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MACROPHYTES DIVERSITY OF GONDSAWARI LAKE OF CHANDRAPUR DISTRICT (M.S.), INDIA.

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ABSTRACT

Aquatic macrophytes play an important role in structuring communities in aquatic environments. These plants provide physical structure, increase habitat complexity and heterogeneity and affect various organisms like invertebrates, fishes and water birds. The present paper describes the diversity of macrophytes of Gondsawari lake near Chandrapur of Maharashtra State from January 2024 to December 2024 in which 16 species belonging to 4 groups such as 6 Free floating suspended submerged, 3 Rooted floating leaves weeds, 2 Rooted submerged hydrophytes and 5 Submerged floating weeds.

Key words- Macrophytes, Gondsawari lake, biodiversity.

INTRODUCTION

Aquatic plants are plants that have adapted to living in aquatic environments (saltwater or freshwater). They are also referred to as hydrophytes or macrophytes. These plants require special adaptations for living submerged in water, or at the water's surface. The most common adaptation is aerenchyma, but floating leaves and finely dissected leaves are also common. Aquatic plants can only grow in water or in soil that is permanently saturated with water. They are therefore a common component of wetlands.

The Gondsawari lake is located near the Chandrapur of Maharashtra State, India. It is 34 km away and situated on the East side of Chandrapur at about 618 m. above mean sea level and is at 20˚00' 55.84" N latitude and 79˚ 31' 35.87" E longitude. The depth of water 20 feet(Monsoon) and 7 feet (Summer). 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), Dey and Kar (1999), Bhaumik *et al.*, (2004), Kumar and Pandit (2005), Ghavzan *et al.*, (2006), Devi and Sharma (2007) and so on.

MATERIALS AND METHODS

The aquatic macrophytes were collected for the period of 1 years i.e. January 2024 to December 2024. Shallow waters macrophytes were collected directly while those from deeper water with the help of long handled hook. After 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). 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. Aquatic vesicular plants are important indicator of water pollution (Shimoda, 1984). Aquatic plants are important as they serve as substratum to different micro and macrofauna (Raut and Pejawar, 2005).

In the present study altogether 16 species belonging to 4 groups such as 6 Free floating suspended submerged, 3 Rooted floating leaves weeds, 2 Rooted submerged hydrophytes and 5 Submerged floating weeds and the data is tabulated in Table No. 1.

Submerged floating weeds represented by 5 species such as *Vallisneria ameriacana, Nymphaea odorata, Eutricularia Sp., Ceratophyllum echinatum and Chara globularis.* Submerged weeds are weeds that are rooted on the bottom of the pond, Floating weeds are plants that float on the surface of the pond or lake.

Rooted floating leaves weeds represented by 3 species such as *Nymphaea tuberosa, Nelumbo nucifera and Trapa natans* Plants that float on the surface and rooted on the bottom are included in this group. Free floating suspended submerged represented by 6 species such as *Azolla carolimana, Lemna minor, Pistia stratiates, Salvinia rotunditolia, Nymphidis Sp. and Salvinia Sp.* They rooted in mud along margin and send out long creeping and floating stem. Rooted submerged hydrophytes represented by 2 species such as *Ipomoea aquatic and Hydrilla Sp.* Submerged aquatic macrophytes are usually rooted in the bottom soil with the vegetative parts predominantly submerged.

Several workers have conducted macrophytes survey in lakes from different parts of India viz. Alwar lakes, Alwar, Rajasthan, Sagar lake, Sagar, Madhya Pradesh (Joshi et al., 1987), Sharma and Singhal (1988) recorded 11 species of macrophytes from a trophical lake. Sarror nagar lake, Hyderabad, Andhra Pradesh (Kodarkar, 1996), Meshram and Dhande (2000) 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. Narayana *et al.*, (2006) study the aquatic macrophytes of Husain sagar, Karanataka. 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. Dhore and Luchare(2014) recorded 15 species of macrophytes in Yevatmal district. B.R. Kiran (2015) recorded 13 species of macrophytes belonging to 11 families in Jannapura tank of Bhadravathi taluk, Karnataka. R. Lakshmanan, S.A. Gathi (2018) reported 37 species belonging to 21 families and 33 genera from Selected wetlands of Tirunelveli district Tamil Nadu, B.K. Dalasingh et.al (2019) found 2 rare species was documented from Gadakharad lake in Different Aquatic Habitats of Puri District, Odisha and Amol Badole et. Al (2021) recorded 44 species of 37 genera belonging to 26 families of lakes around Gondia City, Maharashtra, Shelekar, AL, Yewale, RM and Bhagat, VB (2022) reported 17 macrophyte species of 5 different types in Mandwa lake near Dharnitahsil of Amravati district, Maharashtra, Harney, N.V (2023) recorded 15 species of macrophyte in Chora lake of Bhadrawati Tehsil, District- Chandrapur, Maharashtra, Sanyogita Thakare and Praveenkumar Nasare (2024) reported 18 species of aquatic macrophytes belonging to 04 groups of different 5 lakes of Bhadrawati, District Chandrapur, Maharashtra, Swapan S. Bacher (2024) recorded 21 species of aquatic and marginal macrophytes from 16 families were recorded to be Mulchera lake of Gadchiroli district, Maharashtra, Jadhav, S.L. and Babare, M.G. (2025) recorded 39 species of macrophytes in Emergent Aquatic Macrophytes In The District Of Dharashiv Of Maharashtra, Sangeeta Jadhav, and Mohan Babare (2025) reported 35 species of macrophytes in Jalna District Of Maharashtra, Sangeeta Jadhav, Mohan Babare (2025) reported 105 species in emergent aquatic macrophytes in the Chhatrapati Sambhajinagar District, Maharashtra and Sangeeta L. Jadhav and Mohan G. Babare (2025) recorded 22 species across 9 families of macrophytes in Jalna District of Maharashtra.

Table 1 : Biodiversity of Macrophytes of Gondsawari lake.

Sr. No.	Types	Name of macrophytes
1.	Submerges floating weeds	*Vallisneria ameriacana*
2.	Submerges floating weeds	*Nymphaea odorata*
3.	Submerges floating weeds	*Eutricularia Sp.*
4.	Submerged floating weeds	*Ceratophyllum echinatum*
5.	Submerged floating weeds	*Chara globularis*
6.	Rooted floating leaves weeds	*Nymphaea tuberosa*
7.	Rooted floating leaves weeds	*Nelumbo nucifera*
8.	Rooted floating leaves weeds	*Trapa natans*
9.	Free Floating Suspended submerged	*Azolla carolimana*
10.	Free Floating Suspended submerged	*Lemna minor*
11.	Free Floating Suspended submerged	*Pistia stratiates*
12.	Free Floating Suspended submerged	*Salvinia rotunditolia*
13.	Free Floating Suspended submerged	*Nymphidis Sp.*
14.	Free Floating Suspended submerged	*Salvinia Sp.*
15.	Rooted submerged hydrophytes	*Ipomoea aquatic*
16.	Rooted submerged hydrophytes	*Hydrilla Sp.*

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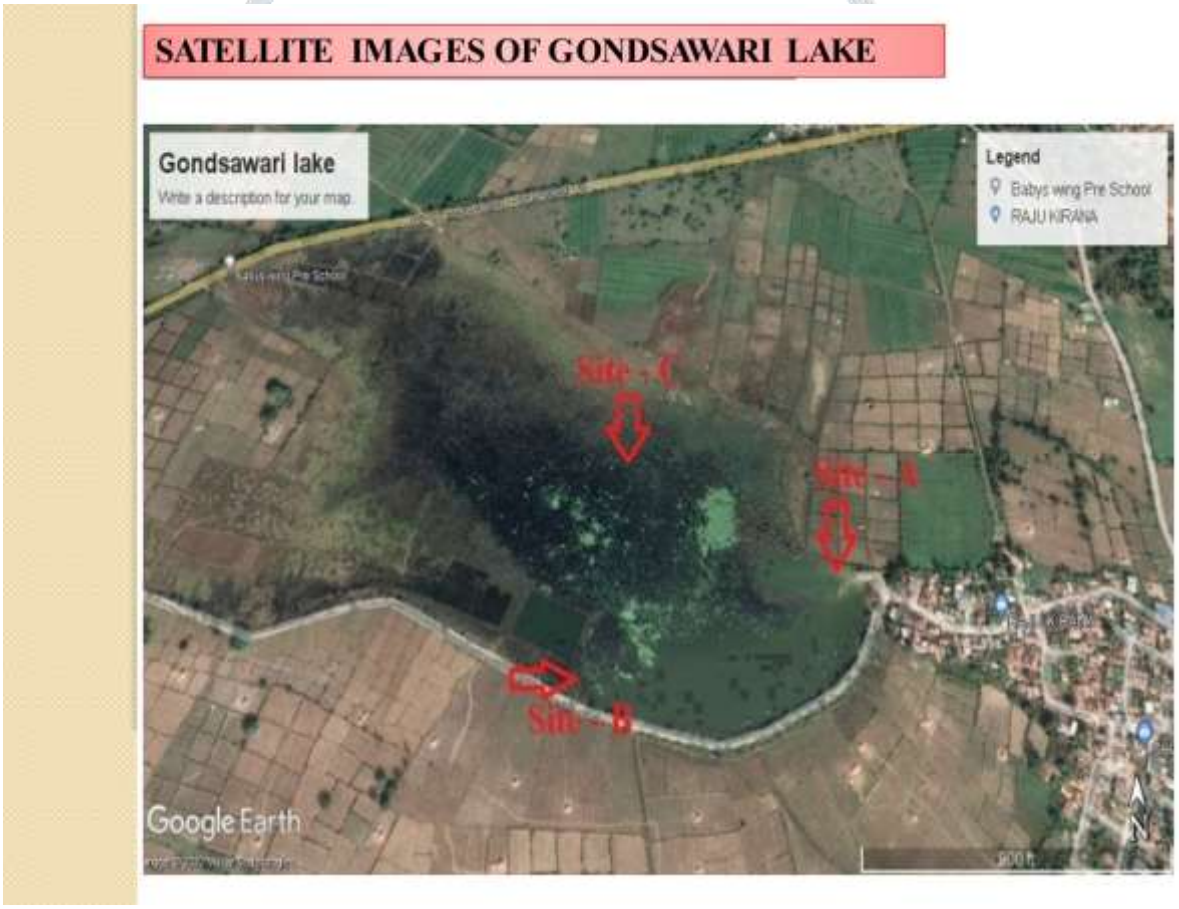

Fig. – Satellite image of Gondsawari lake