STUDY OF OSTRACODS DIVERSITY OF MANDWA LAKE NEAR DHARNI (MELGHAT) TAHSIL, DISTRICT AMRAVATI (M.S.), INDIA

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ABSTRACT

The Mandwa Lake is principal fresh water body located in Mandwa village of Dharni tahsil in Amravati district of Maharashtra state. Dharni is a tahsil place and it is 148 km north west side of Amravati and 80 km east side from Burhanpur, Madhya Pradesh It is situated at about 500 m above the mean sea level. The Ostracods were studied from Nov 2019 to Oct 2020.During this period total 2 species of Ostracods were found in sample of water three sites A, B and C of Mandwa Lake.

Keywords: *Mandwa lake, Ostracods diversity*

Introduction

Ostracods commonly known as seed shrimps and also Ostracods class of a Crustacea and found in a wide variety of aquatic habitats. It is bivalve and appear like small seeds. The body of Ostracod is laterally compressed and protected by a bivalve like such as chitinous or calcareous valve or "shell". Ostracod occurs in both water standing as well as running water. The Ostracods this organism very good food for the fishes and aquatic organisms (Tonapi, 1980).

Mandwa lake is 4 km south east side from Dharni Tahsil at about 500 m above mean sea level and is at 76o55'49''E longitude and 21o31'28'' 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

Material and Method

Sample for planktonic study were collected monthly from three sites of lake. The samples were collected in the morning hours between8.30 a.m. to 10.30 a.m. 50 Lt. of water sample was filtrated through the plankton net made of bolting silk number 25 with mesh size 64 lime the collected samples were allowed to settle down by adding Lugol's Iodine. Normally sedimentation requires 24 hrs. after which supernatant was removed and concentrate was made up to 50 ml. depending the number of plankton and preserved in 5% formalin for further studies.

For the quantitative study the concentrated sample was shaken and immediately one drop of sample was taken on a clear micro side with the help of standard dropper the whole drop was then carefully covered with the cover glass and observed. Plankton identification up to genera and whenever possible upto species level was classified according to keys given by Prescott (1954), Edmonsonic (1959), Sehgal (1983), Adoni (1985), and APHA (1985) and standard analysis was undertaken as per Zar(2005).

Quantitative study of plankton was done by Sedgwick – Rafter Cell method

Sedgwick – Rafter Cell Method

The Sedgwick – Rafter Cell is a special kind of slide similar to the Haemocytometer. The cell has a 50 mm x 20 mm × 10 mm rectangular cavity that holds 1 ml. sample. The cell is moved in horizontal direction on the stage of an inverted microscope and plankton species encountered in the field are enumerated. A number of replicate samples are enumerated to calculate plankton/lit.

$$\text{Plankton(units/lit)} = n\,xc/v$$

Where,

n = number of plankton in 1ml

c = Volume of concentrate

v = Volume of sample in lit.

Result and Discussion

According to Kedar, (2002) reported 7 species belong to Ostracods in Rishi lake and Yedshi lake of Washim District of Maharashtra. Pawar and Pulle, (2005) observed 4 species of Ostracods from Petwadaj dam of Nanded, Maharashtra. Jayabhaye and Madalapure, (2006) recordrd 3 species of OstracodsinParola dam of Hingoli. Sakhre and Joshi, (2006) observed 4 species of Ostracods in Yeldari reservoir. Ansariand Raja, (2007) founded only one species belong to Ostracods in two freshwater bodies of Aligarh, Uttar Pradesh. Rajan, *et.al.,* (2007) observed 3 species of Ostracods in three polluted water bodies of Virudhunagar District, Tamilnadu.

In the present investigation, 2 species were reported at all the three sampling sites A, B and C of the lake under study durin Nov 2019 –Oct2020.

In site A, during 2019-20, 2 species were recorded among which *Stenocyprissp*(81 no./lit) and *Cypris sp.* (35no./lit).

In side B, during 2019-20, 2 species were recorded *Stenocypris sp.* (78 no./lit) and *Cypris sp.* (68 no./lit).

In site C, during 2019-20, 2 species were recorded. *Stenocyprissp*(72 no./lit) and *Cypris sp.* (38 no./lit).

Amoung the different species in side A, Stenocypris sp. was dominant by Ostracods, Cypris sp. In side B, Stenocyprissp.was dominant by Ostracods, Cypris sp. In side C, Stenocypris sp. was dominant by Ostracods, Cypris sp.

Bhagat, *et.al.,* (2010) recorded 5species of Astracoda in Ambadi irrigation dam of District Akola. Kumar, *et. al.,* (2011) observed one genera each of Ostracods of a Varasda wetland system of Rajkot District, Gujarat. Shashikant Sitre and Mahendra Thakare, (2013) observed ostracods by one species in Balaji temple tank of Chimur city of Chandrapur District (M.S.). Balakrishna, *et. al.,* (2013) reported 2 species of Ostracods at Dharmasagar lake of Dharamsagar of Warangal District, Andhra Pradesh. Kamble and Mudkhede, (2013) observed only *Cypirus*in Ambadi reservoir of taluka Kinwat, Maharashtra. Jaiswal, *et.al.,* (2014) reported two species of Ostracods were distributed in a freshwater of Rangavali Dam in Navapur, District Nandurbar (M.S.). Gunwant Gadekar, (2014) founded 3 species of Ostracods in Pangdi lake of Gondia of District Gondia, Maharashtra. Gunwant Gajanan Sontakke and Satish Mokashe, (2014) observed 2 species of Ostracods in Dekhu reservoir from Aurangabad, Maharashtra.

Ferdapercinpacal and Hisamettin Balkis (2015) observed 75 species of Ostracods in Bandirma bay, the Marmara sea Turkey.

Pokale S.S. (2018) founded 2 species of ostracods of Valvan lake of Lonavala, Maharashtra.

Mehmet Yavuzatmaca (2020) observed 26 species of ostracods in streams and lakes in Turkey.

In the present investigation the Ostracods density is a maximum during the winter and minimum during the monsoon season. Patil, (2008) recorded the maximum population of Ostracods during the summer season and minimum during the monsoon season. Pejawar and Gurao, (2008) observed them only during monsoon and stated that these are pollution sensitive species. Nirmal Kumar, *et.al.,*(2011) founded the maximum population of Ostracods during the summer season and minimum during the monsoon season of a Varasda wetland system Gadekar, (2014) observed maximum Ostracods population were reported in summer, in March month while minimum in monsoon season, i.e. in Julymonth in Pangdi lake of Gondia of District Gondia, Maharashtra. Shashikant Sitre, (2014) reported maximum Ostracoda population were observed in summer months and minimum in rainy season in Sunkadin Naik lake of Nagpur city (M.S.).

Conclusion

In the present investigation, the maximum Ostracods during the winter season is probably due to availability of suitable food and favorable temperature and minimum density in monsoon season which could be

due to dilution of water resulting in fewer nutrients and due to reduction of transparency and dissolved oxygen.

Table 1: Yearly variation of Zooplankton fromsitesof MandwaLakeduringyear2019- 20.

Sr. No.	Parameters	A	B	C	Total
1	Ostracods	10.50 ± 8.98	13.00 ± 13.78	10.00 ± 7.54	11.17 ± 4.66

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