House Gecko	C	NA	NA
6		<i>Hemidactylus triedrus</i>	Termite Hill Gecko	UN	NA	NA
7	Scincidae	<i>Eutropis carinata</i>	Keeled Grass Skink	R	NA	LC
8	Varanidae	<i>Varanus bengalensis</i>	Indian Monitor Lizard	UN	I	LC
9	Boidae	<i>Gongylophis conicus</i>	Rough-tailed Sand Boa	C	IV	LC
10	Pythonidae	<i>Python molurus</i>	Indian Rock Python	R	I	NA
11	Colubridae	<i>Coelognathus helena</i>	Trinket Snake	C	IV	LC
12		<i>Ptyas mucosa</i>	Oriental Rat Snake	C	II	LC
13		<i>Oligodon taeniolatus</i>	Streaked Kukri Snake	UN	IV	LC
14		<i>Oligodon arnensis</i>	Banded Kukri	UN	IV	LC
15		<i>Lycodon aulicus</i>	Indian Wolf Snake	UN	IV	LC
16		<i>Sibynophis subpunctatus</i>	Black-headed Snake	R	IV	LC
17		<i>Xenochrophis piscator</i>	Checkered Keelback	UN	II	LC
18	Elapidae	<i>Bungarus caeruleus</i>	Indian Krait	R	IV	LC
19		<i>Naja naja</i>	Spectacled Cobra	C	II	NA
20	Viperidae	<i>Echis carinatus</i>	Saw-scaled Viper	C	IV	LC

C = Common, UN = Uncommon, R = Rare, LC = Least Concern, NA = Not available.

(*Bungarus caeruleus*) and Saw-scaled Viper (*Echis carinatus*) were recorded from the study area. Spectacled Cobra (*Naja naja*) was seen throughout study area and there was observed also chemosensory searching (prey trailing) behaviour near temple (*Mamano Khijado*) in centre of study area at 16:40hrs in 18th September, 2015. Indian Krait (*Bungarus caeruleus*) was recorded on trail during night. Saw-scaled Viper (*Echis carinatus*) was seen on roadkill, under rock, on branch of shrub.

Threats

Khirasara reserve Vidi is near to Metoda GIDC industrial zone and Rajkot city. Rajkot is fastest growing city. There is extensive habitat fragmentation by new constructions for city development and industries (Ardesana et al. 2017). Khirasara Vidi habitat is destructing due to anthropogenic pressure like encroachment by small religious constructions, fast spreading of *cassia tora* which is widely spread in north-west part of Vidi and continuously proliferate, *Lantana camara* and *Prosopis juliflora* which are scattered inside Vidi respectively.

Till the second half of the twentieth century, Vidis in Saurashtra were continuous

Reptiles of Khirasara Vidi



Indian Flap-shelled Turtle (*Lissemys punctata*)



Indian Garden Lizard (*Calotes versicolor*)



Spiny-headed Fan-throated Lizard (*Sitana spinaecephalus*)



Unidentified Gecko (*Hemidactylus* sp.)



Northern House Gecko (*Hemidactylus flaviviridis*)



Termite Hill Gecko (*Hemidactylus triedrus*)



Keeled Grass Snake Skink (*Eutropis carinata*)



Indian Spiny-tailed Lizard (*Saara hardwickii*)



Indian Monitor Lizard (*Varanus bengalensis*)



Rough-tailed Sand Boa (*Gongylophis conicus*)



Trinket Snake (*Coelognathus helena*)



Oriental Rat Snake (*Ptyas mucosa*)



Streaked Kukri Snake (*Oligodon taeniolatus*)



Banded Kukri Snake (*Oligodon arnensis*)



Indian Wolf Snake (*Lycodon aulicus*)



Black-headed Snake (*Sibynophis subpunctatus*)



Checkered Keelback (*Xenochrophis piscator*)



Indian Krait (*Bungarus caeruleus*)



Spectacled Cobra (*Naja naja*)



Saw-scaled Viper (*Echis carinatus*)

(*Herpestes edwardsii*), Golden Jackal (*Canis aureus*), Indian Hare (*Lepus nigricollis*), Five-striped Squirrel (*Funambulus* sp.), Unidentified species of rats, frogs, babbler, insects and as above mentioned reptilian species during our study period.

and rich in grass cover. Expansion of agriculture, invention of *Prosopis*, human habitation and industries brought a major change in land use pattern making present development unsustainable and induced fragmentation which resulted in patchy distribution of grasslands of the region as observed

today (Singh 2001; Jadav 2010; Mehta 2014).

Highway is pass very close to Khirasara Vidi, so number of roadkills of species like Southern Coucal (*Centropus sinensis parroti*), Common Indian Toad (*Duttaphrynus melanostictus*), Indian Hedgehog (*Paraechinus micropus*), Grey Mongoose



References

- Aengals, R., V.M.S. Kumar & M.J. Palot (2011).** *Updated Checklist of Indian Reptiles*. Zoological Survey of India.
- Ardesana R., B. Trivedi & M. Bharad (2017).** Rescue Note on the Indian Rock Python, *Python molurus* (LINNAEUS, 1758) around Rajkot City, Gujarat, India. *Cobra* 11(1): 22-26.
- Daniel, J.C. & E.M. Shull (1963).** A list of the reptiles and amphibians of Surat, Dangs, south Gujarat. *Journal of the Bombay Natural History Society* 60: 737-743.
- Daniel, J.C. (2002).** The Book of Indian Reptiles. *Bombay Natural History Society, Bombay*, 141pp.
- Das, I. (2002).** *A Photographic Guide to Snakes and Other Reptiles of India*. New Holland Publishers Ltd., London, UK, 144pp.
- Deepak, V., V. Giri, M. Asif, S. Dutta, R. Vyas, A. Zambre, H. Bhosale & K. Karanth (2016).** Systematics and phylogeny of *Sitana* (Reptilia: Agamidae) of Peninsular India, with the description of one new genus and five new species. *Contributions to Zoology* 85(1): 67-111.
- Desai, A. (2017).** *Sarpsandarbh* (in Gujarati text). Prakruti Mitra Mandal, Dahod, 230pp.
- Dinesh, K.P., C. Radhakrishnan, K.V. Gururaja, K. Deuti & G. Bhatta (2011).** A Checklist of Amphibia of India. Zoological Survey of India. zsi.gov.in/checklist/ Amphibia.
- Editor-Director (2000).** State Fauna Series No.8 Fauna of Gujarat (Part 1), *Published Director, Zoological Survey of India, Calcutta*. i-vi, 1-464 pp.
- Jadav, R. (2010).** Ecological Status and Importance of Grasslands (*Vidis*) in Conservation of Avian. Ph.D Thesis. Saurashtra University, Rajkot, India, 272pp.
- Mehta, D. (2014).** Study on the Ecology of Nilgai (*Boselaphus tragocamelus*) in Saurashtra. Ph.D. Thesis. Saurashtra University, Rajkot, India, 216pp.
- Murthy, T.S.N. (2010).** *The Reptile Fauna of India*. B.R. Publishing, New Delhi, 332pp.
- Patankar, P., A.P. Singh, I. Desai & B. Suresh (2014).** Species richness of Sauria in Gujarat with a taxonomic key to the identification of their families and species. *Electronic Journal of Environmental Sciences* 7: 27-36.
- Sharma, R.C. (1982).** Taxonomic and Ecological Studies on the Reptiles of Gujarat. *Zoological Survey of India* 80: 85-106.
- Singh H.S. & K. Tatu (1999).** Biodiversity Study on Rampara Wildlife Sanctuary, Rajkot District: A Comprehensive ecological study. *GEER Foundation, Gandhinagar*, 106pp.
- Singh H.S. (2001).** Nature Heritage of Gujarat. *GEER Foundation, Gandhinagar*, 47pp.
- Vyas, R. (1986).** Extension of the range of Dumeril's Black Headed Snake *Sibynophis subpunctatus*, *Hamadryad*, 11(3): 24.
- Vyas, R. (2000).** Herpetofauna of Hingolghadh Nature Education Sanctuary, Gujarat. *Zoos' Print Journal* 15(6): 285-286.
- Vyas, R. (2004).** Herpetofauna of Vansda National Park, Gujarat. *Zoos' Print Journal* 19(6): 1512-1514.
- Vyas, R. (2007).** Herpetofauna of Purna Wildlife Sanctuary, Gujarat, India. *Reptile Rap* (8): 10-15.
- Vyas, R. (2011).** Reptilian diversity in and around the Shoolpaneshwar Wildlife Sanctuary, Gujarat, India. *Reptile Rap* (11): 5-15.
- Vyas, R. (2015).** Status of Ganges Soft-shell Turtle *Nilssonina gangetica* amidst Deplorable Scenarios in Urban Wetlands of Central Gujarat State, India, *Reptile Rap* (17): 03-12pp.

Acknowledgment: We are thankful to Mr. Bhavesh Trivedi, Mr. Chirag Malvi, Mr. Pratik Joshi, Mr. Rajan Jadav, Mr. Jigar Ardesana, and Mr. Sakir Saiyad for providing information and photographs and grateful to Forest Department, Rajkot for support.

Ravi Ardesana¹, Rajdeep Jhala² & Milan Bharad³

¹54, Gunjan Vihar Society, Patidar Chowk, Sadhu Vaswani Road, Rajkot, Gujarat - 360005, India.

Email: ardesanaravi@gmail.com (corresponding author)

²'Ramnivas', 38/B Parnakuti society, Rajkot, Gujarat - 360001, India. Email: rajdeep.jhala@gmail.com

³'OM VARENYAM', Indian Park-2, Nr. Gulmohar residency, Raiya Road, Rajkot, Gujarat - 360005, India.

Email: drmilanbharad@gmail.com

Citation: Ardesana, R., R. Jhala & M. Bharad (2018). A preliminary report on reptiles of Khirasara *Vidi*, Rajkot District, Gujarat, India. *Reptile Rap*#180. In: *Zoo's Print* 33(2): 17:22