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RESEARCH ARTICLE

Macrophytes biodiversity of Nagrala lake of Bhadrawati, district- Chandrapur (M.S.), India

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ABSTRACT

A macrophyte is an aquatic plant that grows in or near water and is either emergent, submergent, or floating, and includes helophytes(a plant that grows in marsh, partly submerged in water, so that it regrows from buds below the water surface). 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 diversity of macrophytes of Nagrala lake of Bhadrawati of Chandrapur district of Maharashtra State from June 2015 to May 2017 in which 15 species belonging to 5 groups such as 5 Free floating suspended submerged, 4 Rooted floating leaves weeds, 3 Rooted submerged hydrophytes, 2 Submerged floating weeds and 1 Rooted emergent with heterophile weeds and 14 families. Among different macrophytes, *Marsilea* sp., *Azola* sp. and *Salvenia* sp. were found in abundance in all the sites of lake.

Key words- Macrophytes, Nagrala lake, biodiversity.

INTRODUCTION

Macrophytes are important component and play a major role in primary productivity of the aquatic ecosystem. Aquatic macrophytes used nutrient and thus influences water quality. It also controls water quality by exuding various organic and mineral components. Aquatic communities reflect. 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 [1]. The Nagrala lake is principal freshwater body located in the Bhadrawati town, located in the Chandrapur district of Maharashtra State, India. Nagrala lake is 2 km away and situated on the north side of Bhadrawati at about 205 m. above mean sea level and is at 20˚ 03' 51.93" N latitude and 79˚ 09' 55.47" 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 Unni [2], Crowder *et al.,* [3], Zutshi *et al.,* [4], Billore and Vyas [5], Islam [6], Kodarkar [7], Salaskar [8], Dey and Kar [9], Bhaumik *et al.,* [10] Kumar and Pandit [11], Ghavzan *et al.,* [12], Devi and Sharma [13].

However very little information is available about the aquatic macrophytes of central India. This work has therefore undertaken of document the aquatic macrophytes of Nagrala lake of Bhadrawati tehsil.

METHODOLOGY

The aquatic macrophytes were collected for the period of 2 years i.e. June 2015 to May 2017. Macrophytes in shallow waters were collected directly while those from deeper water with the help of long handled hook. On collection the specimen was 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 [14].

RESULTS AND DISCUSSION

Aquatic plants serve 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 [15]. Aquatic vesicular plants are important indicator of water pollution [16,17]. Aquatic plants are important as they serve as substratum to different micro and macrofauna [18]. A decline in a macrophyte community may indicate water quality problems and changes in the ecological status of the water body. Such problems may be the result of excessive turbidity, herbicides, or salinization. Conversely, overly high nutrient levels may create an overabundance of macrophytes, which may in turn interfere with lake processing.

In the present study altogether 15 species belonging to 5 groups such as 5 Free floating suspended submerged, 4 Rooted floating leaves weeds, 3 Rooted submerged hydrophytes, 2 Submerged floating weeds and 1 Rooted emergent with heterophile weeds and 14 families. The data is tabulated in Table 1.

Table 1: Biodiversity of Macrophytes of Nagrala lake.

Sr. No.	Name of macrophytes	Family	Life forms
1	*Nymphaea tuberosa*	Nymphaeaceae	Rooted floating leaves weeds
2	*Nelumbo lutea*	Nymphaeaceae	Rooted floating leaves weeds
3	*Trapa natans*	Lythraceae	Rooted floating leaves weeds
4	*Marsilea quadrifolia*	Marsileaceae	Rooted floating leaves weeds
5	*Eutricularia sp.*	Lentibulaiaceae	Submerged floating weeds
6	*Sagittaria Sp.*	Alismataceae	Rooted emergent with heterophile weeds
7	*Lemna minor*	Lemnaceae	Free floating suspended submerged
8	*Azolla carolimana*	Azollaceae	Free floating suspended submerged
9	*Salvinia rotundifolia*	Salviniaceae	Free floating suspended submerged
10	*Pistia stratiates*	Araceae	Free floating suspended submerged
11	*Nymphoides*	Menyanthaceae	Free floating suspended submerged
12	*Nymphoides*	Menyanthaceae	Free floating suspended submerged
13	*Potamogeton crispus*	Naidaceae	Rooted submerged hydrophytes
14	*Ipomoea aquatica*	Convolvulaceae	Rooted submerged hydrophytes
15	*Hydrilla Sp.*	Hydrocharitaceae	Rooted submerged hydrophytes

Several workers have conducted macrophytes survey in lakes from different parts of India viz. Alwar lakes, Alwar, Rajasthan, Sagar lake, Sagar, Madhya Pradesh [19]. Sharma and Singhal [20] recorded 11 species of macrophytes from a trophical lake. Sarrornagar lake, Hyderabad, Andhra Pradesh [7], Meshram and Dhande [21] also recorded the aquatic macrophytes in Wadali lake, Amravati and stated that the macrophytes stimulate the growth of phytoplankton and help in the recycling of the organic matter. Ambasht [22] recorded 25 species of macrophytes from Gujrat Tal, Jaunpur township North India. Narayana *et al.,* [23] study the aquatic macrophytes of Husain sagar, Karanataka. Kiran *et al.,* [15] recorded 15 species of macrophytes the fish culture ponds at Bhadra fish farm, Karnataka. Game and Salaskar [24] recorded the macrophytes on Malchmali lakes, Thane, Maharashtra. Dhore and Luchare [25] recorded 15 species of macrophytes in Yavatmal district.

In the present study a total of 15 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 all the sites of lake.

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