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PRELIMINARY SURVEY ON FLOWERING PLANTS OF BHADRA RESERVOIR PROJECT AREA, KARNATAKA

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Abstract:

Bhadra reservoir project encompasses a diversity of flora and fauna and the present study pertains to flowering plants recorded in and around Bhadra reservoir Project area, Karnataka during 2009-2010. The study was based on extensive and intensive field surveys. The scientific names of the reported plants with their family names have been documented in the present investigation. During this study, a total of 95 flowering plants belonging to 78 genera and 44 families were reported. A preliminary inventory of the recorded flowering plants is provided in this article.

Keywords: Bhadra Project Area & Flowering Plants

Introduction:

The flowering plants (angiosperms), also known as Angiospermae (Lindley, 1830; Cantino et al., 2007) or Magnoliophyta, are the most diverse group of land plants, with about 350,000 species (Zeng et al 2014). Like gymnosperms, angiosperms are seed-producing plants; they are distinguished from gymnosperms by characteristics including flowers, endosperm within the seeds, and the production of fruits that contain the seeds. Etymologically, angiosperm means a plant that produces seeds within an enclosure, in other words, a fruiting plant. The term "angiosperm" comes from the Greek composite word (angeion-, "case" or "casing", and sperma, "seed") meaning "enclosed seeds", after the enclosed condition of the seeds (http://en.wikipedia.org).

The ancestors of flowering plants diverged from gymnosperms in the Triassic Period, during the range 245 to 202 million years ago (mya), and the first flowering plants are known from 160 mya. They diversified extensively during the Lower Cretaceous, became widespread by 120 mya, and replaced conifers as the dominant trees during 100 to 60 mya . Flowering plants also provide economic resources in the form of wood, paper, fiber (cotton, flax, and hemp, among others), medicines (digitalis, camphor), decorative and landscaping plants, and many other uses (http://en.wikipedia.org).

No floristic work was hitherto undertaken for the present study area. Therefore, the present investigation on flowering plants of the Bhadra Project area was undertaken with intensive and extensive floristic exploration studies on the vegetation of the area from 2009 to 2010.

Materials and Methods:

Study Area:

The study area is located at Malnad region of Karnataka. The Bhadra Project area *is* located at latitude 13°42' N and longitude 75°38'20" E.

Collection of Data:

The present study was conducted to known flowering plants occurring in Bhadra project area of Karnataka .The study was based on extensive and intensive field surveys undertaken in and around Bhadra Project area *i.e*. Singanamane, Kudreshed, Shanti nagara, Shankaraghatta, Malenahalli, Nellisera and Tavaraghatta during the

period September 2009-August 2010. Surveys were undertaken in the remote agricultural and non-forest areas.

The study on flowering plants of the Bhadra reservoir project area, Karnataka is an outcome of floristic studies comprising field explorations and identification and literature study carried out during 2009-2010. The plant specimens in the field have been studied and identified by using local and regional floras (Hooker 1872-1897; Gamble 1915-1936; Cowen, 1957; Rao and Razi 1981; Sharma *et al*. 1984, 1988; Saldanha 1984, 1996; Keshava Murthy and Yoganarasimhan 1990; Ramasamy Manikandan and Pakishirajan Lakshminarasimhan. 2012), besides other recent monographs.

Results and Discussion:

Table 1 shows the checklist of flowering plants having 95 plant species belonging to 78 genera and 44 families. The dominant family of the present study is Fabaceae with 13 species. The most species rich families in descending order are Fabaceae (13 species), Asteraceae (8 species) and Apocynaceae (6 species) (Figure 1).

Ramasamy Manikandan and Pakishirajan Lakshminarasimhan (2012) have reported 1337 species of flowering Plants in Rajiv Gandhi (Nagarahole) National Park, Karnataka and 34 varieties of Angiosperms distributed over 754 genera and 152 families. In the present study we have recorded 95 plant species belonging to 78 genera and 44 families.

Conclusion:

It is believed that the flowering plant resources of the Bhadra reservoir Project area provides a comprehensive and checklist of the floristic diversity which will serve as a ready reference for scientists and policy makers. The flowering plants can contribute to the income of the rural peoples and can generate employment as well as income especially for poor peoples in the rural areas. These plants provide food, shelter as well as clothing and contribute to socio-economic upliftment of the people.

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Table 1: Flowering plants of Bhadra reservoir project area, Karnataka

Sl.No	Scientific Name	Family
1.	*Aegele marmelos*	Rutaceae
2.	*Areca catechu*	Arecaceae
3.	*Annona squamosa*	Annonaceae
4.	*Annona reticulata*	Annonaceae
5.	*Artocarpus heterophyllus*	Moraceae
6.	*Azadirachta indica*	Meliaceae
7.	*Argemone mexicana*	Papaveraceae
8.	*Anacardium occidentale*	Anacardiaceae
9.	*Acacia auriculiformis*	Fabaceae
10.	*Abelmoschus esculentus*	Malvaceae
11.	*Aloe vera*	Xanthorrhoeaceae
12.	*Agave sp.*	Asparagaceae
13.	*Allium cepa*	Amaryllidaceae
14.	*Achyranthes aspera*	Amaranthaceae
15.	*Alternanthera sessilis*	Amaranthaceae
16.	*Amaranthus spinosus*	Amaranthaceae
17.	*Amaranthus sp.*	Amaranthaceae
18.	*Allamanda angustifolia*	Apocynaceae
19.	*Butea monosperma*	Fabaceae
20.	*Bougainvillea glabra*	Nyctaginaceae
21.	*Bougainvillea spectabilis*	Nyctaginaceae
22.	*Bauhinia acuminate*	Fabaceae
23.	*Bauhinia sp.*	Fabaceae
24.	*Basella alba*	Basellaceae
25.	*Barleria strigosa*	Acanthaceae
26.	*Barleria cristata*	Acanthaceae
27.	*Carica papaya*	Caricaceae
28.	*Cascabela thevetia*	Apocynaceae
29.	*Cassia tora*	Fabaceae
30.	*Cassia fistula*	Fabaceae
31.	*Catharanthus roseus*	Apocynaceae
32.	*Cocos nucifera*	Arecaceae
33.	*Crossandra infundibuliformis*	Acanthaceae
34.	*Chrysanthemum sp.*	Asteraceae
35.	*Clitoria ternatea*	Fabaceae
36.	*Commelina sp.*	Commelinaceae

37.	*Cosmos sulphureus*	Asteraceae
38.	*Cosmos sp.*	Asteraceae
39.	*Cyperus iria*	Cyperaceae
40.	*Cyperus difformis*	Cyperaceae
41.	*Cyperus rotundus*	Cyperaceae
42.	*Delonix regia*	Fabaceae
43.	*Datura metel*	Solanaceae
44.	*Dieffenbachia sp.*	Araceae
45.	*Ficus benghalensis*	Moraceae
46.	*Ficus religiosa*	Moraceae
47.	*Hibiscus rosa-sinensis*	Malvaceae
48.	*Hibiscus arnottianus*	Malvaceae
49.	*Helianthus sp.*	Asteraceae
50.	*Helianthus tuberosus*	Asteraceae
51.	*Helianthus giganteus*	Asteraceae
52.	*Helianthus annuus*	Asteraceae
53.	*Holarrhena antidysenterica*	Apocynaceae
54.	*Ipomea aquatica*	Convolvulaceae
55.	*Ipomea carnea*	Convolvulaceae
56.	*Jasminum officinale*	Oleaceae
57.	*Jasminum grandiflorum*	Oleaceae
58.	*Jasminum sambac*	Oleaceae
59.	*Jacaranda mimosaefolia*	Bignoniaceae
60.	*Lagerstromia sp.*	Lythraceae
61.	*Lawsonia inermis*	Lythraceae
62.	*Lantana camera*	Verbenaceae
63.	*Leucas aspera*	Lamiaceae
64.	*Magnolia champaca*	Magnoliaceae
65.	*Monochoria vaginalis*	Pontederiaceae
66.	*Morionga oleifera*	Moringaceae
67.	*Millettia pinnata*	Fabaceae
68.	*Mangifera indica*	Anacardiaceae
69.	*Mimosa pudica*	Fabaceae
70.	*Musa sp.*	Musaceae
71.	*Nymphaea sp.*	Nymphaeaceae
72.	*Nerium oleander*	Apocynaceae
73.	*Nyctanthes arbor tristis*	Oleaceae
74.	*Oxalis corniculata*	Oxalidaceae
75.	*Ocimum basilicum*	Lamiaceae
76.	*Polyalthia longifolia*	Annonaceae
77.	*Punica granatum*	Lythraceae
78.	*Phoenix silvestris*	Arecaceae
79.	*Phanera variegata*	Fabaceae
80.	*Piper betle*	Piperaceae
81.	*Phyllanthus emblica*	Phyllanthaceae
82.	*Polygonum glabrum*	Polygonaceae
83.	*Rosa sp.*	Rosaceae

84.	*Ricinus communis*	Euphorbiaceae
85.	*Syzygium cumini*	Myrtaceae
86.	*Senna auriculata*	Fabaceae
87.	*Sida acuta*	Malvaceae
88.	*Solanum nigrum*	Solanaceae
89.	*Tamarindus indica*	Fabaceae
90.	*Tabernaemontana divaricata*	Apocynaceae
91.	*Tagetes erecta*	Asteraceae
92.	*Tectona grandis*	Lamiaceae
93.	*Terminalia arjuna*	Combretaceae
94.	*Tridax procumbens*	Compositae
95.	*Zea mays*	Poaceae

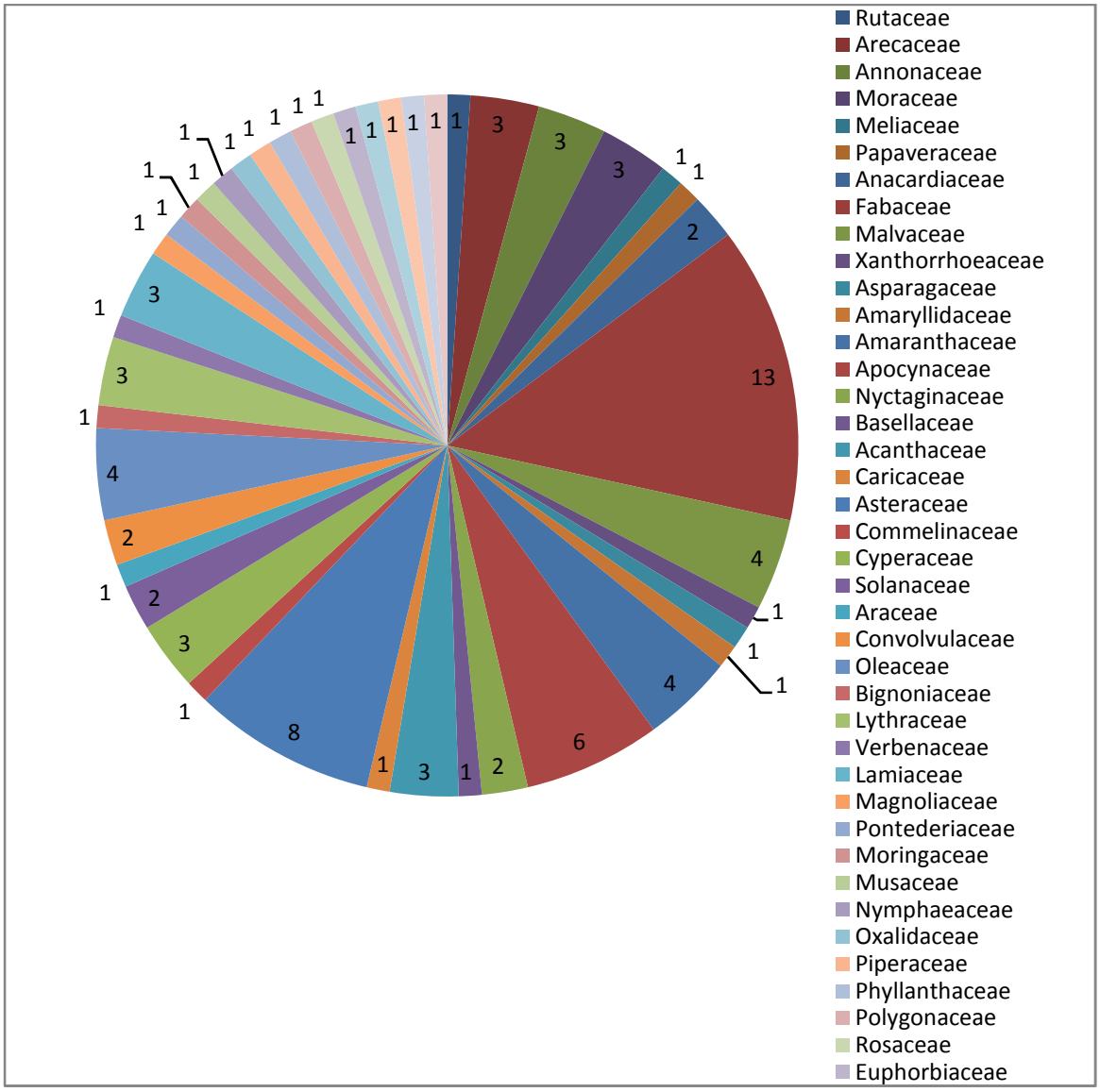

Figure 1: Number of Flowering plants in each family

Figure 2: Lantana camara plant having flowers

Figure 3: Musa plants and Rosa species with flowers

Figure 4: Hibiscus species having flower bud.

Figure 5: Cosmos plant with yellow flowers