BENTHIC DIVERSITY OF MANDWA LAKE OF DHARNI (MELGHAT) TAHSIL, DISTRICT AMRAVATI, MAHARASHTRA, INDIA

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ABSTRACT

Benthic means also some organisms live in rocks, bottom, sediment mud of the ponds, lakes, rivers and sea that is called as benthos or benthic. Animals and plants that inhabit the bottom of large water bodies are called benthos. Number of the organisms are sessile some creep over or burrow in the mud and base of the water body and also number of animals found at the bottom is not only related to nature of the substrata but also to depth the kind and quality of the aquatic plants present in as aquatic environment. Present Benthic in the Mandwa lake near the Dharni (Melghat) town was studied from Jan. 2019 to Dec. 2019 during total 32 species of Benthic were found in sample three sites A, B and C of Mandwa lake near Dharni tahsil disrtic Amravati.

***Keywords**: Mandwa lake, Benthic diversity, Invertebrate phyla.*

Introduction

The bottom of lentic ecosystem, are inhabited by a wide variety of saprophytes belonging to almost all invertebrate phyla, Annelida, Arthropoda, Mollusca etc. The benthos organisms are collectively referred to a zoo benthos and play an important role in the detritus food chain/ web's by recycling energy and matter. Further benthos they form food of other organisms and thus form important components in the benthic food chain and food web. Benthic invertebrates have been attractive targets of biological monitoring efforts because they are a diverse group of long-lived, sedentary species that react strongly and often, predictably to human influence on aquatic ecosystems (Rosenberg and Resh, 1993).

Mandwa lake is 4 km south east side from Dharni Tahsil at about 500 m above mean sea level and is at 76°55'49''E longitude and 21°31'28'' N latitude. Mandwa Lake receives the water from the surrounding catchment areas during the monsoon period. The area of Mandwa lake is spread over 500 acres. The depth of water is 38 feet during the monsoon and 15 feet during the summer season. The water of this lake is primary used for washing, bathing, fishing activities, agriculture and other domestic purpose but now it is at a transitional state with respect to degradation.

Materials and Methods

Benthic samples were collected using Eckmen Dredge. The Collected bottom sediment mud is transformed to a measuring cylinder or bucket and the volume is measured. The organisms in sample were separated by preparing a suspension in water which is filtrated through 0.2 to 0.5 mm mesh size sieve. The filtered residue is placed in an enamel tray and sugar solution (10 mg in 250 ml. D.W.) is added, due to an increase in water density by this addition benthic fauna move up which are collected with the help of dropper, forceps or brush. The sorted organisms are preserved in 4% formalin or 70% alcohol from the field and are transferred to the lab in polythene bags. The identification of organism up to species level was done with the help of standard key (Tonapi, 1980).

Results and Discussion

In the present investigation 32 macroinvertebrate species were observed from 6 different classes in the three different sites A, B and C of the lake under investigation. In class Nematoda, *Diplogaster fictor* and *Rhabditis sp.* and Annelids like *Pheretima* and *Hirudinaria* showed there presented in all the three sites.

Naidu and Shrivastava, (1979) reported occurrence of the Oligochaeta in the lentic

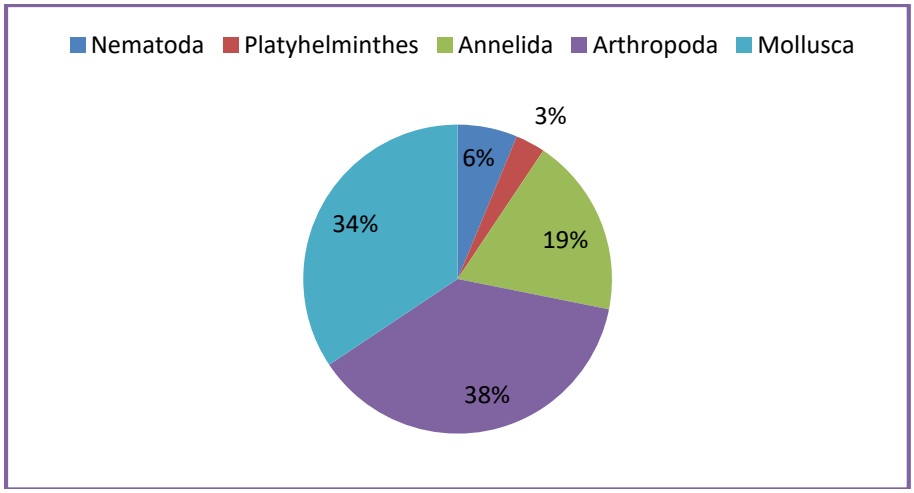
and lotic fresh water reservoirs in Nagpur. Telkhede *et.al.* (2008) noted species of *Rhabdolaimus* and *Diplogaster fictor* from Masala lake at Duragapur of District Chandrapur. Sitre and Zade (2012) reported 13 macro benthic species belonging to three phylum in a polluted urban Naik lake of Nagpur city in Maharashtra. Sitre (2013) observed and recorded *Ceratophyllum sp., Hydrilla sp.* and *Nelumbo sp.* in water reservoir of Bhadrawati Tehsil in Chandrapur District. Lonkar and Kedar (2014) observed 30 species of macro-benthic invertebrates belonging to four phyla from three Urban lakes of Nagpur, in Ambazari lake showed high species diversity with 28 species and 26 species were recorded from Futala lake while 24 species were observed from Gandhisagar lake.

Anitha *et.al.* (2004) reported larvae of mosquito and *chironomous* are considered as pollution indicator by several authors. Their dominant presence in site A and site C because indicates its polluted nature. In site A, *Lymnaea sp.* are abundantly recorded as compare to site B and site C. *Vivipera dissimilis* and *Corbiculla reguaris* are found in site A and site C but both the species are absent from in B probably due to its high contamination. Kiran (2007) recorded the benthic fauna from two polluted lentic water bodies of Bhadrawati Taluka, Karnataka.

Table 1: Distribution of Benthic fauna in Mandwa lake during Jan 2019 Dec 2019

Sr. No.	Phylum	Name of forms/species	Site-A	Site-B	Site-C
1.	Nematoda	*Diplogaster fictor*	+ + -	+ + -	+ - +
2.	Nematoda	*Rhabditis sp.*	- - +	- - +	+ - -
3.	Platyhelminthes	*Dugesia tigrina*	- + -	- + +	- - -
4.	Annelida	*Pheretims posthauma*	- - -	- - +	- + +
5.	Annelida	*Hirudinaria granulosa*	+ + +	- + -	+ + +
6.	Annelida	*Aeolosoma sp.*	+ + +	+ + +	+ + -
7.	Annelida	*Tubifex sp.*	- + +	+ + +	- + +
8.	Annelida	*Pterobdella sp.*	+ - +	+ - -	+ - -
9.	Annelida	*Chaetogaster sp.*	- - +	- + +	+ - -
10.	Arthropoda	*Peltodytes sp.*	- - -	+ - -	+ + +
11.	Arthropoda	*Dinecutus sp.*	-++	++-	-+-
12.	Arthropoda	*Cancer (Rock crab)*	+ + +	+ + +	- - +
13.	Arthropoda	*Mosquito larva*	+ + +	+ + +	+ + -
14.	Arthropoda	*Dragon-fly*	- - +	- + -	+ - -
15.	Arthropoda	*Water mite*	+ + -	+ - +	- + -
16.	Arthropoda	*Cybister sp.*	+ - -	- - +	+ + +
17.	Arthropoda	*Peschatius sp.*	- - +	+ - -	+ + -
18.	Arthropoda	*Chironomous larva*	+ + +	+ + -	+ + +
19.	Arthropoda	*Belostoma sp.*	+ + +	+ + +	- + -
20.	Arthropoda	*Nepa sp.*	- + +	+ - +	- + -
21.	Arthropoda	*Ranatra elongate*	+ - -	- - +	- - +
22.	Mollusca	*Corbicula regularis*	+ + -	- - -	+ - -
23.	Mollusca	*Glessula ceylanies*	- + -	- + -	+ - -
24.	Mollusca	*Glessula notigena*	- - -	+ - -	- - -
25.	Mollusca	*Indonia coerulea*	+ - -	+ - +	- - +
26.	Mollusca	*Indoplanorbis*	- - +	+ - -	- - -
27.	Mollusca	*Lymnaea sp.*	+ + +	+ + -	+ - -
28.	Mollusca	*Melania striatella*	+ - -	+ - -	- - +
29.	Mollusca	*Pila globosa*	- + -	- - +	- - +
30.	Mollusca	*Plotia scabra*	- - -	+ + -	- - -
31.	Mollusca	*Vivipara bengalensis*	- + -	+ - -	- - -
32.	Mollusca	*Vivipara dissimilis*	- - +	- - -	+ - -

Figure 1: Species guild of benthic fauna from Mandwa lake



Conclusion

Benthic populations are various characteristics, which are important in monitoring of aquatic ecosystem. The most basic of these are population size, dispersion, density, distribution and seasonal variation. In the present investigation, Mandwa Lake was found to rich in benthic qualitatively and quantitatively. The most dominant species among benthic macro invertebrates were Mollusca and Oligochaeta. The minimum species as Odonata maintained their irregular presence in poor density throughout the period of observations.

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