Study of Diversity of Saurian Fauna in Karad Tehsil, District Satara (M.S.), Western India

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Abstract: The present study of diversity of saurian was carried out in karad tehsil, district Satara, Maharashtra during January 2016 to January 2017 in selected area. The study revealed the presence of 16 species of saurian which belong to 5 different families. Selected study area covers major habitats of saurians as marshes, rocky and barren area, farm lands especially sugarcane fields, Sahyadri hilly area, Karad town and nearby villages. Observed data analysis gives insight on present situation of ecological and environmental health of area.

Keywords: Diversity, Saurian, lizards, Karad

1. Introduction

Study of diversity of reptiles has been emphasized many aspects of ecology, food web, pest management and ecosystem maintenance. Humans have directly and indirectly disturbed most habitats resulting in gradual loss of biodiversity and other profound ecological changes. Overload of anthropogenic activities, continued habitat loss and drastic climate change is being recognized as one of the greatest threats to future biodiversity. Saurian diversity is also under the threat of same causes as well. 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.

2. Material and Methods

Study area: Karad is located at 17.28°N 74.2°E. It has an average elevation of 566 metres (1856 feet). Karad is located near Agashiva hills 17.237506°N 74.15205°E. Almost annual weather is suitable for growth and reproduction of saurians. West part of tehsil is under the high monsoon belt and recognized as part of western ghat, one of the hotspot in India. But Northern east part of tehsil is dry and semi arid area. This is a uniqueness of Satara district and karad tehsil. Average rainfall for last five years is 632.1mm (Hydromet division, India Meteorological department). Major Crop are rice, jwari, Wheat, Maize and well known belt of sugarcane.

Sampling: Visual encounter method (Doan, 2003) was used for sampling depending upon climatic conditions during day and night. Randomized walking (Whitakar, 2006) method also employed. All the possible macro and microhabitats were checked using safety measure. Species were identified 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;).

3. Results and Discussion

<table>
<thead>
<tr>
<th>Family</th>
<th>Scientific name</th>
<th>Common Name</th>
<th>No. of individuals</th>
<th>Habitat</th>
<th>Local Status</th>
<th>IUCN Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agamidae</td>
<td>Calotes versicolor (Daudin, 1803)</td>
<td>Common garden lizard</td>
<td>66</td>
<td>Ar, Tr, SR</td>
<td>A</td>
<td>LC</td>
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<tr>
<td></td>
<td>Calotes rouxi (Dumeril and Bibron, 1844)</td>
<td>Indian forest lizards</td>
<td>14</td>
<td>Ar, Tr, SR</td>
<td>C</td>
<td>NT</td>
</tr>
<tr>
<td></td>
<td>Sitana pointiceriana (Cuvier, 1829)</td>
<td>Fan throated lizard</td>
<td>03</td>
<td>Ar, Tr, SR</td>
<td>R</td>
<td>LC</td>
</tr>
<tr>
<td></td>
<td>Psammophilus blanfordanus (Stoliczka, 1871)</td>
<td>Blanford's rock agama</td>
<td>08</td>
<td>Ar, SR</td>
<td>O</td>
<td>LC</td>
</tr>
<tr>
<td>Chamaeleonidae</td>
<td>Chamaeleo zeylanicus (Stoliczka, 1872)</td>
<td>Indian Chamaeleon</td>
<td>12</td>
<td>Ar, Tr</td>
<td>O</td>
<td>NE</td>
</tr>
<tr>
<td>Gekkonidae</td>
<td>Hemidactylus brookii (Gray, 1930)</td>
<td>Brook's house gecko</td>
<td>35</td>
<td>Ar, Tr, SR</td>
<td>C</td>
<td>LC</td>
</tr>
<tr>
<td></td>
<td>Hemidactylus frenatus (Dumeril and Bibron, 1844)</td>
<td>Asian house gecko</td>
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<td>Ar, Tr, SR</td>
<td>C</td>
<td>LC</td>
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<td></td>
<td>Hemidactylus lechisenua (Dumeril and Bibron, 1844)</td>
<td>Common bark gecko</td>
<td>31</td>
<td>Ar, Tr, SR</td>
<td>C</td>
<td>LC</td>
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<tr>
<td></td>
<td>Hemidactylus flaviviridis (Murray, 1886)</td>
<td>Yellow-green House</td>
<td>56</td>
<td>Ar, Tr, SR</td>
<td>A</td>
<td>LC</td>
</tr>
</tbody>
</table>
Gecko | Termite hill gecko | Tr,SR | O | NT
--- | --- | --- | --- | ---
Scincidae | Hemidactylus triedrus (Daudin, 1802) | Tr,SR | C | NT
 | Eutropis carinata (Schneider, 1801) | Golden Skink | 14 | Tr,SR | C | NT
 | Eutropis macularia (Blyth, 1853) | Common Skink | 17 | Tr,SR | C | LC
 | Eutropis trivittata (Hardwicke & Gray, 1827) | Indian Three banded | 9 | Tr,SR | R | LC
 | Lygosoma lineata (Gray, 1839) | Lined Supple skink | 11 | Tr,SR | R | LC
 | Lygosoma punctatus (Gmelin, 1799) | Spotted supple skink | 18 | Tr,SR | O | NT
Varanidae | Varanus bengalensis (Daudin, 1803) | Common Indian monitor lizard | 18 | Ar,Tr,SR,Aq | C | LC

Abbreviations used in the Table
Local Status: - A-Abundant, C-Common, U-Uncommon-
Occasional and R-Rare.
Habitat: - Ar- Arboreal, Tr- Terrestrial, SR-Stony & Rocky,
and Aq-Aquatic.

Total 16 different species and 5 different families were
encountered in this study. Near threatened species of family
scincidae was a notable finding. Most of these member as
Lygosoma punctatus and Eutropis carinata observed in early
winter and early summer seasons as month of October to
December and February to March of study time.

There is a correlation between seasonal change mainly
transitional period of season, food availability and breeding.
Most of the habitats are under tremendous disturbance due
to urbanization and development of non-agriculture lands.
This will be the measure cause for species abundance and its
richness in future.(Joshi P.S., Tantarpale V.T.,2016)

Outbreak of Family Chamaeleonidae was observed in month
of March to April in study time but average occurrence of
this species is occasional.

Family Gekkonidae shows various diversity in given study
area and local status with respect to seasonal change.

Figure 1: Family Agamidae percentage in study area

Figure 2: Abundance distribution model of Family
Gekkonidae

Figure 3: Family Scincidae percentage in study area

Figure 4: Relative abundance of Family Scincidae
Where $k = 0.1665$ ; $\chi^2 = 0.1786$ ; $p$ (same) = 0.98

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643
References