# A REVIEW OF HERPETOFAUNAL DIVERSITY OF VIDARBHA REGION, MAHARASHTRA, INDIA.

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***Abstract :*** *The review paper aims to prepare a checklist status of herpetofaunal diversity in the Vidarbha region of Maharashtra. It is the region, located 20.9374$^0$ North and 77.7796$^0$ East, has an area of 97.32 km$^2$, and contain eleven districts. Herpetology is a branch of zoology study of reptiles and amphibians. Herpetofauna play an important role in the ecosystem as a link to the food chain. Many researchers reported data on herpetofaunal species in the past, from overall observation family Colubridae (87), Gekkonidae (26), and Dicroglossidae (25), species are mostly listed. In the Vidarbha region, the Gadchiroli district has different kinds of animal present. It was rich in flora and fauna. Before this, there has been no study on the subject of herpetofauna in the Gadchiroli district .Therefore, the Gadchiroli district is selected for the study of herpetofauna. The objective of this paper is to review the available literature on the distribution and diversity of herpetofaunal in different regions of the Vidarbha. Various parameters have been used to calculate species in this region.*

***Keywords:*** *Herpetofauna, Ecosystem, Gadchiroli, Checklist, Vidarbha.*

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## Introduction:

The Earth is full of floral and faunal diversity. They are susceptible to global threats like deforestation, wetlands loss and agricultural pollution. Reptiles and amphibians plays important roles in aquatic and terrestrial ecosystems (Schneider et al; McCallum), as a link in the food chain are often very sensitive to environmental changes. Vidarbha region of Maharashtra state has healthy climate, terrain, mountainous, rugged configuration received noteworthy interest that provide suitable environment for ophidian fauna. (Joshi and Tantarpale, 2014). Vidarbha has eleven districts & diversity of fauna found in this region. Among these, the Gadchiroli district has rich diversity of herpetofauna, including several unique and endemic species. Before this, there has been no study on the subject of

herpetofauna in the Gadchiroli district. Therefore, Gadchiroli district is selected for the study of herpetofauna.

**Review of Literature:**

**BASELINE STATUS OF HERPETOFAUNA IN VIDARBHA REGION:**

In Vidarbha, Wadatkar (2003) studied 12 species of snake from the Amravati University campus area. Nande and Deshmukh (2007) specified 32 species of snake from Amravati, which includes Melghat region. Harney (2011) recorded 17 species of snake from Bhadravati, Chandrapur District. Joshi (2011) registered 22 species of snake in the Buldhana District, Bhanadarkar et al. (2012) recorded 59 species of reptiles and amphibians from Navegaon National Park, Gondia District. Kumbhar et al. (2013) specified 30 species of reptiles from the Tadoba-Andhari Tiger Reserve Chandrapur. Joshi et al. (2014) documented 35 species of Ophidians in the Vidarbha region. Ingle et al. (2014) observed 21 species of snake from Malegaon, District washim. Bawaskar and Bawaskar (2016) registered 58 species of Herpetofauna from Khamgaon, District Buldhana. Dinesh D.Khate and Kiran Bawaskar (2020) recorded a total of 70 species throughout the Chandrapur District in Vidarbha.

**Material and Method:**

Review study have been done by using the research paper and books.

**OBSERVATION AND RESULT:**

| Sr. | Order | Family | Species | Common name | Status |
|---|---|---|---|---|---|
| 1. | Anura | Bufonidae | *Duttaphrynusmelanostictus* (Schneider,1799) | Common Indian toad | C |
| 2. | | | *Duttaphrynusstomaticus*( Lutken, 1864) | Indian marbled toad | C |
| 3. | | | *Duttaphrynusscabar* (Schneider,1799) | Schneider's toad | O |
| 4. | | Dicroglossidae | *Euphlyctiscyanophlyctis* (Schneider, 1799) | Indian skipper frog | C |
| 5. | | | *Euphlyctishexadctylus*(Lesson, 1834) | Indian green frog | C |
| 6. | | | *Fejervaryalimnocharis* (Gravenhost, 1829) | Asian grass frog | C |
| 7. | | | *Hoplobatrachustigerinus* (Daudin,1803) | Indian bullfrog | C |
| 8. | | | *Hoplobatrachuscrassus* (Jerdon,1853) | Jerdon's bullfrog | U |
| 9. | | | *Sphaerothecabreviceps* (Schneider, 1799) | Indian burrowing frog | C |
| 10. | | | *Sphaerothecadobsonii*(Boulenger, 1882) | Dobson's burrowing frog | U |
| 11. | | Microhylida | *Microhylaornata* (Dumeril and | Asian ornate frog | C |

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|---|---|---|---|---|---|
| | | e | Bibron, 1841) | | |
| 12. | | | *Kaloulataprobanica*(Parker 1934) | Asian painted frog | U |
| 13. | | | *Microhyla rubra* (Jerdon, 1854) | Red narrow-mouthed frog | O |
| 14. | | | *Uperodonglobulosus*(Gunther,1864) | Indian globular frog | R |
| 15. | | | *Uperodon variegates* (Stoliczka.1872) | White bellied pug-snouted frog | R |
| 16. | | | *Uperodonsystomus*(Schneider,1799) | Marbled Balloon frog | R |
| 17. | | Ranidae | *Hylaranamalabarica* (Tshudi, 1838) | Fungoid frog | |
| 18. | | | *Hydrophylaxbabuvistatra*(Padhye,Jadhav,Modak,Nameer, Dahanukar 2015) | Wide –spread Fungoid frog | O |
| 19. | | Rhacophoridae | *Polypedatus maculatus* (Gray, 1830) | Indian tree frog | C |
| 20. | Testudines | Trionychidae | *Lissemys punctata* (Lecepede, 1788) | Indian flapshell turtle | |
| 21. | Squamata(Sauria) | Agamidae | *Calotes versicolor* (Daudin, 1802) | Indian garden lizard | C |
| 22. | | | *Calotesrouxii*(Dumeril and Bibron, 1837) | Indian forest lizards | C |
| 23. | | | *Sitanaponticeriana*(Cuvier, 1829) | Fan throated lizard | C |
| 24. | | | *Psammophilusblanfordanus* (Stoliczka,1871) | Blanford's rock agama | C |
| 25. | | Chamaeleonidae | *Chamaeoleozeylanicus* (Laurenti, 1768) | Indian chamaeleon | O |
| 26. | | Gekkonidae | *Geckoellacollegalensis* (Beddomi 1870) | Forest spotted gecko | R |
| 27. | | | *Geckoella nebulosus* (Agawal and Karanath,2015) | Common spotted gecko | C |
| 28. | | | *Hemidactylus brookii (Gray, 1845)* | Brook's house gecko | C |
| 29. | | | *Hemidactylus flaviviridis (Murray, 1886)* | Yellow-greenHouseGecko | R |
| 30. | | | *Cyrtodactylusvaradgirii* (Agarwal,Mirza,Pal,Maddock, Mishra, and Bauer,2016) | Giri'sGeckoella | O |
| 31. | | | *Hemidactyluscf.parvimaculatus* | SpottedHouseGecko | C |

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| | | | (Deraniyagala1953) | | |
| 32. | | | *Hemidactylusgracilis*(Blanford1870) | GracefulLeaf-toedGecko | U |
| 33.. | | | *Hemidactylus frenatus (Schlegel, 1836)* | Asian house gecko | C |
| 34. | | | *Hemidactylus giganteus (Stoliczka, 1871)* | Giant Indian gecko | R |
| 35. | | | *Hemidactylus hemchandrai (Dandge and Tiple 2015)* | Hemchandrai's gecko | O |
| 36. | | | *Hemidactylus leschenaultia (Dumeril and Bibron, 1836)* | Common bark gecko | U |
| 37. | | | *Hemidactylus triedrus (Daudin, 1802)* | Termite hill gecko | U |
| 38. | | Scincidae | *Eutropisbeddomii (Jerdon, 1870)* | Beddome's skink | O |
| 39. | | | *Eutropiscarinatus*(*Schneider, 1801*) | Golden Skink | A |
| 40. | | | *Eutropiscarinata (Schneider, 1799)* | Keeled grass skink | U |
| 41. | | | *Eutropismacularius (Blyth, 1853)* | Bronze grass skink | C |
| 42. | | | *Lygosoma lineate (Gray, 1839)* | lined writhing skink | U |
| 43. | | | *Lygosoma punctatus (Gmelin, 1799)* | Spotted supple skink | U |
| 44. | | Varanidae | *Varanus bengalensis (Daudin, 1803)* | Bengal monitor lizard | U |
| 45. | | Lacertidae | *Ophisopsjerdonii (Blyth, 1853)* | Jerdon's Snake-eyed Lacerta | U |
| 46. | | Mabuyidae | *Eutropiscarinata*(Schneider1801) | GoldenSkink | C |
| 47. | | | *Eutropismacularia*(Blyth1853) | BronzeGrassSkink | C |
| 48. | | Lygosomidae | *Lygosomalineata*(Gray1839) LinedSuppleSkink | LinedSuppleSkink | U |
| 49. | | | *Lygosomapunctata*(Gmelin1799) | SpottedSuppleSkink | U |
| 50. | Squamata (Ophida) | Typhlopidae | *Grypotyphlopsacutus (*Dumeril and Bibron,1844) | Beaked worm snake | U |
| 51. | | | *Ramphotyphlopsbraminus* (Daudin, 1803) | Common worm snake | C |
| 52. | | Pythonidae | *Python molurusmolurus* Linnaeus, 1758) | Indian rock python | O |
| 53. | | Boidae | *Gongylophisconicus (*Schneider, 1801) | Common sand boa | C |
| 54. | | | *Eryxjohnii (*Russell, 1801) | Red sand boa | O |
| 55. | | Sibynophiida | *Sibynophissubpunctatus*(DumérilBi | Dumeril's Black- | O |

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|---|---|---|---|---|---|
| | | e | bron,andDuméril1854) | headed Snake | |
| 56. | | Ahaetuliidae | *Ahaetullanasuta*(Lacepede, 1789) | Common vine snake | U |
| 57. | | | *Dendrelaphis tristis* (Daudin, 1803) | Bronzback tree snake | R |
| 58. | | Colubridae | *Amphiesmastolatum*(Linnaeus, 1758) | Striped keelback | C |
| 59. | | | *Argyrogenafasciolata*(Shaw, 1802) | Banded racer | U |
| 60. | | | *Atretiumschistosum*(Daudin 1803) | Olive kill back | C |
| 61. | | | *Boiga forsteni*(Dumeril, 1854) | Forsten's cat snake | U |
| 62. | | | *Boiga trigonata*(Bechstein, 1802) | Indian cat snake | C |
| 63. | | | *Coelognathushelenahelena* (Daudin, 1803) | Common trinket snake | U |
| 64. | | | *Coelognathushelenamonti collaris*(Schulz,1992) | Montane trinket snake | C |
| 65. | | | *Coronellabranchyura*(Gunther, 1866) | Indian smooth snake | R |
| 66. | | | *Elachistodonwestermanni*(Reinhardt, 1863) | Indian egg eater | O |
| 67. | | | *Lycodonaulicus*(Linnaeus, 1758) | Common wolf snake | C |
| 68. | | | *Lycodonflavomaculatus*(Wall, 1907) | Yellow Spotted Wolf snake | O |
| 69. | | | *Lycodon striatus* (Shaw, 1802) | Barred wolf snake | C |
| 70. | | | *Macropisthodonplumbicolour* (Cantor,1839) | Green keelback | R |
| 71. | | | *Oligodonarnesis*(Shaw, 1802) | Common kukri snake | C |
| 72. | | | *Oligodontaeniolatus*(Jerdon, 1853) | Russell's kukri snake | U |
| 73. | | | *Psammophiscondanarus* (Merrem, 1820) | Condanarus sand snake | U |
| 74. | | | *Psammophisleithii*(Gunther, 1869) | Leith's sand snake | U |
| 75. | | | *Psammophislongifrons*(Boulenger, 1897) | Stout sand snake | U |
| 76. | | | *Ptyas mucosa (*Linnaeus, 1758) | Indian rat snake | C |
| 77. | | | *Sibynophissubpunctatus (*Dumeril, 1854) | Black headed snake | O |
| 78. | | | *Xenochrophis piscator (*Schneider, 1799) | Checkered keelback | O |
| 79. | | Elapidae | *Bungarus caeruleus (*Schneider, 1801) | Common krait | C |

| | | | | | |
|---|---|---|---|---|---|
| 80. | | | *Bungarus fasciatus* (Schneider, 1801) | Banded krait | R |
| 81. | | | *Bungarussindanuswalli*(Wall, 1908) | Wall's sind krait | R |
| 82. | | | *Calliophismelanurus*(Shaw, 1802) | Slender coral snake | R |
| 83. | | | *Najanaja*(Linnaeus, 1758) | Indian spectacle cobra | C |
| 84. | | Viperidae | *Daboia russelii*(Shaw and Nodder, 1797) | Russell's viper | R |
| 85. | | | *Echiscarinatus*(Schneider, 1801) | Saw-scaled viper | R |
| 86. | | | *Trimeresurusgramineus*(Shaw, 1802) | Green pit viper | O |
| 87. | Crocodilia | Crocodylidae | *Crocodylus palustris* (Lesson, 1831) | Mugger crocodile | R |

**Table1.Abbreviations used in the table:**

**Status:** A= Abundant;C=Common;U=Uncommon;O=Occasional;R=Rare.

**Discussion:**

**RELATIONSHIP WITH HABITAT:**

Herpetofauna present in different types of habitats such as terrestrial and aquatic. Habitat of herpetofauna found at streams, roads, turning rocks, prodding bushes, wood logs, rocks, forest area, crevices and observing wall of buildings etc. The tropical areas with elevated densities of mega-trees, especialy those with intensive fortifying in large cavities promote habitat herpetogeneity having the richness of herpetofauna (Voris, 1977, Whitfield and pierce, 2005).There is specific relationship between herpetofauna and their habitat, because they are typically sensitive to disruption in the environment. So, it is necessary to know the exact need of habitat conservation of herpetofauna. Crocodiles always prefer slow-moving rivers, swamps, and lakes. Alligators are found in freshwater habitations.

Crocodiles also established in coastal swamps.

**SEASONAL VARIATION:**

Seasonal variation and diversity of herpetofauna were generally higher in rainy seasons. The actual Impact of climate change on amphibians is not known, nor whether they are affected by particular diseases, but the complexity changing in the environment make amphibians more sensitive to infection. Variation in moisture regime and temperature might weaken amphibian's immune systems. (Prada S et.al. 2014).

**RELATIONSHIP WITH ENVIRONMENTAL FACTORS:**

In Maharashtra, most of the forest area are available in the Vidarbha and fix up with three main seasons, monsoon season from June to September, the winter October to February and the summer season from March to May. The forest types found in the Vidarbha area are classified as sub-tropical hill forests, tropical Monsoon forests and tropical deciduous forests. In Vidarbha temperature ranges from minimum of $10^0$ to $25^0$ & maximum of $30^0$ to $47^0$ including humidity ranges from $10^0$- $15^0$ to 60% - 95%. The normal annual rainfall (last 5 years) in the Vidarbha is 477.7 mm, and it is takes place due to a monsoon. Every year between months from June to September 90% of rain occurs. Because peripheral regions of the Vidarbha mostly covered with green zone and wide habitat ranges. Diverse population of herpetofauna has strong relation with environmental factors like temperature, rain, and humidity (Hill *et al*., 2003). In high temperature and rainy season diversity decreases, and can occur near lakes, streams, rivers, and ponds in humid regions as well as forest region.

## CONCLUSION:

Herpetofauna plays a vital role in maintaining the ecosystem. It takes part in a food chain of the ecosystem. But herpetofaunal population is declining gradually due to anthropocentric developmental activities directly disturb the habitat zone of herpetofauna. Changes in seasonal variations also impact the diversity of herpetofauna. Therefore, an appropriate management plan should be framed and stringently implement.

## IUCN STATUS OF HERPETOFAUNA:

According to International Union for Conservation of Nature and Natural resources (IUCN), among Indian amphibians, 78 species are Critically Endangered, 32 are endangered, 22 species are Vulnerable and 7 species are threatened.

## RECOMMENDATIONS:

1. Conservation of herpetofauna is necessary to balance the ecosystem.
2. Anthropogenic disturbance like acidification of water bodies shows adverse effect on herpetofauna.
3. Recently conclusion that the populations of reptiles are reducing due to many reasons, such as extinction of forest areas, habitat loss, unauthorized trades for skins and flesh, anthropogenic pressure, poaching, trafficking, preventive measures and strict action by government is required.
4. Deforestation restrict not only wild life population but also forest dwelling amphibians, reptiles and their micro-habitat value.

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