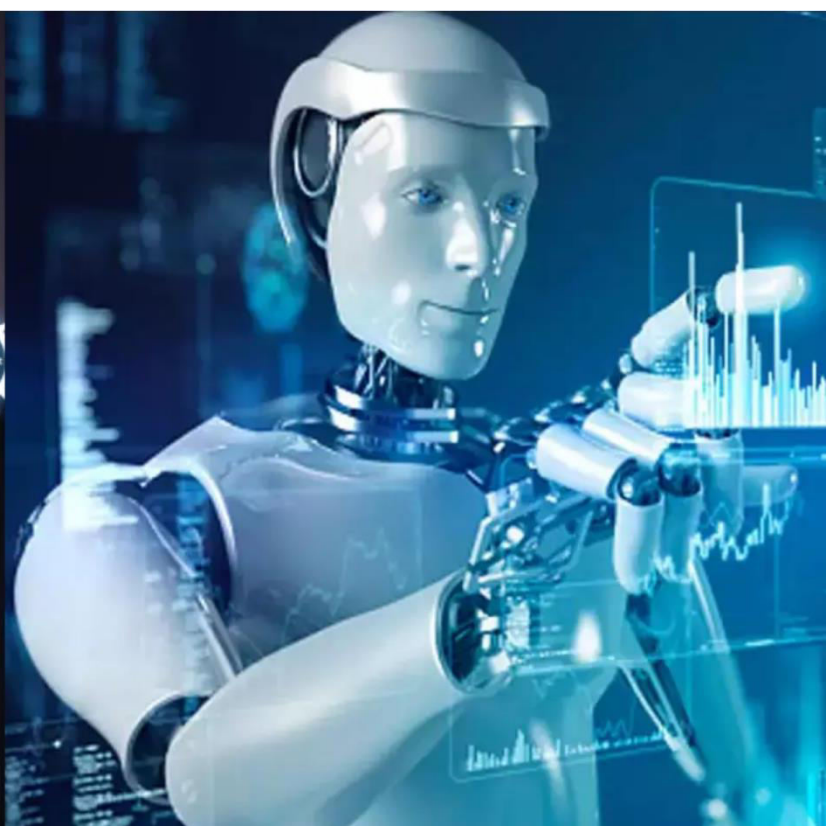




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Macrobenthic Faunal Diversity of Gondsawari Lake, District Chandrapur (MS), India

V.R. Podey¹, Misar S.D²

Research Scholar, Department of Zoology, Janata Mahavidyalaya, Chandrapur, India

Research Supervisor, Department of Zoology, Janata Mahavidyalaya, Chandrapur, India

ABSTRACT: Molluscs are the environment indicators and play a very important role in maintaining aquatic ecosystem by recycling nutrients and surviving as nutrition for certain aquatic organisms. Also they are important source of food for other animals i.e. fishes, birds and mammals even for human being. In the age of global decline of biodiversity, it is necessary to study the present status of different biota and hence this attempt was made.

The present paper deals with the study of diversity of malacofauna from Gondsawari lake of Chandrapur district for the period January 2024 to December 2025. During the study period of 2 years in site A 31 species (belongs 5 phylum and 10 class), in site B 23 species (belongs 5 phylum and 08 class) and 14 species (belongs 4 phylum and 05 class) are found in site C. Molluscs play an important role in ecosystems. Study of malacofauna in freshwater bodies in particular region provides documentation of molluscan species in that region which in turn helps in managing conservation policies.

KEYWORDS: Malacofauna, Gondsawari lake, Diversity

I. INTRODUCTION

Across the globe around 8000 species of gastropods are present. Gastropods are soft bodied animals with univalve, spirally coiled shells. Inside the shell the soft muscular body of gastropods composed of head, foot, visceral mass and mantle. In rivers and lakes, freshwater bivalves serve as filters. Numerous species can be found in dense clusters and filter out a lot of silt, bacteria, diatoms, blue-green algae, and other microscopic organisms as well as heavy metals and big organic compounds.

Fresh water molluscs serve as food for humans in many areas all over the world. Use of shellfish food is very popular among poor and tribal people of India as additional resources of protein rich food. Subba Rao, N. V. and S.C. Mitra (1989), Dey, A. (2007) and Tripathy, B. and Mukhopadhyay, A. (2015) suggested that there are about 22 freshwater species used as food in various regions in India. Ecosystems with lower levels of diversity are more susceptible to pollution, ailments, and other environmental stresses. Aqueous ecosystems are threatened by pollution, changes to the topography or hydrobiological system, as well as more important causes like global change. All the biotic and abiotic factors of an ecosystem are interconnected. Thus, abrupt changes in abiotic factors and stress experienced by biotic components damage the whole ecosystem.

The Gondsawari lake is situated in the Gondsawari village which about 34 km from Chandrapur of Maharashtra state. It is at the East side at about 618 meter above the MSL and is at 20°00' 55.84" N latitude and 79° 31' 35.87" E longitude. The area of this lake is spread over 51.405 acres. The depth of water is 19 feet during the monsoon season and 7 feet during the summer season. The taxonomic study of Indian fresh water molluscs has been done by Zoological Survey of India, Subba Rao, N.V. (1989), Rao, H.S. (1925), Tonapi, G.T. and L. Mulherkar (1963), Tonapi, G.T. (1971), Subba Rao, N.V. and S.C. Mitra (1975,1979), Surya Rao *et. al.*, (2002), Patil, S.G. and S.S. Talmale (2003,2005), Tripathy, B. and Mukhopadhyay, A. (2015), Magare, S.R. *et. al.*, (2016), Kambale, V.S. (2018), Kumar, A. *et. al.*, (2019), Misar, S.D. *et. al.*, (2020) and so on.

II. MATERIAL AND METHODS

The present work was carried out from January 2024 to December 2025. For study purpose Molluscan shells were collected by hand-picking them from the littoral zone of water bodies. Scoop net was used to pull out mollusks lodged in aquatic weeds or buried in bottom of water bodies (Sajan, S. K. et al., 2021). For research, no live mollusks were collected. If samples of living molluscan species were the only thing observed, rather than shells, they were promptly released into water bodies after photography and documented on film. Collected shells were cleaned properly by using soft bristle brush to remove mud and dried. Species identification was done by using standard keys Subba Rao, N. V. (1989) and Ramkrishna and Dey, A. (2007).

III. RESULT AND DISCUSSION

During the present investigation in site A 31 species (belongs 5 phylum and 10 class) are found while in site B 23 species (belongs 5 phylum and 08 class) and 14 species (belongs 4 phylum and 05 class) are found in site C.

In site A, 31 species are found in 5 phylum and 10 class such as Platyhelminthes/ Turbellaria - *Dugesia tigrina*, Nematoda/ Chromadorea - *Diplogaster factor* and *Rhabditis* species, Annelida/ Clitellata - *Tubifex* species, Annelida/ Oligochaeta - *Chaetogaster* species and *Pheretima posthauma*, Annelida/ Polychaeta - *Aeolosoma bengalensis*, Annelida/ Hirudinea - *Hirudinaria granulose*, Arthropoda/ Malacostraca - *Paratelpus ajaquemonti*, Arthropoda/ Insecta - Dragonfly nymphs, Damselfly nymphs, *Chironomus* larva, *Dineutus* species, *Anopheles* species, *Corixa* species, *Culex* species, *Nepa* species, *Ranatra elongate*, *Gerris* species and Predaceous diving beetles, Mollusca /Gastropoda - *Vivipara bengalensis*, *Melania tuberculata*, *Lymnea* species, *Indoplanorbis exustus* and *Pila globosa*, Mollusca /Bivalvia - *Lamellidens correaanus*, *Lamellidens marginalis*, *Corbicula regularis*, *Corbicula peninsularis*, *Unio* species and *Parreysia carrugata*.

In site B, 23 species are found in 5 phylum and 08 class such as Platyhelminthes/ Turbellaria - *Dugesia tigrina*, Nematoda/ Chromadorea - *Diplogaster factor* and *Rhabditis* species, Annelida/ Oligochaeta - *Chaetogaster* species, Annelida/ Polychaeta - *Aeolosoma bengalensis*, Annelida/ Hirudinea - *Hirudinaria granulose*, Arthropoda/ Insecta - Dragonfly nymphs, Damselfly nymphs, *Chironomus* larva, *Dineutus* species, *Anopheles* species, *Culex* species, *Nepa* species and *Ranatra elongate*, Mollusca /Gastropoda - *Vivipara bengalensis*, and *Pila globosa*, Mollusca /Bivalvia - *Lamellidens correaanus*, *Lamellidens marginalis*, *Corbicula regularis*, *Corbicula peninsularis* and *Unio* species.

In site C, 14 species are found in 4 phylum and 05 class Nematoda/ Chromadorea - *Rhabditis* species, Annelida/ Oligochaeta - *Chaetogaster* species and *Pheretima posthauma*, Arthropoda/ Insecta - Damselfly nymphs, *Dineutus* species, *Anopheles* species, *Culex* species, *Nepa* species, *Ranatra elongate*, *Gerris* species and Predaceous diving beetles, Mollusca /Gastropoda - *Pila globosa*, Mollusca /Bivalvia - *Lamellidens correaanus* and *Lamellidens marginalis*,

A study of the diversity of native freshwater malacofauna is accomplished by number of inventories. Das, U. K., et al., (2011) studied molluscan diversity of Pagladia river Asam, they reported *Melanoides scabra* as dominant species at that site. Pandya, P. J., & Vachhrajani, K. D. (2012) studied malacofauna of Mahi River Gujrat. Patil, S. A. (2013) Singhori wildlife sanctuary Madhya Pradesh. S. D. Misar et. al., (2016) During the present investigation, a total of 19 molluscan taxa belonging to 2 classes, viz., gastropoda and bivalvia, 14 families were recorded in Saigata lake of Bramhapuri taluka, Dist Chandrapur, Maharashtra, India. Chandra, K., et al., (2017) reported 150 species of gastropods belonging to 16 families and 51 genera along with 67 species of bivalves in India. Pimpalshende, Atul K. and Sitre, Shashikant R. (2018) recorded 25 species of benthic fauna in freshwater lakes of Pombhurna Tehsil of Chandrapur District, MS, India. A.K. Singh et, a., (2019) reported 26 species of macroinvertebrate in floodplain lakes of North Bihar, India. Bhute, K. B. and Harney, N.V. (2020) During the study, 20 species of benthic fauna belonging to 10 groups of class/phylum were found of Nagrala Lake, Bhadrawati, District Chandrapur (MS), India. Sajan, S.K. et al., (2021) under Zoological Survey of India carried out inventory of land and freshwater molluscs in some parts of the Andhra Pradesh and Telangana state of Deccan Peninsula India. Malacofauna in the Poba Reserve Forest in Assam, India, was examined in connection to specific physicochemical parameters by Chutia, J., & Kardong, D. (2022). They discovered 16 species, with the winter season recording the highest number of species, and the monsoon season the lowest. Dr. Rupali P. Tekade (2023) recorded 10 species belongs 02 classes were recorded. 06 species belong to class gastropods and 04 species from class Bivalvia of Molluscs from Arni Region, Yavatmal. G. V. Ade and P. M. Makode (2024) recorded a total 12 species of molluscs have been reported in this paper, 9 of these are gastropods and 3 are bivalves.

These species belong to 3 orders, 7 families and 7 genera. S.B. Patharde and P.M. Telkhade (2025) A total of 16 molluscan species from 8 families and 6 orders have been identified in Borda Dam at Wani Taluka of Yavatmal District, Maharashtra, India.

In the course of present study, a greater number of molluscs were recorded during summers, very less during monsoon and moderate during winters. Many surveys recorded an increase in number of molluscs during summer and decrease during monsoon season during summer season. Molluscs get ample amount of decomposed organic matter for feeding due to rise in temperature and increase in decomposition of organic matter in water bodies during summer (Dorlikar, A. V., et al., 2014; Malhotra, Y. R. et al., 1976). High molluscs species richness and diversity flourish in the low water flow, or nearly lentic environment, with a rich macrophyte population in the side channels, according to (Bódis, E., et al. 2016).

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Sr. No	Phylum/Class	Name of forms	Site A	Site B	Site C
1.	Platyhelminthes/ Turbellaria	<i>Dugesia tigrina</i>	+	+	-
2.	Nematoda/ Chromadorea	<i>Diplogaster factor</i>	+	+	-
3.	Nematoda/ Chromadorea	<i>Rhabditis species</i>	+	+	+
4.	Annelida/ Clitellata	<i>Tubifex species</i>	+	-	-
5.	Annelida/ Oligochaeta	<i>Chaetogaster species</i>	+	+	+
6.	Annelida/ Polychaeta	<i>Aelosoma bengalensis</i>	+	+	-
7.	Annelida/ Oligochaeta	<i>Pheretima posthuma</i>	+	+	+
8.	Annelida/ Hirudinea	<i>Hirudinaria granulose</i>	+	+	-
9.	Arthropoda/ Malacostraca	<i>Paratelphus ajaquemonti</i>	+	-	-
10.	Arthropoda/ Insecta	<i>Dragonfly nymphs</i>	+	+	-
11.	Arthropoda/ Insecta	<i>Damselfly nymphs</i>	+	+	+
12.	Arthropoda/ Insecta	<i>Chironomus larva</i>	+	+	-
13.	Arthropoda/ Insecta	<i>Dineutus species</i>	+	+	+
14.	Arthropoda/ Insecta	<i>Anopheles species</i>	+	+	+
15.	Arthropoda/ Insecta	<i>Corixa species</i>	+	-	-
16.	Arthropoda/ Insecta	<i>Culex species</i>	+	+	+
17.	Arthropoda/ Insecta	<i>Nepa species</i>	+	+	+
18.	Arthropoda/ Insecta	<i>Ranatra elongata</i>	+	+	+
19.	Arthropoda/ Insecta	<i>Gerris species</i>	+	-	+
20.	Arthropoda/ Insecta	<i>Predaceous Diving Beetles</i>	+	-	+
21.	Mollusca /Gastropoda	<i>Vivipara bengalensis</i>	+	+	-

22.	Mollusca /Gastropoda	<i>Melania tuberculata</i>	+	-	-
23.	Mollusca /Gastropoda	<i>Lymnea species</i>	+	+	-
24.	Mollusca /Gastropoda	<i>Indoplanorbis exustus</i>	+	-	-
25.	Mollusca /Gastropoda	<i>Pila globosa</i>	+	+	+
26.	Mollusca /Bivalvia	<i>Lamellidens correatus</i>	+	+	+
27.	Mollusca /Bivalvia	<i>Lamellidens marginalis</i>	+	+	+
28.	Mollusca /Bivalvia	<i>Corbicula regularis</i>	+	+	-
29.	Mollusca /Bivalvia	<i>Corbicula peninsularis</i>	+	+	-
30.	Mollusca /Bivalvia	<i>Unio species</i>	+	+	-
31.	Mollusca /Bivalvia	<i>Parreysia carrugata</i>	+	-	-

Table 1 - Showing Malacofaunal diversity of Gondsawari lake

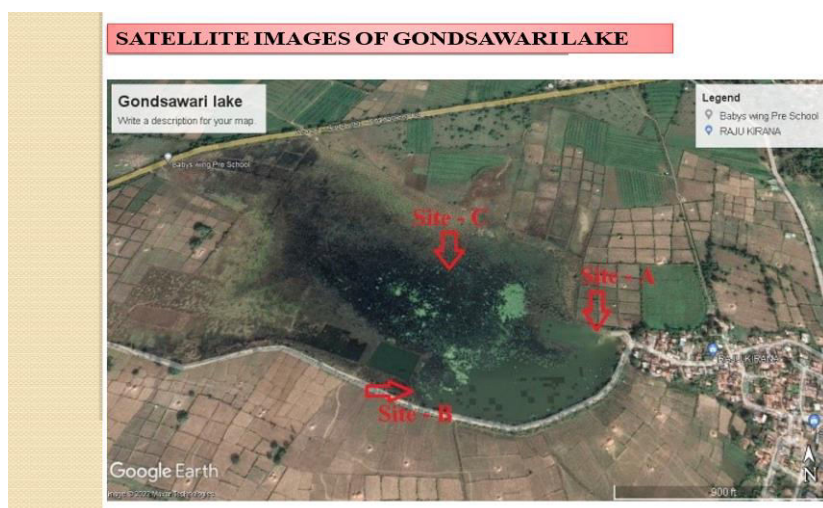


Fig 1 – Image of Gondsawari lake



Fig 2 – Image of some benthos in Gondsawari lake.



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