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Hydrophytes of Pond Near Chiyada Village, Bavla , Gujarat - India

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Abstract - Freshwater ecosystem categorized in River, Pond, Lake, Stream, spring, falls and Ditches habitat. Pond ecosystem, water logged of freshwater either by natural rainfall or irrigate through canal. Aquatic plants grow in waterlogged pond area .These plant species have adaptations of water and microscopic to macro habit structure .When water level is high in pond, Hydrophytes are found in the area. The present research work deals with diversity of hydrophytes in pond near village chiyada located at Koth-Bavla highway in Gujarat, Observation and collection of 37 species of hydrophytes angiosperms grown in aquatic area. There are habitat like Free Floating, Floating rooted, submerged, arshy. The floral diversity showed 34 Genera and 37 species belonging to 23 families. The total plant species with their botanical name, family, adaptation, Habit and Habitat is presented.

Key words: *Hydrophytes , Pond ,Chiyada.*

I. INTRODUCTION

Aquatic freshwater ecosystems are importance for aquatic fauna and flora, domestic animals and human being. These ecosystems are also important in nature ^[8].it considered aquatic plants as those species which normally stand in water, either completely submersed or immersed. Water plants as those whose seeds germinate either the water phase or substrate of a body of water ^[9]. The present study of aquatic angiosperm found in fresh water body. Research works have been done on the aquatic plants in different freshwater bodies of India and the comprehensive work on the wetland flora was produced by Biswas et al. ^[2]. Aquatic angiosperms are dominant and grow in Free Floating, Floating rooted, submerged, muddy, marshy area. Emergent species dominated in number over floating and submerged species in all the water bodies.^[10]

II. STUDY AREA

Pond area near chiyada village situated near Koth-Bavla highway located between 22°.755174 ' N 72°. 352308' E in the Ahmedabad district, Gujarat state. Monsoon season = from mid-June to October, where the area receives around 700 mm of rain on average.

III. MATERIALS AND METHODS

The present study is the outcome of several years' survey with critical observation and collection. Identification was done with the help of flora^{[1][3][4][5][6][7][10][14][15][16]} and subject experts. The field study were organized during the year 2013-2014 each Month survey carried out and collect the aquatic plants . The seasonal variation of plant species in wetland have been studied and find out that the species richness in the year. The plant list categorized according to their systematic positions following Bentham & Hookers classification system^[7]

IV. RESULT & DISCUSSION

Hydrophytes angiosperm plant species of pond in Chiyada are indigenous and naturalized plants. The study area shows plant diversity comprises of **34** genera and **37** species belong to **23** angiosperm families. Dicots were represented by **09** families and Monocots were represented by **14** families. The following table no. 1 gives the name of families, genera and species belong to Dicotyledons and Monocotyledons. The dominant families are **Hydrocharitaceae (04 species)** , **Cyperaceae(04 species)** , **Poaceae (03 species)** **Scrophulariaceae (03 species)**.Aquatic angiosperms plant species found in habitat as floating stage 06 species (16%),Submerged species 06(16%) , Mid marsh 04 species(11%) , Marsh 14 species (38%) , Reed swamp 04 species (11%) , Moist Soil area found 03 species(08%). In most of the season *Nelumbo* , *Eichhornia* sp. Cover the water surface, *Lemna* also cover on water surface, *Typha* sp. Seen tallest among the all aquatic species. In winter and starting of summer new emergent plant species grown in moist soil, where water level decrease in periphery. After summer and in rainy season when water logged, plant species grows and aquatic vegetation shows dense species richness.

V. ACKNOWLEDGEMENT

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<https://www.google.co.in/maps/place/Chiyada,+Gujarat/@22.7561878,72.3518908,17z/data=!3m1!4b1!4m2!3m1!1s0x395eeab5d2a44c33:0x8568e6793a7b2613?hl=en>

TABLE: 1 PLANT LIST WITH BOTANICAL NAME, FAMILY AND HABITAT

Sr.No.	Plant species	Family	Habitat
1	<i>Alternanthera sessilis (L.) DC.</i>	Amaranthaceae	Marsh
2	<i>Aponogeton appendiculatus H.</i>	Aponogetonaceae	Submerged
3	<i>Nasturtium officinalae R.Br</i>	Brassicaceae	Marsh
4	<i>Ceratophyllum demersum L.</i>	Ceratophyllaceae	Floating
5	<i>Ipomoea aquatica Forssk</i>	Convolvulaceae	Marsh
6	<i>Ipomoea carnea Jacq.</i>	Convolvulaceae	Marsh
7	<i>Cyperus compressus L.</i>	Cyperaceae	Reed swamp
8	<i>Cyperus corymbosus Rottb.</i>	Cyperaceae	Moist soil
9	<i>Carex nubigana D. Don</i>	Cyperaceae	Reed swamp
10	<i>Scirpus mucronatus (L.) Palla</i>	Cyperaceae	Reed swamp
11	<i>Nymphoides indica (L.) O. Kuntze</i>	Gentianaceae	Mid marsh
12	<i>Nymphoides hydrophyllum (Lour.) O. Kuntze</i>	Gentianaceae	Mid marsh
13	<i>Hydrilla verticillata (L. f.) Royle</i>	Hydrocharitaceae	Submerged
14	<i>Hydrocharis morsus-ranae L.</i>	Hydrocharitaceae	Floating
15	<i>Ottelia alismoides (L.) Pers</i>	Hydrocharitaceae	Submerged
16	<i>Vallisneria spiralis (L.) Hara</i>	Hydrocharitaceae	Submerged
17	<i>Juncus bufonius L.</i>	Juncaceae	Reed swamp
18	<i>Lemna minor L.</i>	Lemnaceae	Floating
19	<i>Utricularia aurea Lour. Vit</i>	Lentibulariaceae	Floating
20	<i>Ammania baccifera L.</i>	Lythraceae	Moist soil
21	<i>Najas graminea Dulile</i>	Najadaceae	Submerged
22	<i>Nelumbo nucifera</i>	Nymphaeaceae	Mid marsh

	<i>Gaertn.</i>		
23	<i>Nymphaea pubescence Willd.</i>	Nymphaeaceae	Mid marsh
24	<i>Ludwigia adscendens (L.) Hara</i>	Onagraceae	Marsh
25	<i>Coix lacryma-jobi L.</i>	Poaceae	Moist soil
26	<i>Paspalidium punctatum (Brum.) A. Camus</i>	Poaceae	Marsh
27	<i>Paspalum distichum L</i>	Poaceae	Marsh
28	<i>Polygonum glabrum Willd.</i>	Polygonaceae	Marsh
29	<i>Eichhornia crassipes (Mart.) Solms</i>	Pontederiaceae	Floating
30	<i>Monocharia vaginalis (Brum.) Kunth</i>	Pontederiaceae	Marsh
31	<i>Potamogeton crispus L.</i>	Potamogetonaceae	Submerged
32	<i>Limnophila indica (L.) Druce</i>	Scrophulariaceae	Marsh
33	<i>Lindernia ciliata (Colsm.) Pennell</i>	Scrophulariaceae	Marsh
34	<i>Bacopa monnieri (L) Pennell.</i>	Scrophulariaceae	Marsh
35	<i>Trapa natans var. bispinosa (Roxb.)</i>	Trapaceae	Floating
36	<i>Typha angustifolia L.</i>	Typhaceae	Marsh

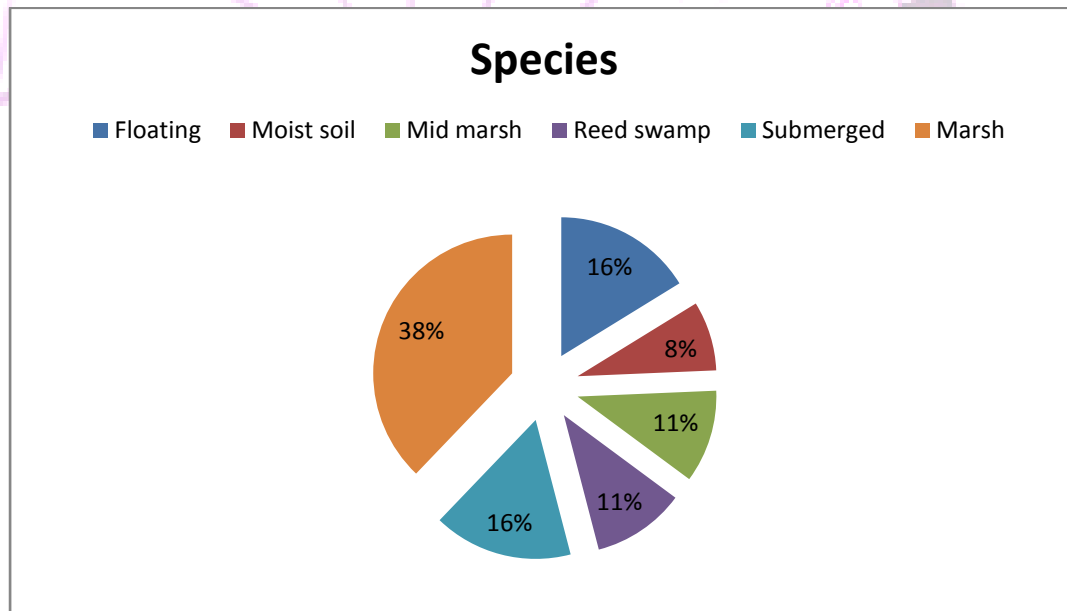
Aquatic Angiosperm	Family	Genus	Species
TOTAL	23	34	37
Dicot	14	12	14
Monocot	9	22	23

GRAPH-1 FAMILY AND SPECIES No.



GRAPH-2 HABITAT AND SPECIES No.

Habitat	Species
Floating	6
Moist soil	3
Mid marsh	4
Reed swamp	4
Submerged	6
Marsh	14



1. Satellite Image of study Site:



2. Study Site Pond near Village Chiyada.(Photo by: Bharat maitreya)



3. Study Site Pond near Village Chiyada. (Photo by: Bharat maitreya)

