



Exploration of Floral Diversity of Suraha Tal Bird Sanctuary, Ballia, Uttar Pradesh, India

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ABSTRACT

Author have reported 221 species out of 169 genera during the floristic survey of angiosperm of Suraha Tal Bird Sanctuary district of Ballia, Uttar Pradesh, As habit wise including 181 herbs, 06 shrubs, 31 trees & 03 climbers while habitat wise dwelling 176 & 45 genera terrestrial and wetland respectively. Out of 221 species belongs 48 family viz. Asteraceae, Acanthaceae, Aizoaceae, Anacardaceae, Alismataceae, Amaranthaceae, Basellaceae, Bixaceae, Boraginaceae, Brassicaceae, Cannabaceae, Caryophyllaceae, Chenopodaceae, Cleomaceae, Cucurbitaceae, Commelinaceae, Combretaceae, Convolvulaceae, Cyperaceae, Euphorbiaceae, Fabaceae, Fumariaceae, Linaceae, Lamiaceae, Lythraceae, Malvaceae, Meliaceae, Moraceae, Nymphaeaceae, Onagaraceae, Oleaceae, Oxalidaceae, Papervaceae, Primulaceae, Poaceae, Polygonaceae, Plumbaginaceae, Portulacaceae, Ranunculaceae, Rhamnaceae, Rubiaceae, Rutaceae, Scrophulariaceae, Solanaceae, Teliaceae, Typhaceae, Verbinaceae and Violaceae.

KEYWORDS: Exploration, floral diversity, Suraha Tal Bird Sanctuary, Uttar Pradesh.

INTRODUCTION

Suraha Tal is natural lake of district Ballia of Uttar Pradesh. It is an oval shaped lake occupied area of 34.2 km². It is a perennial meander of the river Ganga with an area of 26 km². It extends between 25° 48' N - 25° 52' N & 84° 8' E - 84° 13' E at an altitude of 166 m [12]. This Tal is located about 17 km north from Ballia city along the river of Ganga. The floristic survey of this Tal including herbs, shrubs, tree, climbers, terrestrial and wetland. It is surrounded by highest natural vegetation including arable fields, macrophytes, mesophytes etc. The present study revealed interesting data & provide the scope of ethnomedicinally, drug, pharmaceutical etc.

These specimens is well documented in Hooker (1881) [4], Duthie (1903) [2], Hajra et al., (1995) [3], Siddiqui (2004) [10], Narain & Lata (2006) [8], Takthajan (2009) [14], Sumeet, et al., (2010) [13], Pandey (2011) [9], Singh & Narain (2012) [11], Bhati, et al., (2014) [1], Jadhav (2016) [5], Joshi (2017) [6] and Khanna, (2017) [7].

MATERIALS AND METHODS

Present study based on field survey of district Ballia carried out many regions of Suraha Tal Bird Sanctuary. The specimen identification done by morphological, anatomical and floral characters as well as with help of floras, e-floras and herbarium.

RESULT AND DISCUSSION

All floral species observed at Suraha Tal Bird Sanctuary were listed below in the table 1.

Table 1. Observed flora at Suraha Tal Bird Sanctuary.

S.N.	Botanical Name	Family	Fl. & Fr.	Habit	Habitat
1.	<i>Abelmoschus crinitus</i> Wall.	Malvaceae	July-December	Herb	Terrestrial
2.	<i>Abutilon indicum</i> (L.) Moench	Malvaceae	All year	Herb	Terrestrial
3.	<i>Acanthospermum hispidum</i> DC.	Asteraceae	November-April	Herb	Terrestrial
4.	<i>Adhatoda vasica</i> Nees	Acanthaceae	December-June	Herb	Terrestrial
5.	<i>Aegle marmelos</i> (L.) Corrêa	Rutaceae	February-August	Tree	Terrestrial
6.	<i>Ageratum conyzoides</i> L.	Asteraceae	All Year	Herb	Wetland
7.	<i>A. haustonianum</i> Mill.	Asteraceae	All Year	Herb	Wetland
8.	<i>Albizia lebbek</i> (L.) Benth.	Fabaceae	August-March	Tree	Terrestrial
9.	<i>Amaranthus paniculatus</i> L.	Amaranthaceae	June-December	Herb	Terrestrial
10.	<i>A. viridis</i> L.	Amaranthaceae	All year	Herb	Terrestrial
11.	<i>Amberboa ramosa</i> (Roxb.) Jafri	Asteraceae	December-April	Herb	Terrestrial
12.	<i>Ammania baccifera</i> L.	Lythraceae	All year	Herb	Terrestrial
13.	<i>Anagalis arvensis</i> L.	Primulaceae	October-January	Herb	Wetland
14.	<i>Anaphalis margaritacea</i> (L.) Benth.	Asteraceae	November-March	Herb	Terrestrial
15.	<i>Anthemis cotula</i> L.	Asteraceae	April-October	Herb	Terrestrial
16.	<i>Arabidopsis thaliana</i> (L.) Heynh.	Brassicaceae	November-February	Herb	Terrestrial
17.	<i>Argemone mexicana</i> L.	Papervaceae	April-November	Herb	Terrestrial
18.	<i>Artemisia indica</i> Willd.	Asteraceae	August-February	Herb	Terrestrial
19.	<i>A. japonica</i> L.	Asteraceae	August-February	Herb	Terrestrial

20.	<i>Artocarpus heterophyllus</i> Lam.	Moraceae	February-June	Tree	Terrestrial
21.	<i>Basella alba</i> L.	Basellaceae	December-March	Climber	Terrestrial
22.	<i>Bauhinia variegata</i> L.	Fabaceae	November-June	Tree	Terrestrial
23.	<i>Barleria prionitis</i> L.	Acanthaceae	July- Dec.	Herb	Terrestrial
24.	<i>Bidens bipinnata</i> L.	Asteraceae	September-February	Herb	Terrestrial
25.	<i>B. sulphurea</i> (Cav.) Sch.-Bip.	Asteraceae	December-March	Herb	Terrestrial
26.	<i>Bixa orellana</i> L.	Bixaceae	All year	Tree	Terrestrial
27.	<i>Blainvillea acmella</i> (L.) Philipson	Asteraceae	September – January	Herb	Terrestrial
28.	<i>Blumea bifoliata</i> (L.) DC.	Asteraceae	December-April	Herb	Terrestrial
29.	<i>B. eriantha</i> DC.	Asteraceae	December-April	Herb	Terrestrial
30.	<i>B. lacera</i> (Burm. f.) DC.	Asteraceae	December-March	Herb	Terrestrial
31.	<i>B. laciniata</i> (Roxb.) DC.	Asteraceae	December-April	Herb	Terrestrial
32.	<i>B. membranacea</i> DC.	Asteraceae	December-March	Herb	Terrestrial
33.	<i>B. mollis</i> (D. Don) Merr.	Asteraceae	December-April	Herb	Terrestrial
34.	<i>B. obliqua</i> (L.) Druce	Asteraceae	December-March	Herb	Terrestrial
35.	<i>B. oxyodonta</i> DC.	Asteraceae	December-March	Herb	Terrestrial
36.	<i>Bombax ceiba</i> L.	Malvaceae	All year	Tree	Terrestrial
37.	<i>Brachycome iberidifolia</i> Cass.	Asteraceae	January-March	Herb	Terrestrial
38.	<i>Brassica rapa</i> L. subsp. <i>campestris</i> (L.) Clapham	Brassicaceae	November-March	Herb	Terrestrial
39.	<i>Breea arvensis</i> (L.) Less.	Asteraceae	February-May	Herb	Terrestrial
40.	<i>Caesulia axillaris</i> Roxb.	Asteraceae	November-March	Herb	Wetland
41.	<i>Calendula officinalis</i> L.	Asteraceae	January- April	Herb	Terrestrial

42.	<i>Cannabis sativa</i> L.	Cannabaceae	August-March	Herb	Terrestrial
43.	<i>Carthamus tinctorius</i> L.	Asteraceae	February – April	Herb	Terrestrial
44.	<i>Cassia fistula</i> L.	Fabaceae	March-August	Tree	Terrestrial
45.	<i>C. tora</i> L.	Fabaceae	March-August	Tree	Terrestrial
46.	<i>Ceiba pentandra</i> (L.) Gaertn.	Malvaceae	February-April	Tree	Terrestrial
47.	<i>Centaurea cyanus</i> L.	Asteraceae	March-July	Herb	Terrestrial
48.	<i>Centipeda minima</i> (L.) A. Br. & Aschers.	Asteraceae	November-February	Herb	Wetland
49.	<i>Chenopodium album</i> L.	Chenopodaceae	October-February	Herb	Terrestrial
50.	<i>Chrysanthellum americanum</i> (L.) Vatke	Asteraceae	December – March	Herb	Terrestrial
51.	<i>Chrysanthemum indicum</i> L.	Asteraceae	December-March	Herb	Terrestrial
52.	<i>Chrysopogan zizanioides</i> (L.) Roberty	Poaceae	October-December	Herb	Terrestrial
53.	<i>Cichorium intybus</i> L.	Asteraceae	February – April	Herb	Terrestrial
54.	<i>Cirsium verutum</i> (D.Don) Spreng.	Asteraceae	September-January	Herb	Terrestrial
55.	<i>Citrus aurantiifolia</i> (Christm.) Swingle	Rutaceae	November-March	Tree	Terrestrial
56.	<i>C. aurantium</i> L.	Rutaceae	November-March	Tree	Terrestrial
57.	<i>C. limon</i> (L.) Osbeck	Rutaceae	November-March	Shrub	Terrestrial
58.	<i>Cleome viscosa</i> L.	Cleomaceae	July- October	Herb	Terrestrial
59.	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	July-September	Climber	Terrestrial
60.	<i>Commelina benghalensis</i> L.	Commelinaceae	All year	Herb	Wetland
61.	<i>Conyza bonariensis</i> (L.) Cronq.	Asteraceae	November-May	Herb	Terrestrial
62.	<i>C. canadensis</i> (L.) Cronq.	Asteraceae	November-May	Herb	Terrestrial
63.	<i>Corchorus capsularis</i> L.	Teliaceae	August-September	Herb	Terrestrial

64.	<i>Cordia dichotoma</i> Forst.	Boraginaceae	Feb.- April	Tree	Terrestrial
65.	<i>Coronopus didymus</i> (L.) Sm Wallich ex C. B. Clarke	Brassicaceae	Nov.-March	Herb	Wetland
66.	<i>Cotula anthemoides</i> L.	Asteraceae	January- April	Herb	Wetland
67.	<i>C. hemisphaerica</i> (Roxb.)	Asteraceae	January- April	Herb	Wetland
68.	<i>Croton sparsiflorus</i> Morong	Euphorbiaceae	All year	Herb	Terrestrial
69.	<i>Cucumis melo</i> L.	Cucurbitaceae	Sept.- Nov.	Herb	Terrestrial
70.	<i>Cyathocline purpurea</i> (Buch.-Ham. ex. D. Don) Kuntze	Asteraceae	December- March	Herb	Terrestrial
71.	<i>Cynodon dactylon</i> (L.) Pers	Poaceae	All year	Herb	Wetland
72.	<i>Cynotis axillaris</i> (L.) D. Don ex. Sweet	Commelinaceae	August-Oct.	Herb	Wetland
73.	<i>Cyperus rotundus</i> L.	Cyperaceae	August- Oct.	Herb	Wetland
74.	<i>Dahlia pinnata</i> Cav.	Asteraceae	December- March	Tree	Terrestrial
75.	<i>Datura metal</i> L.	Solanaceae	All Year	Herb	Terrestrial
76.	<i>Delbergia sissoo</i> DC.	Fabaceae	Nov.- March	Tree	Terrestrial
77.	<i>Dicoma tomentosa</i> Cass.	Asteraceae	December- April	Herb	Terrestrial
78.	<i>Digitaria sanguinalis</i> (L.) Scop.	Poaceae	August- Sept.	Herb	Terrestrial
79.	<i>Echinochloa colona</i> (L.) Link	Poaceae	Sept.- Oct.	Herb	Wetland
80.	<i>Echinops echinatus</i> Roxb.	Asteraceae	February – August	Shrub	Terrestrial
81.	<i>Eclipta prostrata</i> (L.) L.	Asteraceae	All Year	Herb	Wetland
82.	<i>Elephantopus scaber</i> L.	Asteraceae	October- February	Herb	Terrestrial
83.	<i>Emilia sonchifolia</i> (L.) DC.	Asteraceae	January- March	Herb	Terrestrial
84.	<i>Enhydra fluctuans</i> DC.	Asteraceae	December- April	Herb	Terrestrial
85.	<i>Eragrostis nigra</i> Nees ex Steud.	Poaceae	October- Dec.	Herb	Terrestrial
86.	<i>Erigeron sublyratus</i> DC.	Asteraceae	February- July	Herb	Terrestrial

87.	<i>Eupatorium adenophorum</i> Spreng.	Asteraceae	January- June	Herb	Terrestrial
88.	<i>E. odoratum</i> L.	Asteraceae	December- May	Herb	Terrestrial
89.	<i>E. riparium</i> Regel	Asteraceae	January- June	Herb	Terrestrial
90.	<i>Euphorbia hirta</i> L.	Euphorbiaceae	All year	Herb	Terrestrial
91.	<i>E. neriifolia</i> L.	Euphorbiaceae	All year	Herb	Terrestrial
92.	<i>E. prostrata</i> Aiton	Euphorbiaceae	All year	Herb	Terrestrial
93.	<i>Ficus benghalensis</i> L.	Moraceae	Nov.- Feb.	Tree	Terrestrial
94.	<i>F. racemosa</i> L.	Moraceae	Nov.- Jan.	Tree	Terrestrial
95.	<i>F. religiosa</i> L.	Moraceae	Nov.- Jan.	Tree	Terrestrial
96.	<i>Fumaria indica</i> (Hauskn.) Pugsley	Fumariaceae	Oct.- Feb.	Herb	Terrestrial
97.	<i>Gaillardia pulchella</i> Foug.	Asteraceae	September- March	Herb	Terrestrial
98.	<i>Galinsoga parviflora</i> Cav.	Asteraceae	September- January	Herb	Terrestrial
99.	<i>G. quadriradiata</i> Ruiz & Pavon	Asteraceae	November- March	Herb	Terrestrial
100.	<i>Gerbera gossypina</i> Cass.	Asteraceae	November- March	Herb	Terrestrial
101.	<i>Glossocardia bosvallea</i> (L.f.) DC.	Asteraceae	August- October	Herb	Terrestrial
102.	<i>Glossogyne bidens</i> Cass.	Asteraceae	October- March	Herb	Terrestrial
103.	<i>Gnaphalium luteo- album</i> L.	Asteraceae	December- April	Herb	Wetland
104.	<i>G. pennsylvanicum</i> Willd.	Asteraceae	December- April	Herb	Wetland
105.	<i>G. polycaulon</i> Pers.	Asteraceae	December- March	Herb	Wetland
106.	<i>G. pulvinatum</i> Delile	Asteraceae	December- April	Herb	Wetland
107.	<i>G. purpureum</i> L.	Asteraceae	December- March	Herb	Wetland
108.	<i>Grangea maderaspatana</i> (L.) Poir.	Asteraceae	December- April	Herb	Wetland
109.	<i>Grewia hirsuta</i> Vahl	Teliaceae	Oct.- Dec.	Shrub	Terrestrial
110.	<i>Guizotia abyssinica</i> Cass.	Asteraceae	December- March	Herb	Terrestrial
111.	<i>Hamelia patens</i> Jacq.	Rubiaceae	All year	Herb	Terrestrial
112.	<i>Helianthus annuus</i> L.	Asteraceae	December- June	Herb	Terrestrial

113.	<i>Heliotropium indicum</i> L.	Boraginaceae	Sept.- Feb.	Herb	Wetland
114.	<i>Heteropogon contortus</i> (L.) P. Beauv. ex Roem & Schult.	Poaceae	July- Nov.	Herb	Terrestrial
115.	<i>Iberis amara</i> L.	Brassicaceae	December-March	Herb	Terrestrial
116.	<i>Impatiens balsamina</i> L.	Balsaminaceae	Nov.- March	Herb	Terrestrial
117.	<i>Ipomoea carnea</i> Jacq.	Convolvulaceae	All year	Herb	Wetland
118.	<i>I. aquatica</i> Forsk.	Convolvulaceae	All year	Herb	Wetland
119.	<i>Inula nervosa</i> Wall. ex DC.	Asteraceae	November-March	Herb	Terrestrial
120.	<i>Ixeris polycephala</i> Cass.	Asteraceae	October-February	Herb	Terrestrial
121.	<i>Ixora coccinea</i> L.	Rubiaceae	All year	Herb	Terrestrial
122.	<i>Justicia diffusa</i> Willd.	Acanthaceae	Aug.-March	Herb	Wetland
123.	<i>Lactuca remotiflora</i> DC.	Asteraceae	November-February	Herb	Terrestrial
124.	<i>Lagascea mollis</i> Cav.	Asteraceae	October-February	Herb	Terrestrial
125.	<i>Lantana camara</i> L.	Verbinaceae	All year	Shrub	Terrestrial
126.	<i>Launaea asplenifolia</i> (Willd.) Hook. f.	Asteraceae	October-April	Herb	Terrestrial
127.	<i>L. procumbens</i> (Roxb.) Ramayya & Rajgopal	Asteraceae	October-April	Herb	Terrestrial
128.	<i>Lepidium sativum</i> L.	Brassicaceae	Nov.- March	Herb	Terrestrial
129.	<i>Linum usitatissimum</i> L.	Linaceae	March- Sept.	Herb	Terrestrial
130.	<i>Lucas aspera</i> (Willd.)Link	Lamiaceae	All year	Herb	Wetland
131.	<i>Ludwigia hyssopifolia</i> (G. don) Exell	Onagaraceae	Nov.- Feb.	Herb	Terrestrial
132.	<i>Malvastrum coromandelianum</i> (L.) Garcke	Malvaceae	All year	Herb	Terrestrial
133.	<i>Mangifera indica</i> L.	Anacardaceae	Jan.- August	Tree	Terrestrial
134.	<i>Matricaria recutita</i> L.	Asteraceae	August-October	Herb	Terrestrial
135.	<i>Melilotus indicus</i> (L.) Allioni	Fabaceae	Dec.- March	Herb	Terrestrial
136.	<i>Morus alba</i> L.	Moraceae	Feb.- June	Tree	Terrestrial
137.	<i>Mukia maderaspatana</i> (L.) M. Roem	Cucurbitaceae	April- Nov.	Herb	Terrestrial

138.	<i>Murraya koenigii</i> (L.) Spreng.	Rutaceae	July- Dec.	Tree	Terrestrial
139.	<i>Mussaenda frondosa</i> L.	Rubiaceae	All year	Tree	Terrestrial
140.	<i>Nymphaea stellata</i> Willd.	Nymphaeaceae	July- Dec.	Herb	Wetland
141.	<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	Octo.- March	Tree	Terrestrial
142.	<i>Ocimum basilicum</i> L.	Lamiaceae	July- Nov.	Herb	Terrestrial
143.	<i>Oldenlandia umbellata</i> L.	Rubiaceae	Aug.-Oct.	Herb	Wetland
144.	<i>Oxalis corniculata</i> L.	Oxalidaceae	Dec.- May	Herb	Wetland
145.	<i>O. corymbosa</i> DC.	Oxalidaceae	Dec.-May	Herb	Wetland
146.	<i>Pannisetum pedicellatum</i> Trin.	Poaceae	August- Dec.	Herb	Terrestrial
147.	<i>Parthenium hysterophorus</i> L.	Asteraceae	Throughout Year	Herb	Terrestrial
148.	<i>Pentanema indicum</i> (L.) Ling	Asteraceae	November-March	Herb	Terrestrial
149.	<i>P. vestitum</i> (Wall. ex DC.) Ling	Asteraceae	November-March	Herb	Terrestrial
150.	<i>Phyllanthus amarus</i> Schumach . & Thonn.	Euphorbiaceae	All year	Herb	Terrestrial
151.	<i>P. emblica</i> L.	Euphorbiaceae	Nov.- March	Herb	Terrestrial
152.	<i>P. simplex</i> Retz.	Euphorbiaceae	July- Dec.	Herb	Terrestrial
153.	<i>Physalis peruviana</i> L.	Solanaceae	Nov.- March	Herb	Terrestrial
154.	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Fabaceae	March-Nov.	Tree	Terrestrial
155.	<i>Polygonum barbatum</i> L.	Polygonaceae	Sep.- June	Herb	Wetland
156.	<i>Pluchea lanceolata</i> (DC.) Clarke	Asteraceae	February-April	Herb	Terrestrial
157.	<i>P. tomentosa</i> DC.	Asteraceae	February-April	Herb	Terrestrial
158.	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Nov.- March	Herb	Terrestrial
159.	<i>Polygala longifolia</i> Poir.	Polygalaceae	June- Dec.	Herb	Terrestrial
160.	<i>Pongammia pinnata</i> (L.) Pierre	Fabaceae	April- June	Tree	Terrestrial
161.	<i>Portulaca grandiflora</i> Hook.	Portulacaceae	All year	Herb	Terrestrial
162.	<i>P. oleracea</i> L.	Portulacaceae	All year	Herb	Terrestrial
163.	<i>Primula umbellata</i> (Lour.) Bentvelzen	Primulaceae	April- August	Herb	Terrestrial
164.	<i>Prosopis cineraria</i> (L.) Druce	Fabaceae	August- Feb.	Shrub	Terrestrial
165.	<i>Pulicaria angustifolia</i> DC.	Asteraceae	December-May	Herb	Terrestrial

	Benth. & Hook. f.				
166.	<i>P. crispa</i> (Forsskal.)	Asteraceae	December- May	Herb	Terrestrial
167.	<i>P. foliolosa</i> DC.	Asteraceae	November- May	Herb	Terrestrial
168.	<i>Ranunculus cantoniensis</i> DC.	Ranunculaceae	July- December	Herb	Wetland
169.	<i>R. muricatus</i> L.	Ranunculaceae	August- November	Herb	Wetland
170.	<i>R. sceleratus</i> L.	Ranunculaceae	All year	Herb	Wetland
171.	<i>Ricinus communis</i> L.	Euphorbiaceae	August- March	Herb	Terrestrial
172.	<i>Rumex dentatus</i> L.	Polygonaceae	Dec.- Feb.	Herb	Terrestrial
173.	<i>Rungia repens</i> (L.) Nees	Acanthaceae	Nov.- March	Herb	Wetland
174.	<i>Saussurea heteromalla</i> DC.	Asteraceae	February- May	Herb	Terrestrial
175.	<i>Sagittaria guayanensis</i> Kunth	Alismataceae	Aug.- Oct.	Herb	Wetland
176.	<i>Scripus articulatus</i> L.	Cyperaceae	July- Oct.	Herb	Wetland
177.	<i>Senecio linifolius</i> L.	Asteraceae	December- March	Herb	Terrestrial
178.	<i>Solanum nigrum</i> L.	Solanaceae	June- Feb.	Herb	Terrestrial
179.	<i>Soliva anthemifolia</i> (Juss.) R. Br.	Asteraceae	December- April	Herb	Terrestrial
180.	<i>Sonchus asper</i> (L.) Hill.	Asteraceae	November- March	Herb	Terrestrial
181.	<i>S. brachyotus</i> DC.	Asteraceae	November- March	Herb	Terrestrial
182.	<i>S. oleraceus</i> L.	Asteraceae	November- March	Herb	Terrestrial
183.	<i>Setaria italica</i> (L.) P. Beauv.	Poaceae	August- Feb.	Herb	Wetland
184.	<i>Sida cordifolia</i> L.	Malvaceae	All year	Herb	Terrestrial
185.	<i>Silybum marianum</i> (L.) Gaertn.	Asteraceae	May- September	Herb	Terrestrial
186.	<i>Solidago canadensis</i> L.	Asteraceae	October- January	Herb	Terrestrial
187.	<i>Spergula arvensis</i> L.	Caryophyllaceae	Sept.- Jan.	Herb	Terrestrial
188.	<i>Sphaeranthus indicus</i> L.	Asteraceae	December- March	Herb	Wetland
189.	<i>S. senegalensis</i> DC.	Asteraceae	December- March	Herb	Wetland

190.	<i>Spilanthes ciliata</i> Kunth	Asteraceae	November-April	Herb	Wetland
191.	<i>S. oleracea</i> L.	Asteraceae	October – March	Herb	Wetland
192.	<i>S. paniculata</i> Wall. ex DC.	Asteraceae	October-March	Herb	Wetland
193.	<i>S. radicans</i> Jacq.	Asteraceae	October-March	Herb	Wetland
194.	<i>Stellaria media</i> (L.) Vill.	Caryophyllaceae	Sept.-Feb.	Herb	Terrestrial
195.	<i>Sterculia urens</i> Roxb.	Malvaceae	Dec.- March	Herb	Terrestrial
196.	<i>Synedrella vialis</i> (Less.) A. Gray	Asteraceae	August-December	Herb	Terrestrial
197.	<i>Syzygium cumini</i> (L.) Skeels.	Myrtaceae	March-August	Tree	Terrestrial
198.	<i>S. nervosum</i> A. Cunn. Ex. DC.	Myrtaceae	April- August	Tree	Terrestrial
199.	<i>Tagetes erecta</i> L.	Asteraceae	October-April	Herb	Terrestrial
200.	<i>T. minuta</i> L.	Asteraceae	October-April	Herb	Terrestrial
201.	<i>T. patula</i> L.	Asteraceae	October-April	Herb	Terrestrial
202.	<i>Tamarindus indica</i> L.	Fabaceae	May- Dec.	Tree	Terrestrial
203.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	June- Nov.	Tree	Terrestrial
204.	<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	Malvaceae	All year	Tree	Terrestrial
205.	<i>Toona ciliata</i> M. Roem.	Meliaceae	July- Sept.	Tree	Terrestrial
206.	<i>Trianthema portulacastrum</i> L.	Aizoaceae	Dec.-April	Herb	Terrestrial
207.	<i>Tridax procumbens</i> L.	Asteraceae	All Year	Herb	Terrestrial
208.	<i>Triumfetta annua</i> L.	Teliaceae	July- Dec.	Herb	Terrestrial
209.	<i>Typha angustifolia</i> L.	Typhaceae	Nov.- March	Herb	Wetland
210.	<i>Urena lobata</i> L.	Malvaceae	August- Dec.	Herb	Terrestrial
211.	<i>Vernonia aquatica</i> L.	Scrophulariaceae	Jan.-April	Herb	Wetland
212.	<i>V. cinerea</i> (L.) Less.	Asteraceae	All Year	Herb	Terrestrial
213.	<i>V. divergens</i> (Roxb.) Benth.	Asteraceae	December-February	Herb	Terrestrial
214.	<i>V. elliptica</i> DC.	Asteraceae	January-April	Climber	Terrestrial
215.	<i>Viola cinerea</i> Boiss. var. <i>stocksii</i> (Boiss.) Becke	Violaceae	Feb.- May	Herb	Terrestrial
216.	<i>Wedelia chinensis</i> (Osbeck) Merr.	Asteraceae	December – March	Herb	Terrestrial

217.	<i>W. trilobata</i> (L.) A.S. Hitc.	Asteraceae	December – March	Herb	Terrestrial
218.	<i>Xanthium strumarium</i> L.	Asteraceae	March- June	Shrub	Terrestrial
219.	<i>Youngia japonica</i> (L.) DC.	Asteraceae	December- April	Herb	Terrestrial
220.	<i>Zinnia elegans</i> L.	Asteraceae	December- March	Herb	Terrestrial
221.	<i>Ziziphus jujuba</i> Mill.	Rhamnaceae	Sept.-Oct.	Tree	Terrestrial

A Total of 221 species were documented belongs to 169 genera and 48 family. As habit wise including 181 genera are herbs viz. *Abelmoschus crinitus*, *Abutilon indicum*, *Acanthospermum hispidum*, *Adhatoda vasica*, *Ageratum conyzoides*, *A. haustonianum*, *Amaranthus paniculatus*, *A. viridis*, *Amberboa ramosa*, *Ammania baccifera*, *Anagalis arvensis*, *Anaphalis margaritacea*, *Anthemis cotula*, *Arabidopsis thaliana*, *Argemone mexicana*, *Artemisia indica*, *A. japonica*, *Barleria prionitis*, *Bidens bipinnata*, *B. sulphurea*, *Blainvillea acmella*, *Blumea bifoliata*, *B. eriantha*, *B. lacera*, *B. laciniata*, *B. membranacea*, *B. mollis*, *B. obliqua*, *B. oxyodonta*, *Brachycome iberidifolia*, *Brassica rapa –campestris*, *Breaa arvensis*, *Caesulia axillaris*, *Calendula officinalis*, *Cannabis sativa*, *Carthamus tinctorius*, *Centaurea cyanus*, *Centipeda minima*, *Chenopodium album*, *Chrysanthellum americanum*, *Chrysanthemum indicum*, *Chrysopogan zizanioides*, *Cichorium intybus*, *Cirsium verutum*, *Cleome viscosa*, *Commelina benghalensis*, *Conyza bonariensis*, *C. canadensis*, *Corchorus capsularis*, *Coronopus didymus*, *Cotula anthemoides*, *C. hemisphaerica*, *Croton sparsiflorus*, *Cucumis melo*, *Cyathocline purpurea*, *Cynodon dactylon*, *Cynotis axillaris*, *Cyperus rotundus*, *Datura metal*, *Dicoma tomentosa*, *Digitaria sanguinolis*, *Echinochloa colona*, *Eclipta prostrata*, *Elephantopus scaber*, *Emilia sonchifolia*, *Enhydra fluctuans*, *Eragrostis nigra*, *Erigeron sublyratus*, *Eupatorium adenophorum*, *E. odoratum*, *E. riparium*, *Euphorbia hirta*, *E. neriifolia*, *E. prostrata*, *Fumaria indica*, *Gaillardia pulchella*, *Galinsoga parviflora*, *G. quadriradiata*, *Gerbera gossypina*, *Glossocardia bosvallea*, *Glossogyne bidens*, *Gnaphalium luteo-album*, *G. pennsylvanicum*, *G. polycaulon*, *G. pulvinatum*, *G. purpureum*, *Grangea maderaspatana*, *Guizotia abyssinica*, *Hamelia patens*, *Helianthus annuus*, *Heliotropium indicum*, *Heteropogon contortus*, *Iberis amara*, *Impatiens balsamina*, *Ipomoea carnea*, *I. aquatica*, *Inula nervosa*, *Ixeris polycephala*, *Ixora coccinea*, *Justicia diffusa*, *Lactuca remotiflora*, *Lagascea mollis*, *Launaea asplenifolia*, *L. procumbens*, *Lepidium sativum*, *Linum usitatissimum*, *Lucas aspera*, *Ludwigia hyssopifolia*, *Malvastrum coromandelianum*, *Mangifera indica*, *Matricaria recutita*, *Melilotus indicus*, *Morus alba*, *Mukia maderaspatana*, *Murraya koenigii*, *Mussaenda frondosa*, *Nymphaea stellata*, *Nyctanthes arbor-tristis*, *Ocimum basilicum*, *Oldenlandia umbellata*, *Oxalis corniculata*, *O. corymbosa*, *Pannisetum pedicellatum*, *Parthenium hysterophorus*, *Pentanema indicum*, *P. vestitum*, *Phyllanthus amarus*, *P. emblica*, *P. simplex*, *Physalis peruviana*, *Pithecellobium dulce*, *Polygonum barbatum*, *Pluchea lanceolata*, *P. tomentosa*, *Plumbago zeylanica*, *Polygala longifolia*, *Pongammia pinnata*, *Portulaca grandiflora*, *P. oleracea*, *Primula umbellata*, *Pulicaria angustifolia*, *P. crispa*, *P. foliolosa*, *Ranunculus cantoniensis*, *R. muricatus*, *R. sceleratus*, *Ricinus communis*, *Rumex dentatus*, *Rungia repens*, *Saussurea heteromalla*, *Sagittaria guayanensis*, *Scripus articulatus*, *Senecio linifolius*, *Solanum nigrum*, *Soliva anthemifolia*, *Sonchus asper*, *S. brachyotus*, *S. oleraceus*, *Setaria italica*, *Sida cordifolia*, *Silybum marianum*, *Solidago canadensis*, *Spergula arvensis*, *Sphaeranthus indicus*, *S. senegalensis*, *Spilanthes ciliata*, *S. oleracea*, *S. paniculata*, *S. radicans*, *Stellaria media*, *Sterculia urens*, *Synedrella vialis*, *Syzygium cumini*, *S. nervosum*, *Tagetes erecta*, *T. minuta*, *T. patula*, *Trianthema portulacastrum*, *Tridax procumbens*, *Triumfetta annua*, *Typha angustifolia*, *Urena lobata*, *Vernonica aquatica*, *V. cinerea*, *V. divergens*, *Viola cinerea*, *Wedelia chinensis*, *W. trilobata*, *Youngia japonica*, *Zinnia elegans* and *Ziziphus jujuba* while 06 genera shrubs viz. *Citrus limon*, *Echinops echinatus*, *Grewia hirsuta*, *Lantana camara*, *Prosopis cineraria* and *Xanthium strumarium* and 31 genera

are tree viz. *Aegle marmelos*, *Albizia lebeck*, *Artocarpus heterophyllus*, *Bauhinia variegata*, *Bixa orellana*, *Bombax ceiba*, *Cassia fistula*, *C. tora*, *Ceiba pentandra*, *Citrus aurantiifolia*, *C. aurantium*, *Cordia dichotoma*, *Dahlia pinnata*, *Delbergia sissoo*, *Ficus benghalensis*, *F. racemosa*, *F. religiosa*, *Mangifera indica*, *Morus alba*, *Murraya koenigii*, *Mussaenda frondosa*, *Nyctanthes arbor-tristis*, *Pithecellobium dulce*, *Pongamia pinnata*, *Syzygium cumini*, *S. nervosum*, *Tamarindus indica*, *Terminalia bellirica*, *Thespesia populnea*, *Toona ciliata* and *Ziziphus jujuba* remaining 3 genera are climbers viz. *Basella alba*, *Coccinia grandis* and *Vernonica elliptica* (Table 1) [15].

While as habitat wise out of 221 species in which 45 genera are wetland viz. *Ageratum conyzoides*, *A. haustonianum*, *Anagalis arvensis*, *Caesulia axillaris*, *Centipeda minima*, *Commelina benghalensis*, *Coronopus didymus*, *Cotula anthemoides*, *C. hemisphaerica*, *Cynodon dactylon*, *Cynotis axillaris*, *Cyperus rotundus*, *Echinochloa colona*, *Eclipta prostrata*, *Gnaphalium luteo-album*, *G. pennsylvanicum*, *G. polycaulon*, *G. pulvinatum*, *G. purpureum*, *Grangea maderaspatana*, *Heliotropium indicum*, *Ipomoea carnea*, *I. aquatica*, *Justicia diffusa*, *Lucas aspera*, *Nymphaea stellata*, *Oldenlandia umbellata*, *Oxalis corniculata*, *O. corymbosa*, *Polygonum barbatum*, *Ranunculus cantoniensis*, *R. muricatus*, *R. sceleratus*, *Rungia repens*, *Sagittaria guayanensis*, *Scripus articulatus*, *Setaria italica*, *Sphaeranthus indicus*, *S. senegalensis*, *Spilanthes ciliata*, *S. oleracea*, *S. paniculata*, *S. radicans*, *Typha angustifolia* and *Vernonica aquatica* and rest of 176 genera are terrestrial viz. *Abelmoschus crinitus*, *Abutilon indicum*, *Acanthospermum hispidum*, *Adhatoda vasica*, *Amaranthus paniculatus*, *A. viridis*, *Amberboa ramose*, *Ammania baccifera*, *Anaphalis margaritacea*, *Anthemis cotula*, *Arabidopsis thaliana*, *Argemone mexicana*, *Artemisia indica*, *A. japonica*, *Barleria prionitis*, *Bidens bipinnata*, *B. sulphurea*, *Blainvillea acmella*, *Blumea bifoliata*, *B. eriantha*, *B. lacera*, *B. laciniata*, *B. membranacea*, *B. mollis*, *B. obliqua*, *B. oxydonta*, *Brachycome iberidifolia*, *Brassica rapa –campestris*, *Breea arvensis*, *Calendula officinalis*, *Cannabis sativa*, *Carthamus tinctorius*, *Centaurea cyanus*, *Chenopodium album*, *Chrysanthellum americanum*, *Chrysanthemum indicum*, *Chrysopogon zizanioides*, *Cichorium intybus*, *Cirsium verutum*, *Cleome viscosa*, *Conyza bonariensis*, *C. canadensis*, *Corchorus capsularis*, *Croton sparsiflorus*, *Cucumis melo*, *Cyathocline purpurea*, *Datura metal*, *Dicoma tomentosa*, *Digitaria sanguinalis*, *Elephantopus scaber*, *Emilia sonchifolia*, *Enhydra fluctuans*, *Eragrostis nigra*, *Erigeron sublyratus*, *Eupatorium adenophorum*, *E. odoratum*, *E. riparium*, *Euphorbia hirta*, *E. neriifolia*, *E. prostrata*, *Ficus benghalensis*, *F. racemosa*, *F. religiosa*, *Fumaria indica*, *Gaillardia pulchella*, *Galinsoga parviflora*, *G. quadriradiata*, *Gerbera gossypina*, *Glossocardia bosvallea*, *Glossogyne bidens*, *Guizotia abyssinica*, *Hamelia patens*, *Helianthus annuus*, *Heteropogon contortus*, *Iberis amara*, *Impatiens balsamina*, *Inula nervosa*, *Ixeris polycephala*, *Ixora coccinea*, *Lactuca remotiflora*, *Lagascea mollis*, *Launaea asplenifolia*, *L. procumbens*, *Lepidium sativum*, *Linum usitatissimum*, *Ludwigia hyssopifolia*, *Malvastrum coromandelianum*, *Mangifera indica*, *Matricaria recutita*, *Melilotus indicus*, *Morus alba*, *Mukia maderaspatana*, *Murraya koenigii*, *Mussaenda frondosa*, *Nyctanthes arbor-tristis*, *Ocimum basilicum*, *Pannisetum pedicellatum*, *Parthenium hysterophorus*, *Pentanema indicum*, *P. vestitum*, *Phyllanthus amarus*, *P. emblica*, *P. simplex*, *Physalis peruviana*, *Pithecellobium dulce*, *Pluchea lanceolata*, *P. tomentosa*, *Plumbago zeylanica*, *Polygala longifolia*, *Pongamia pinnata*, *Portulaca grandiflora*, *P. oleracea*, *Primula umbellata*, *Pulicaria angustifolia*, *P. crispa*, *P. foliolosa*, *Ricinus communis*, *Rumex dentatus*, *Saussurea heteromalla*, *Senecio linifolius*, *Solanum nigrum*, *Soliva anthemifolia*, *Sonchus asper*, *S. brachyotus*, *S. oleraceus*, *Sida cordifolia*, *Silybum marianum*, *Solidago canadensis*, *Spergula arvensis*, *Stellaria media*, *Sterculia urens*, *Synedrella vialis*, *Syzygium cumini*, *S. nervosum*, *Tagetes erecta*, *T. minuta*, *T. patula*, *Tamarindus indica*, *Terminalia bellirica*, *Thespesia populnea*, *Toona ciliata*, *Trianthema portulacastrum*, *Tridax procumbens*, *Triumfetta annua*, *Urena lobata*, *Vernonica cinerea*, *V. divergens*, *Viola cinerea*, *Wedelia chinensis*, *W. trilobata*, *Youngia japonica*, *Zinnia elegans* and *Ziziphus jujuba* (Table 1).

CONCLUSION

Occurrence of 221 species indicates good diversity of angiosperms while *Ageratum conyzoides*, *Argemone mexicana*, *Cynodon dactylon*, *Cyperus rotundus*, *Echinops echinatus*, *Heliotropium indicum*, *Ipomoea carnea*,

Malvastrum coromandelianum, *Parthenium hysterophorus*, *Lantana camara*, *Scripus articulatus*, *Sagittaria guayanensis*, *Solanum nigrum*, *Sida cordifolia*, *Spilanthes ciliata*, *Typha angustifolia*, *Xanthium strumarium*, *Ricinus communis* are observed highly destructive weed threat for natural vegetation.

Some plants giving nutritional demanding as food like *Aegle marmelos*, *Artocarpus heterophyllus*, *Chenopodium album*, *Brassica campestris*, *Mangifera indica*, *Morus alba*, *Syzygium cumini*, *Tamarindus indica* and *Ziziphus jujuba* as well as medicinally importance such as *Adhatoda vasica*, *Abutilon indicum*, *Cannabis sativa*, *Eclipta prostrata*, *Nyctanthes arbor-tristis*, *Solanum nigrum* etc.

The macrophytes have ability to purification of contamination water through uptake of pollutants and heavy metal which maintain B.O.D of water for survival of flora and fauna resulting as balanced the adapted ecosystem.

So this ecosystem plays crucial role of environment to maintain temperature and water quality.

CONFLICT OF INTEREST

No conflict of interest.

AUTHOR CONTRIBUTION

Praveen Kumar Singh completed the lake and flora survey and design the research article, Ravikant Singh read and edit the paper whereas Ramesh Chandra Vishwakarma read and suggest corrections. All authors read and verify the contents.

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