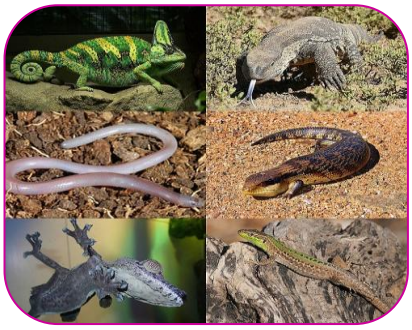
REVIEWS OF LITERATURE
IMPACT FACTOR : 3.3754 (UIF) UGC APPROVED JOURNAL NO. 48385 ISSN: 2347-2723
VOLUME - 5 | ISSUE - 9 | APRIL - 2018

STUDIES ON ECOLOGY AND DIVERSITY OF LIZARDS IN AKOT REGION, MAHARASHTRA, INDIA



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ABSTRACT

In this research article is focus on ecology and diversity of lizards in Akot region Maharashtra, India. Reptiles Lizards and Snakes are of immense ecological importance. There are total sixteen species of lizards belonging to five families from which,three were abundant, two were common, two were frequent, and two were occasional while seven were rare. The maximum abundance was showed by Calotesversicolorfollowed byHemidactylus leschenaultia andEutropismacullariuswhile Chamaeoleozeylanicuswas most rarely observed with least abundant. During study, Gekkonidae family was observed to be more dominant while least dominance was shown by Chamaeleonidae and Varanidae. A monthly comparison of saurian species occurrence showed highest number of species during June to September while lowest during February to May. The cause behind their minimum diversity in the winter months to early summer months is cold blooded nature of reptiles due to favorable environmental condition; monsoon is the breeding season for most of the reptiles which leads to their maximum abundance in rainy season.

KEYWORDS : *Diversity, Ecology, Lizards.*

INTRODUCTION

Lizards typically have feet and external ears, while snakes lack both of these characteristics. However, because they are defined negatively as excluding snakes. Many lizards can detach their tails to escape from predators, an act called autotomy. Vision, including color vision, is particularly well developed in most lizards, and most communicate with body language or bright colors on their bodies, as well as with pheromones. The adult length of species within the suborder ranges from a few centimeters for chameleons such as*Brooke siamicra* and geckos such as*Sphaerodactylusariasae*to nearly 3 m (9.8 ft) in the case of the largest living varanid lizard, the Komodo dragon. Some extinct varanids reached great size.The extinct aquatic mosasaurs reached 17 m (56 ft), and the giant monitor*Megalania* is estimated to have reached perhaps 7 m (23 ft).

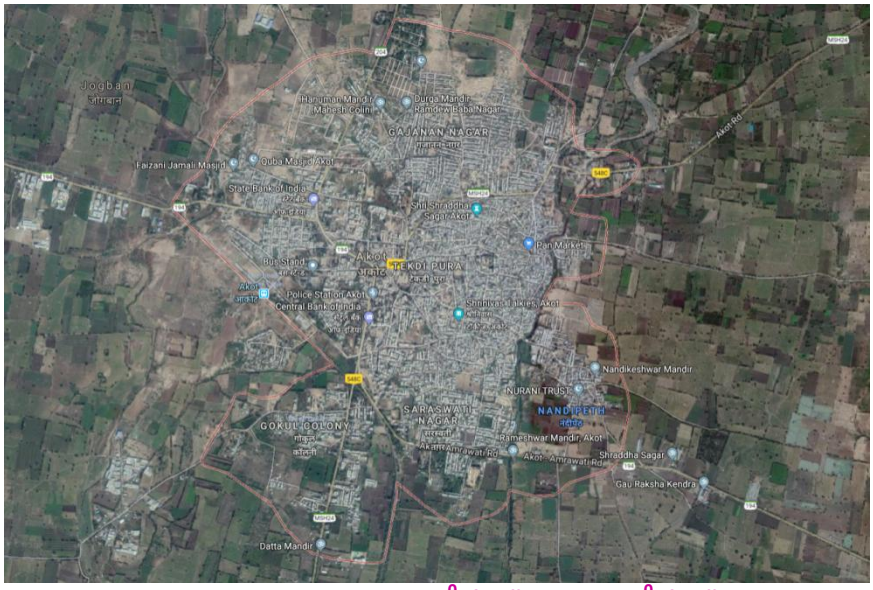
Most lizard species are harmless to humans. Only the largest lizard species, the Komodo dragon, which reaches 3.3 m (11 ft) in length and weighs up to 166 kg (365 lb), has been known to stalk, attack, and, on occasion, kill humans. An eight-year-old Indonesian boy died from blood loss after an attack in 2007 (Berrin 1997).The venoms of the Gila monster and beaded lizard are not usually deadly, but they can inflict extremely painful bites due to powerful jaws. Numerous species of lizard are kept as pets, including iguanas, anoles, and geckos (such as the popular leopard gecko). Some lizards have an affinity for humans, but many are suspicious or skittish around them. Lizards that bite humans are very rare. Lizards are predominantly insectivorous, but some eat fruit, or vegetables. Live crickets and worms are the most typical foods for pet lizards, though the crested gecko (not a friendly lizard to humans) can feed entirely on fruit.

The diversity of lizards has been emphasized in many studies to their dominance in the terrestrial ecosystem and provision of ecosystem services such as pest control and ecological maintenance.Among

reptiles lacertianfauna is diverse group that changes from the primitive to specialized, phylogenetically,and structural modifications exhibits greater variations than any other group of reptiles (Smith 1935).Lizards are members of the suborder Sauria which is one of the two suborders of Squamata.They are poikilotherms,insectivorous and oviparous to ovoviviparous (Mathews 2007). The monumental works on Indian reptiles are, 'The Reptiles of British India' by Gunther (1864).

MATERIALS AND METHODS:

The Akot Tehsil is one of the most diversified regions in Maharashtra state of India with respect to diversity.



Geographical Coordinates 21^{0}5'47" North, 77^{0}3'31" East

Akot is situated between 21^{0}5'47" North latitudes, 77^{0}3'31" Eastlongitudes. The district is a part of Amravati Division and is administrated by the Collector.The present study is based on the field work carried out in the study sites during January 2013 to December 2013.During the study, an efficient protocol was adopted.The survey was made using a " Visual Encounter Survey " method (Doan 2003) as well as by employing randomized walking (Whitaker 2006).The selected area was randomly explored on the basis of habitat,structure and the possibility of availability of species.

After detection,a specimen was identified with the help of visible structural features. For identification and comparative studies of observed specimens, keys and methods suggested by Daniel (2002), Das (2002) and Ahmed *et al.,* (2009) were adopted.The International Union of Conservation of Nature (IUCN) status of each encountered species was categorized on the basis of Molur*et al.,* (1998), Kumbhar*et al.,* (2013), and Alexander and Jayakumar (2014).

RESULTS AND DISCUSSION

Akot region of Maharashtra (India) has healthy environment and climatic condition with classical demography setup as mountainous terrain rugged configuration and sudden fall in elevation is phenomenal

During study, total sixteen species of lizards belonging to five families have been identified. From the observed species, three were abundant, two were common, two were frequent, and two were occasional while seven were rare. The maximum abundance was showed by Calotesversicolorfollowed by*Hemidactylus leschenaultia* and*Eutropis*macullariuswhile Chamaeoleozeylanicuswas most rarely observed with least abundant. During study, Gekkonidae family was observed to be more dominant while least dominance was shown by Chamaeleonidae and Varanidae. In the observations, characters of studied species were found

almost same as per existing records of Daniel (2002) and Ahmed *et al.*(2009).A monthly comparison of saurian species occurrence showed highest number of species during June to September while lowest during February to May. The cause behind their minimum diversity in the winter months to early summer months is cold blooded nature of reptiles. Lizards preferred to hibernate in their burrows or resting places during winter to early summer. Species generally observed more during monsoon months. According to Pal *et al.,*(2012) and Joshi (2014), due to favorable environmental condition, monsoon is the breeding season for most of the reptiles which leads to their maximum abundance in rainy season.

Thus, it is evident from the present study that the Akot region (M.S.) India has healthy environmental and demographic setup which accommodates rich saurian diversity. The present diversity study is confined to limited area and selected habitats. There are, in future, chance of more species being reported because of few pockets and habitats in the studied area required more extensive exploration.

SUMMARY AND CONCLUSION

Study area was found with evinced variation in topographic layers. Among the three regression models, Species-Area (Square Km) Relationship and Species-Area Mean elevation Relationship were found to be statistically significant while Species-Area Population Density Relationship was found to be statistically insignificant. The lacertian species richness was found to be correlated to all climate variables. Among the three regression models, Species-Average Rainfall Relationship, and Species-Relative Humidity Relationship was found to be statistically significant while Species-Mean Temperature Relationship was found to be statistically insignificant.In Akot region, Maharashtra (India), rapidly expanding human populations are increasingly modifying the environment and thereby reducing the amount of habitat available for numerous species. Habitat loss and degradation are perhaps the greatest threats for species that are specialized and that range over a relatively small geographic area. Not only human activities but also environmental factors such as changing climates and environmental contamination affect the distribution, life histories, and survival of these reptiles.

The laws and legislation are not just sufficient for protection of these animals but it is necessary to raise the awareness levels by providing important information about snakes among different sections of people for conservation of lacertian biodiversity in Akot region (M.S.), as well as neighborhood. The disappearance of lizards will have tremendous social and ecological implications. Hence the research paperhad been written in the hope that it will help in raising the awareness levels among different sections of people and will provide important information for protection and conservation of lizard biodiversity in Akot region as well as neighborhood.

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