



# **A CASE STUDY ON AQUATIC WEED DIVERSITY IN NARSAPUR LAKE OF SIDDIPET DISTRICT, TELANGANA, INDIA 502103.**

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## **ABSTRACT:-**

Aquatic weeds / plants are the primary producers of the aquatic ecosystem. They help the fishes in providing Food, Oxygen, Shelter etc. The weeds may be microphytes and macrophytes. The microphytes are microscopic algae Eg:- Volvox, Chlamydomonas, Euglena, Microcystis, etc. Macrophytes are large in size they are Floating weeds, Emergent weeds, Rooted weeds etc. Floating weeds float on the surface of water Eg:- Azolla, Lemna, Pistia, Eichornia, Wolffia etc. Emergent weeds emerge out of water Eg:- Typha, Vallisneria, Nymphaea etc. Rooted weeds have roots, they grow from the bottom soil Eg:- Ipomea, Marsilea etc. Narsapur is at Siddipet district, this lake is spreaded around 40 acres of land and providing shelter for various types of birds, weeds, fishes and other organisms, in this article we are going to study about various types of aquatic weeds at NARSAPUR Lake Of Siddipet District, Telangana State, India 502103. and their uses in regulating of water quality parameters and providing food and shelter for various types of aquatic organisms.

## **Key Words:-**

Weeds, primary producers, aquatic ecosystem, fishes, shelter and aquatic organisms.



**Fig 1.0:-view of Narsapur lake**

Narsapur Lake is at NGOs Colony of Siddipet District, Telangana State, India 502103. The lake is spreaded around 40 acers of land. Lake provides shelter for migratory birds and other aquatic organisms. In Narsapur Lake various types of Aquatic weeds are present i.,e Floating, Submerged and Emergent weeds etc.

## **METHODS**

with the help of traditional crafts& Gears we have collected various types of aquatic weeds at different locations of Narsapur lake. The present study started from May 2022 to August 2023 during the study we identified various types of aquatic weeds i.,e floating, submerged, emergent and etc.

## **AQUATIC WEED DIVERSITY OF NARSAPUR LAKE**

Various types of aquatic weeds diversity have been observed at Narsapur Lake they providing food and shelter to fishes and other aquatic organisms ( direct or indirect way).

### **1.1 Azolla**

- Azolla is finding increasing use for sustainable production of livestock feed. It is floating aquatic weed.



- Azolla can be used as a potential diet for fish as it is easy to grow, has a high yield, and is inexpensive to produce, which is reflected in its lower price compared to the price of a kilogram of fish feed.
- The use of aquatic macrophytes, such as Azolla with hyper accumulating ability is known to be an environmentally friendly option to restore polluted aquatic resources.
- The present review highlights the phytoaccumulation potential of macrophytes with emphasis on utilization of Azolla as a promising candidate for phytoremediation

### **1.2 Pontederia crassipes**

- Pontederia crassipes (Eichhornia) commonly known as common water hyacinth. it is known as the "Terror of Bengal" due to its invasive growth tendencies.

- It is floating aquatic weed.
- Water hyacinth can absorb a large amount of harmful heavy metals and other substances. After death, it rots and sinks to the bottom of the water, causing secondary pollution to the water body, destroying the natural water quality, and may even affect the quality of residents' drinking water in severe cases.
- water hyacinth is comprised up of 95% water & its Evapotranspiration rate is high.
- water hyacinth can also provide a food source for goldfish, keep water clean and help to provide oxygen.



### 1.3 *Najas marina*

- *Najas marina* is an aquatic plant known by the common names spiny water nymph, spiny naiad and holly-leaved naiad.



### 1.4 *Pistia stratiotes*

- *Pistia stratiotes*, is often called water cabbage, water lettuce, Nile cabbage, or shellflower.
- In Nigeria, the dried leaves are prepared into a powder form and are applied to wounds and sores for disinfection. A similar use is present in Indian traditional medicine, where the powdered leaf is applied to syphilitic eruptions and skin infections.



- The roots and leaves of the plant have been found to absorb excess nutrients and heavy metals, such as zinc, Chromium, And Cadmium In Contaminated Waters.

- Pistia stratiotes can be grown in water gardens to reduce harmful algal blooms and eutrophic conditions. The plant is able to control the growth of algae by restricting light penetration in the water column and competing for nutrients, with significant uptake of phosphorus and ammonia nitrogen.
- It is floating aquatic weed.

### 1.5 Hydrilla verticillate

- It is emergent aquatic weed.
- Hydrilla is known to have many digestive and health benefits. The plant contains vitamins, minerals, and antioxidants, as well as being useful for fighting indigestion. The plant is also known for its extremely high concentration of calcium, vitamin B-12, iron and magnesium. As such, the plant has become an extremely popular.



### 1.6 Typha latifolia

- It is rooted aquatic weed.
- The rhizomes are edible after cooking and removing the skin, while peeled stems and leaf bases can be eaten raw or cooked. The young flower spikes, young shoots, and sprouts at the end of the rootstocks are edible as well.



### 1.7 Ipomea carnea

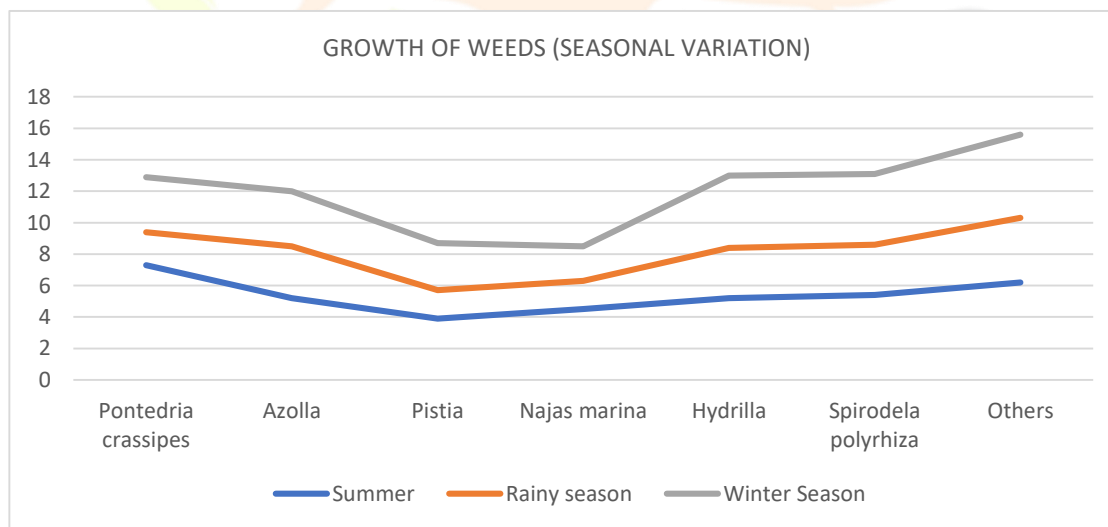
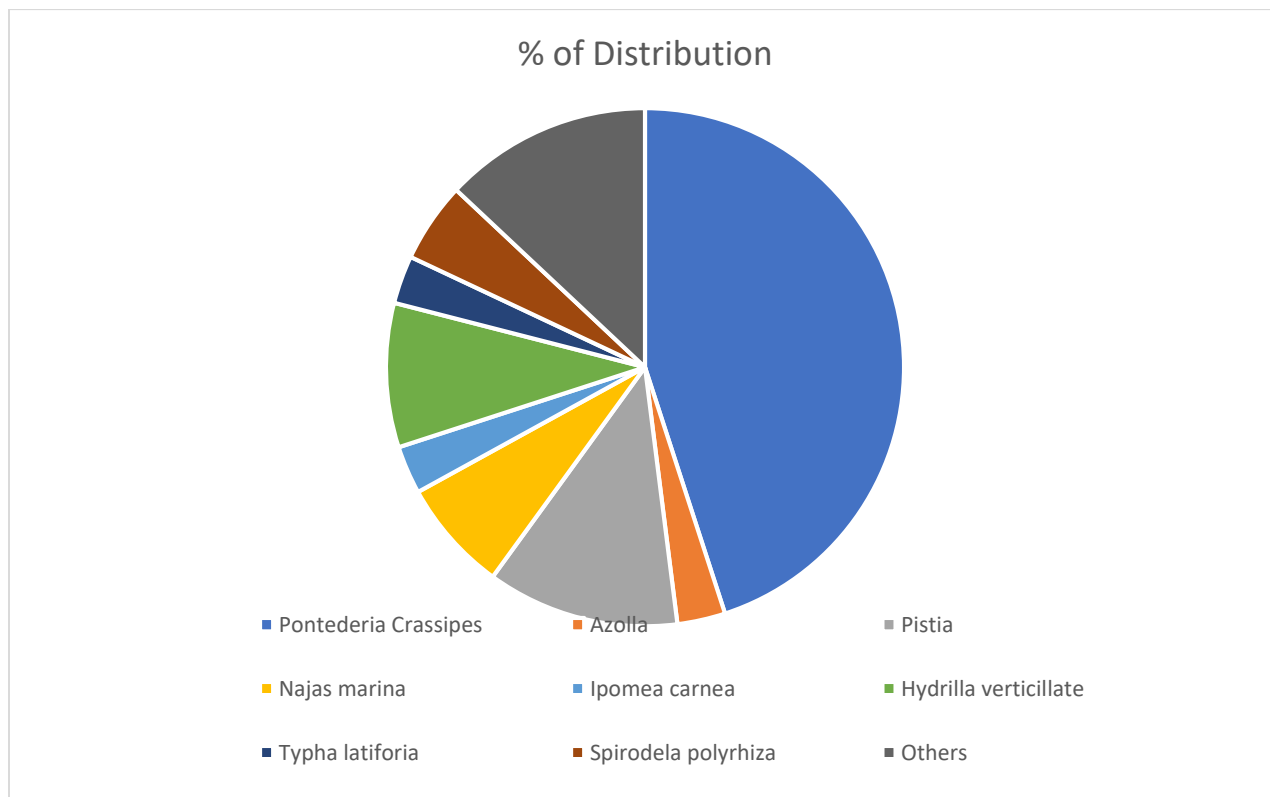
- This flowering plant has heart-shaped leaves that are a rich green and 6–9 inches (15–23 cm) long. It can be easily grown from seeds.
- The stem of ipomea carnea can be used for making paper.
- The plant is also of medicinal value. It contains a component identical to marsilin, a sedative and anticonvulsant. A glycosidic saponin has also been purified from Ipomea carnea with anticarcinogenic and oxytoxic properties.



### 1.8 Spirodela polyrhiza

- Spirodela polyrhiza plant has round shaped, flat disc 0.5 to 1.0 cm wide upper surface is mostly green, sometimes red in colour, the lower surface is dark in colour.
- Spirodela polyrhiza can be used for bioremediation, removing toxic substances from aquatic environment as well as cleaning eutrophic waters, specially used in wastewater treatment plants.

Other aquatic weeds were also present, but comparatively the dominant species of weeds have been mentioned in the present study.



### Result & Discussion

With this we conclude that the dominant weed species were Pontederia crassipes (Eichhornia). Water hyacinth grows and reproduces quickly, so it can cover large portions of ponds and lakes. The excess growth depletes dissolved oxygen(DO) in the water, often killing fish. By increasing the temperature, the growth of aquatic weeds is also seen simultaneously.

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