



ORIGINAL RESEARCH PAPER

Forestry Science

SACRED GROVES: TRADITION OF BIODIVERSITY CONSERVATION IN NORTHERN CHHATTISGARH

KEY WORDS: Sacred Groves, Biodiversity, Tribes, Chhotanagpur

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ABSTRACT

India is a country of ecological and cultural diversity. With its diversity of ecosystems and species the community efforts of conservation are extremely varied. Protection of natural habitats (forests, stretches of river, ponds and lakes) in indigenous cultures is typically achieved by demarcating them as sacred, by the association of ancestral spirits or a local deity. This is amply illustrated in the case of the tribal population, which harbours beliefs like ancestor worship, worship of tree spirits, wildlife, and the sacred landscape. Many such sacred groves are found in Chhattisgarh and are locally known as Sarna, Matagudi, Devgudi and Gaondevi. Of these the groves of northern Chhattisgarh were studied by surveying the tribal areas and interviewing the locals. Sarana sacred groves are predominantly found in this Chhotanagpur region of the State. Some of the deities to whom these groves are dedicated are Andhari Pat, Chala Pachao, Sarna Burhia, Sarna Mata, Mahadania and Budhadev. Sal, Indian gooseberry, Indian laurel, Black myrobalan, Indian butter tree are among the most commonly found plant species in the sacred groves. Because of their 'divine' protection, a number of tree species that have otherwise been heavily extracted from the forests continue to exist in these groves. This is a tradition way to conserve these species in their natural habitat. Therefore we need to identify the existing sacred grove and species prevalent in those groves and encourage the related tribes for the conservation of these sacred groves.

INTRODUCTION

In India, the traditional communities have been protecting large tracts of natural forest as sacred groves, from time immemorial. A sacred forest or grove comprises patches of natural vegetation – from a few trees to several acres – that are dedicated to local deities or tree spirits. These spaces are protected by local communities because of their religious beliefs and traditional rituals that run through several generations. The degree of sanctity accorded to the sacred groves varies from one area to another. The sacred groves have played an important role in conserving the forest and its constituent biodiversity elements since ancient times. The sacred groves, in the rural landscape perform several ecological functions; they provide a range of benefits and services to the community. The occurrence of sacred groves can be observed in areas of high ecological significance where they protect watersheds, critical habitats and often house rare and endangered species.

Sacred groves are scattered all over the country (Fig.1), and are referred to by different names in different parts of India. They are mainly found in the states of Kerala, Karnataka, Tamil Nadu, Andhra Pradesh, Goa, Maharashtra, Gujarat, Chhattisgarh, Jharkhand, Odisha, West Bengal, Rajasthan, Uttarakhand, and in the North-Eastern states of Manipur and Meghalaya. Around 14,000 sacred groves have been reported from all over India but their number could be as high as 100,000 (Malhotra *et al.*, 2001).

According to the interviewed locals and the elderly people most of the groves are managed by the local community (ies) and owned by a group of families, or a clan. The community rituals are often synchronized with the blossoming of the flowers of the trees in the groves, and other agricultural operations. These rituals reveal the close sense of harmony that exists between nature and tribal communities. The Chhotanagpur part of the State shows the predominance of *sarana* or *jahera* kind of SGs plotted all over the State (Patnaik and Pandey, 1998; Pandey, 2000). Sacred groves in Jashpur and Sarguja district are known as Sarna. The *saranas* are of different types such as *sarhul sarana*, *mahadani sarana*, etc. During field survey it was found that area occupied by the *sarana* is less than an acre. Sacred groves which form examples of *in situ* conservation, also act as refugia for some plant species, and should be protected (King and Viji, 1997)

During the last three to four decades, increasing human pressures has lead to severe land use changes. Major threats to the grove include urbanization, over-exploitation of resources (like overgrazing and excessive firewood collection), and environmental destruction due to religious practices. Other threats to the sacred groves include invasion by invasive species, like the invasive weeds *Chromolaena odorata*, *Lantana camara*. Therefore the sacred groves require attention of locals and need

conservation. To fulfil this objective locals are to be encouraged and trained with the help of forest departments and NGO's.

Materials and Methods

Study Area

Northern region of Chhattisgarh is classified under hilly agro-ecological regions of the state. It includes Jashpur, Koriya, Sarguja, (Surajpur and Balrampur) districts. An ethno-botanical survey has been conducted to record information on sacred groves in northern tribal pockets of Chhattisgarh.

Methodology

To initiate the study, important tribal localities, pilgrim places and biodiversity rich areas of Sarguja were identified with the help of field survey. Status survey and identification of sacred groves were done during survey. The tribal communities were interviewed to collect information on existence of groves, plants and animals conserved their ethno- botanical information etc. Phytosociological studies and vegetation analysis were carried out through quadrat method. Quadrats of 40m x 40m were plotted.

Frequency = No. of plots in which species occur / Total no. of plots

Secondary Information

We searched using internet-based search engines, databases on scientific literature and leading ecology and conservation journals with keywords, including "sacred grove biodiversity", "ecology of sacred grove", "sacred grove India". We restricted ourselves to quantitative studies and documented observations on grove biodiversity and ecology. The study provided valuable information about a large number of useful plants and animals are conserved and worshipped as symbol to local deity by the tribal in sacred groves.

Results and Discussion

Status and rituals

In this study we found that sacred groves in Sarguja are locally known as *Phool*, *Sarhul*, *Kadamara Mahadani Buddhadev*, *Mandar*. *Sarana* sacred groves are predominantly found in the Sarguja region of the state. The area of these sarna's vary from 0.2-2.0 ha. and the area is continuously reducing due to the increased encroachment and over exploitation of the groves. Major deity worshiped in the sarna is the Sarna Bhuria. The major tribes associated with these groves are Kaware, Gond, Santhals, Oraons and pahari korwas. The tribes usually worship the tree of Shorea robusta believing that the deity resides on the tree.

Phyto-diversity Status

Bhelwa, Bija, Kusum, Kullu, Mahua, Asna, Tendu, Char, Sal, Chandan are among the most commonly found tree species in the sacred groves. Among these species most frequently occurring

species in these groves is *Terminalia tomentosa* with a frequency of 61.25%, followed by *Madhuca indica*, *Dispyros melanoxyllon*, *Buchnanian lanzan* having their respective frequencies as 55.57%, 45.23%, and 40.58%. *Santalum album* a endangered species is also found in these groves with a frequency of 12.36 All these species are under threatened category in their conservation status. Among plants with medicinal values found in these groves are *Curculigo orchioides* most frequently occurring herb having 30.48% frequency, followed by *Cholrophytum tuberosum* (28.56%) and *Ocimum sanctum*(27.50%). Certain medicinal plant species otherwise facing danger of extinction according to IUCN are culturally and traditionally considered to be sacred and not cut by local communities and these plants are though in low frequency available in these groves. These plant are *Curcuma aromatica*(2.56), *Curcuma angustifolia*(1.90), *Rauwolfia serpentine*(2.86), *Gloreosa superb*(4.76), *Tinospora cordifolia* (5.71). Many SGs constitute pristine vegetation, and are particularly rich in trees and associate groups of like epiphytes are also found in sacred grooves area.

Faunal -Diversity Status

Amphibia, reptiles, birds, butterflies etc are among the most commonly found animal species in the sacred groves

Conclusion

There 6major types of Sacred groves in the sarguja region. Major tree species found in groves are Bhelwa, beeja, mahua, asna, tenoo, char, sal, and Chandan. Plant with ethnobotanical importance found here are giloy, musli, glory lily, parijat, tikhur and Tulsi.

Maximum frequency is shown by Asna followed by mahua, tendoo and char. Least frequent trees are Chandan and bhelwa. Among medicinal plant found here most frequent is kali musli followed by Safed musli And tulsi lowest frequency was observed of tikhur, giloy, janglihalidi.

This study highlights the importance of sacred groves in conserving the endemic and endangered flora and fauna. Study also reveals the role of tribes in the conservation of the groves hence conserving forest and biodiversity, and the study also recognizes various tribal traditions related to these groves, the tribes worship the sacred plants and animals; they sing and dance in the groves during festivals. The tribes are also dependent on these groves for their day today needs of fuel-wood, small timber, fodder, medicines, food etc. Thus, the conservation strategies for forest and biodiversity must include tribes and their sacred groves. Thus, this study gives prime importance to the conservation of these groves for conserving the biodiversity and cultural tribal diversity of the sarguja district.

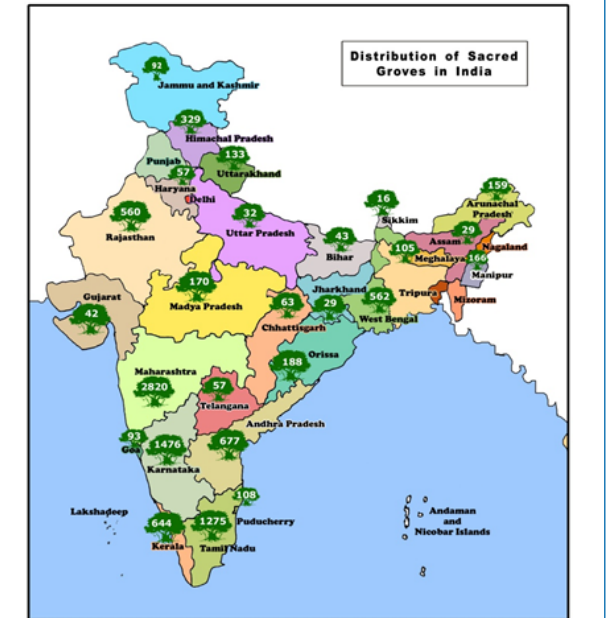
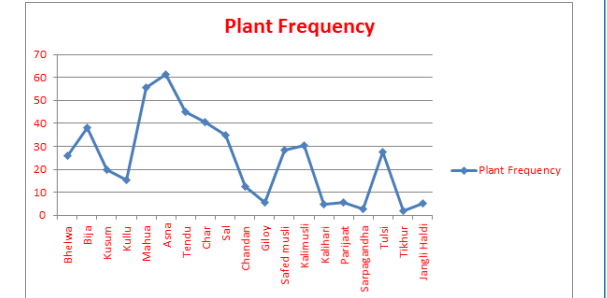
Table 1.Sacred Groves found in Jashpur and Sarguja District of Chhattisgarh.

S. No.	Name of the sacred groves	Deity	Area (Ha)
1	Phool Sarna	Sarna Bhuria	0.2-1.5
2	Sarhul Sarna	Sarna Bhuria	0.5-2
3	Kadamara	Andhari Pat	0.5-14
4	Mahadani	Mahadania	2-21
5	Buddhadev	Buddha dev	Not known
6	Mandar	Gohel	0.2-2

Table2. Threatened plants conserved in sacred groves.

S. No.	Trees/ Plants	Botanical name	Status	Plant Frequency
1.	Bhelwa	<i>Semecarpus anacardium</i>	Endangered	25.78
2.	Bija	<i>Pterocarpus marsupium</i>	Endangered	38.23
3.	Kusum	<i>Schliechera oleosa</i>	Threatened	19.63
4.	Kullu	<i>Sterculia urens</i>	Near Threatened	15.47
5.	Mahua	<i>Madhuca latifolia</i>	Endangered	55.57
6.	Asna	<i>Terminalia tomentosa</i>	Near Threatened	61.25
7.	Tendu	<i>Diospyros melanoxyllon</i>	Endangered	45.23
8.	Char	<i>Buchanania lanzan</i>	Vulnerable	40.58
9.	Sal	<i>Shorea robusta</i>	N/A	34.72

10.	Chandan	<i>Santalum album</i>	Endangered	12.36
11.	Giloy	<i>Tinospora cordifolia</i>	Vulnerable	5.71
12.	Safed musli	<i>Cholrophytum tuberosum</i>	Endangered	28.56
13.	Kalimusli	<i>Curculigo orchioides</i>	Endangered	30.48
14.	Kalihari	<i>Gloreosa superb</i>	Endangered	4.76
15.	Parijaat	<i>Nyctanthus spp.</i>	Endangered	5.71
16.	Sarpagandha	<i>Rauwolfia serpentine</i>	Vulnerable	2.86
17.	Tulsi	<i>Oscimum sanctum</i>	N/A	27.52
18.	Tikhur	<i>Curcuma angustifolia</i>	Endangered	1.90
19.	Jangli Haldi	<i>Curcuma aromatica</i>	Vulnerable	5.26



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