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Study on different aquatic plants found in ponds of Purulia town West Bengal

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Abstract- This paper list different ponds and aquatic plants found in Purulia town, West Bengal. Purulia is located at 23.33°N 86.37°E. It has an average elevation of 228 metres (748 feet). In Purulia town temperature ranging from lows of 12°C to highs above 38°C. Most of the rainfall occurs during the wet monsoons. Change in temperature also reflect in vegetation. The plants found are mostly of arid region because of less or limited period of rainfall. One of the noticeable things of Purulia town is, there are many ponds found in different areas. Ponds play an important role in ecosystem. People are dependent on ponds in many ways. Ponds are sometimes highly polluted which cause nutrient loads which effect the plants growing in it. In this paper we are mainly listing the aquatic plants in these ponds. Many studies on aquatic plants on wetlands has been done to know the diversity of aquatic plants. A time to time survey gives the outline of ecological changes if any happened.

Key words: Ponds, aquatic plants, usage

INTRODUCTION

Aquatic plants which are typically grown in fresh water are source of food, oxygen and breeding ground for many organisms. Aquatic plants produce oxygen through photosynthesis. Also breakdown polluting nutrients and chemicals.[1]

They reduced erosion of the shore line in ponds while rooted plants stabilize bottom sediments. Overall ponds and aquatic plants balance the ecosystem for water conservation, increase ground water level and its home for many organisms.[2,3]

Lakes, rivers, ponds are dead and dying in India with no plan for recovery and revival.[4] In Purulia ponds are used for bathing, washing cloths and other purposes, which causes nutrient loads in plants also. Many invasive plants completely cover the ponds which effect the other aquatic animals and plants in these ponds.[5]

Plant survey always help to know the real condition of plants in different areas.[6-9]

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MATERIALS & METHODS

This paper is based on extensive study of aquatic plants found in different ponds in Purulia town. Different plants were studied during a period of time to identify the plants and their usage. The plants were collected and taken to the laboratories and compared with previous data available in different books. The photographs of the plants also taken to compare and to keep records of these plant.

After collecting the plants, they were studied thoroughly and identified using the book "The Botany of Bihar And Orissa" by H.H.Haines.

RESULTS

This study provides the idea of different kind of pond plants growing in different temperature and environment in Purulia town (WB). It also shows how the pollution may lead to change the quantity and quality of aquatic plants in compare to wild.

Some of the important plants found in different ponds in Purulia town.

Eichhornia

Botanical name: *Eichhornia crassipes*

Family: Pontederiaceae

Local name: Jalkumbhi, kachoripana

English name: Eichhornia

Eichhornia is an invasive plant grow rapidly it's also called the terror of Bengal.

Eichhornia has the quality to absorb the extra nutrients from the water. But because of hyper active growth it is very bad for the environment. It covers almost everything in the water bodies.

Sagittaria

Botanical name: *Sagittaria latifolia*

Family: Alismataceae

Local name: Indian potato

English name: Broadleaf arrowhead

Sagittaria is frequently grown in ponds and forms dense colonies. The dark green leaves like an arrow and this plant has strong root which helps in reduce soil erosion. This plant can grow in high level of phosphates and hard water.

Water lily

Botanical name: *Nymphaea nouchali*

Family: Nymphaeaceae

Local name: Water lily

English name: Water lily

Water lily is a flowering plant with submerged roots and stems. It is an ornamental plant also used in cultural festivals.It's also considered as medicinal plant to treat indigestion. The tubers of this plants are completely edible.

Taro pond plant

Botanical name: *Colocasia esculenta*

Family: Araceae

Local name: elephant ears

English name: Taro pondplant

Taro pond plant also referred as elephant ear is one of the plant which is used as Pollutant removal from domestic wastewater. Taro tubers are used as food which is rich with many vitamins. Taro leaves are also usedfor water repellent.

Marsilea

Botanical name: *Marsilea quadrifolia*

Family: Marsileaceae

Local name: Water Clover

English name: Water Clover

Marsilea used as food in some place from many years. It possesses many pharmacological activities such as antipyretic and analgesic, antidiabetic, antiamnesic, antifertility, anti-tumor, antioxidant activity. Also used to treat snake bite.

Arrowarum

Botanical name: *Peltandra virginica*

Family: Araceae

Local name: Arrow arum

English name: Arrow arum

Arrow arum is a perennial plant grows in shallow fresh water and it provide habitats to many organisms. Arrow arum can be used as an ornamental in water.

Water spinach

Botanical name: *Ipomoea aquatica*

Family: Convolvulaceae

Local name: Water spinach

English name: Water spinach

Water spinach is used as food; this is a common vegetable ingredient in many places. It has many nutrient values. Good for body as well as skin and brain.

Alligator weed

Botanical name: *Alternanthera philoxeroides*

Family: Amaranthaceae

Local name: Alligator weed

English name: Alligator weed

Alligator weed is used as fodder which is substitute of animals. It grows very fast and can affect the native plants.

Duckweeds

Botanical name: *Lemna minor*

Family: Araceae

Local name: Water lentils

English name: Duckweeds

Duckweeds are fresh water aquatic plant. Duckweeds are used to make medicines. It can absorb heavy metals from water. It also eaten as food in many places.

Soft rush

Botanical name: *Juncus effusus*

Family: Juncaceae

Local name: Soft rush

English name: Soft rush

Soft rush is a habitat for many small organisms. It is used as an ornamental plant, also for planting in water gardens.

Water caltrop

Botanical name: *Eleocharis dulcis*

Family: Trapaceae

Local name: Paniphal

English name: Water chestnut

It is a water plant used as food and cultivated in India and its source of income for many.

Hydrilla

Botanical name: *Hydrilla verticillata*

Family: Hydrocharitaceae

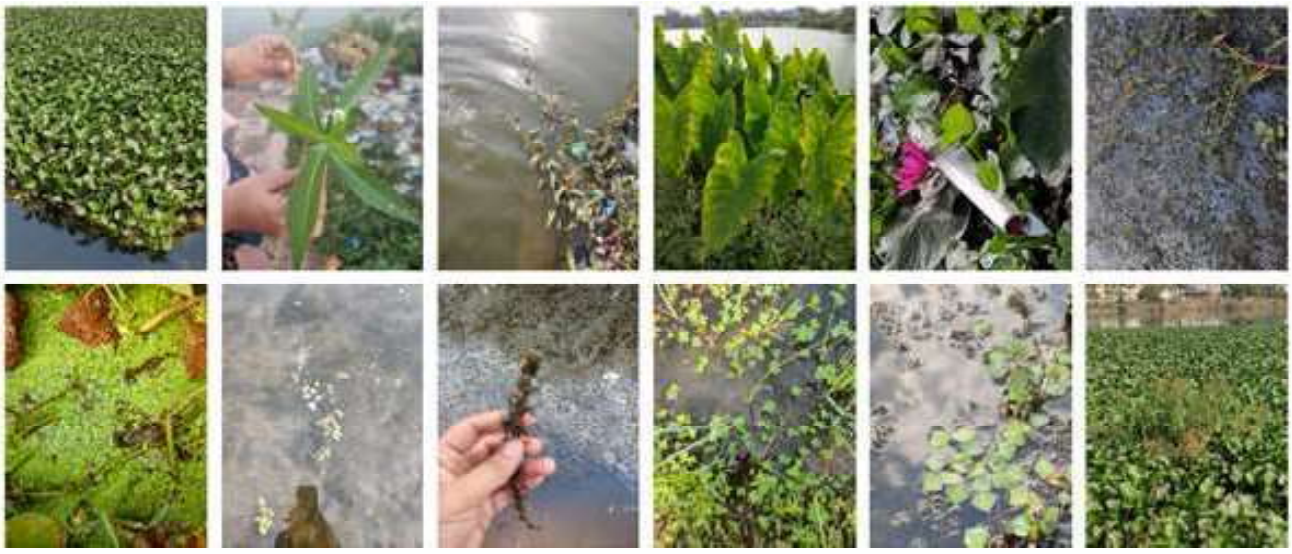
Local name: Hydrilla

English name: water Thyme

Hydrilla is used as popular super food, because it contains vitamins and minerals. It also has medicinal usage, used for digestion, improves blood circulation and also helps in blood sugar control.

Table 1. List of different aquatic plants found in different ponds in Purulia town West Bengal

Sl. No	Name	Botanical name	Family
1.	Eichhornia	*Eichhornia crassipes*	Pontederiaceae
2.	Sagittaria	*Sagittaria latifolia*	Alismataceae
3.	Water lily	*Nymphaea nouchali*	Nymphaeaceae
4.	Taro pond plant	*Colocasiaesculenta*	Araceae
5.	Marsilea	*Marsilea qsuadrifolia*	*Marsileaceae*
6.	Arrowarum	*Peltandra virginica*	Araceae
7.	Water spinach	*Ipomoea aquatica*	Convolvulaceae
8.	Alligator weed	*Alternanthera philoxeroides*	Amaranthaceae
9.	Duckweeds	*Lemna minor*	Araceae
10.	Soft rush	*Juncus effusus*	Juncaceae
11.	Water caltrop	*Eleocharis dulcis*	Trapaceae
12.	Hydrilla	*Hydrilla verticillata*	Hydrocharitaceae



Photographs of different aquatic plants taken at field during survey

CONCLUTION & DISCUSSION

Purulia town has many ponds and these ponds are source of many aquatic plants. Which encourage to take a survey of different aquatic plants found in these ponds. Aquatic plant survey in Purulia town is not done by many researchers. Current study was mainly focused for identification of different aquatic plants found in Purulia town, West Bengal.

In ponds in Purulia town few aquatic plants are found because of more human activities. In these ponds number of plants are less in compare to wild. The ponds are highly

polluted which also effect the diversity of the plants found in these ponds.

Conservations and cleanliness of these ponds are highly required. Cleaning measures should be done according to the need of the society. Ponds help to increase the ground water level. Also, ponds are the lifeline for many small organisms and aquatic plants. So it is very important to prevent them from extinction before it's too late.

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REFERENCES

1. **Maheshwari J. K. & R. P. S. Tomar. 1983.** A contribution to wetland flora of Sitapur district. U.P. *Journal of the Bombay Natural History Society.* **80:** 529-538.

2. **Maliya S. D. 2006.** The Aquatic and Wetland Flora of Mainpuri district, U. P. India. *Journal of Economic & Taxonomic Botany.* **30(3):**533-546.

3. **Maliya S. D. and Singh S. M. 2004.** Diversity of aquatic & wetland macrophytes vegetation of Uttar Pradesh (India). *Journal of Economic & Taxonomic Botany.* **28(4)**: 935-975.

4. **Kannaiyan S. Gopalam A. (ed) 2007.** Biodiversity in India – Issues andConcerns. *Associated Publishing Company, New Delhi* p. 430. (Inpress).

5. **Kannaiyan S, Gopalam A (eds) 2007.** *Agro biodiversity volume II. Associated Publishing Company*, New Delhi, p. 372 (In press).

6. **Khoshoo T. N. 1995.** Biodiversity, Bioproductivity and Biotechnology. In: *Farmers Rights and Plant Genetic Resources – Recognition and Rewards*: A dialogue (eds) M.S. Swaminathan, Mac Millan India Ltd.pp.156-159.

7. **Muthuchelian K., Kannaiyan S., Gopalam A. 2007.** *Forest BiodiversityVol-II. Associated Publishing Company*, New Delhi, p. 329.

8. **Mishra K. N. and Maurya L. P. 2002.** Phytodiversity in relation to ecovariability of two wetlands of Jaunpur (U.P.). *Journal of Phytological Research.* **15(2):** 201-208.

9. **Sanjay Mishra and Satya Narain. 2014.** Aquatic and marshy angiospermic diversity of eastern Uttar Pradesh, Duthie Herbarium, Department of Botany, University of Allahabad. *Indian Journal of Plant Sciences.* **3(2):** 63-75

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