

Study of Aquatic weeds in Dongar Haldi Village Lake in Pombhurna Tehsil of Chandrapur District in Maharashtra State

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ABSTRACT

During present study the diversity of aquatic weeds in village lake of Dongar Haldi in Pombhurna Tehsil of Chandrapur district in year 2020-2021 was observed and recorded. Total 16 different species of aquatic weeds were found to be present in Dongar Haldi lake during the present research work. The aquatic weeds of the lake were classified into five different types as free floating, submerged floating, Rooted submerged, marginal and emergent weeds. In present study biodiversity of aquatic weeds of a village level lake are investigated and presented. For conservation and sustainable utilization of aquatic ecosystems it is necessary to carry out biodiversity assessment of aquatic macrophytes of all the aquatic ecosystems of the world. In this context, this research work forms a baseline data collection of a perennial freshwater lake which will be used for future predictions with respect to pollution assessment and biodiversity analysis.

KEYWORDS : Aquatic weeds, Pombhurna tehsil, Dongar Haldi village, Chandrapur district, Maharashtra state.

I. INTRODUCTION

Aquatic weeds constitute a part of aquatic ecosystems of the world. Aquatic weeds are present in places of marshy land and water logged areas throughout the world. The weed biodiversity varies continuously due to presence of nutrients in water and around the marshy place. The weeds are disturbing to production of fish fauna and recreational aspects of the lakes too. Macrophytes of freshwater ecosystems play important roles in the structure and functioning of fresh water

ecosystems of the world. The aquatic macrophytes (weeds) are classified as free floating, rooted floating, submerged and emergent hydrophytes based on their characteristics. Proper identification of aquatic weeds is of primary importance for their control and management. Species of macrophytes are of great importance today as far as natural food supply to fish species is concerned.

Aquatic weeds of different water bodies in India are studied by different researchers like Unni (1971), Khinchi et al (2008), Wadhawe et al (2010), Tijare (2011), Rohankar et al (2012), Sikdar (2012), Sharma (2013), Parshuramkar et al (2013), Dhore and Lachure (2014), Sitre (2014), Shende, et al (2016), Bhute and Harney (2017), Sashi Kumar et al (2015), Reddy and Chaturvedi (2016), Murkute and Chavan (2016), Deshmukh et al (2016), Prasad and Das (2018), Pimpalshende and Sitre (2019). The freshwater ecosystems of pombhurna tehsil are still uninvestigated till date with respect to aquatic weeds. So an attempt is made here to study them, with respect to aquatic weed diversity during 2020-21.

II. MATERIALS AND METHODS

STUDY AREA:

The freshwater perennial lake under study is located in Dongar Haldi village in Pombhurna tehsil of Chandrapur district in Maharashtra state (India). It is located between 19.91235 latitude and 79.58031 longitude. Total water spread area of this freshwater village level lake is 36364.18 m² and is about 194 mts above the mean sea level. In rainy season 15 feet deep water level is present in it and during summer season its capacity decreases to about 10 feet deep water.

In fig.1 the satellite image of the lake is shown while the lake view is pictorised in fig.2 with

different types of weeds.



Fig. 1. Satellite image of Dongar Haldi lake

Fig.2. Dongar Haldi lake View

Collection and Identification of Weeds

Weeds (Macrophytes) in shallow water and marginal areas were collected directly while those from deeper water are collected with the help of long handled hook and local fishermen people. After collection the weeds were thoroughly washed, excess water soaked with filter paper and kept in polythene bags lined with filter paper brought in N.S. Science and Arts College laboratory at Bhadrawati and Vidya Vikas Mahavidyala Samudrapur and identified using

standard literature (Cook, 1996; Gupta, 2001; Lancer 2002, Lars 2003, Sharma 2013).

III. RESULT AND DISCUSSION

In Dongar Haldi village lake total 16 weeds were observed and listed in the Table 1. The weed species recorded belonging to different groups viz. free floating, submerged floating, rooted submerged, marginal weeds and emergent weeds. Three free floating, 3 submerged floating, 3 rooted submerged , 2 marginal weeds and 6 emergent weeds were present in lake.

Table 1 : Biodiversity of Weeds in Dongar Haldi Lake

Sr.No.	Name of Speceis	Family	Types of Weeds
1	Ipomea indica	Convolvulaceae	Marginal
2	Solanum virginianum	Solanaceae	Marginal
3	Alternanthera philoxeroides	Amarantheceae	Rooted submergd
4	Ipomea aquatica	Convolvulaceae	Rooted submergd
5	Marsilea quadrifolia	Marsileaceae	Rooted submergd
6	Nymphoides cristata	Nymphaceae	Free floating
7	Nymphea lutea	Nymphaceae	Free floating
8.	Lemna minor	Lemnaceae	Free Floating
8	Eleocharis spp	Cyperaceae	Submerged floating

9	Vallisneria spiralis	Najadaceae	Submerged floating
10	Hydrilla verticillata	Hydrocharitaceae	Submerged floating
11.	Najas minor	Najadaceae	Submerged floating
11.	Ludwigia sp.	Onagraceae	Emergent
12.	Polygonum glabrum	Polygonaceae	Emergent
13.	Typha angustata	Typhaceae	Emergent
14.	Sagittaria sp.	Alismaceae	Emergent
15.	Ottelia sp.	Hydrocharitaceae	Emergent
16.	Cynodon dactylon	Poaceae	Emergent

The emergent weeds like Typha, Sagittaria and Cynodon have shoots projected above water level. The marginal weeds were present on the banks of the lake periphery in water logged areas. Similar finding were observed by Deka et al (2014) who found out status of aquatic macrophytes of the wetland of Nalbari district of Assam, India. Chudamani and Siddhi (2004) recorded 61 species during study of macrophytes of Beeshazar Tal, Chitwan, Nepal. Sharma et al (2017) observed 45 macrophytes species belonging to 29 families and 34 genera. Bhute and Harney(2017) recorded diversity of Nagrala lake and recorded 15 species belonging to five groups into five free floating, suspended submerged, four rooted leaved weed, three rooted submerged hydrophytes, submerged weeds of floating nature and 1 rooted emergent. Channe and Nasare(2018) studied macrophytes biodiversity assessment of Nandgaon and Arwat lakes of Chandrapur District, Maharashtra, India. Shende et al (2016) studied Aquatic macrophyte diversity of Mul lake from Mul taluka of Chandrapur district. Our work was supported from the similar findings of the above authors.

Aquatic macrophytes play important role in aquatic ecosystem and thus they maintain aquatic biodiversity. The aquatic weeds show their importance by providing food and habitats for aquatic invertebrates, zooplankton, fishes, and aquatic wild life (Lacoul and Freedman, 2006). In Indian sub continent many lakes are still un investigated and studies of this nature are needed to analyze their biodiversity.

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<i>Iponmea aquatica</i>	<i>Hydrilla verticillata</i>	<i>Nymphoides cristata</i>
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<i>Marsilea quadrifolia</i>	<i>Solanum Virginian</i>	<i>Nymphaea lutea</i>
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<i>Eleocharis spp</i>	<i>Vallisneria spiralis</i>
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