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# REVIEW ON THE AQUATIC WEEDS, AND THEIR IMPACTS ON ECOSYSTEM AND AQUACULTURE

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## ABSTRACT

The present research paper is discussion on the aquatic weeds and impact on their surroundings aquatic fauna and Ecosystem. . For the study of aquatic weed the author has been selected some sites of Waghadi river. Waghadi River is one of the most important tributaries of river Painganga and flows through the cities of Ghatanji, Kelapur, and Yavatmal. The river thereafter merge into the river of Godavari and floes downstream. The weeds are plants which grows out of their place, interfere with the utilization of natural resources, prolific, persistent, resistant, competitive, harmful and even poisonous in nature and can grow under adverse climatic conditions. Sometimes economical plants may also grow out their proper places which are termed as rouge and not weeds. Aquatic plants are essential parts of natural aquatic systems and form the basis of a water body's health and productivity. On the other side, when aquatic plants become over abundant it requires control. The presence of excessive aquatic vegetation influences on aquatic animals and results are to reduce in numbers. During the study in the session 2021-22 at some places of Waghadi River Dam outlet of Yerabara region of Ghatanji taluka, District Yavatmal. It was found that the Algae and Aquatic flowering weeds was covered the maximum part of the water it includes the A]. Emergent weeds – shore & marginal like ***Typha latifolia*** B]. Floating weeds - Free floating, rooted floating like ***Eichhornia crassipes***, ***Salvinia auriculata*** C] Rooted and non-rooted submerged weeds: Submerged weeds which are completely submerged within water and rooted in the bottom soil e.g. **Hydrilla, Najas** etc. Non-rooted free floating submerged weeds e.g. **Ceratophyllum.** According to discussion and observation of research work, it was conclude that these aquatic weed are harmful as well as useful impact on their surrounding fauna and on the ecosystem.

**Keywords: -** Yerabara dam, Aquatic systems, Aquatic weeds, aquatic fauna, Ecosystem.

## INTRODUCTION

Vegetation is an important part of aquatic system, but some time it can get out of control and create problems. In recent year there has been a growing awareness among fish culturists regarding aquatic weed problems. Presence of small amount of certain aquatic plants in fish culture waters may be useful as they have definite role in the development and maintenance of a balanced community. Aquatic plants are essential parts of natural aquatic systems and form the basis of a water body's health and productivity. Invariably aquatic plants become over abundant or unsightly and require control (Whetstone, 2005). Aquatic weeds are those unabated plants which grow and complete their life cycle in water and cause harm to

aquatic environment directly and to related eco-environment relatively (Lancar and Krake, 2002).

Growth of aquatic weeds interferes with the storage and delivery systems of irrigation water, maintenance of canals, drains, barrages, lakes, ponds etc. These systems often get choked with the weeds and cause environmental pollution. On low lying areas, adjoining irrigation and drainage channels, soil salinity and alkalinity problems do arise.

**OBJECTIVES**

- The presented research work has been provides a preliminary knowledge to aware the aquatic weed, and their role in ecosystem, their harmful impacts on ecosystem as well as their useful role in ecosystem.
- Aquatic weed when in limited quantities, are useful and necessary for the ecosystem of pond.
- They form natural food for many species of fishes.
- Aquatic weeds provide shade and shelter and oxygenate water.
- They reduce turbidity and provide spawning beds.
- Aquatic weeds are responsible for lowering quantity as well as quality of water. These weeds cause taste and odour problems and also increases biological oxygen demand because of organic loading.
- Consumption of water by aquatic weeds is much higher because of their high water needs.
- Due to growth and sedimentation of aquatic weeds, the depth of pond, drain, rivers etc. goes on decreasing every year resulting in over flow of water.
- Fish production is greatly affected by the presence of aquatic weeds (Wiley et al., 1984). Isolated weed beds may be tolerated, providing shelter and shade for fish, but when the growth become thick and cover entire water body, it can lethal for fish growth. Fish may suffocate from a lack of oxygen and may cause death.

So for all objectives need to study and provided the knowledge to people as well as pupil.

**DATA AND METHODOLOGY**

The work is comprises in following way's

1] Site / Location selection: - For the study of aquatic weeds the sites were selected by the researcher was out let of Yerabara Dam, the Dam is situated on Waghadi River at Yerabara, taluka Ghatanji, District Yavatmal, Maharashtra.

2] Making a schedule for periodically visit to site: - In the session 2021-22, researcher made a schedule from January 2021 to January 2022, and try to cover all season.

3] Observation of aquatic weeds and to take the photograph with high quality camera: - To observed the aquatic weed, their type, spreading pattern, took the photographs, and note down the data

4] Identification of aquatic weed, informational data is collected and save properly: - On the basis of collecting data, photographs, and the subject experts, identified the aquatic weeds and their types.

5] To observe the aquatic fauna and floras data is noted: - Observation and Discussion is mention in presented research paper.

6] With the help of collected informational data used to study the impact on ecosystem and aquacultures:-Discussion is mention in presented research paper.

7] According to need of study uses the compound and light microscope.

**RESULT AND DISCUSSION**

LOCATION: - OUT LET OF YERABARA DAM:- Waghadi Dam located at Latitude/Altitude: 20.2634854° N 78.3078003 ° E Waghadi River is one of the most important tributaries of river Painganga, and flows through the cities of Kelapur, Ghatanji and Yavatmal Also River covers different villages near these cities. Waghadi river Covers almost 80 Km distance. There is a Waghadi dam near Ghatanji, Yavatmal district in state of Maharashtra. Waghadi Project and Dam's Official Designation is Waghadi: D-01427. Waghadi Dam was constructed as part of irrigation projects by the Government of Maharashtra in the year 1978. It is built on and impounds Waghadi River, nearest city to dam is Ghatanji in Yavatmal District of Maharashtra. Waghadi dam constructed in Yelabara near Ghatanji taluka.

**IMPACTS ON ECOSYSTEMS:-**

1. Alteration of Water Chemistry: Aquatic weeds can change the pH, temperature, and nutrient levels in the water, affecting the overall ecosystem balance.2. Habitat Disruption: Dense growth of aquatic weeds can alter habitats for fish, birds, and other aquatic species, reducing biodiversity.3. Water Flow Obstruction: Aquatic weeds can clog waterways, reducing water flow and increasing the risk of flooding.4. Decreased Water Quality: Decomposing aquatic weeds can lead to decreased water quality, reducing oxygen levels and increasing nutrient pollution.5. Impact on Native Species: Non-native aquatic weeds can outcompete native species for resources, leading to a decline in native plant and animal populations.

**IMPACTS ON AQUACULTURE:-**

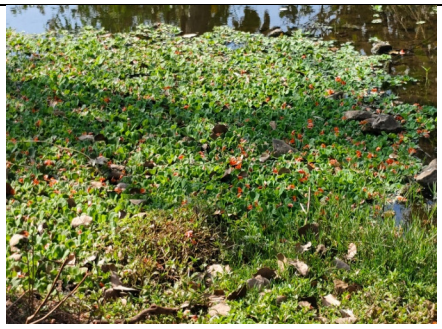
1. Reduced Water Quality: Aquatic weeds can reduce water quality, affecting the health and growth of farmed aquatic species.2. Increased Disease Risk: Aquatic weeds can provide habitat for disease-carrying organisms, increasing the risk of disease outbreaks in aquaculture systems.3. Reduced Feed Availability: Aquatic weeds can compete with farmed species for food resources, reducing feed availability and increasing production costs.4. Increased Maintenance Costs: Aquatic weeds can clog pumps, pipes, and other equipment, increasing maintenance costs and reducing system efficiency.5. Reduced Productivity: Aquatic weeds can reduce the productivity of aquaculture systems by competing with farmed species for resources and affecting water quality.

**MANAGEMENT STRATEGIES:-**

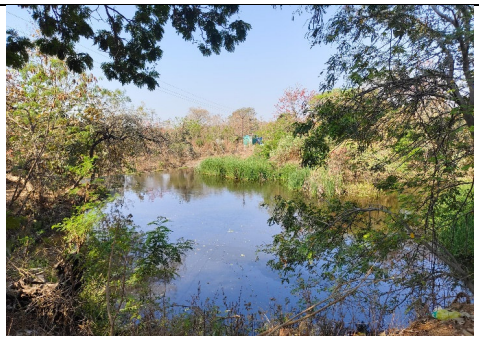
1. Physical Removal: Regular removal of aquatic weeds can help control their growth and reduce their impacts.
2. Biological Control: Introducing natural predators or competitors of aquatic weeds can help control their populations.3. Chemical Control: Using herbicides can be effective in controlling aquatic weeds, but care must be taken to avoid harming non-target species.4. Cultural Control: Modifying aquaculture practices, such as reducing nutrient inputs and increasing water

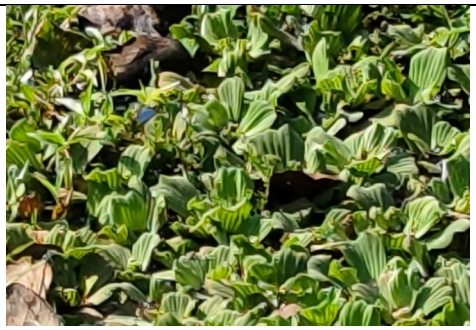
circulation, can help reduce the growth of aquatic weeds.5. Integrated Management: Combining multiple management strategies can provide the most effective control of aquatic weeds and minimize their impacts on ecosystems and aquaculture.

**Dence water area occupied by Pistia stratiotes (water cabbage)**



**Callitriche stagnalis (starwort)**





**Phragmites australis (Common reed)**

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