



### Short Communication

## Road kills of Reptiles in the region of Khed Tahsil, Pune, MS, Northern Western Ghats, India

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Available online at: [www.isca.in](http://www.isca.in)

Received 27<sup>th</sup> March 2013, revised 9<sup>th</sup> April 2013, accepted 16<sup>th</sup> May 2013

### Abstract

Very few studies on Herpetological Road mortality have been conducted in India which is related to amphibians only. There are several studies outside the India on road kills of reptiles. During the different seasons reptiles can be seen dead on roads. The present study, we collected the reptiles representing 8 species in Khed Tehsil from different regional type like Industrial, Agricultural, water bodies and forest regions. We select the road which shows a similar habitat pattern of other areas of Khed tehsil. No observation of road kill was made between months of August, but two distinctive peaks in road kills were seen in June- July and September- October. The threatened status is more in agricultural and forest areas of Khed Tahasil, Pune (MS), India.

**Keywords:** Herpetological, Reptiles, road kills, distinctive peaks, Khed Tahsil, threaten.

### Introduction

Western Ghats is a one of the 'Hotspot' of Biodiversity. Khed Tahsil is part of Northern Western Ghats, in which the reptiles are widely distributed in different landscapes, land or water. Their role in ecology is also impermanent<sup>1</sup>. Roads are one of the barriers for dispersal of Reptiles<sup>2</sup>. There are several Herpetological studies outside the India on impacts of road kills of reptiles and there density<sup>3</sup>, while in India few researches on road kills in Herpetology especially with reference to amphibians<sup>4</sup>, in the observations most of the reptiles are snakes, each Reptile that is killed, whether by accident or deliberately, reduce genetic diversity, decreases the potential for dispersal in fragmented habitat, diminishes the potential for reproduction and lowers the overall population size. The aim of this study was to document the diversity of species affected by road killed, the relative abundance of species being affected<sup>5</sup>.

### Material and Methods

To create a bibliography of literature addressing to the ecological effects of road and traffic on reptiles, direct effects are considered to involve injury or mortality occurring during road construction (e.g., inadvertent burial or death from blasting) or subsequent physical contact with vehicles. Indirect effect include habitat loss, fragmentation and alteration (changes in temperature, moisture, light, noise, pollutant or quality of available habitat) such changes may influence the behavior, survival, growth and reproductive success of individual animals. The road kills effects may be especially problematic when they affect sensitive, threatened or endangered species or interface with important ecosystem processes<sup>6</sup>.

The Khed Tahsil Pune (MS) is situated at 18° 51' N and 73° 56' E in this region of Northern Western Ghats, Maharashtra, India.

The region receives maximum amount of rainfall (1200-1300 mm), winter temperature about 5° C to 6° C and summer temperature about 32° C to 38° C for the year during May to December. In the present study, we select four different regions of Khed Tahsil; Industrial, agricultural, water bodies and forest. We select the road from Chakan to Waki turfe Wada the distance about 23 km. The road segment predominated on either side with industrial area up to Shinde Wasuli MIDC, Chakan; agricultural area up to Askhed; forest area up to Karanjvihire and Water bodies up to Waki tarfe wada. The road passing through four land uses was sampled for killed reptiles on road from May 2012 to December 2012. We preferred to carry out sampling and photography during early mornings and late evening seems to extrinsic factor controlling the timing of reproductive activity of sampling. There is collection and identification of species from these different areas by standard literatures<sup>7-10</sup>. Number of reptile kills per kilometer is expressed as encounter rate. We are taken the photographs of road kills dead individual species<sup>11,12</sup>.

### Results and Discussion

The present study resulted that the Reptiles belonging to single order, five Families, eight genera were recorded in the survey (table 1). The calotes (*Colotus versicolor*) is observed in Agamidae; wolf snake (*Lycodon aulicus*), trinkate (*Coelognathus helinus*), grass snake (*Macropisthodon plumbicolor*) and cat snake (*Boiga trigonata*) belongs to family Colubridae; russe viper (*Daboia russelii*) belongs to family Viperidae; common crait (*Bungarus caeruleus*) belongs to Elapidae family and earth boa (*Erix whitakeri*) belongs to Boidae family (figure-1). The result shows conservation status and Encounter rate of road killed Reptiles. The Road kills occurs in different habitat of Khed Tahsil, Pune (MS), India

(table 2). The seasonal habitat required of amphibians and reptiles; there for the distribution of resources across the landscape relative to roads can influence mortality. These resources are associated with refuge, mates and prey that tend to be concentrated in distinct habitats that are patchily distributed.

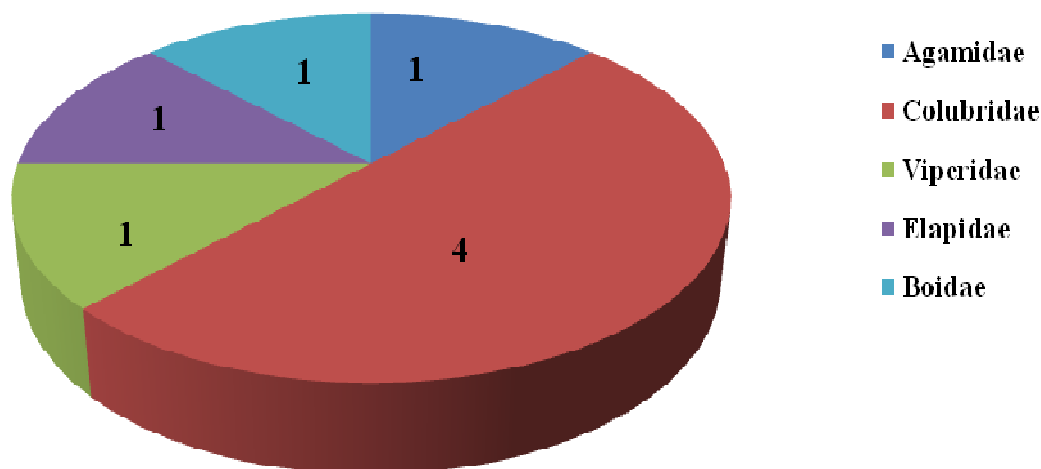
## Conclusion

The present study concluded that the reptile fauna of majorly threatened at agricultural and forest areas (figure 2). When the

roads fragment, such habitats the probability that individuals will be killed or injured by traffic during movements in search of resources, increases as does the resistance of the landscape to such movements. The present study shows, the habitat of reptiles around the roads is the part of their ecology. For the maintenance of biodiversity of reptiles fauna and increase the genetic diversity of reptiles there is need to develop a proper barrier system outside the road during construction.

**Table-1**  
**Different species of Road kills reptiles observed during May to December 2013**

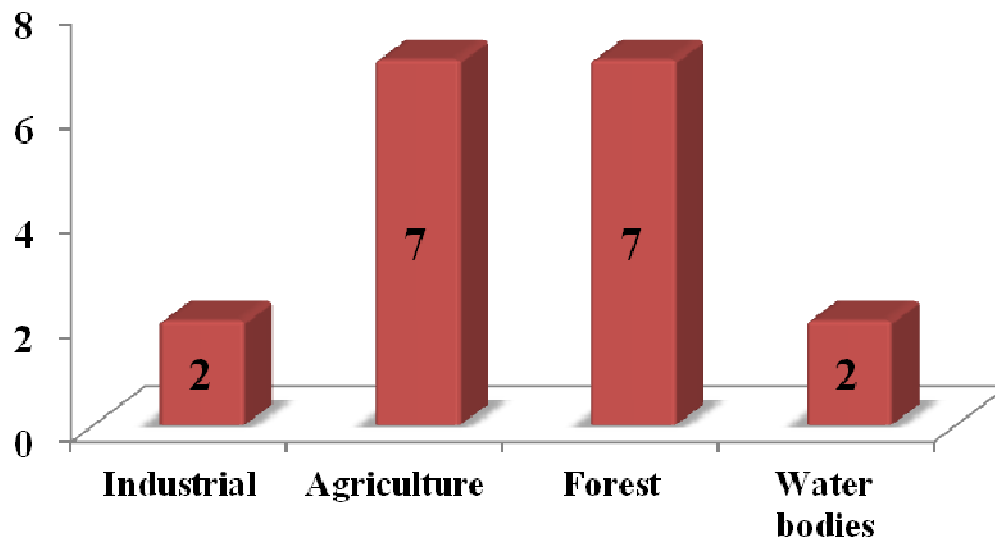
Road kills of Reptiles	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<i>Colotus versicolor</i>	1	1	Nil	Nil	Nil	Nil	Nil	Nil	2
<i>Lycodon aulicus</i>	Nil	Nil	Nil	Nil	1	1	Nil	Nil	2
<i>Coelognathus helinus</i>	Nil	Nil	Nil	Nil	1	Nil	Nil	Nil	1
<i>Daboia russelii</i>	Nil	1	1	Nil	Nil	Nil	Nil	1	3
<i>Macropisthodon plumbicolor</i>	Nil	Nil	Nil	Nil	Nil	3	Nil	1	4
<i>Bungarus caeruleus</i>	Nil	1	Nil	Nil	1	Nil	Nil	Nil	2
<i>Erix whitakeri</i> (Das)	Nil	Nil	Nil	Nil	Nil	Nil	1	Nil	1
<i>Boiga trigonata</i>	1	Nil	1	Nil	Nil	Nil	Nil	1	3



**Figure-1**  
**Graph showing family distribution of road kill reptiles observed in Khed Tahasil**

**Table-2**  
**Road kills in different regions of different habitats in Khed Tahsil during the year 2012**

Road kills of Reptiles	Habitats of Reptiles (Road kills regions)			
	Industrial	Agriculture	Forest	Water bodies
<i>Colotus versicolor</i>	0	2	0	1
<i>Lycodon Aulicus</i>	1	1	0	0
<i>Coelognathus helinus</i>	0	0	1	0
<i>Daboia russelii</i>	0	1	1	0
<i>Macropisthodon plumbicolor</i>	0	1	2	1
<i>Bungarus caeruleus</i>	0	0	2	0
<i>Erix whitakeri</i> (Das)	0	1	0	0
<i>Boiga trigonata</i>	1	1	1	0



**Figure-2**  
**Graph showing the threatened status of different habitats in Khed Tahsil, Pune (MS), India**

### Acknowledgement

Author is thankful to Chairmen, Secretary K.T.S.P. Mandal's, Principal of Hutatma Rajguru Mahavidyalaya, Rajgurunagar, Dr. S. B. Patil Head, Department of Zoology, Hutatma Rajguru Mahavidyalaya, Rajgurunagar, Authorities of Pune University, Pune, JNT University, Rajasthan and UGC for providing and necessary laboratory, facilities and financial assistance to complete this research work.

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