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Study of some economic important plants of Sariska tiger reserve in Aravallis

Research Article

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Abstract

Present work has been carried out in one of the reserved forest area of the state of Rajasthan *i.e.* Sariska Tiger Reserve (STR). The study area is a part of Aravalli range. Being the oldest mountain system, It is rich in minerals as well as it harbours rich fauna, flora and ample of wildlife. The reserve has immense ecological and geomorphological significance. It is a highly complex ecosystem formed by the Northern Tropical dry mixed deciduous forests. A large number of species have become economic important species from the most common species in due course of time in the present study areas. The Aravalli is the repository of biodiversity, the rich diversity of study area used by inhabitant for fodder, fuel, timber, agriculture tools and medicine etc.

Keywords: Biodiversity; Sariska tiger reserve; Aravallis Economioc important plants

Introduction

According to the Champion and Seth (1968) the forest of Aravalli region falls under the broad category of Tropical Dry forests. Study area the "Sariska Tiger reserve" (74°14′ to 76° 34′ N and 25° 5′ to 27° 3′ E) is situated in the Aravalli hill range and lies in the semi-arid part of Rajasthan (Rodgers and Panwar, 1988). It became a wild life sanctuary in 1955 and Tiger reserve in 1982. According to Department of Forest, Government of Rajasthan the total area of the Sariska Tiger Reserve is 866 sq km, of which 302.2 sq km is buffer zone and 497.8 sq km is core zone. Sariska core zone is comprised of three isolated; pockets: Core-I (273.8 sq km), II (126.5 sq km) and III (97.5 sq km). The status of the Core I has been notified as a National park in 1982. Sariska is undulating to hilly and has numerous narrow valleys. Kiraska and Kankwari plateau and two large lakes Mansarovar and Somsagar. Silisad lake is situated just along the north eastern boundary of the reserve. The altitude of Sariska varies from 540 to 777 meters. The vegetation of Sariska correspond to Northern tropical dry deciduous forests (sub group 5 B; 5/E I and 5/E2) and Northern tropical thorn forest (Sub Group 6 B). The forest being scattered and sparse over a large area on various geological and soil formation and vary greatly in composition. Sariska is very rich in biodiversity with wide spectrum of flora and ample of wild life. The main economically valuable species are dhok (*Anogeissus pendula*) salar (*Boswellia serrata*), khair (*Acacia catechu*), bamboos (*Dendrocalamus strictus*), dhak (*Butea monosperma*), kair (*Cappais decidua*), ber (*Zizyphus mauritiana*) with having lot of ground flora comprised of shrubs, herbs, grasses and sedges etc [1-4].

Material and methods

Personal observations were taken in the field by visiting the study area and its different landforms. It was a great help that the field staff of Sariska Tiger Reserve, Department of Forest, Government of Rajasthan was associated always in the field. Plant samples (leaf, flower etc.) were brought to Indira Gandhi Centre for Human Ecology, Environmental and Population Studies, herbarium sheets for important species were prepared and help and cooperation was sought from the "Herbarium" of Department of Botany, University of Rajasthan, Jaipur for finding out their feasibility of uses as forest

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products. Interview has been taken for counter check of their utility by local dwellers inside or outside the reserve. The inventorization of such species and their parts utilize checked by literature authentically.

Result and Discussion

Several studies so far conducted in Aravallis like Nair and Nathawath1957, Dennis etal1977, Sharma 1978, 1983, Parmar1985, Rogers1988, 1990, 1991, Khan1995 which supported checklist of plant diversity in this natural reserve with their economic uses at local, besides this in other region studies like Samant and Dhar1997, Joshi 2000, Gamble 1884, Ghate 1939, Legris and Meher Homji, 1982 on the prospects and valuation of biodiversity in form of economic important plants as the source of income for the livelihood. The Himalaya is the repository of biodiversity. The rich diversity of the species is used by the inhabitants for fodder, fuel, timber, agricultural tools, medicinal, edible, religious and various other purposes [5-10]. The inventory of useful resources of the protected areas provides an array of existing information. The present study provides comprehensive information on life forms, altitudinal range, nativity, endemism, parts used and indigenous uses as medicine, edible, fodder, fuel, agricultural tools, religious and various other aspects. Such baseline information on the useful species is very much important to assess the population in wild, identify their economic and conservation values. Phytochemical investigation of medicinal and edible plants provides information about the biologically active compounds, which is very much important for the identification of potential values of these species [10]. Quantitative assessment of such resources using standard ecological methods and their extraction trends are urgently required. Analysis of interview schedule has revealed that there is large number of plant species with economic value. Plant species are utilized for variety of purposes. Table 1 includes twenty one species providing timber for shelter and other purposes. Table 2 includes names of nine species utilized for making agricultural implements. Table 3 includes



Table 1: Includes the plant species providing timber for shelter in Sariska Tiger reserve.

S No	Name of the species	Familes	Local name	Purpose	Category
1.	Acacia leucophloea (Roxb.) Willd.	Mimosaceae	Rajva	Hutment	V
2.	Acacia nilotica (Linn.) Del.	Mimosaceae	Babool	Hutment	V
3.	Albizia procera (Roxb.) Benth	Mimosaceae	-	Hutment	V
4.	Anogeissus latifolia (Roxb.) Wall ex Bedd.	Combretaceae	Dhavdo	Hutment	V
5.	Anogeissus pendula Edgen	Combretaceae	Dhok	Hutment	V
6.	Bridelia retusa (Linn.) Spr.	Euphorbiaceae	-	Hutment	V
7.	Butea monosperma (Lam.) Taub.	Paplionaceae	Palas	Thatching	V
8.	Dalbergia sissoo Roxb.	Paplionaceae	Motoshisham	Hutment	V
9.	Dendrocalamus strictus Nees.	Poaceae	Bans	Hutment	E
10.	Diospyros melanoxylon Roxb.	Ebenaceae	Timbru	Hutment	V
11.	Diospyros montana Roxb.	Ebenaceae	-	Hutment	V
12.	Garuga pinnata Roxb.	Burseraceae	-	Hutment	Т
13.	Gmelina arborea Linn.	Verbenaceae	Sivan	Hutment	Т
14.	Haldina cordifolia (Roxb.)	Rubiaceae	Haldu	Hutment	V
15.	Lannea coromandelica Houtt. Merrill	Anacardiaceae	Madhol	Hutment	V
16.	Madhuca longifolia (Koetig.) Macbride var. latifolia (Roxb.) Chev.	Sapotoceae	-	Hutment	V
17.	Miliusa tomentosa (Roxb.) Sinclair	Annonaceae	Umbhio	Hutment	Т
18.	Mitragyna parvifolia (Roxb.) Korth	Rubiaceae	Kalam	Hutment	V
19.	Salmalia malabarica (Dc.) Schott. & Endl.	Bombaceae	Shimlo	Hutment	V
20.	Sterculia urens Roxb.	Sterculiaceae	Kadayo	Hutment	т
21.	Terminalia alata Roth.	Combretaceae	-	Hutment	Т

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Table 2: Includes plant species utilize for making agricultural implement in Sariska Tiger Reserve.

	Name of the species	Families	Part used	Category
1.	Acacia nilotica (Linn.) Del	Mimosaceae	Bole and dendron	V
2.	Anogeissus latifolia (Roxb.) Wall ex. Bedd.	Combretaceae	Bole and dendron	V
3.	Anogeissus pendula Edgew.	Combretaceae	Bole and dendron	V
4.	Dendrocalamus strictus Nees.	Poaceae	Bole and dendron	V
5.	Haldina cordifolia Roxb.	Rubiaceae	Bole and dendron	Т
6.	Madhuca longifolia (Koenig) Macbride var. latifolia (Roxb.) Chev.	Sapotaceae	Bole and dendron	V
7.	Milusa tomentosa (Roxb.) Sinclair	Annonaceae	Bole and dendron	V
8.	Mangifera indica Linn.	Anacardiaceae	Bole and dendron	Т
9.	Mitragyna parvifolia (Roxb.) Korth	Rubiaceae	Bole and dendron	V

 Table 3: Includes name of plant species used exclusively for furniture making in Sariska Tiger Reserve.

	Name of species	Families	Part used	Category
1.	Acacia leucopholea (Roxb.) Willd	Mimosaceae	Bole and dendron	V
2.	Acacia nilotica (L.) Del.	Mimosaceae	Bole and dendron	V
3.	Albizia odoratissima (L.f.) Benth.	Mimosaceae	Bole and dendron	V
4.	Albizia procera (Roxb.) Benth.	Mimosaceae	Bole and dendron	V
5.	Anogeissus latifolia (Roxb.) Wall ex. Bedd.	Combretaceae	Bole and dendron	V
6.	Anogeissus pendula Edgew.	Combretaceae	Bole and dendron	V
7.	Bauhnia racemosa Lamk.	Caesalpiniaceae	Bole and dendron	V
8.	Bauhnia tomentosa Linn.	Caesalpiniaceae	Bole and dendron	V
9.	Butea monosperma (Lam.) Taub.	Paplionaceae	Bole and dendron	V
10.	Dalbergia latifolia Roxb.	Paplionaceae	Bole and dendron	V
11.	Dalbergia sissoo Roxb.	Paplionaceae	Bole and dendron	V
12.	Dendrocalamus strictus Nees.	Poaceae	Bole and dendron	V
13.	Diospyros melanoxylon Roxb.	Ebenaceae	Bole and dendron	V
14.	Haldina cordifolia Roxb.	Rubiaceae	Bole and dendron	Т
15.	Lannea coromandelica Houtt. Merrill.	Anacardiaceae	Bole and dendron	V
16.	Madhuca longifolia (Koenig) Macbride var. latifolia (Roxb.) Chev.	Sapotaceae	Bole and dendron	V

Table 4: Includes the list of plant species which are utilize for fuel purpose in Sariska Tiger Reserve.

	Name of the species	Families	Local name	Use	Category
1.	Acacia leucophloea (Roxb.) Willd.	Mimosaceae	Rijua	Dried twigs and boles	V
2.	Acacia nilotica (Linn.) Del.	Mimosaceae	-	Dried twigs and boles	V
3.	Aegle marmelos (L.) Corr.	Rutaceae	Bel	Dried twigs and boles	V
4.	Albizzia odoratissima (L.f.) Benth.	Mimosaceae	-	Dried twigs and boles	V
5.	Albizzia procera (Roxb.) Benth.	Mimosaceae	-	Dried twigs and boles	V
6.	Anogeissus latifolia (Roxb.) Wall	Combretaceae	Dhawdo	Dried twigs and boles	V
7.	Anogeissus pendula Edgew.	Combretaceae	Dhok	Dried twigs and boles	V
8.	Bridelia retusa (L.) Spr.	Euphorbiaceae	-	Dried twigs and boles	V
9.	Boswellia serrata Roxb.	Burseraceae	Salar	Dried twigs and boles	V
10.	Dalbergia sissoo Roxb.	Paplionaceae	Sisam	Dried twigs and boles	V
11.	Delonix elata (L.) Gamble	Caesalpiniaceae	Sandesro	Dried twigs and boles	V
12.	Butea monosperma Lam. Taub.	Paplionaceae	Dhak	Dried twigs and boles	Т
13.	Diospyrous meloxylon Roxb.	Ebenaceae	Timbru	Dried twigs and boles	-
14.	Diospyrous montana Linn.	Ebenaceae	-	Dried twigs and boles	-
15.	Flacourtia indica Burm. f. Merr.	Flacourtiaceae	-	Dried twigs and boles	-
16.	Grewia subinaequalis Dc.	Tiliaceae	Phalsa	Dried twigs and boles	-
17.	Grewia tiliaefolia Vahl.	Tiliaceae	-	Dried twigs and boles	-
18.	Haldina cordifolia Roxb.	Rubiaceae	Haldu	Dried twigs and boles	-
19.	Lannea coromandelica (Houtt.) Merrill.	Anacardiaceae	Madhol	Dried twigs and boles	V
20.	Miliusa tomentosa (Roxb.) Sinclair.	Annonaceae	Umbhio	Dried twigs and boles	V
21.	Mitragyna parvifolia (Roxb.) Korth.	Rubiaceae	Kalam	Dried twigs and boles	V
22.	Pithecellobium dulce (Roxb.) Benth.	Mimosaceae	Jangel Jalebi	Dried twigs and boles	V
23.	Terminalia alata Roth.	Combretaceae	-	Dried twigs and boles	Т

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24.	Terminalia arjuna (Roxb.) Wt. & Am.	Combretaceae	-	Dried twigs and boles	E
25.	Terminalia crenulata Roth.	Combretaceae	-	Dried twigs and boles	Т
26.	Woodfordia fruticosa (L.) Kurz.	Lythraceae	-	Dried twigs and boles	Т
27.	Wrightia tinctoria R.Br.	Apocynaceae	Dudhli	Dried twigs and boles	V
	Shrubs				-
28.	Alangium salvifolium (L.f.) Wang.	Alangiaceae	Ankol	Dried twigs and boles	V
29.	Capparis decidua (Forsk.) Edgew.	Capparaceae	Kair	Dried twigs and boles	-
30.	Capparis sepiaria Linn.	Capparaceae	-	Dried twigs and boles	-
31.	Grewia flavescen Juss.	Tiliaceae	-	Dried twigs and boles	-
32.	Grewia tenax (Forsk.) Fiori.	Tiliaceae	-	Dried twigs and boles	-
33.	Grewia tiliaefolia Vahl.	Tiliaceae	-	Dried twigs and boles	V
34.	Ipomoea nil (Linn.) Roth.	Convolvulaceae	-	Dried twigs and boles	V
35.	Jatropha curcus Linn.	Euphorbiaceae	Ratanjot	Dried twigs and boles	V
36.	Lycium barbarum Linn.	Solanaceae	-	Dried twigs and boles	V
37.	Nyctanthes arbor-tristis Linn.	Nyctanthaceae	Harsinghar	Dried twigs and boles	V
38.	Vitex nigrindo Linn.	Verbenaceae	Nirgund	Dried twigs and boles	V

name of sixteen plant species used exclusively for furniture making. Table 4 included a list of thirty eight plant species which are utilized for fuel purposes [11-17] (Tables 1-4).

Conclusion

In this study emphasis was laid on the floral diversity with their uses as economic value important products for the subsistence and livelihood of local dwellers inside and outside the Sariska Tiger Reserve . The study revealed that the loss biodiversity of the study area due to anthropogenic activities leads in scarcity of economic important species, which is basis of livelihood of local peoples. Due to the human interference in reserve will lead to deterioration of so many species which have great importance to generate economy for local peoples, and uses of such economic important plants species of the reserve so far.

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