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Floating water hyacinth in keetham reservoir Agra

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Abstract
Aquatic macrophytes are aquatic photosynthesis organism, large enough to see with the naked eye that actively grow permanently or periodically submerged below floating on, or growing up through the water surface. The relevant spatial extent for floating leaved macrophyte richness (500m from pond edge) was larger than that for submerged macrophyte occurrence (10.75 and 100m), where as emergent macrophyte richness was best explained at much larger extents (1000m).

Keywords: diversity of water hyacinth

Introduction
It is situated along Agra-Mathura by pass-road, 20Kms. Away from Agra water works and is exploited to provide water to Agra city for drinking proposes during scarcity of water in summer season. Many natural depression distributed in the vicinity of this lake. The lake spreads over an area of 256 acre with a total storage capacity of 289.97m^3. The lake is fed by Okhla Canal of Yamuna River and has a catchment area of 20 mile^2. Eichhorina is veneered all over the water bodies. The whole water body is below the levy in the main flood Plain of river. Yamuna is infested with dense growth of several other macrophytes, particularly Alternanthera Philoxeroides, Which formed a dense mat over water and various members of Cypraceae. In addition *Vallisneria spiralis*, *Hydrilla verticillata Ranunculus sceleratus* etc. Were also present in adjoining area in sanctuary.

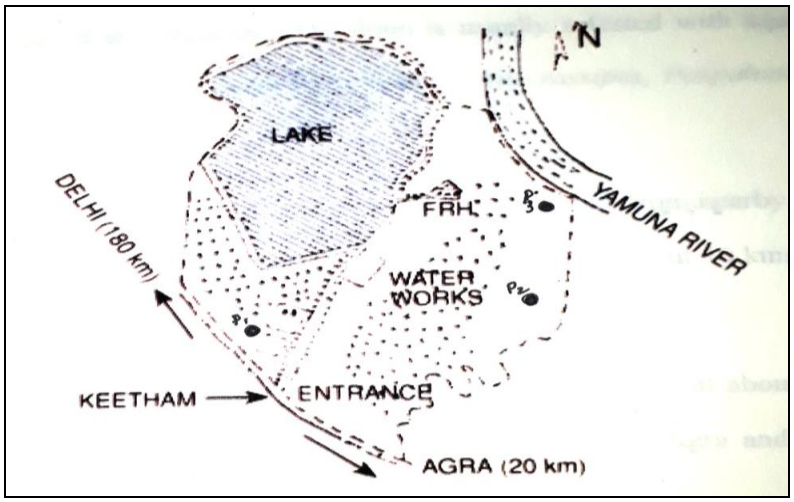

Fig 1: Sur Sarovar (Keetham Reservoir Map)

Materials and Method
***Eichhornia crassipes* (Mart).**
It belongs to the family pontideriaceae. An aquatic floating herb, rooting at the nodes. Leaves radical, rosulate ovaterhomboid. The spongy petioles inflated near the middle portion into bladder –like structures. Flowers lilac of pale violed, in man flowered spikes. Perianth zygomorphic or sub actionomorphic. 6- Parted, about 3.5-4cm long. Stamens 6 unequal, decurved, overy sessile, 3- celled, cells many ovuled. Maximum biomass 1793.8-5432.5 g/m dry weight was estimated in June-July 2017 when the plant had very luxurious growth and strewn all over the water body. Minimum 346.5-418g/m^2 in Sept. 2017. When the plants were getting decomposed. After that new growth starts, thus resulting is an increase in new biomass The increase in the new biomass is slow till the maturation of the plant.

Table 1

Plant species	Month	Standing crops
Eichhornia crassipes	Oct-Nov.	105.4±13.2
Eichhornia crassipes	Nov.-Dec.	278.0 ±62.7
Eichhornia crassipes	Jan.-Feb.	1489.6± 285.5
Eichhornia crassipes	Feb-March	1400.0±395.9

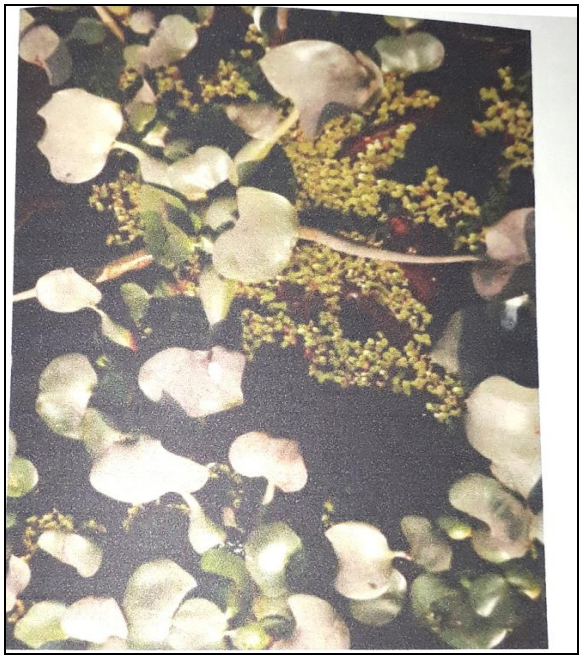

Fig 2: Sur Sarovar (Water Hyacinth)

Water hyacinth- *Eichhornia crassipes*

The floating water hyacinth is not native to Florida. The floating water hyacinth has spread throughout the world. It was introduced ornamental plant, in the 1800s. Water hyacinth is a very fast growing plant.

Fig 2: *Eichhornia crassipes*

One plant can multiple to cover an acre in a single growing season. They can grow into dense infestations having serious economic and environmental consequences water hyacinths occur in all types of fresh water in florida. Water hyacinths vary in size from a few inches to over 2 feet in height. Water hyacinths have showy lavender flowers .They have rounded leathery leaves that are attached to erect spongy and sometimes inflated stalks. They have dark feathery roots, and they have runners, with attached daughter plants. In field situations water hyacinths can be confused with floating frog's bits.

(*Limnobium spongia*), The best way to tell the difference between the two is to look at the roots. Water hyacinths has dark root, Frog's bit has whitish roots. Another way is to compare the stems .Water hyacinth has fleshy stems that are sometimes bulbous.

Fig 3: Eichhornia- Alternanthera Association at Keetham Reserrvoir (Near Water Pumping Station)

Frog's bit has a slender ridged, leaf Stalk. Remember water hyacinth has purplish-blue flower, rounded, thick shiny leaves and spongy sometimes bulbous leaf stalks.

Result

Aquatic plants are a key component of spatial heterogeneity in a water scape contributing to habitat complexity and helping determine diversity at various spatial scales. The result indicate that habitat complexity provided by the different architectures of aquatic plants, significantly affects both S and total N. However, number of individuals (as a result of passive sampling) also helps to account for S together with plant identity and area contributes to the determination of N. We suggest that measurement of structural complexity .measured of structural complexity measured through fractal geometry, should be included in studies aimed at explaining attributes of attached invertebrates at small (e.g. plant or leaf) scales.

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