

Research Article

A PRELIMINARY SURVEY OF ANURANS FROM SALEKASA TEHSIL OF GONDIA DISTRICT, MAHARASHTRA STATE

¹*Santosh D. Puri and ²Sneharika R. Patle

Department of Zoology, Shankarlal Agrawal Science College Salekasa, Dist. Gondia, Maharashtra State

Article History: Received 27th December 2024; Accepted 25th January 2025; Published 31st January 2025

ABSTRACT

The present paper deals with anuran diversity from Salekasa tehsil of Gondia district in the different habitats. This study was carried out on the basis of survey conducted during the period of July 2024 to October 2024 in study area. Visual encounter survey method was used for the observation and photographic evidences of frogs and toads in all possible habitats of the study area. A total of 15 species of anurans belonging to 5 families were recorded. This study showed that the Salekasa tehsil of Gondia district including forest area was found rich in anuran diversity and support many more species. It was a preliminary study on the anuran diversity but further studies are needed for addition of new species.

Keywords: Anuran fauna, Frogs and Toads, Salekasa tehsil, Gondia district.

INTRODUCTION

Anuran diversity refers to the variety of frog and toad species within a particular region or ecosystem. Frogs and toads are amphibians and are a key component of many ecosystems due to their roles as both predators and prey. Amphibians play important roles in the food chains of both terrestrial and aquatic ecosystem and are widely considered to be useful indicators of ecosystem stress (Qureshi and Wagh, 2020). Amphibians are diverse in form, colour, behaviour and natural habits. They vary in size, reproductive capacity, population density and diversity. They are most abundant in the tropics and their loss can seriously harm the functioning of the ecological community and the food chain (Pankaj, 2020).

Frogs and toads are both amphibians belonging to the order Anura, but they exhibit distinct differences in their physical characteristics, behaviour and habitat preferences. Understanding these differences can help in accurate identification and appreciation of their roles in ecosystems. Frogs generally have smooth, moist skin that appears shiny or slimy. Toads typically have dry, rough and warty skin. Frogs usually have a more streamlined, elongated body with longer and powerful hind legs. Toads have a stockier, more squat body with shorter and less muscular legs. Frogs often have prominent, bulging eyes positioned on the sides

of their heads. Toads have more flattened, less prominent eyes with a more pronounced brow. The Eastern Vidarbha region of Maharashtra which including Gondia district, is home to a variety of frog and toad species. The species of frog and toad are adapted to the diverse habitats of Gondia district, ranging from forests and grasslands to agricultural areas and urban environments. Studying amphibians in the Gondia district of Maharashtra is not only crucial for understanding and preserving the region's biodiversity but also for maintaining the ecological services they provide, contributing to sustainable agriculture, monitoring environmental changes and safeguarding human health. The frogs and toads are vital to their ecosystems, providing essential services such as pest control, nutrient cycling and habitat maintenance. Their roles in food webs and as bioindicators of environmental health further underscore their significance.

In relation to the present research work and investigation about anuran diversity, the considerable work done by various workers cited from available literature. A survey of literature in reference to the anuran diversity has revealed that, virtually no research work has been done to generate scientific information on the frogs and toads from Salekasa tehsil in Gondia district of Maharashtra State and hence the present study was launched.

MATERIALS AND METHODS

Study area

For the survey of the frog and toad species, the surrounding area of small water bodies, the water-stored area and other marshy area from Salekasa tehsil was used. Salekasa (21.5583°N latitude and 80.2528°E longitude) tehsil is situated in the Gondia district of Maharashtra State, India. Salekasa experiences a tropical monsoon climate, with distinct wet and dry seasons, supporting lush vegetation and maintaining the health of local ecosystems.

The temperature in Salekasa varies throughout the year, with relatively mild winters and hot summers. Small rivers and streams flow through Salekasa, contributing to the region's hydrology. The area also features wetlands and marshy regions, which support a diverse range of flora and fauna, including amphibians, birds and aquatic plants.

Understanding the geography and natural features of Salekasa is essential for studying its ecological dynamics and implementing effective conservation strategies.

Field Survey and Species Identification

The field survey was carried on frog and toad species from Salekasa tehsil of Gondia district, Maharashtra State, India. Visual Encounter Survey (VES) was done randomly by walking through the study area to note down the encountered species of frogs and toads. The survey was done from July to October 2024 at morning and evening time as the frogs remains most active during rainy season. A checklist of frog and toad species was prepared from the study area. The photos of each species were taken by using Nikon camera and mobile camera and noted down distinguishing morphological features in data sheets.



Figure1. Satellite map of Salekasa tehsil of Gondia district, Maharashtra.

The field guides and methods used by Gururaja and Ramachandra (2012); Wagh *et al.* (2017); Mudke *et al.* (2020) were adopted and the available checklists also used for the identification of the species (iNaturalist, 2024); (iNaturalist, Maharashtra Check List, 2024); (India, 2024). Some of the confused species were identified by consulting with experts.

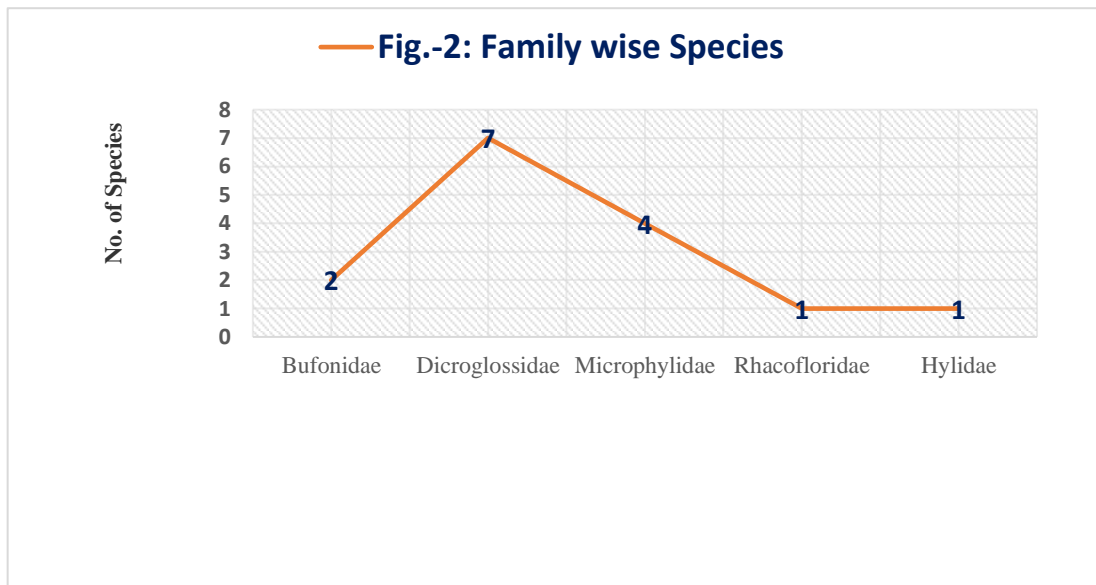
RESULTS AND DISCUSSION

Total fifteen anuran species including 13 Frog species and 02 Toad species were recorded including in five families from Salekasa tehsil of Gondia district, Maharashtra State, India. Out of fifteen species, 02 Toad species from family bufonidae, 07 Frog species from dicroglossidae, 04 Frog species from microphylidae, 01 Frog species from rhacophoridae and 01 Frog species from hylidae family. A checklist of Frog and Toad species was prepared which shown in table-1, dicroglossidae was the dominant family.

Table 1. Checklist of Frog and Toad species at Salekasa tehsil of Gondia district, Maharashtra State, India.

S. No.	Family	Common Name	Scientific Name
1	Bufo	Asian Common Toad	<i>Duttaphrynus melanostictus</i>
2	Bufo	Granular Toad	<i>Rhinella granulosa</i>
3	Dicroglossidae	Indian Bull Frog	<i>Hoplobatrachus tigrinus</i>

4		Jerdon's Bull Frog	<i>Hoplobatrachus crassus</i>
5		Rice field Frog	<i>Fejervarya limnocharis</i>
6		Long-legged Cricket Frog	<i>Minervarya syhadrensis</i>
7		Indian Skipper Frog or Skittering Frog	<i>Euphlyctis cyanophlyctis</i>
8		Pierre's Wart Frog	<i>Minervarya pierrei</i>
9		Terai Cricket Frog	<i>Minervarya teraiensis</i>
10		Indian Painted Frog	<i>Uperodon taprobanicus</i>
11	Microphylidae	Variagated Ramanella or White bellied Pug snout Frog	<i>Uperodon variegatus</i>
12		Ornate narrow-mouthed Frog	<i>Microhyla ornata</i>
13		Ornate Chorus Frog	<i>Microphyla fissipes</i>
14	Rhacophoridae	Indian Tree Frog	<i>Polypedates maculatus</i>
15	Hylidae	Pine Woods Tree Frog	<i>Hyla femoralis</i>



Photographs of Anuran Species





In the present investigation fifteen species of anurans belonging to 5 families were recorded. Forty-three species of amphibians were listed from Maharashtra State (Padhye and Ghate, 2002) and five species of amphibians from Madhya Pradesh (Ingle, 2003). Nine anuran species from Raja Jagannathan Bandh Deo, India (Pankaj, 2020) and twenty-eight anuran species were documented at Dampa Tiger Reserve, Mizoram, India (Decemson *et al.*, 2021). Eleven anuran species reported from Amravati district (Wagh *et al.*, 2017) and Sixteen anuran species each encountered from Nagpur district and Melghat Region (Bala and Jha, 2017; Qureshi and Wagh, 2020). Fourteen species of amphibians from Shivaji University Campus, Kolhapur, Maharashtra (Yadav *et al.*, 2014) and thirteen species of anurans reported from Navegaon National Park from Gondia district of Maharashtra (Bhandarkar *et al.*, 2012).

The species recorded are similar to the other species reported from the adjacent states and other districts of Maharashtra State. Although the duration of our survey was limited to four months, we found considerably good species diversity in this region. As compared to other researchers in Maharashtra, fifteen species of anurans were observed within this short study period. With further systematic study and inventories, we expect records of a greater number of species from this region. The presently known species diversity was found to be threatened by multiple anthropogenic activities and therefore urgent conservation strategies are required to protect the endemic and threatened anuran fauna of the region.

CONCLUSION

The study of frog and toad species in a specific region of Salekasa tehsil of Gondia district in Maharashtra provides valuable insights into their diversity, distribution and ecological roles. The study reveals a good diversity of frog and toad species in the region highlighting the ecological significance of Gondia district. The research may identify the first record of the species previously undocumented in the area. These discoveries contribute to the overall understanding of anuran biodiversity in the region. The study identifies preferred habitats for different frog and toad species such as forested areas, ponds and marshes. This information helps in understanding their ecological importance and the consequences of population changes. Weather conditions, especially rainy season might enhance frog activity but make fieldwork challenging. The human

activities affect the frog habitats due to pollution, deforestation and urbanization. The research may provide an assessment of the conservation status of various species, identifying those that are endangered or at risk. This may highlight successful strategies and areas where additional efforts are needed. The biodiversity of frogs and toads in Salekasa tehsil of Gondia district is of significant ecological, environmental and scientific importance. Thus, this research could contribute significantly to understanding and preserving frog and toad biodiversity in the chosen area.

ACKNOWLEDGMENT

The authors are grateful to the principal of the college Dr. S. Narayan Murthy for supporting this research work. Authors are also very much thankful to Dr. K. M. Kulkarni (Former Director, Higher Education, Pune, Maharashtra Govt.) for his great cooperation and guidance.

CONFLICT OF INTERESTS

The authors declare no conflict of interest

ETHICS APPROVAL

Not applicable

REFERENCES

- Bala U and Jha AK (2017). Studies on organization of Anuran communities in Nagpur district of Maharashtra, India. *International Journal of Researches in Biosciences, Agriculture & Technology*, Special Issue (2) Vol V, 1052-1056.
- Bhandarkar, W. R., Paliwal, G. T., Bhandarkar, S. V. and Kali, A. A. (2012). Herpetofaunal diversity at navegaon national park, Distt. Gondia Maharashtra. *International Journal for Environmental Rehabilitation and Conservation*, 3(1), 42-49.
- Decemson, H., Gouda, S., Lalbiakzuala, Lalmuansanga, Hmar, G. Z., Mathipi, V. and Lalremsanga, H. T. (2021). An annotated checklist of amphibians in and around Dampa Tiger Reserve, Mizoram, India. *Journal of Threatened Taxa*, 13(3), 17918-17929. <https://doi.org/10.11609/jott.6319.13.3.17918-17929>.

- Gururaja, K. V. and Ramachandra, T. V. (2012). Anuran Diversity and Distribution in Dandeli Anshi Tiger Reserve. *Sahyadri Conservation Series: 8, ENVIS Technical Report 37 Environmental Information System (ENVIS)*.
- iNaturalist (2024). *Amphibians of India's Check List*. Retrieved from iNaturalist: <https://www.inaturalist.org/lists/61350-Amphibians-of-Indias-Check-List?>
- iNaturalist (2024). *Maharashtra Check List*. Retrieved from iNaturalist: https://www.inaturalist.org/check_lists/6984-Maharashtra-Check-List
- India, A. O. (2024). *A taxonomic checklist of indian amphibians*. Retrieved from Amphibians of India: <https://www.indianamphibians.org/species-list>
- Ingle, M. (2003). A preliminary Survey of herpetofauna of Naglog area, Jashapur Chhattisgarh State. *Cobra*, 54, 1-5.
- Mudke M, Gururaja KV, Aravind N, and Singal R (2020) Annotated list of anurans from the lateritic plateau of western India with notes on malformations. *Check List*, 16 (3): 685–698. <https://doi.org/10.15560/16.3.685>.
- Padhye, A. D. and Ghate, H. V. (2002). An overview of amphibian fauna of Maharashtra State. *Review Zoos' Print Journal*, 17(3): 735-740.
- Pankaj, N. (2020). Evaluation of amphibian fauna of the different forest and grassland habitats in and around the area of raja Jagganath Bandh Deo India. *International Research Journal of Modernization in Engineering Technology and Science*, 2(10): 75-84.
- Qureshi, H. A. and Wagh, G. A. (2008). Amphibians of the Melghat, Maharashtra, India. *IRCF Reptiles And Amphibians*, 27(2): 288-292. DOI: 10.17161/randa.v27i2.14400.
- Wagh, G. A., Rawankar, A. S., Sharma, V. and Wadatkar, J. S. (2017). A preliminary study on the amphibian diversity in different habitats of Amravati district, Maharashtra. *Journal of Entomology and Zoology Studies*, 5(1): 158-162.
- Yadav, O.V., Yankanchi, S. R. and Patil, A. M. (2014). Diversity, Threats and Conservation of Herpetofauna in Shivaji University Campus, Kolhapur, Maharashtra, India. *International Journal of Current Microbiology and Applied Sciences*. 3(6): 742-749.

