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Vinay Kumar Bharti
Research Scholar Botany
Deptt. Pt. S.N.S. Govt. P.G.
College, Shahdol (M.P.) A.P.S.
University, Rewa (M.P.)
486003

The Rare and Threatened Plants of Shahdol Division Forest of (M.P.) India

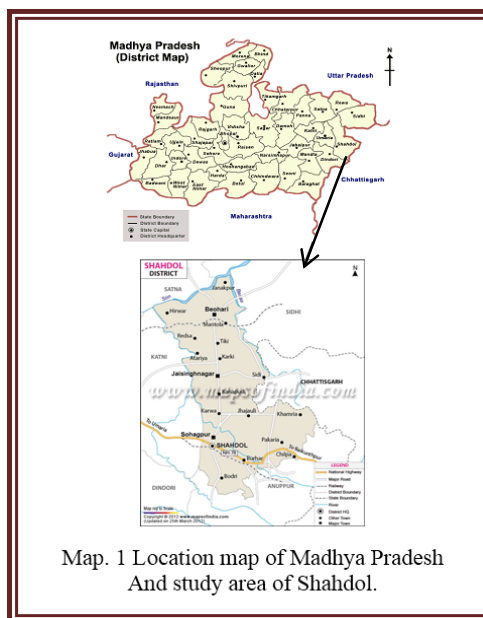
Vinay Kumar Bharti

Abstract

In the present paper 37 plant species have been recorded as rare or endangered plants. All 37 plant species are enumerated with their botanical names, local names, red data categories and present status in the study area. Many of these plant species have immediate attention for their conservation. It is an alarming situation where endangered species requires more and more attentions. The present study also highlights that some rare or endangered plants abundantly found in Shahdol Division Forest Area. The protected forest area is observed as the best conservation model of the plant diversity and it harbors a large number of endangered and rare plants.

Keywords: Rare, Threatened, Plants, Shahdol division, Forest.

1. Introduction



Map. 1 Location map of Madhya Pradesh
And study area of Shahdol.

The term biodiversity is an amalgam of two words biological and diversity. In general biodiversity is a complex and balanced network of different species, which are mutually in dependent on each other. Floral and faunal diversities are two facts components of biodiversity which covers the variety and variability of species. The Government of India has already mandate up with a Biodiversity Acts, 2002 and national Environment policy, 2005. To achieve the effective implementation of the above acts we must have a comprehensive update list of plants and animals of the region with particular interest to rare and threatened taxa. Thus, present attempt has been made for documentation of floral components and threatened or rare plants of Shahdol Division Forest Area. These rare and threatened plants species has to be highlighted for their conservation.

Correspondence
Vinay Kumar Bharti
Research Scholar Botany
Deptt. Pt. S.N.S. Govt. P.G.
College, Shahdol (M.P.) A.P.S.
University, Rewa (M.P.)
486003

In India the work on threatened plants was first published in 1980 by the Botanical survey of India (BSI). Jain and Sastry, 1980 published a small booklet entitled “Threatened plants of India”. Later on comprehensive work on rare and threatened plants of India was also published by BSI in the form of a book in three volumes entitled “RED DATA BOOK OF INDIAN PLANTS” (Nayar and Sastry, 1987, 1988, 1990) [12].

Study area: Shahdol District is situated in the northeastern part of the Madhya Pradesh provinces of India. Because of the division of the district on 15-08-2003, the area of the district remains 5671 km². It is surrounded by Anuppur in the southeast, Satna & Sidhi in the north and Umaria in the west. The district extends 110 km from east to west and 170 km from north to south. This district is situated between 22°38' N latitude to 24°20' N latitude and 80°28' E Longitude to 82°12' E longitude. The District is located in the north-eastern part of the Deccan Plateau.

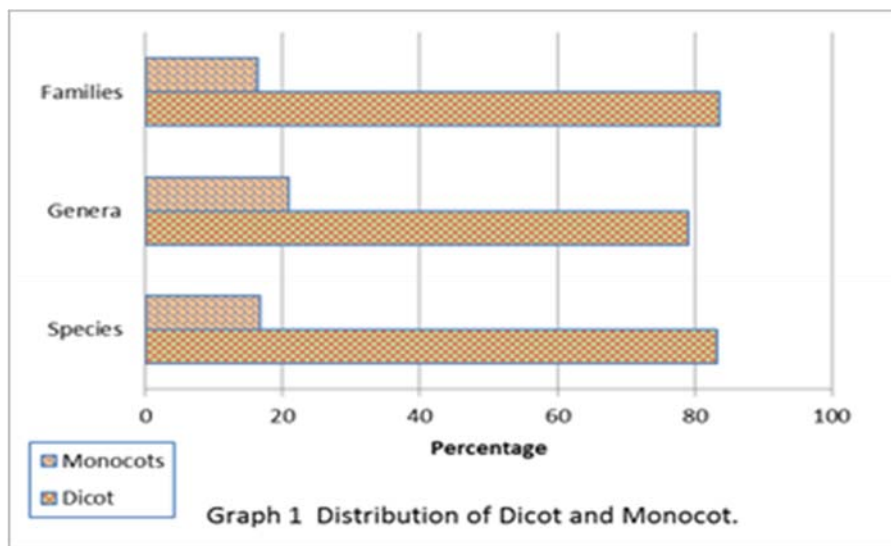
Natural forests provide an enormous range of indigenous medicinal plants that are used by the tribal communities inhabiting the forest fringe areas. With the pressure on the demand on medicinal plants on the rise, due to commercialization and globalization of herbal wealth, their availability in nature has subsequently gone down. Due to overexploitation of medicinal plants and habitat destruction, many sensitive herbs including commercially valuable medicinal plants are losing ground in Madhya Pradesh (Khan *et al.*, 2005 & 2008) [8, 9, 10]. The centre for Research Planning and Action, 2001 report shows the estimated domestic demand for selected medicinal plants in India. As a result important species of medicinal plants in many parts of the India have become endangered due to their premature

and over harvesting by collectors and traders for pharmaceutical companies and the subsequent degradation of their natural habitat. Local availability of medicinal plant resources and the ethnomedicinal knowledge are both under threat due to market demands and acculturation, among the indigenous communities (Khan *et al.*, 2005) [8, 9]. The threat status of a particular species is best evaluated by a firsthand study of the populations across its entire range of distribution. In an entire group of species like medicinal plants of India, one may certain not have access to field data on the populations of each species across its entire distribution range (Ved, *et al.* 2003) [15].

2. Materials and Methods

The present study deals with many plant species observed for floristic data. Rare or endangered plants were recorded from the study area. During the field survey various criteria of IUCN for categorizing threatened plants, viz. extent of occurrence, area of occupancy, number of individuals, probability of extinction etc. were measured. Rarity of species was determined by field study, visual estimations and literature. In course of the collection revealed that few rare and endangered species were present in the study area, which have been also mentioned in the Red data book of Indian plants, IUCN list of threatened species and list of BSI arid zone circle. Extensive surveys of the study area were conducted to prepare a list of plant species occurring in different seasons. The specimen of all these plant species were collected for herbarium purposes. Herbarium sheets were prepared and documented. Identifications were done with the help of different floras.

3. Results and Discussion



Taxonomical surveys were conducted in different tracks in the forest areas of Shahdol division 422 angiosperm taxa were documented for floristic analysis. During the course of present investigations 422 plant species of which 350 were dicots and 72 monocots were collected and identified. The total number of enumeration of plants with species, genera and families are summarized in Table 1 & Graph 1. The phyto-diversity ratio of species level between monocots to

dicots is 1: 4.9 of genera 1: 3.0 and of families 1:5.1. The results are tabulated as below:-

Table 1: Diversity of Dicot and Monocot.

S. No.		Dicots		Monocots		Total	Ratio
		Number	%age	Number	%age		
1.	Species	350	83.2	72	16.7	422	1:4.9
2.	Genera	214	79.1	57	20.8	271	1:3.0
3.	Families	83	83.6	16	16.3	99	1:5.1

Table 2: List of Rare and Threatened Plants of the Study Area.

S. No.	Botanical name	Local name	Family	Habit	Red data book category	Present status in study
1.	<i>Abutilon bidentatum</i> Hoesh.	Kanghi	Malvaceae	Herb	Invulnerable	VU
2.	<i>Acacia catechu</i> * (L.f) Willd.	Khair	Mimosaceae	Tree	Invulnerable	LC
3.	<i>Adina cordifolia</i> (Willd) ex Roxb.	Haldu	Rubiaceae	Tree	Vulnerable	NT
4.	<i>Ailanthes excelsa</i> Roxb.	Aruu	Simaroubaceae	Tree	Vulnerable	VU
5.	<i>Alangium salvifolium</i> L.f.Wang.	Ankol	Alangiaceae	Tree	Rare	EW
6.	<i>Alysicarpus vaginalis</i> (L.)D.C.	----	Fabaceae	Herb	Invulnerable	EN
7.	<i>Ampelocissus latifolia</i> Roxb.**	Pannibel	Vitaceae	Climber	Invulnerable	CR
8.	<i>Argyrea nervosa</i> Dalz.	Naar	Convolvulaceae	Climber	Invulnerable	EW
9.	<i>Bauhinia vahalli</i> Wt Arn.**	Kachnar bel	Cesalpiniaceae	Climber	Rare	CR
10.	<i>Boswellia serrata</i> Roxb.*	Salai	Burseraceae	Tree	Rare	LC
11.	<i>Celastrus paniculata</i> Willd.**	Malkagini	Clastraceae	Climber	Rare	CR
12.	<i>Chlorophytum laxaum</i> R. Br.	Safed mausali	Liliaceae	Herb	Rare	EN
13.	<i>Cissus rependa</i> Vahl.	Hadjod	Vitaceae	Herb	Rare	EX
14.	<i>Cordia dichotoma</i> Forst.	Lasora	Ehreteaceae	Tree	Vulnerable	EN
15.	<i>Crateva nervosa</i> DC.	--	Capparaceae	Tree	Rare	EN
16.	<i>Curcuma pseudomontana</i> Grah.	Musali	Zingiberaceae	Herb	Invulnerable	VU
17.	<i>Cythocline purpurea</i> Roxb.	Bhandaria	Asteraceae	Herb	Vulnerable	VU
18.	<i>Dalbergia latifolia</i> Roxb.	Safed shisham	Fabaceae	Tree	Invulnerable	EN
19.	<i>Didymocarpus pygmaea</i> Clarke.	Pathar phodi	Gesneriaceae	Herb	Vulnerable	NT
20.	<i>Dioscorea bulbifera</i> L.**	Jatashankari	Dioscoreaceae	Climber	Endangered	CR
21.	<i>Eranthemum roseum</i> Vahl R.Br.**	-----	Acanthaceae	Shrub	Rare	EW
22.	<i>Feronia limonia</i> L.	Kaitha	Rutaceae	Tree	Invulnerable	EN
23.	<i>Gloriosa superba</i> Linn.**	Kalihari	Liliaceae	Climber	Endangered	EW
24.	<i>Ipomoea cairica</i> (L.)Sweet.	-----	Convolvulaceae	Climber	Vulnerable	EN
25.	<i>Justicia neesii</i> Raman.	-----	Acanthaceae	Herb	Vulnerable	VN
26.	<i>Mallotus philippensis</i> Lam.	Sinduri	Euphorbiaceae	Tree	Rare	EN
27.	<i>Manilkara hexandra</i> Roxb.Dub **	Khirani	Sapotaceae	Tree	Invulnerable	CR
28.	<i>Melhania fultetyporensis</i> Munro	-----	Sterculiaceae	Shrub	Rare	EN
29.	<i>Mimosa hamata</i> Willd.	Bander ki roti	Mimosaceae	Shrub	Invulnerable	NT
30.	<i>Morinda tomentose</i> Heyne.	Aal	Rubiaceae	Tree	Vulnerable	NT
31.	<i>Nyctanthes arbortristis</i> L.**	Harsingar	Nyctagenaceae	Tree	Vulnerable	CR
32.	<i>Pterocarpus marsupium</i> Roxb.**	Bija sal	Fabaceae	Tree	Rare	CR
33.	<i>Salvadora persica</i> L.	Pilu	Salvadoraceae	Tree	Invulnerable	EN
34.	<i>Sarcostemma viminale</i> L.**	Sambher bel	Asclepiadaceae	Climber	Endangered	CR
35.	<i>Terminalia alata</i> * Heyne. Ex Roth.	Safeda	Combretaceae	Tree	Invulnerable	LC
36.	<i>Terminalia bellirica</i> Gaertn.	Baheda	Combretaceae	Tree	Invulnerable	EN
37.	<i>Wrightia tinctoria</i> * R.Br.	Dhudhi	Apocynaceae	Tree	Invulnerable	LC

*Abundantly found in the study area, ** Extremely high risk of extinction in the wild condition EW - Extinct in wild, CR - Critically endangered – Extremely high risk of extinction in the wild, EN - Endangered – High risk of extinction in the wild, VU - Vulnerable – High risk of endangered in the wild, NT - Near threatened – Likely to become endangered in near future, LC - Least concern –Lowest risk to become near threatened.

It is an attempt to highlights the rare or threatened plants of this study area. The government bodies as well as various NGOS have to come forward to take up responsibility of this important task to save the plant wealth. Efforts should also be made in search of rare plants of every regions of the country for their conservation. Hence, protective measures have to be taken for these precious plants wealth, because they will be danger in near future. It can be concluded that these protected and non protected forest plays a vital role in conservations of plant wealth. The national parks and sanctuaries also provide good habitats for in-situ conservation of plants.

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