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# Indian Streams Research Journal



## BIODIVERSITY OF AQUATIC WEEDS IN WASHIM REGION OF MAHARASHTRA, INDIA.



**Idhole R.L.**

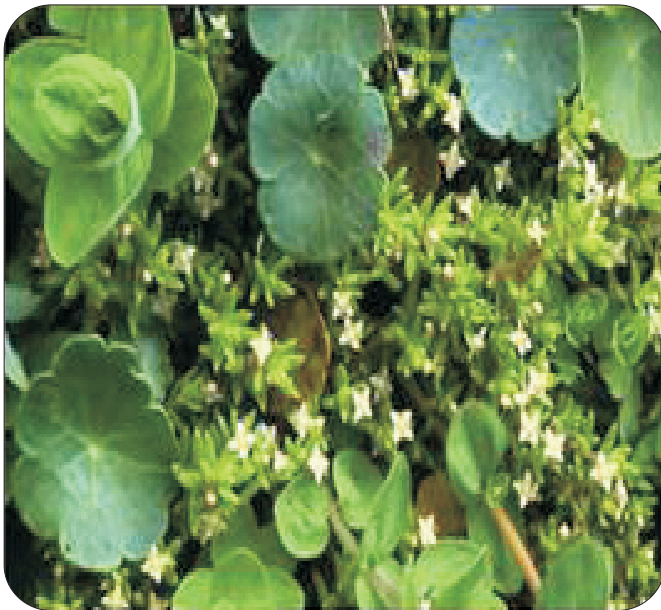
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### ABSTRACT

**W**etland is among the most productive ecosystems in the world. Aquatic weeds always thrive in places of marshy lands and water logged areas of the world. The aquatic plants are the most important component of the aquatic ecosystem. Aquatic plants are key components for the well functioning of wetland ecosystem for biological productivity and support diverse organisms and there by provide lots of goods and services for the dependent people. Due to rapid pace of urbanization formation of new human settlements and Industrialization weeds are in serve threat of extinction. It is there for an urgent and almost need to record and to access diversity potentially of these aquatic plant communities

before they will vanish forever. So the present work is carried out to study the biodiversity of aquatic weeds in Washim, Maharashtra, India. During the present study from August 2015 to January 2016, 8 species of fresh water aquatic weeds viz. Hydrilla, Eicchornia, Duckweed, Vallisneria, Pistia, M.algae, Typha, Nymphaea have been reported from various wetlands such as Ekburji dam ,Dev talav, Padmtirtha and Narayan baba talav in Washim region.

**KEYWORDS** :Aquatic weed, Washim, biodiversity.

## INTRODUCTION

Aquatic ecosystems are important one which provide livelihoods for the millions of people who live around them. Man depends ponds for most of his needs like fishing, agriculture, irrigation, and other domestic purposes. Ponds are playing a very good role in rain harvesting, storage of water and regulation of ground water level. So in order to maintain the ground water level we must conserve ponds and pond habitat. In earlier days aquatic plants are used as food, fodder, medicine etc. but with the advancement in life styles the uses of aquatic plants are foregone and are treated as mere weeds which are making the ponds useless (Bhagyalina P. and R. Gopalan 2012). Aquatic weeds always thrive in places of marshy lands and water logged areas of the world. In each and every water body, whether it is small or large, a variety of weeds thrives and develops. The weed biodiversity of every water body changes continuously based on nutrient supply seasonally and depending upon climatic conditions of the region during the process of succession. The aquatic weeds are unwanted vegetation which grow in ponds and lakes and hamper its use (Sushilkumar, 2011). Out of 160 aquatic weeds *Ipomoea aquatica*, *Typha angustata*, *Eichhornia crassipes*, *Nelumbo nucifera*, *Alternanthera philoxeroides*, *Vallisneria spiralis*, *Chara*, *Potamogeton*, *Hydrilla*, *Ceratophyllum* and *Salvinia* are spread in Indian water bodies to a very large extent that they are a ecological threat to the regions under which they are thriving. The aquatic weeds are also termed as macrophytes of the water body due to their large visible size. These macrophytes are broadly classified as terrestrial as well as aquatic. The aquatic weed varieties are broadly classified as free floating, submerged, rooted floating, emergent and bank weeds.

Several research work was carried out on diversity of aquatic weeds, **Anderson(2003)** gave a review of aquatic weed biology and management research conducted by the United States Department of Agriculture Agricultural Research Service. **Khan et al., (2002)** evaluated some aquatic plants from Bangladesh through mineral composition. **Mandal (1986)** studied on pollution tolerant aquatic plants of Lalbandh Lake, Santiniketan, West Bengal, India. **Bhupendra and Mani (2008)** studied floral diversity of Baanganga Wetland, Uttarakhand, India reporting a total of 178 plant species. **Kolet et al., (2013)** Studies on the Biodiversity of Weeds from V.P.M.'s College Campus and Adjoining Areas in Thane, India Due to rapid pace of urbanization, formation of new human settlements and Industrialization, weeds are in serve threat of extinction. It is therefore an urgent and almost need to record and to access diversity potentially of these aquatic plant communities before they will vanish forever. No elaborate study regarding the aquatic weeds or mycrophytes of Washim district Maharashtra has been carried out up to the date. So the present work is the first contribution to the biodiversity of aquatic weeds in Washim, Maharashtra, India

## MATERIALS AND METHODS:-

### Description of Study Area:-

Washim is a district in Maharashtra, India the headquarters is at Washim. The area of the district is 5,150 km<sup>2</sup>. Washim is located in the eastern region of vidarbha. Akola lies to its north, Amravati lies to its north-east, Hingoli lies to its south, Buldhana lies to its west, and Yavatmal lies to its east. River Penganga is the main river of the district. It flows through the Tehsil of Risod. Later it flows through the boundary of Washim and Hingoli districts. River Kas is the main tributary of Penganga. River Kas meets Penganga about 1 km from the village of Shelgaon Rajgure. River Arunavati and its tributaries originate in the Tehsil of Washim and those flows through the Tehsils of Mangrul pir and Manora into the district of yavatmal. River Katepurna originates in the hilly areas of the district and flows northwards through the Tehsil of Malegaon and enters the Akola district.

The sample of selected plants were collected from different water bodies such as Narayan Baba

Talav, Ekburgii Dam, Dev Talav of Washim District. The aquatic weeds were collected by hand picking and also with the help of local fishermen. The collected weeds were then brought to laboratory and identified using standard literature on weeds (Cook, 1996). Visual observations about topographic changes in the water level of pond and its surface were also recorded to assess the extent of changes in the pond basin.

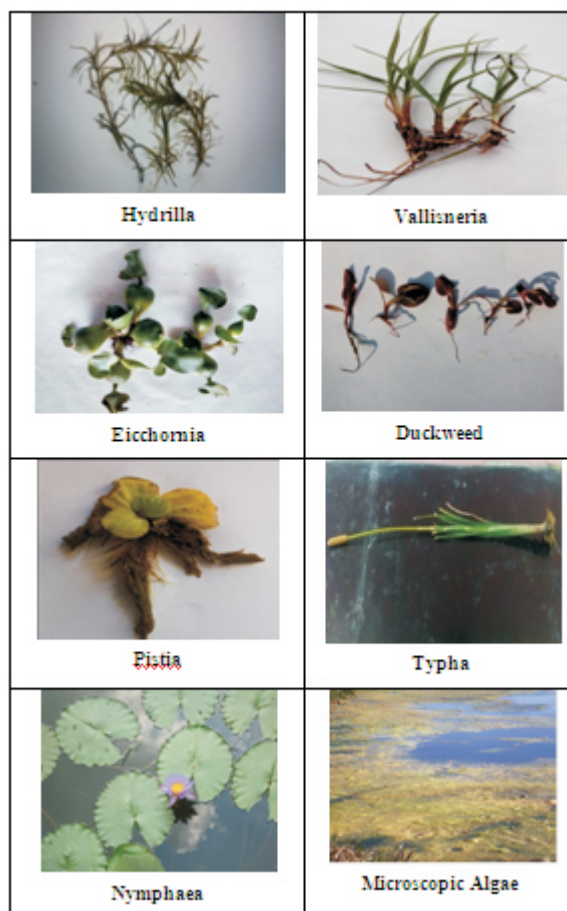
**RESULTS AND DISCUSSION;-**

The present study reveals a total 8 microphyte species belonging to 7 families from the wetlands of the Washim region of Maharashtra represented in Observation table I and Photoplate I. The present study shows that Hydrilla, duckweed, vallisneria were found most abundant at Ekburgii dam, Narayan Baba Talav, The dense vegetation of Nymphaea was also observed at Ekburgii dam

Sr.no	Family	Aquatic weed (Scientific Name)	Common Name	Site of Collection
1	Hydrocharitaceae	1.Hydrilla 2.Vallisneria	1. waterhyme 2.Eel grass/ Tap grass	-Ekburgii dam, Narayan Baba Talav, Padmtirtha, Dev Talav.
2	Pontederiaceae	1.Eicchornia	1. water hyacinth	Ekburgii dam & Padmtirtha.
3	Araceae	1.Duckweed 2..Pistia	1.Bayroot 2..Jalkumbhi	Ekburgii dam
4	Typhaceae	1.Typha	1.Punks	Ekburgii dam
5	Nymphaeaceae	1.Nymphaea	1.Water lilies	Ekburgii dam & Dev Talav.
6	Microscopic Algae			-Ekburgiidam, Narayan Baba Talav, Padmtirtha, Dev Talav.

**Table I:-List of Aquatic Weeds in Washim Region**

The present study concludes that further studies may be done to develop biodiversity of Aquatic plants are essential components of healthy aquatic systems. All plants whether in or around water play the important role in photosynthesize. They use sunlight, carbon dioxide, and water to grow and produce new plant tissue. They also produce oxygen through this process. It has been assured that aquatic weed have assumed greater awareness of the pollution in Aquatic ecosystem. The study of aquatic weeds is important in environmental monitoring as possible indicator of physiological and chemical changes in environmental ecosystem. In conclusion , biodiversity of Aquatic weeds is useful biomarker for environment ecosystem. . No elaborate study regarding the aquatic weeds or mycrophytes of Washim district Maharashtra has been carried out up to the date. So the present work is the first contribution to the biodiversity of aquatic weeds in Washim, Maharashtra, India.



**Photo plate I: Aquatic Weeds**

#### **SUGGESTIONS AND RECOMMENDATIONS:**

The documentation and proper assessment of aquatic biodiversity is dependent on respective areas and their habitat. Unfortunately, . The study of the aquatic weeds is not yet reported in the washim region, presently aquatic ecosystems are destroyed rapidly due to various reasons. The loss of biodiversity is mainly from habitat destruction, over-harvesting, pollution and inappropriate introduction of exotic plants and animals. The survival of native aquatic species is threatened and hence attention on the aquatic resources. Therefore immediate steps are to be taken for their conservation and sustainable utilization. There is a need for increased legal protection, well designed management practices to conserve the aquatic biodiversity. The measure for conservation of aquatic resources should be taken up on priority by different government and non-government organizations for benefit of humanity.

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