

Biodiversity of Macrophytes of Three Water Bodies Near Bhadrawati, District-Chandrapur (M.s.), India.



Zoology

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ABSTRACT

Aquatic macrophytes includes a vast majority of aquatic vascular plants. They are found mainly in the shallow regions of ponds, lakes, rivers, swamps and streams etc. They are of considerable ecological and economical importance. Macrophytes is an important factors for helping in maintaining ecological balance. Aquatic macrophytes play a pivotal role in maintaining primary productivity of water ecosystem. The present paper describes the biodiversity of macrophytes of three water bodies (Kanhala, Pindavani and Malhara Ponds) of Bhadrawati town located in the Chandrapur district of Maharashtra State from Oct. 2005 to Sep. 2007 in which 19 species representing 16 families belonging to 5 groups such as 5 Submerged floating weeds, 4 Rooted floating leaves weeds, 1 Rooted emergent with heterophile weeds, 6 Free floating suspended submerged and 3 Rooted submerged hydrophytes. Among different macrophytes, Marsilea sp., Azola sp. and Salvenia sp. were found in abundance in Kanhala pond as compare to Pindavani and Malhara ponds while Eutricularia sp. was not recorded from Kanhala pond.

Introduction

Aquatic macrophytes are the main primary producers of organic matter on which fishes thrive. They are also source of oxygen. They are also respond to the changes in water quality and have been used as indicator of pollution of pollution in several cases (Westtake, 1981 and Best, 1982). The three ponds selected for study viz. Kanhala, Pindavani and Malhara pond are principal freshwater bodies located in the rural area, around the vicinity of Bhadrawati town, located in the Chandrapur district of Maharashtra State, India. It is situated at about 211 m above MSL and at 20°06'1 35.6711N latitude and 79°07'17.3311 E longitude.

During the last few decades considerable studies on aquatic macrophytes from different freshwater bodies of India and abroad have been carried out by researchers like, Unni, (1971), Crowder *et al.*, (1977), Zutshi *et al.*, (1980), Billore and Vyas (1981), Islam (1990), Kodarkar, (1996), Salaskar, (1998), Dey and Kar (1999), Bhaumik *et al.*, (2004), Kumar and Pandit (2005), Ghavzan *et al.*, (2006), Devi and Sharma (2007) and so on.

However very little information is available about the aquatic macrophytes of centre India. This work has therefore undertaken of document the aquatic macrophytes of three water bodies located in the town Bhadrawati which lies in the central region of the country.

Materials and Methods

The aquatic macrophytes were collected for the period of 2 years i.e. October 2005 to September 2007. The recorded data was segregated in 3 seasons, Winter (Oct. to Jan.), Summer (Feb. to May) and Monsoon (June to Sep.).

Macrophytes in shallow waters were collected directly while those from deeper water with the help of long handled hook. On collection the specimen were thoroughly washed, excess water soaked with filter paper, kept in polythene bags lined with filter paper and brought to the laboratory and preserved in 10% formalin and observed. The specimens were identified up to species level as per the guidelines of Kodarkar (1994).

Result and Discussion

Aquatic plants serves as a good source of food to mankind and animals thus forming a palatable food for water birds and a best for aquatic wild life conservation practices (Kiran *et al.*, 2006). Aquatic vesicular plants are important indicator of water pollution (Seddon, 1972 and Shimoda, 1984). Aquatic plants are important as they serve as substratum to different micro and macro fauna (Raut and Pejawar, 2005).

In the present study altogether 19 species representing 16 families belonging to 5 groups such as 5 Submerged floating weeds, 4 Rooted floating leaves weeds, 1 Rooted emergent with heterophile weeds, 6 Free floating suspended submerged and 3 Rooted submerged hydrophytes were recorded in these three ponds. The data is tabulated in Table No. 1. and Figs in plate I.

Several workers have conducted macrophytes survey in lakes from different parts of India viz. Alwar lakes , Alwar, Rajasthan Vyas (1964), Udaipur lake, Udaipur, Rajasthan Paliwar (1984), Sagar lake, Sagar, Madhya Pradesh (Joshi *et al.*, 1987), Sharma and Singhal (1988) recorded 11 species of macrophytes from a tropical lake. Sarrornagar lake, Hyderabad, Andhra Pradesh (Kodarkar, 1996), Meshram and Dhande (2000) also recorded the aquatic macrophytes in Wadali lake, Amraoti and stated that the macrophytes stimulate the growth of phytoplankton and help in the recycling of the organic matter. Ambasht (2005) recorded 25 species of macrophytes from Gujrat Tal, Jaunpur townshio North India. Narayana *et al.*, (2006) study the aquatic macrophytes of Husain sagar, Karanataka. in Kiran *et al.*, (2006) recorded 15 species of macrophytes the fish culture ponds at Bhadra fish farm, Karnataka. Game and Salaskar (2007) recorded the macrophytes on Malchmali lakes, Thane, Maharashtra.

In the present study a total of 19 species of macrophytes belonging to 5 groups were recorded during the present study. Among different macrophytes, *Marsilea sp.*, *Azola sp.* and *Salvenia sp.* were found in abundance in Kanhala pond as compare to Pindavani and Malhara ponds while *Eutricularia sp.* was not recorded from Kanhala pond.

Table 1 : Biodiversity of Macrophytes forms of Kanhala, Pindavani and Malhara ponds.

Sr.No.	Types	Name of macrophytes	Family	Kanhala pond	Pindavani pond	Malhara pond
1	Submerged floating weeds	Ceratophyllum echinatum	Ceratophyllaceae	+	+	+
2	Submerged floating weeds	Nymphaea odorata	Nymphaeaceae	+	+	+
3	Submerged floating weeds	Myriophyllum exalbescens	Haloragaceae	+	+	+

4	Submerged floating weeds	Eutricularia sp.	Lentibulariaceae	+	+	-
5	Submerged floating weeds	Vallisneria americana	Hydrocharitaceae	+	+	+
6	Rooted floating leaves weeds	Marsilea quadrifolia	Marsileaceae	++	+	+
7	Rooted floating leaves weeds	Nelumbo lutea	Nymphaeaceae	+	+	+
8	Rooted floating leaves weeds	Nymphaea tuberosa	Nymphaeaceae	+	+	+
9	Rooted floating leaves weeds	Trapa natans	Trapaceae	+	+	+
10	Rooted emergent with heterophile weeds	Sagittaria Sp.	Alismataceae	+	+	+
11	Free floating suspended submerged	Lemna minor	Lemnaceae	+	+	+
12	Free floating suspended submerged	Azolla carolimana	Azollaceae	++	+	+
13	Free floating suspended submerged	Salvinia rotundifolia	Salviniaceae	++	+	+
14	Free floating suspended submerged	Pistia stratiates	Araceae	+	+	+
15	Free floating suspended submerged	Wolffia Sp.	Lemnaceae	+	+	+
16	Free floating suspended submerged	Nymphaoides	Menyanthaceae	+	+	+
17	Rooted submerged hydrophytes	Potamogeton crispus	Naidaceae	+	+	+
18	Rooted submerged hydrophytes	Hydrilla Sp.	Hydrocharitaceae	+	+	+
19	Rooted submerged hydrophytes	Ipomoea aquatica	Convolvulaceae	+	+	+

+ = Present, - = Absent, ++ = Abundance.

Plate XIII

MACROPHYTES



1) *Trapa natans*



2) *Lemna minor*



3) *Myriophyllum sp.*



4) *Hydrilla sp.*



5) *Nymphaea sp.*



6) *Pistia stratiates*

Plate XIV

MACROPHYTES



7) *Azolla sp.*



8) *Ceratophyllum sp.*



9) *Ipomoea sp.*



10) *Nelumbo sp.*



11) *Salvinia sp.*

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