PROJECT REPORT

INVENTORISATION OF EXISTING FLORAL AND FAUNAL ELEMENTS IN THE PROPOSED BIODIVERSITY PARK AREA AT BARGI HILLS, JABALPUR (M.P.)

Submitted to

M.P. State Biodiversity Board Bhopal

STATE FOREST RESEARCH INSTITUTE

POLIPATHER, JABALPUR

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PROJECT DETAILS

Project Title

INVENTORISATION OF EXISTING FLORAL AND FAUNAL ELEMENTS IN THE PROPOSED BIODIVERSITY PARK AREA AT BARGI HILLS, JABALPUR (M.P.)

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PROJECT COST Rs. 0.50 lakh

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SPONSORING AGENCY M.P State Biodiversity Board, Bhopal (M.P)

IMPLEMENTING AGENCY State Forest research Institute Polipathe, Jabalpur.(M.P)

1. INTRODUCTION

It is an accepted fact that the knowledge of the floristic composition of any place is an essential prerequisite for the study of various ecosystems. This necessitates a worker in the taxonomic field to assess and evaluate from time to time the floristic composition of the region. The summer school in Botany, held at Kodaikanal in 1962, also made a vital recommendation in this regard. It emphasized that the flora of all big cities and their environs be worked out. This has further been emphasized by Hedberg (1971) who considered that the greatest drawback in the study of ecology in the tropics is its inadequate taxonomic study. Present floras have all been published either in the last quarter of the nineteenth century or in the first quarter of the twentieth century. Ever since, frequent and large-scale human migration, import of food grain, biotic interference, etc. have brought great changes in the floristic composition especially of the urban settlement.

The concept of bio-parks initiated by State Biodiversity Board in collaboration with various institutions has a novel aim of providing a platform for scientific community to create public awareness about rich biodiversity. The park will serve multiple purposes ranging from education, and research to eco-tourism *etc*.

The concept of bio-park is the combination of zoological park, Botanical Park and biodiversity interpretation centre dealing with importance of local and regional biodiversity. As proposed, the bio-park will be established and developed in the natural surroundings. Therefore, it is very much essential to have an insight into the existing flora and fauna so that it can be further developed, taking natural diversity into consideration. Diverse sites like a wetland or hilltop are conserved so that natural diversity is maintained and attracts tourists as well. The present work was carried out to prepare an inventory of existing flora and fauna with the help of past records on the biodiversity, available in various working plans.

Madhya Pradesh State Biodiversity Board, in collaboration with the state Forest Department, universities, research institutes and revenue administration, is trying to facilitate setting up of Biodiversity Parks in three eco regions of the state, namely Chambal, Satpura and Bhopal. In the above context, Shri B. M. S. Rathore, Member Secretary, State Biodiversity Board along with Dr. V. G. Gogate, Project In - charge, Yamuna Biodiversity Park, Delhi had visited these areas from 12 to 15 July, 2005. The areas visited include Audhpur protected forest in Gwalior, Bargi Hills and Dumna forest areas in Jabalpur, Bhartadev forest area in Chhindwara, Kolar and Kerwa forest areas in Bhopal. Madhya Pradesh State Biodiversity Board, Bhopal, vide its letter No. 975/BDB/2005, dated 20/7/2005, has sanctioned the project to fulfill the single objective mentioned below.

2. OBJECTIVE

Inventorisation of existing floral and faunal diversity.

3. STUDY SITE

Jabalpur is an ancient city of central India situated in the heart of the country on shores of holy river Narmada and lies on the plains of its tributaries *viz*. Hiran and Gour. Narmada River valley has the famous Marble Rocks, the only of its kind in the world, where the whole river flows for nearly 2 kms. through varied colored and tinted marble rocks with a deep water fall in between. Jabalpur is linked by National highway No.7 interconnecting North to South (Varanasi to Kanyakumari), NH No. 12 from Jabalpur to Jaipur and NH 12 A from Jabalpur to Raipur. It also has a good network of state highways,

which connect it with most of the districts of the state. Their cardinal points are 23^0 10'N latitude and 79^0 57' E longitudes with altitude of 393 meters above mean sea level. The topography of Jabalpur is unique. The city is surrounded by low, rocky, and barren hillocks. Bargi hills are situated in the South Eastern part of the Jabalpur city. Much of the area is well protected with rich biodiversity and scenic beauty and the remains of the Madanmahal Fort highlight its historical importance. Nearly 276 ha. area has been demarcated for establishment of the biopark.

The forest of Jabalpur range according to Champion's broad classification is Dry Tropical Forest. The forest is divided into two classes i.e. Northern Tropical Dry Deciduous Forest (Group 4B) and Southern Tropical Dry Deciduous Forest (Group - 4A). Floristically, Jabalpur district is quite rich. During the period from the year 1982 to 1986, Shrivastava and Oommachan conducted floristic survey and identified 933 plant species from Jabalpur, Barela, Pariyat, Kundam, Dumna and Bargi, which are floristically important areas of Jabalpur district.

4. CLIMATE

According to the meteorological records of the Jabalpur observatory, the climate is governed by the monsoon pattern and the year divided into three major seasons namely; the hot season from March to the middle of June, monsoon from mid June to the end of September and the winter season from November to the middle of March. October is the transitional month between the monsoon and the winter season. The average temperature prevalent in Jabalpur is 24 -25^0C. December and January are the coldest months where temperature on individual days may drop to near freezing points. Temperature increases steadily from March to May and are the hottest months, with peak reaching nearly 45-47^o C.

The amount of precipitation is governed by the monsoon pattern. The average annual rainfall over the district is 1270 mm. The variation of rainfall from year to year is not very large. Jabalpur receives comparatively higher rainfall than its surrounding districts

5. Geology and Soil

Jabalpur has more or less complete sequence of geological formations like Archaeans, Vindhyans, Gondwana, Lameta, Deccan trap and Intertrappeans. The region comprising of Bargi hills constitutes Deccan trap characterized by hilltops and terrace like formations. The area has lameta beds occurring in patches along with limestone, sand stone and clays. A large area in this region is covered by archaean formations which consist of conglomerate, phyllites, mica schist, marble and ferruginous rocks. Soil of the study area is gravel to sandy loam in texture and usually blackish brown in colour.

6. METHODOLOGY

The work was undertaken on the following lines for inventorization of the floral and faunal diversity of the area. The survey work has been done through Line Transect Method.During the fieldwork, observations were made on habit, habitat, soil, details of association and other peculiarities. An attempt has also been made in every case to identify the plants from fresh specimens as far as possible in the field. The lists of animals and birds have been prepared on the basis of direct sightings during the field visits and from the secondary information.

The study area was surveyed in the month of January. Three entry points were marked namely Bargi hills opposite MPEB soil laboratory, Thakur tal and Shailparn udyan. Line transects were laid from all three entry points to record the species five meters along the line on both sides. All new species encountered in the transects were recorded. Plant specimens were collected to facilitate identification and for future reference. Flora of Madhya Pradesh and Jabalpur were consulted for identification of plants.

7. OBSERVATIONS

The area has rocky terrain throughout the bargi hills upto Madanmahal.There is a clear demarcation of biotic interference and protection along the Madanmahal hills. The area nearing habitation shows signs of heavy biotic pressure. As a result, the hill is devoid of tree vegetation. The areas protected from pressure are Thakur tal and Bargi hills bordering the MPEB campus towards the Nayagaon, Purwa and Sangram Sagar and therefore has comparatively dense vegetation which can be clearly divided into tree, shrub and herbaceous layers.

The area exhibits mixed vegetation without any clear dominance except *Wrightia tinctoria, Diospyros melanoxylon, Chloroxylon sweitenia and Aegle marmelos*. The forests mainly comprise of miscellaneous species. Dominant tree species were *Lagerstoemia parviflora, Butea monosperma, Diospyros melanoxylon, Chloroxylon sweitenia, Cassia fistula, Buchnania lanzan, Terminalia alata, Gardenia laurifolius, Woodfordia fruticosa, Syzygium cumini* etc. The shrub layer comprised of *Helicteres isora, Grewia hirsuta, Flacourtia indica, Wrightia tinctoria, Ziziphus nummularia, Vitex negundo, Lantana camara, Holarrhena antidysentrica, Indigofera cassioides, Flemingia strobilifera, etc.* as its prominent constituents. Most of the herbaceous layers had dried out and only few species were in identifiable condition. There were few woody and herbaceous climber species, which were very common throughout the site. These were *Cocculus hirsutus, Cissempelos pareira, Gymnema sylvestre, Ventilago denticulata, Abrus precatorius and Hemidesmus indicus.*

The area has rich density and diversity of some species of medicinal importance like *Gymnema sylvestre, Butea superba, Mucuna pruriens, Andrographis paniculata, Barleria cristata, Aegle marmelos, Feronia limonia, Celastrus paniculatus.* These were encountered throughout the site with almost every second tree supporting the climbers.

The area surrounding the Thakur tal has rich diversity of aquatic plants. **A big patch (50m^2) of threatened insectivorous species *Drosera burmannii* was located on the western boundary of the pond along the stream as well as *Drosera burmannii* along the catchment stream,** which charges the reservoir were recorded from the area. It is good indicator of the kind of vegetation the area can support. It needs protection from trampling by cattle and human beings. The area supports rich herbaceous vegetation, including grasses and sedges.

With the onset of summer, a number of flowering trees especially *Cassia fistula,* W*rightia tinctoria, Hollarrhena antidysentrica, Bombax ceiba, Nyctanthes arbor-tristis and Sterculia urens* can be seen as distinct trees with aesthetic value. The area nearing MPEB and Thakurtal has old plantations of Bamboo, excepting a small patch towards Madanmahal forest; rest of the area is not in good shape at present.

The area of Bargi hills towards Nayagaon has all the layers of vegetaton e.g. Tree, Climber, Shurb, Herb, whereas the area of proposed park linking Madanmahal Fort and Badanpur has scanty vegetation of shurbs and herbs. The tree vegetation is completely absent in this area. Therefore, various tree species can be planted in this area and the preferred species would be *Ficus sp., Madhuca*

longifolia, Terminalia sp., Cassia fistula, Syzygium cumini, Ailanthus excelsa, Aegle marmelos, Phyllanthus emblica, etc.

The western part of Thakur tal including Badanpur has three major residential colonies there fore, there is a lot of biotic pressure in this areas which includes manmade fire, lopping and grazing, etc. The Madanmahal fort area does not have any plantation or tree cover. Likewise, some natural tree species around the small park near Devtal, called Shailparn udyan have been proctectes but outside it, biotic pressure again has taken its toll. Thus, both the hills exhibit stark contrast in vegetation cover.

The site revealed 210 genera and 281 species (**Table - 1).** The total representation at the site was of 86 families **(Table - 2).** The dominant family was Poaceae with 54 species, followed by Papilionaceae and Cyperaceae with 21 and 17 species respectively (**Table - 3)**. The site recorded 13 aquatic species **(Table - 4),** 10 rocky species **(Table - 5)**, 118 species of medicinal importance and 39 species having seasonal importance in terms of scenic beauty and use by the wild animals. The important species of medicinal value that were present in proposed park area are *Abutilon indicum, Asparagus racemosus, Aegle marmelos, Cissampelos pareira, Curculigo orchioides, Datura stramonium, Evolvulus alsinioides, Gloriosa superba, Gymnema sylvestre, Helicteres isora, Hemidesmus indicus, Phyllanthus emblica, Solanum nigrum, Spilanthus calva, Urginea indica, Vitex negundo and Wrightia tinctoria.*

Thirtynine species have been identified which are important seasonally important **(Table - 6)** in terms of their flowering, fruting, and the use by different wild animals including bird species. Species like *Drosera burmanni*, *Gloriosa superba, Mucuna pruriens* are ephemeral, which can be sighted during monsoon for 2-3 months.

Thirteen species of aquatic habitat were found around Thakur tal, the big reservoir in the area. The source of water is a small stream that collects hill water during rainy season and dries up in the month of December. It harbours *Drosera* an important rare insectivorous marshy plant. An important pteridophyte *Ophioglossum* was also recorded in this area. Of the 281 species recorded at the site, at least 120 species were known to have medicinal value. Poaceae is the dominant family in the area followed by Fabaceae and Cyperaceae in terms of species number **(Table - 7).** Some important plants growing in various habitat conditions are also classified (**Table - 8).** Seven rare plant species have been identified **(Table - 9)** in the proposed Biodiversity park area.

With the view of enhancing the scenic beauty and making the area more attractive and colourful, plantation of the species having attractive flowers can be taken up **(Table - 10).** Labeling such species, which are found naturally, needs to be done. Few wild animals and reptiles were also identified on the basis of evidences, such as hare, porcupine, rock lizard, *etc,* while other animals and birds were listed on the basis of secondary information **(Table - 12&13).**

8. SUGGESTIONS

- A nature trail can be developed around Thakur tal and Bargi hill adjoining Nayagaon. Signagees highlighting no disturbance zone can be put at the vantage points.

- The major tree species along with local names and importance can be highlighted at regular intervals by putting signages.

- At the entry point a signboard can be put up highlighting the details about the species found in that area.

- Since the area around Madanmahal fort is devoid of tree species that area needs to be covered with plantations of represenpative species of the areas involving local people.

- Plants of those species representing this area can be made available in the nursery maintained by the park from where people can purchase the plants for plantation.

- Succession processes and species involved in the sucession can be highlighted by painting the exposed rocks in the park area

- The fruit bearing trees growing in the park area needs to be well protected and seasonally, the fruits can be sold at the entry point by the management.

- As indicated in the preliminary report by the experts the two major religious shrines can be developed as a Sacred grooves with public /community participation.

- A pictorial guide book can be prepared highlighting important plants, rare plants, their localities and importance in terms of habitat conservation.

- Bird watching points can be identified so that interested visitors can make use of the area.

Table 1. LIST OF THE PLANTS RECORDED FROM BARGI HILLS AREA

Botanical Name	Local Name	Habit	Family
Abrus precatorius L.	Gumchi	Climber	Papilionaceae
Abutilon indicum (L.) Sweet	Kanghi	Herb	Malvaceae
Acacia auriculiformis A.Cunn.ex Benth.	Wattle tree	Tree	Mimosaceae
Acacia catechu (L.f) Willd.	Khair	Tree	Mimosaceae
Acacia nilotica (L.) Wild. ex.Del.	Babul	Tree	Mimosaceae
Acalypha indica L.	Kuppi	Herb	Euphorbiaceae
Achyranthes aspera L.	Chirchira	Herb	Amaranthaceae
Adina cordifolia Salisb.	Haldu	Tree	Rubiaceae
Aeschynomene indica Linn.	Laugauni	Herb	Papilionaceae
Aegle marmelos (L.) Correa	Bel	Tree	Rutaceae
Aerva lanata (L.) Juss.ex Schult.	Chaya	Herb	Amaranthaceae
Ageratum conyzoides		Herb	Asteraceae
Ailanthus excelsa Roxb.	Maharukh	Tree	Simaroubaceae
Alangium salvifolium (L.f) Wang.	Akol	Tree	Alangiaceae
Albizia lebbeck (L.) Benth.	Kala Siris	Tree	Mimosaceae
Albizia procera (Roxb.) Benth.	Safed Siris	Tree	Mimosaceae
Alloteropsis cimicina (L.) Stapf.	-	Grass	Poaceae
Alternanthera sessilis (L.) R.Br. ex DC.		Herb	Amaranthaceae
Alternanthera pungens (L.)		Herb	Amaranthaceae
Alysicarpus pubescens L.	-	Herb	Papilionaceae
Amarnathus spinosus L.	Kataili	Herb	Amaranthaceae
Ammania baccifera L.	-	Herb	Lythraceae
Amorphophallus campanulatus (Roxb.) Bl.	Suran	Herb	Araceae
Andropogon intermedius Br.	Ghonsi	Grass	Poaceae
Anethum graveolens L.	Soya	Herb	Apiaceae
Anisochilus carnosus (L.f.) Wall *ex* Benth.	-	Herb	Lamiaceae
Annona squamosa L.	Seetaphal	Small Tree	Annonaceae
Anogeissus latifolius (DC) Wallich. *ex* Guill.	Dahwa	Tree	Combretaceae
Apluda mutica L.	Phular	Grass	Poaceae
Argemone maxicana L.	Peeli kateli	Herb	Papaveraceae
Aristolochia indica L.	Ishwarmool	Twinner	Aristolochiaceae
Arthraxon ciliaris P. Beauv.	-	Grass	Poaceae
Arundinella pumila (Hochst.*ex* A. Rich.)	Katang- bans	Grass	Poaceae
Arundinella setosa Trin.	Baasin	Grass	Poaceae
Asclepias curassavica L.	-	Herb	Asclepiadaceae
Asparagus racemosus Willd.	Satavar	Herb	Liliaceae
Averrhoa carambola L.	-	Herb	Averrhoaceae
Azadirachta indica A.Juss.	Neem	Tree	Meliaceae
Bambusa arundinacea (Retz.) Willd.	Kanta Bans	Grass	Poaceae
Bauhinia racemosa Lamk.	Ashta	Tree	Caesalpiniaceae
Bauhinia variegata L.	Kachnar	Tree	Caesalpiniaceae
Bergia ammannioides Roxb.	-		Elatinaceae
Biophytum sensitivum (L.) DC.	-	Herb	Oxalidaceae
Blepharis madraspatensis (L.) Heyne ex Roth	-	Herb	Acanthaceae
Boerhavia diffusa L.	Punarnava	Herb	Nyctaginaceae

Bombax ceiba L.	Semal	Tree	Bombacaceae
Boswellia serrata Roxb. *ex* Colebr.	Salai	Tree	Burseraceae
Bothrichloa intermedia (R.Br.) A. Camus	Bhains kandi	Grass	Poaceae
Bothrichloa pertusa (L.) A.Camus	Lahan	Grass	Poaceae
Brachiaria igant (L.) Stapf.	Lahiya	Grass	Poaceae
Bulbostylis barbata (Roth.) Kunth.*ex* C.B. Cl.	-	Grass	Cyperaceae
Butea monosperma (Lamk.) Taub.	Palas	Tree	Papilionaceae
Butea superba Roxb.	Palas bel	Climber	Papilionaceae
Caesulia igantean Roxb.	-	Herb	Asteraceae
Caesulia axillaries Roxb.	-	Herb	Asteraceae
Calotropis igantean (L.) R.Br. ex W.T. Ait	Madar	Shrub	Asclepiadaceae
Calotropis procera Dyrand ex W.T Ait.	Aak	Shrub	Asclepiadaceae
Canscora diffusa (Vahl.) R.Br.	-	Herb	Gentianaceae
Careya arborea Roxb.	Kumbhi	Tree	Lecythidaceae
Carissa spinarum L.	Karonda	Shrub	Apocynaceae
Casearia graveolens Dalz.	Girchi	Tree	Samydaceae
Cassia fistula L.	Amaltas	Tree	Ceasalpiniaceae
Cassia occidentalis L.	Kasaundhi	Shrub	Ceasalpiniaceae
Cassia pumila L.	Sarmal	Herb	Ceasalpiniaceae
Cassia tora L.	Chakoda	Herb	Ceasalpiniaceae
Celastrus paniculatus Willd.	Malkanghni	Climber	Celastraceae
Cenchrus ciliaris L.	Bhassaronda	Grass	Poaceae
Cenchrus setigerus Vahl.	-	Grass	Poaceae
Centella asiatica (L.) Urban	Mandukparni	Herb	Apiaceae
Ceropegia hirsutus Wt. & Arn.	-	Twinner	Menispermaceae
Chenopodium album		Shrub	Chenopodiaceae
Chionachne koenigii (Spreng.) Thw.	Kadpi	Grass	Poaceae
Chloroxylon swietenia DC.	Bhirra	Tree	Rutaceae
Chrysopogon fulvus (Spreng.) Chiov.	Chichula	Grass	Poaceae
Cissampelos pareira L.	Bichhukand	Climber	Menispermaceae
Cleome ylindr L.	Hulhul	Herb	Capparidaceae
Cleome gynandra L.	Hurhur	Herb	Capparidaceae
Cocculus hirsutus (L.) Diels.	Jaljamni	Strangler	Menispermaceae
Coix lacryma-jobi L.	Garu	Grass	Poaceae
Commelina benghalensis L.		Herb	Commelinaceae
Commelina nudiflora Linn.	Kanshura	Herb	Commelinaceae
Convolvulus arvensis Linn.	Beri	Herb	Convolvulaceae
Corchorus aestuans L.	-	Herb	Tiliaceae
Corchorus capsularis Linn.	Narcha	Herb	Tiliaceae
Corchorus olitorius Linn.	Desipat	Herb	Tiliaceae
Cordia dichotoma G.Forster		Tree	Ehretiaceae
Crotalaria alata Buch-Ham	Vanmethi	Herb.	Papialionaceae
Curcuma amada Roxb.	Amahaldi	Herb	Zingiberaceae
Cyanotis ylindrical (Heyne *ex* Roth.) Schult.& J.H.Schult.		Herb	Commelinaceae
Cyathocline calys champ	-	Herb	Annonaceae
Cynadon dactylon (L.) Pers.	Doob	Grass	Poaceae
Cyperus distans	-	Grass	Cyperaceae

Cyperus esculentus L.	Cicoda	Grass	Cyperaceae
Cyperus flavidus Retz.	-	Grass	Cyperaceae
Cyperus iria L.	-	Grass	Cyperaceae
Cyperus kyllinga Endl.	Gondla	Grass	Cyperaceae
Cyperus niveus Retz.	-	Grass	Cyperaceae
Cyperus pilosus Vahl.	-	Grass	Cyperaceae
Cyperus pumilus L.	-	Grass	Cyperaceae
Cyperus pygmaeus Rotth.	-	Grass	Cyperaceae
Cyperus rotundus Linn.	Motha	Grass	Cyperaceae
Dactyloctenium aegypticum (L.) Willd.	-	Grass	Poaceae
Datura metel L.	Kala dhatura	Shrub	Solanaceae
Datura stramonium L.	Dhatura	Shrub	Solanaceae
Dendrocalamus strictus (Roxb.) Nees.	Bans	Grass	Poaceae
Dendrophthoe falcate (L.f.) Etting.		Parasite	Loranthaceae
Desmodium triflorum (L.) DC.	Teenpatti	Herb	Papilionaceae
Desmodium velutinum (Willd.) DC.	-	Herb	Papilionaceae
Dicanthium annulatum (Forssk.) Stapf.	Marbell	Grass	Poaceae
Dichanthium aristatum (Poir.) E. Hubb.	-	Grass	Poaceae
Didymocarpus pygmaeus	-	Herb	Gentiaceae
*Digitaria ylindr (*A.Rich.) Stapf.	-	Grass	Poaceae
Digitaria adcendans (H.B.& La.) Honr.	-	Grass	Poaceae
Digitaria setigera Roth. *ex* Roem. & Schult.	-	Grass	Poaceae
Digitaria stricta Roth. *ex* Roem. & Schult.	-	Grass	Poaceae
Digitaria ternate (A.Rich.) Stapf.	-	Grass	Poaceae
Dioscorea bulbifera L.	Airpotato	Climber	Dioscoreaceae
Diospyros ylindr Roxb.	Bistendu	Tree	Ebenaceae
Diplocyclos palmatus (L.) Jeffery		Climber	Cucurbitaceae
Drosera burmannii Vahl.	Bhuiphul	Herb	Droseraceae
Drymaria cordata (L.) Willd. *ex* Roem. & Schult.		Herb	Caryophyllaceae
Echinochloa colonum (L.) Link.		Grass	Poaceae
Echinops echinatus Roxb.	utakanta	Herb	Asteraceae
Eclipta prostrata (L.) L.	Bhringraj	Herb	Asteraceae
Ehretia laevis Roxb.		Tree	Ehretiaceae
Elephantopus scaber L.	Ghobhi	Herb	Asteraceae
Eleusine indica (L.) Gaertn.	-	Grass	Poaceae
Eragrostiella bifaria (Vahl.) Bor.	-	Grass	Poaceae
Eragrostiella brachyphylla (Stapf.) Bor	-	Grass	Poaceae
Eragrostis gangetica (Roxb.) Steud.	-	Grass	Poaceae
Eragrostis pilosa (L.) Roem. & Schult.	-	Grass	Poaceae
Eragrostis tenella (L.) P. Beauv. ex Roem. & Schult.	Bhurbhusi	Grass	Poaceae
Eragrostis tenuifolia Steud.	-	Grass	Poaceae
Eragrostis unioloides (Retz.) Nees.	-	Grass	Poaceae
Eriocaulon cinereum R.Br.	-	Grass	Eriocaulaceae
Eucalyptus sp.	-	Hybrid	Myrtaceae
Euphorbia hirta L.	Dudhi	Herb	Euphorbiaceae
Euphorbia neriifolia			Euphorbiaceae
Evolvulus alsinioides L.	Shankhpushpi	Creeper	Convolvulaceae

Feronia limonia (L.) Swingle	Kaitha	Tree	Rutaceae
Ficus benghalensis L.	Bad	Tree	Moraceae
Ficus glomerata Roxb.	Gular	Tree	Moraceae
Ficus religiosa L.	Peepal	Tree	Moraceae
Ficus virens Ait.	Pakar	Tree	Moraceae
Fimbristylis ylindr (Vahl.) Kunth.	-	Grass	Cyperaceae
Fimbristylis dichotoma (L.) Vahl.	-	Grass	Cyperaceae
Flacourtia indica (N.Burm.) Merr.	Kakai	Shrub	Flacourtiaceae
Gardenia latifolia W. Ait.	Phetra	Tree	Rubiaceae
Garuga pinnata Roxb.	Kekad	Tree	Burseraceae
Gloriosa superba L.	Kalihari	Climber	Liliaceae
Glossocardia bosvellea (L.f.) DC.	-	Herb	Gesneriaceae
Gmelina arborea Roxb.	Khamer	Tree	Verbenaceae
Gnaphalium indicum Linn.	-	Herb	Asteraceae
Gomphostemma crinitum Wall.	-	Herb	Lamiaceae
Grewia tilifolia Vahl.	Dhaman	Tree	Tiliaceae
Gymnema sylvestre (Retz.) R.Br.*ex* Schultes	Gudmar	Twinner	Asclepiadaceae
Hackelochloa granularis (L.) Kuntze	-	Grass	Poaceae
Helicteres isora L.	Ainthi	Shrub	Sterculiaceae
Heliotropium indicum L.	-	Herb	Boraginaceae
Heliotropium strigosum	-	Herb	Boraginaceae
Hemidesmus indicus (L.) W.T. Ait.	Antamool	Climber	Asclepiadaceae
Heteropogon contortus (L.) Roem. & Schult.	Lampa/kush	Grass	Poaceae
Hiptage benghalensis (L.) Kurz.	-	Herb	Malpighiaceae
Holarrhena antidysentrica (L.) Wall.	Dudhi	Tree	Apocynaceae
Holoptelea integrifolia (Roxb.) Planch.	Cilbil	Tree	Ulmaceae
Hydrilla verticillata Linn. F.	Jhangi	Herb	Hydrocharitaceae
Hygrophila quadrivalvis Ness.	-	Herb	Acanthaceae
Hyptis suaveolens (L.) Point.	-	Herb	Lamiaceae
Impatiens balsamina L.		Herb	Balsaminaceae
Imperata cylindrical (L.) P. Beauv.	-	Grass	Poaceae
Indigofera cassioides Rottl. *ex* DC.	Neel	Herb	Papilionaceae
Indigofera cordifolia Heyne	Nelabari	Herb	Papilionaceae
Indigofera linifolia Retz.	Torki	Herb	Papilionaceae
Ipomea aquatica Forsk	Kalmisag	Herb	Convolvulaceae
Iseilema laxum Hack.	-	Grass	Poaceae
Jatropha curcas L.	Ratanjot	Small tree	Euphorbiaceae
Kydia calycina Roxb.	Bharanga	Tree	Malvaceae
Lagerstoemia parviflora Roxb.	Lendia	Tree	Lythraceae
Lannea coromandelica (Houtt.) Merr.	Moyan	Tree	Anacardiaceae
Lantana camara L.	Makoi	Shrub	Verbenaceae
Lathyrus aphaca L.	-	Herb	Lamiaceae
Leea edgeworthii Santapau.	-	Climber	Leeaceae
Leonotis nepetaefolia (L.) R. Br.		Shrub	Lamiaceae
Leucas cephalotes (Koen. *ex* Roth.)	-	Herb	Lamiaceae
Limnophilla indica (L.) Druce.	-	Herb	Scrophulariaceae
Limnophilla sp.	-	Herb	Scrophulariaceae
Lindernia crustacea F. Muell	-	Herb	Scrophulariaceae

Ludwigia adcendens (L.) H.Hara.	-	Herb	Onagraceae
Madhuca indica J.F.Gmel.	Mahua	Tree	Sapotaceae
Mallotus philippensis (Lamk.) Muell. – Arg.	Sinduri	Small tree	Euphorbiaceae
Manilkara hexandra (Roxb.) Dubard.	Maulsari	Tree	Sapotaceae
Martynia annua L.	Bagnakha	Herb	Martyniaceae
Medicago denticulate Willd	-	Herb	Fabaceae
Memordica dioica	karela	Climber	Cucurbitaceae
Merremia tridentate Linn	Konda	Herb	Convolvulaceae
Milletia auriculata Baker *ex* Brandis.	Gurar	Liana	Papilionaceae
Moringa oleifera Lamk.	Sahjan	Tree	Moringaceae
Mucuna pruriens (L.) DC.	Kewanch	Climber	Papilionaceae
Mukia madraspatana (L.) Cogn.		Herb	Curcubitaceae
Naringi crenulata (Roxb.) Nicolson	Katbel	Tree	Rutaceae
Nyctanthes arbor tristis L.	Harshingar	Tree	Nyctanthaceae
Nymphaea nouchali Burm.	Kamal	Herb	Nymphaeaceae.
Ocimum canum Sism.	Jangli tulsi	Herb	Lamiaceae
Oldenlandia corymbosa L.	-	Herb	Rubiaceae
Operculina turpethum (L.) S. Manso.	Nishoth	Climber	Convolvulaceae
Oplismenus burmanni (Retz.) Beauv.	-	Grass	Poaceae
Ougenia oogeinensis (Roxb.) Hochr.	Tinsa	Tree	Papilionaceae
Oxalis corniculata L.		Herb	Oxalidaceae
Panicum psilopodium trin.		Grass	Poaceae
Panicum repens L.	-	Grass	Poaceae
Paspalidium flavidum (Retz.) A.Camus	Chichvi	Grass	Poaceae
Paspalum scrobiculatum L.	-	Grass	Poaceae
Pavonia zeylanica (L). Cav.	-	Herb	Malvaceae
Pennisetum orientale L. Rich.	Mavai	Grass	Poaceae
Pergularia daemia (Forsk.) Chiov.	Dudhi	Herb	Asclepiadaceae
Perotis indica (L.) Kuntze	-	Grass	Poaceae
Phyla nodiflora (L.) Greartn.	Jalpapli	Herb	Verbenaceae
Phyllanthus airy-shawii Brunel *ex* Roxb.	Bhuiamla	Herb	Euphorbiaceae
Phyllanthus amarus Schumacher & Thonn.	Bhuiaonla	Herb	Euphorbiaceae
Phyllanthus emblica L.	Aonla	Tree	Euphorbiaceae
Phyllanthus virgatus G.Forster	-	Herb	Euphorbiaceae
Plumbago zeylanica L.	Chitrak	Shrub	Plumbaginaceae
Polycarpaea corymbosa (L.) Lamk.	-	Herb	Caryophyllaceae
Polygala arvensis Willd.	-	Herb	Polygalaceae
Polygonum glabrum Willd	-	Herb	Polygonaceae
Polygonum plebeium R. Br.	-	Herb	Polygonaceae
Pongamia pinnata (L.) Pierre.	Karanj	Tree	Papilionaceae
Psoralea corylifolia L.	Babchi	Herb	Papilionaceae
Pterocarpus marsupium Roxb.	Beeja	Tree	Papilionaceae
Rungia parviflora ness	-	Herb	Acanthaceae
Rungia pectinata (L.) Nees.	-	Herb	Acanthaceae
Rungia repens (L.)	-	Herb	Acanthaceae
Saccharum spontaneum L.	Kans	Grass	Poaceae
Sapindus emarginatus Vahl.	Rittha	Tree	Sapindaceae
Scirpus articulatus L.	Chichora	Grass	Cyperaceae

Scirpus tuberosus Desf.	Sakatunga	Grass	Cyperaceae
Scleria levis Retz.	Churia	Grass	Cyperaceae
Sehima nervosum (Rottb.) Stapf.	Sheda	Grass	Poaceae
Sesamum orientale L.	-	Herb	Pedaliaceae
Setaria intermedia Reom. & Schult.	-	Grass	Poaceae
Setaria pumila (Poir.) Roem. & Schult.	Nuri	Grass	Poaceae
Sida acuta Burm. f.	-	Herb	Malvaceae
Sida cordata (Burm.) Borss.	-	Herb	Malvaceae
Sida cordifolia L.	Kungyi	Herb	Malvaceae
Smilax zeylanica L.	Ramdaton	Liana	Smilacaceae
Solanum nigrum C.B. Clarke	Makoi	Herb	Solanaceae
Soymida febrifuga (Roxb.) A.Juss.	Rohan	Tree	Meliaceae
Sphaeranthus indicus L.	Gorakhmundi	Herb	Asteraceae
Spigelia anthelmia L.	-	Herb	Spilagiaceae
Spilanthus calva DC.	-	Herb	Asteraceae
Sterculia urens Roxb.	Kullu	Tree	Sterculiaceae
Stereospermum chelonoides (L.f.) D.C.	Phenella	Tree	Bignoniaceae
Syzygium cumini (L.) Skeels.	Jamun	Tree	Myrtaceae
Tephrosia purpurea (L.)	Sarphonka	Herb	Papilionaceae
Tephrosia strigosa(L.)	-	Herb	Papilionaceae
Termanalia arjun	Koha,Arjun	Tree	Combretaceae
Terminalia alata Heyne *ex* Roth.	Saja	Tree	Combretaceae
Terminalia arjuna (Roxb. *ex* DC.) W & A.	Arjuna	Tree	Combretaceae
Terminalia bellirica Gaertn.	Bahera	Tree	Combretaceae
Terminalia chebula Retz.	Harra	Tree	Combretaceae
Themeda quadrivalvis (L.) Kuntze.	Gunhar	Grass	Poaceae
Themeda triandra Forsk.	Gunair	Grass	Poaceae
Thysanolaena maxima (Roxb.) Kuntz.	Phoolbahari	Grass	Poaceae
Tinospora cordifolia (Willd.) Miers.	Giloy	Climber	Menispermaceae
Tribulus terrestris L.	Gokhru	Herb	Zygophyllaceae
Tridax procumbens L.	Ghamera	Herb	Cucurbitaceae
Triumfetta pilosa Roth	-	Herb	Tiliaceae
Triumfetta rhomboidea Jacq.	-	Herb	Tiliaceae
Uraria picta (Jacq.) Desv. *ex* DC.		Herb	Papilionaceae
Urgenia indica (Roxb.) Kunth.	Junglipyaz	Herb	Cucurbitaceae
Urochola reptans (L.) Stapf.	-	Grass	Poaceae
Vanda tesellata (Roxb.) Hook. *ex* G.Don.	Banda	Epiphyte	Orchidaceae
Ventilago denticulata Willd.	Keonti	Liana	Rhamnaceae
Vitex negundo L.	Nirgundi	Shrub	Verbenaceae
Vitis latifolia Planch.		Climber	Vitaceae
Woodfordia fruticosa (L.) Kurz.	Dhawai	Shrub	Lythraceae
Wrightia tinctoria R. Br.	Dudhi	Liana	Periplocaceae
Xanthium strumarium L.	Gokhru	Herb	Asteraceae
Ziziphus glaberrima (Sedgw.) Santpau.	Ghont	Tree	Rhamnaceae
Ziziphus mauritiana Lamk.	Ber	Tree	Rhamnaceae
Ziziphus oenoplia (L.) Mill.	Makoi	Liana	Rhamnaceae

Table - 2 : LIST OF FAMILIES AND NUMBER OF SPECIES

Family	Number of Species
Alangiaceae	1
Anacardiaceae	1
Araceae	1
Aristolochiaceae	1
Averrhoaceae	1
Balsaminaceae	1
Bignoniaceae	1
Bombacaceae	1
Celastraceae	1
Chenopodiaceae	1
Ebenaceae	1
Elatinaceae	1
Eriocaulaceae	1
Flacourtiaceae	1
Gesneriaceae	1
Hydrocharitaceae	1
Lecythidaceae	1
Leeaceae	1
Loranthaceae	1
Malpighiaceae	1
Martyniaceae	1
Moringaceae	1
Nyctaginaceae	1
Nyctanthaceae	1
Nymphaeaceae.	1
Onagraceae	1
Orchidaceae	1
Papaveraceae	1
Pedaliaceae	1
Periplocaceae	1
Plumbaginaceae	1
Polygalaceae	1
Samydaceae	1
Sapindaceae	1
Simaroubaceae	1
Smilacaceae	1

Spilagiaceae	1
Ulmaceae	1
Vitaceae	1
Zingiberaceae	1
Zygophyllaceae	1
Annonaceae	2
Apiaceae	2
Apocynaceae	2
Boraginaceae	2
Burseraceae	2
Caesalpiniaceae	2
Capparidaceae	2
Caryophyllaceae	2
Dioscoreaceae	2
Ehretiaceae	2
Gentianaceae	2
Liliaceae	2
Meliaceae	2
Myrtaceae	2
Oxalidaceae	2
Polygonaceae	2
Sapotaceae	2
Sterculiaceae	2
Commelinaceae	3
Lythraceae	3
Rubiaceae	3
Scrophulariaceae	3
Solanaceae	3
Ceasalpiniaceae	4
Menispermaceae	4
Moraceae	4
Rhamnaceae	4
Rutaceae	4
Verbenaceae	4
Acanthaceae	5
Amaranthaceae	5
Convolvulaceae	5
Cucurbitaceae	5
Mimosaceae	5
Asclepiadaceae	6
Combretaceae	6

Malvaceae	6
Tiliaceae	6
Lamiaceae	7
Euphorbiaceae	9
Asteraceae	10
Cyperaceae	17
Papilionaceae	21
Poaceae	54

Table : 3 - TEN DOMINANT FAMILIES OF BARGI HILLS ECO-PARK

I	Poaceae	54
II	Papilionaceae	21
III	Cyperaceae	17
IV	Asteraceae	10
IX	Combretaceae	6
V	Euphorbiaceae	9
VI	Lamiaceae	7
VII	Tiliaceae	6
VIII	Malvaceae	6
X	Asclepiadaceae	6

Table 4 - Aquatic plants at the Study site

S.No.	Botanical name	Habit	Family
1	*Alternanthera sessilis*	Herb	Amaranthaceae
2	*Bergia ammanioides*	Herb	Elatinaceae
3	*Caesulia axillaris*	Herb	Compositae
4	Drosera burmanni	Herb	Droseraceae
5	*Eriocaulon cinereum*	Sedge	Cyperaceae
6	*Limnophilla*	Herb	Scrophulariaceae
7	*Limnophilla sp.*	Herb	Scrophulariaceae
8	*Ludwigia adscendens*	Herb	Onagraceae
9	*Polycarpaea corymbosa*	Herb	Caryophyllaceae
10	*Polygala arvensis*	Herb	Polygalaceae
11	*Polygonum glabrum*	Herb	Polygonaceae
12	*Polygonum plebium*	Herb	Polygonaceae
13	*Scirpus articulatus*	Sedge	Cyperaceae

Table - 5 List of plants found in association with the rock

S.No.	Botanical name	Habit	Family
1	*Dryopteris sp.*	Fern	Aspidiaceae
2	*Ficus benghalensis*	Tree	Moraceae
3	*Ficus religiosa*	Tree	Moraceae
4	*Hemidesmus indicus*	Climber	Asclepiadaceae
5	*Anisochilus carnosus*	Herb	Lamiaceae
6	*Hyptis suaveolens*	Herb	Asteraceae
7	*Leonotis nepetaefolia*	Shrub	Lamiaceae
8	*Blepharis madraspatensis*	Herb	Acanthaceae
9	*Carissa spinarium*	Shrub	Apocynaceae
10	*Sterculia urens*	Tree	Sterculiaceae

Table 6 - SEASONALLY IMPORTANT PLANTS AT THE STUDY SITE

S.No	Botanical name	Local name	Habit	Family
1	*Acacia auriculiformis* A. Camus	Wattle tree	Tree	Fabaceae
2	*Ailanthus excelsa* Roxb.	Maharukh	Tree	Simaroubaceae
3	*Asparagus racemosus* Willd.	Satavar	Herb	Liliaceae
4	*Bauhinia racemosa* Lamk.	Ashta	Tree	Fabaceae
5	*Bauhinia vareigata* L.	Kachnar	Tree	Fabaceae
6	*Bombax ceiba* L.	Semal	Tree	Bombacaceae
7	*Butea monosperma* (Lamk.) Taub.	Palas	Tree	Fabaceae
8	*Azadirachta indica* A.Juss.	Neem	Tree	Meliaceae
9	*Cassia fistula* L.	Amaltas	Tree	Ceasalpiniaceae
10	*Carissa spinarum* L.	Karonda	Shrub	Apocynaceae
11	*Curcuma amada* Roxb.	Amahaldi	Herb	Zingiberaceae
12	*Drosera burmannii* Vahl.	Bhuiphuxl	Herb	Droseraceae
13	*Dioscorea bulbifera* L.	Airpotato	Climber	Dioscoreaceae
14	*Feronia limonia* (L.) Swingle	Kaitha	Tree	Rutaceae
15	*Ficus benghalensis* L.	Bad	Tree	Moraceae
16	*Ficus glomerata* Roxb.	Gular	Tree	Moraceae
17	*Ficus religiosa* L.	Peepal	Tree	Moraceae
18	*Ficus virens* Ait.	Pakar	Tree	Moraceae
19	*Gloriosa superba* L.	Kalihari	Climber	Liliaceae
20	*Holarrhena antidysentrica*	Dudhi	Tree	Apocynaceae
21	*Madhuca indica* J.F.Gmel.	Mahua	Tree	Sapotaceae
22	*Mallotus philippensis* (Lamk.) Muell.	Sinduri	Small tree	Euphorbiaceae
23	*Manilkara hexandra* Roxb.	Maulsari	Tree	Sapotaceae
24	*Martynia annua* L.	Bagnakha	Herb	Martyniaceae
25	*Mucuna pruriens* (L.) DC.	Kewanch	Climber	Fabaceae
26	*Nyctanthes arbor tristis* L.	Harshingar	Tree	Nyctaginaceae
27	*Phyllanthus emblica* L.	Aonla	Tree	Euphorbiaceae
28	*Plumbago zeylanica* L.	Chitrak	Shrub	Plumbaginaceae
29	*Sapindus emarginata Vahl.*	Rittha	Tree	Sapindaceae
30	*Smilax zeylanica* L.	Ramdaton	Liana	Smilacaceae
31	*Stereospermum suaveolens* DC.	Phenella	Tree	Bignoniaceae

32	*Syzygium cumini* (L.) Skeels.	Jamun	Tree	Myrtaceae
33	*Terminalia arjuna* Roxb.*ex*.DC.	Arjuna	Tree	Combretaceae
34	*Terminalia bellirica* Gaertn.	Bahera	Tree	Combretaceae
35	*Terminalia chebula* Retz.	Harra	Tree	Combretaceae
36	*Vanda tesellata* R.Br.	Banda	Epiphyte	Orchidaceae
37	*Ziziphus oenoplia* (L.) Mill.	Makoi	Liana	Rhamnaceae

Table 7- MEDICINAL PLANTS OF THE STUDY SITE

Botanical name	Local name	Habit	Family
Abrus precatorius L.	Gumchi	Climber	Fabaceae
Abutilon indicum (L.) Sweet	Kanghi	Herb	Malvaceae
Acacia catechu (L.f) Willd.	Khair	Tree	Fabaceae
Acacia nilotica (L.) Willd.*ex* Del.	Babul	Tree	Fabaceae
Achyranthes aspera L.	Chirchira	Herb	Amaranthaceae
Aegle marmelos (L.) Correa	Bel	Tree	Rutaceae
Ailanthus excelsa Roxb.	Maharukh	Tree	Simaroubaceae
Alangium salvifolium (L.f) Wang.	Akol	Tree	Alangiaceae
Amorphophallus campanulatus (Roxb.) Bl.	Suran	Herb	Araceae
Anethum graveolens L.	Soya	Herb	Apiaceae
Annona squamosa L	Seetaphal	Small Tree	Annonaceae
Argemone maxicana L.	Peeli kateli	Herb	Papaveraceae
Aristolochia indica L.	Ishwarmool	Twinner	Aristolochiaceae
Asclepias curassavica L.	-	Herb	Asclepiadaceae
Asparagus racemosus Willd.	Satavar	Herb	Liliaceae
Azadirachta indica A.Juss.	Neem	Tree	Meliaceae
Bambusa arundinacea (Retz.) Willd.	Kanta Bans	Grass	Poaceae
Bauhinia racemosa Lamk.	Ashta	Tree	Fabaceae
Bauhinia vareigata L.	Kachnar	Tree	Fabaceae
Boerhavia diffusa L.	Punarnava	Herb	Nyctaginaceae
Bauhinia racemosa Lamk.	Ashta	Tree	Fabaceae
Bombax ceiba L.	Semal	Tree	Bombacaceae
Boswellia serrata Roxb. ex Colebr.	Salai	Tree	Burseraceae
Butea monosperma (Lamk.) Taub.	Palas	Tree	Fabaceae
Butea superba Roxb.	Palas bel	Climber	Fabaceae
Calotropis gigantea R. Br.	Madar	Shrub	Asclepiadaceae
Calotropis procera (Ait.) R. Br.	Aak	Shrub	Asclepiadaceae
Careya arborea Roxb.	Kumbhi	Tree	Lecythidaceae
Carissa spinarum l.	Karonda	Shrub	Apocynaceae
Cassia fistula L.	Amaltas	Tree	Ceasalpiniaceae
Cassia occidentalis L.	Kasaundhi	Shrub	Ceasalpiniaceae
Celastrus paniculata Willd.	Malkanghni	Climber	Celastraceae
Centella asiatica (L.) Urban	Mandukparni	Herb	Apiaceae
Ceropegia hirsutus Wt. & Arn.	-	Twinner	Menispermaceae
Chloroxylon swietenia DC.	Bhirra	Tree	Rutaceae
Cissampelos pareira L.	Bichhukand	Climber	Menispermaceae
Cleome gynandra L.	Hurhur	Herb	Capparidaceae

Cleome viscosa L.	Hulhul	Herb	Capparidaceae
Cocculus hirsutus (*L.*) Diels.	Jaljamni	Strangler	Menispermaceae
Curculigo orchioides Gaertn.	Kali musli	Herb	Hypoxidaceae
Curcuma amada Roxb.	Amahaldi	Herb	Zingiberaceae
Cynadon dactylon (L.) Pers.	Doob	Grass	Poaceae
Datura metel L.	Kala dhatura	Shrub	Solanaceae
Datura stramonium L.	Dhatura	Shrub	Solanaceae
Dendrocalamus strictus (Roxb.) Nees.	Bans	Grass	Poaceae
Dioscorea bulbifera L.	Airpotato	Climber	Dioscoreaceae
Diospyros melanoxylon Roxb.	Tendu	Tree	Ebenaceae
Drosera burmannii Vahl.	Bhuiphul	Herb	Droseraceae
Eclipta prostrata (L.) L. Mant.	Bhringraj	Herb	Asteraceae
Elephantopus scaber L.	Ghobhi	Herb	Asteraceae
Eucalyptus sp.	-	Hybrid	Myrtaceae
Euphorbia hirta L.	Dudhi	Herb	Euphorbiaceae
Evolvulus alsinioides (*L.*) L.	Shankhpushpi	Creeper	Convolvulaceae
Feronia limonia (L.) Swingle	Kaitha	Tree	Rutaceae
Ficus benghalensis L.	Bad	Tree	Moraceae
Ficus glomerata Roxb.	Gular	Tree	Moraceae
Ficus religiosa L.	Peepal	Tree	Moraceae
Gardenia latifolia W.Ait.	Phetra	Tree	Rubiaceae
Garuga pinnata Roxb.	Kekad	Tree	Burseraceae
Gloriosa superba L.	Kalihari	Climber	Liliaceae
Gmelina arborea Roxb.	Khamer	Tree	Verbenaceae
*Grewia hirsuta*Vahl.	Gursakri	Shrub	Tiliaceae
Grewia tiliaefolia Vahl.	Dhaman	Tree	Tiliaceae
Gymnema sylvestre (Retz.) R.Br *ex* Schultes	Gudmar	Twinner	Asclepiadaceae
Helicteres isora L.	Ainthi	Shrub	Sterculiaceae
Hemidesmus indicus (L.) R.Br.	Antamool	Climber	Asclepiadaceae
Hiptage benghalensis (L.) Kurz.	-	Herb	Malpighiaceae
Lagerstoemia parviflora Roxb.	Lendia	Tree	Lythraceae
Lannea coromandelica (Houtt) Merr.	Moyan	Tree	Anacardiaceae
Lantana camera L.	Makoi	Shrub	Verbenaceae
Leea edgeworthii Santapau.	-	Climber	Leeaceae
Leucas cephalotes (Koen.*ex*.Roth)	-	Herb	Lamiaceae
Madhuca indica J.F.Gmel.	Mahua	Tree	Sapotaceae
Mallotus philippensis (Lamk.) Muell.	Sinduri	Small tree	Euphorbiaceae
Manilkara hexandra (Roxb.) Durand	Maulsari	Tree	Sapotaceae
Martynia annua L.	Bagnakha	Herb	Martyniaceae
Milletia auriculata Lamk.	Gurar	Liana	Fabaceae
Moringa oleifera Lamk.	Sahjan	Tree	Moringaceae
Mucuna pruriens (L.) DC.	Kewanch	Climber	Fabaceae
Nyctanthes arbor- tristis L.	Harshingar	Tree	Nyctaginaceae
Ocimum canum Sism.	Jangli tulsi	Herb	Lamiaceae
Operculia turpethum (L.) S. Manso.	Nishoth	Climber	Convolvulaceae
Ougenia oogeinensis (Roxb.) Hochr.	Tinsa	Tree	Fabaceae
Pergularia daemia (Forsk.*)* Chiov.	Dudhi	Herb	Asclepiadaceae

Phyllanthus amarus Schumacher.	Bhuiaonla	Herb	Euphorbiaceae
Phyllanthus emblica L.	Aonla	Tree	Euphorbiaceae
Phyllanthus debilis Willd.	-	Herb	Euphorbiaceae
Phyllanthus simplex Retz.	-	Herb	Euphorbiaceae
Plumbago zeylanica L.	Chitrak	Shrub	Plumbaginaceae
Pongamia pinnata Vent.	Karanj	Tree	Fabaceae
Psoralea corylifolia	Babchi	Herb	Fabaceae
Pterocarpus marsupium Schreb.	Beeja	Tree	Fabaceae
Sapindus emarginatus Vahl.	Rittha	Tree	Sapindaceae
Sesamum orientale L.	-	Herb	Pedaliaceae
Sida cordifolia L.	Kungyi	Herb	Malvaceae
Solanum anguivi Lamk.	Barhanta	Shrub	Solanaceae
Solanum nigrum C.B.Clarke	Makoi	Herb	Solanaceae
Solanum surratense N. Burm.	Kateli	Herb	Solanaceae
Soymida febrifuga (Roxb.) A.Juss.	Rohan	Tree	Meliaceae
Sphaeranthus indicus L.	Gorakhmundi	Herb	Asteraceae
Spigelia anthelmia L.	-	Herb	Spilagiaceae
Spilanthus calva DC.	-	Herb	Asteraceae
Sterculia urens Roxb.	Kullu	Tree	Sterculiaceae
Stereospermum suaveolens DC.	Phenella	Tree	Bignoniaceae
Syzygium cumini (L.) Skeels.	Jamun	Tree	Myrtaceae
Tephrosia purpurea (L.)	Sarphomka	Herb	Fabaceae
Terminalia alata Heyne ex Roth	Saja	Tree	Combretaceae
Terminalia arjuna (Roxb.*ex*.DC.) W. & A.	Arjuna	Tree	Combretaceae
Terminalia bellirica Gaertn.	Bahera	Tree	Combretaceae
Terminalia chebula Retz.	Harra	Tree	Combretaceae
Tinospora cordifolia (Willd.)	Giloy	Climber	Menispermaceae
Tribulus terestris L.	Gokhru	Herb	Zygophyllaceae
Tridax procumbens L.	Ghamera	Herb	Cucurbitaceae
Urgenia indica (Roxb.) Kunth.	Junglipyaz	Herb	Cucurbitaceae
Vanda tesellata R.Br.	Banda	Epiphyte	Orchidaceae
Vitex negundo L.	Nirgundi	Shrub	Verbenaceae
Wrightia tinctoria R.Br.	Dudhi	Liana	Periplocaceae
Xanthium strumarium L.	Gokhru	Herb	Asteraceae

Table : 8 - PLANTS UNDER VARIOUS HABITAT AND IMPORTANCE

S.No.	Plant Category	Number
1	Rare plants	7
2	Seasonally important plants	39
3	Aquatic plants	13
4	Rocky plants	9
5	Medicinals plants	118

Table : 9 - RARE PLANTS AT THE STUDY SITE

	Botanical name	Local name	Habit	Family
1	*Butea superba* Roxb.	Palasbel	Climber	Papilionaceae
2	*Centella asiatica* (L.) Urban	Mandokparni	Herb	Menispermaceae
3	*Ceropegia hirsutus* Wt. & Arn.	Dudhi	Climber	Asclepiadaceae
4	*Drosera burmanni* Vahl.	-	Herb	Droseraceae
5	*Gloriosa superba* L.	Kalihari	Climber	Liliaceae
6	*Gymnema sylvestre* (Retz.) R.Br.*ex* Schultes	Gudmar	Climber	Asclepiadaceae
7	*Urgenia indica* L.	Jangli pyaz	Herb	Liliaceae

Table - 10 LIST OF PLANTS WITH ATTRACTIVE FLOWERS AND FRAGRANCE

S.No.	Botanical Name	Flower/ Fruit colour
1	*Butea monosperma*	Orange
2	*Cassia fistula*	Yellow
3	*Abrus precatorius*	Pink/White
4	*Bauhinia vareigata*	White/Violet
5	*Bauhinia racemosa*	Violet
6	*Holarrhena antidysentrica*	White
7	*Wrightia tinctoria*	White-pink-pale yellow
8	*Sterculia urens*	Pale green/Yellow red
9	*Woodfordia fruticosa*	Scarlet/Orange
10	*Bombax ceiba*	Scarlet
11	*Mallotus philippensis*	Yellow
12	*Gloriosa superba*	Orange/Yellow
13	*Butea superba*	Orange/Scarlet
14	*Vitex negundo*	White
15	*Helicteres isora*	Red-orange

Table:11 List of rainy season Plant species.

S.no	Name of species	Habit	Family
1.	*Alysicarpus monilifer* L. DC.	Herb	Papilionaceae
2.	*Cassia pumila* L.	Herb	Ceasalpiniaceae
3.	Crotalaria linifolia (L.)	Herb	Fabaceae
4.	Indiogafera cordifolia	Herb	Fabaceae
5.	*Psoralea corylifolia* L.	Herb	Papilionaceae
6.	Desmodium trifolium	Herb	Papilionaceae
7.	*Oldenlandia corymbosa* L.	Herb	Rubiaceae
8.	Lindernia crustascea	Herb	Scorphulariceae
9.	Sonchus arvensis	Herb	Asteraceae
10.	Blumea lacera	Herb	Asteraceae
11.	Tridex procumbens	Herb	Asteraceae
12.	Celome viscose	Herb	Capparidaceae
13.	Celome gynandara	Herb	Capparidaceae
14.	Evolvulus alsinoides	Herb	Convolvulaceae
15.	Merremia tridentate	Herb	Convolvulaceae
16.	Convolvulus arvensis	Herb	Convolvulaceae
17.	Euphorbia hirta	Herb	Euphorbiaceae
18.	Corchorus aestuans	Herb	Tiliaceae
19.	Corchorus olitorius	Herb	Tiliaceae
20.	*Triumfetta rhomboidea* Jacq.	Herb	Tiliaceae
21.	Commelina benghalensis	Herb	Commenlianaceae
22.	Cyperus rotundus	Herb	Cyperaceae
23.	Panicum psilopodium	Herb	Poaceae

24.	Eragrostis tenella	Herb	Poaceae
25.	Fumaria indica	Herb	Fumariaceae
26.	Coronopus didymus	Herb	Fumariaceae
27.	Spergula arvensis	Herb	Caryophyllaceae
28.	Melilotus indica	Herb	Fabaceae
29.	Lathyrus aphaca	Herb	Fabaceae
30.	Medicago denticulate	Herb	Fabaceae
31.	Sonchus arvensis	Herb	Asteraceae
32.	Oxalis corniculata	Herb	Oxiladaceae
33.	Rungia pectinata	Herb	Acanthaceae
34.	Rumex dentatus	Herb	Amaranthaceae
35.	Gilinus lotoides	Herb	Alzoaceae
36.	Pulicaria angustifolia	Herb	Asteraceae
37.	Echinops echinatus	Herb	Acanthaceae
38.	Chroxophore parviflora	Herb	Euphorbaceae
39.	Alternanthera pungens	Herb	Amaranthaceae
40.	Phyla nodifolia	Herb	Scorphulaceae
41.	Biophytum sensitivum	Herb	Oxalidaceae
42.	Corchorus olitorius	Herb	Tiliaceae
43.	Euphorbia hirtas	Herb	Euphorbiaceae
44.	Heliotropium strigosum	Herb	Boriginaceae
45.	Lindernia crustaceae	Herb	Scorphulariceae
46.	Oldenlandia corymbosa	Herb	Rubiaceae
47.	Physalia minima	Herb	Solanaceae

48.	*Dioscorea bulbifera* L.	Climber	Dioscoreaceae
49.	*Euphorbia neriifolia*		Euphorbiaceae
50.	Memordica dioica	Climber	Curcubitaceae
51.	*Mukia madraspatana* (L.) Cogn.	Herb	Curcubitaceae
52.	Potamogeton nodusus L.	Herb	Potamogetonaceae
53.	Sagittaria sagittiflolia L.	Herb	Alismataceae
54.	*Hydrilla verticillata* Linn. F	Herb	Hydrocharitaceae
55.	*Polygonum glabrum* Willd	Herb	Polygonaceae
56.	Commelina axillaries L.	Herb	Commelinaceae
57.	*Scirpus tuberosus* Desf.	Herb	Cyperaceae
58.	*Smithia conferta* J.E Smith.	Herb	Fabaceae
59.	*Eclipta alba* (L.) Hassk	Herb	Asteraceae
60.	*Phyla nodiflora* (L.) Greartn	Herb	Verbenaceae
61.	*Caesulia axillaries* Roxb.		Asteraceae
62.	*Hygrophila quadrivalvis* Ness.	Herb	Acanthaceae
63.	*Corchorus capsularis* Linn.	Herb	Tiliaceae
64.	*Polygonum plebeium* R. Br.	Herb	Polygonaceae
65.	Cyathocline purpurea (Don) Kuntze.	Herb	Asteraceae
66.	*Gnaphalium indicum* Linn.	Herb	Asteraceae
67.	Pulicaria angustifolia D.C	Herb	Asteraceae
68.	*Achyranthes aspera* L.	Herb	Amaranthaceae

Table –12 : LIST OF BIRDS FOUND IN THE PROJECT AREA

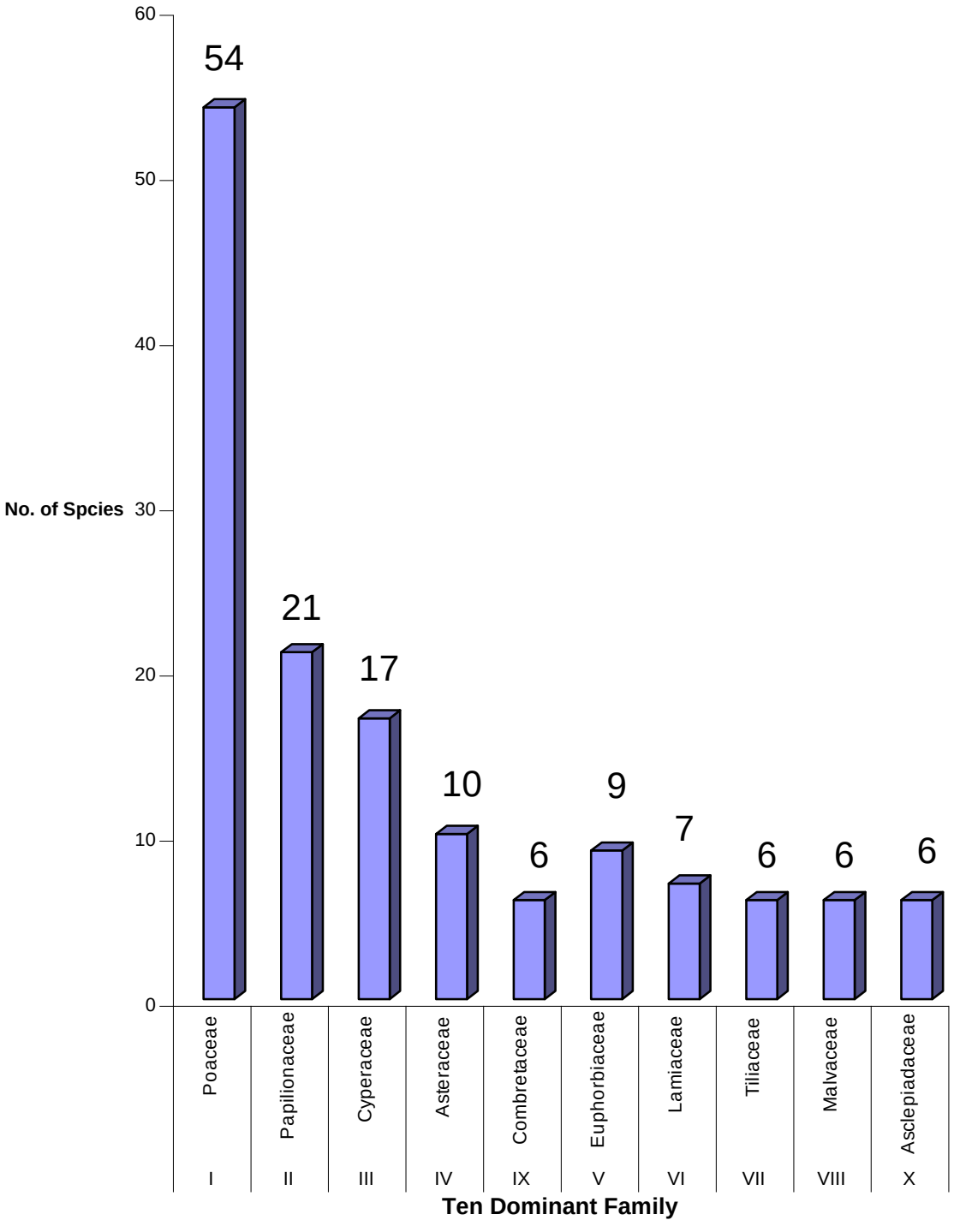
Scientific name	English name	Hindi name
Acridotheres ginginianus	Jungle myna	Jungli myna
Acridothers tristis	Indian Myna	Myna
Bubo zeylonensis	Brown fish owl	Owl
Cacomantis merulinus	Cuckoo	Cuckoo
Capella gallinago	Chaha	Suipe
Caprimulgus asiaticus	Common Indian nightjar	Nightjar
Carvus splendens	House crow	House crow
Clamator jacobinus	Pied crested cuckoo	Cuckoo
Columba livia	Rock pigeon	Kabutar
Copschus saularis	Magpie robin	Robin
Coracias benghalensis	Rolier Blue fay	Neelkanth
Corvus macrorhynchos	Jungle crow	Jungle crow
Coturnix coturnix	Grey quail	Bater
Dendroccopos mahrattensis	Wood peckar	Katphora
Dinopeum benghalensis	Golden backed wood packer	Golden wood packer
Dinopium benghalense	Golden backed wood pecker	Katphora
Eudynamus scolopacea	Keol	Keol
Eudynamys scolopacea	Koel	Koel, Kokila
Francolinus francolinus	Black partridge	Kalateetar
Francolinus francolinus	Black partidge	Partidge
Francolinus pictus	Painted parteridge	Titar
Francolinus pondicerianus	Grey partridge	Safed teetar
Gallus De sonneralti	Grew jungli fowl	Janglimurgi
Gallus gallus	Red jungle fowl	Janglimurgi
Gyps bengalensis	Vulture Bengle	Vulture Bengle
Halcyon pileata	Black capped kingfisher	Kingfisher
Halcyon smyrnensis	White breasted kingfisher	Kingfisher
Lonchura malabarica	White throated munia	White munia
Lonchura Malacca	Black headed munia	Black munia
Nectarinia asiatica	Purple sun bird	Sun bird
Nephron percnopterus	White scavenger vulture	Vulture
Orthotomus seetorius	Tailor bird	Tailor bird
Passer domesticus	House sparrow	sparrow
Pavo cristatus	Peafowl peacock	Hor
Perdicula asiatica	Jungli bush quail	Lowwa
Perdicula asiatica	Jungle bush quail	Quail
Petronia xanthocollis	Yellow throat sparrow	Jangli chiai
Ploceus phliippinus	Baya (Weaver bird)	Baya
Pterocles exustus	Sand grose common	Sand grose
Pycnontus cafer	Red vented bulbul	Bulbul
Pycnontus jocosu	Red whiskered bulbul	Bulbul
Saxicoloides fulicata	Indian robin	Robin
Streptopelia chinensis	Water hen	Duck Jalmurgi Fakta

Streptopelia chinunsis	Spotted Dove	Spotted Dove
Streptopelia decaocto	Ringed dove	Ringed dove
Sturnus pagodarum	Brahyminy myna	Myna
Torgos calvus	King or Black vulture	King vulture
Treron phoenicoptera	Green pigeon	Harial
Turdoides caudatus	Jungle Babbler	Jungle Babbler
Turdoides striatus	Common Babbler	Common Babbler

Table – 13: List of Animals and Reptiles found in the project area.

SCIENTIFIC NAME	ENGLISH NAME	HINDI NAME
Bungarus bungarus	Banded krait	Krait
Calotes versicolor	Garden lizard	Garden lizard
Canis aureus	Jackal	Kolha, Shial
Funambulus palmarum	Squirrel	Squirrel
Herpestes auropunctatus	Mongoose	Neola
Hyaena hyaena	Hyaena	Haina Lakkarbagha
Hystrix leucura	Porcupine	Sehi
Lupus rufcaudatus	Hare	Khargosh
Muntjak muticas	Barking deer	Ghutari
Naja naja	Cobra	Cobra
Presbytis entellus	Langur monkey	Langur
Sus cristatus	Indian wild boar	Suar
Varanus bengalensis	Indian monitor (Goh)	Goh

Fig. - A : Ten dominant family of Bargi Hills Eco park



Executive Summary

The concept of bio-parks initiated by State Biodiversity Board in collaboration with various institutions has a novel aim of providing a platform for scientific community to create public awareness about rich biodiversity. The park will serve multiple purposes ranging from education, and research to eco-tourism *etc*.

The concept of bio-park is the combination of zoological park, botanical park and biodiversity interpretation centre dealing with importance of local and regional biodiversity. As proposed, the bio-park will be established and developed in the natural surroundings. Therefore, it is very much essential to have an insight into the existing flora and fauna so that it can be further developed, taking natural diversity into consideration. Diverse sites like a wetland or hilltop are conserved so that natural diversity is maintained and attracts tourists as well. The present work was carried out to prepare an inventory of existing flora and fauna with the help of past records on the biodiversity, available in various working plans.

Madhya Pradesh State Biodiversity Board, in collaboration with the state Forest Department, universities, research institutes and revenue administration, is trying to facilitate setting up of Biodiversity Parks in three eco regions of the state, namely Chambal, Satpura and Bhopal. In the above context, Shri B. M. S. Rathore, Member Secretary, State Biodiversity Board along with Dr. V. G. Gogate, Project In - charge, Yamuna Biodiversity Park, Delhi had visited these areas from 12 to 15 July, 2005. The areas visited include Audhpur protected forest in Gwalior, Bargi Hills and Dumna forest areas in Jabalpur, Bhartadev forest area in Chhindwara, Kolar and Kerwa forest areas in Bhopal. Madhya Pradesh State Biodiversity Board, Bhopal, vide its letter No. 975/BDB/2005, dated 20/7/2005, has sanctioned the project to fulfill the single objective mentioned below.

Bargi hills are situated in the South Eastern part of the Jabalpur city. Much of the area is well protected with rich biodiversity and scenic beauty and the remains of the Madanmahal Fort highlight its historical importance. Nearly 276 ha. area has been demarcated for establishment of the biopark.

The work was undertaken on the following lines for inventorization of the floral and faunal diversity of the area. The survey work has been done through Line Transect Method. The study area was surveyed in the month of January and September. Three entry points were marked namely Bargi hills opposite MPEB soil laboratory, Thakur tal and Shailparn udyan. Line transects were laid from all three entry points to record the species five meters along the line on both sides. All new species encountered in the transects were recorded.

The area has rocky terrain throughout the bargi hills upto Madanmahal.There is a clear demarcation of biotic interference and protection along the Madanmahal hills. The area nearing habitation shows signs of heavy biotic pressure. As a result, the hill is devoid of tree vegetation. The areas protected from pressure are Thakur tal and Bargi hills bordering the MPEB campus towards the Nayagaon, Purwa and Sangram Sagar and therefore has comparatively dense vegetation which can be clearly divided into tree, shrub and herbaceous layers.

The area exhibits mixed vegetation without any clear dominance except *Wrightia tinctoria, Diospyros melanoxylon, Chloroxylon sweitenia and Aegle marmelos*. The forests mainly comprise of miscellaneous species. Dominant tree species were *Lagerstoemia parviflora, Butea monosperma, Diospyros melanoxylon, Chloroxylon sweitenia, Cassia fistula, Buchnania lanzan, Terminalia alata, Gardenia laurifolius, Woodfordia fruticosa, Syzygium cumini* etc. The shrub layer comprised of *Helicteres isora, Grewia hirsuta, Flacourtia indica, Wrightia tinctoria, Ziziphus nummularia, Vitex negundo, Lantana camara, Holarrhena antidysentrica, Indigofera cassioides, Flemingia strobilifera, etc.* as its prominent constituents. Most of the herbaceous layers had dried out and only few species were in identifiable condition. There were few woody and herbaceous climber species, which were very common throughout the site. These were *Cocculus hirsutus, Cissempelos pareira, Gymnema sylvestre, Ventilago denticulata, Abrus precatorius and Hemidesmus indicus.*

The area surrounding the Thakur tal has rich diversity of aquatic plants. **A big patch (50m^2) of threatened insectivorous species *Drosera burmannii* was located on the western boundary of the pond along the stream as well as *Drosera burmannii*** along the catchment stream, which charges the reservoir were recorded from the area. It is good indicator of the kind of vegetation the area can

support. It needs protection from trampling by cattle and human beings. The area supports rich herbaceous vegetation, including grasses and sedges.

The site revealed 210 genera and 281 species**.** The total representation at the site was of 85 families**.** The dominant family was Poaceae with 54 species, followed by Papilionaceae 21 and Cyperaceae with 17 . The site recorded 13 aquatic species**,** 10 rocky species, 118 species of medicinal importance and 39 species having seasonal importance in terms of scenic beauty and use by the wild animals. The important species of medicinal value that were present in proposed park area are *Abutilon indicum, Asparagus racemosus, Aegle marmelos, Cissampelos pareira, Curculigo orchioides, Datura stramonium, Evolvulus alsinioides, Gloriosa superba, Gymnema sylvestre, Helicteres isora, Hemidesmus indicus, Phyllanthus emblica, Solanum nigrum, Spilanthus calva, Urginea indica, Vitex negundo and Wrightia tinctoria.*

Rare plants at the study site

S.No.	Botanical name	Local name	Habit	Family
1	*Butea superba* Roxb.	Palasbel	Climber	Papilionaceae
2	*Centella asiatica* (L.) Urban	Mandokparni	Herb	Menispermaceae
3	*Ceropegia hirsutus* Wt. & Arn.	Dudhi	Climber	Asclepiadaceae
4	*Drosera burmanni* Vahl.	-	Herb	Droseraceae
5	*Gloriosa superba* L.	Kalihari	Climber	Liliaceae
6	*Gymnema sylvestre* (Retz.) R.Br.*ex* Schultes	Gudmar	Climber	Asclepiadaceae
7	*Urgenia indica* L.	Jangli pyaz	Herb	Liliaceae

List of plants with attractive flowers and fragrance

S.No.	Botanical Name	Flower/ Fruit colour
1	*Butea monosperma*	Orange
2	*Cassia fistula*	Yellow
3	*Abrus precatorius*	Pink/White
4	*Bauhinia vareigata*	White/Violet
5	*Bauhinia racemosa*	Violet

6	*Holarrhena antidysentrica*	White
7	*Wrightia tinctoria*	White-pink-pale yellow
8	*Sterculia urens*	Pale green/Yellow red
9	*Woodfordia fruticosa*	Scarlet/Orange
10	*Bombax ceiba*	Scarlet
11	*Mallotus philippensis*	Yellow
12	*Gloriosa superba*	Orange/Yellow
13	*Butea superba*	Orange/Scarlet
14	*Vitex negundo*	White
15	*Helicteres isora*	Red-orange

The site is among the richest around Jabalpur in terms of vegetation, habitat as well as for development of Biodiverstiy Park as it provides excellent natural view and terrain for attracting people for nature lovers. It will also prove to be a valuable site for conservation of some threatened plants in *in-situ* condition as well as promoting conservation among local population.