

Sacred Groves: Floristic Diversity and their Role in Conservation of Nature

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Abstract

Sacred Groves, one form of nature worship, are considered as "Sacred Natural Sites". Indian sacred groves represent a diverse spectrum of ecosystem. Groves are present amidst the barren landscape or grassland (e.g., in Meghalaya), hill slope (Nagoni in Himalaya), amidst the agricultural landscape (in West Bengal, Karnataka), coastal plain (e.g., Edayilekkadu in Kerala) and Rajasthan desert. With the rapid ongoing changes in society and land use patterns, nowhere except groves one can expect regional ecosystem characteristics which can be served as models or replica for researchers and educators. The importance of sacred grove in nature conservation has been increased manifold in recent time especially after the declaration of Convention on Biological Diversity (CBD). Community based conservation initiatives are one of the prime agendas for CBD for which sacred grove tradition can be portrayed as role model. The importance of sacred groves in socio-religious life as well as livelihood security has been felt by the indigenous communities from time immemorial which are actually substantiated by numerous local customs, folk lore, social and religious taboos throughout India.

Keywords: Floristic diversity; Conservation; Sacred groves; Biodiversity

Introduction

Nature worship is an integral part of human beings mainly in India. Sacred Groves, one form of nature worship which are the unique pieces of vegetations conserved by the indigenous people by dedicating them to the local deity. Sacred groves are named differently in Indian languages like 'Devarakadu', 'Devarabana', 'nagabana', 'buthadabana' in Kannada, 'kavu' in Kerala, 'Kovilkadu' in Tamil Nadu, 'Sarna' or 'Dev' in Madhya Pradesh, 'Devrai' or 'Devrahati' in Maharashtra, 'Sarnas' in Bihar, 'Orans' in Rajasthan, 'Lai Umang' in Manipur, 'Dev Van' in Himachal Pradesh, 'Sarana' or 'Jaherthan' in Jharkand and 'Ki Law Lyngdoh' or 'Ki Law Kyntang' in Meghalaya. In India, it has been reported from various parts of the country and are recorded mainly in tribal areas [1] (Figure 1).

These groves are also tracts of virgin forest harboring rich biodiversity



Figure 1: Sacred Grove.

protected by the local people based on their indigenous cultural and religious beliefs and taboos. These are also the repositories of rare and endemic species and which are regarded as the remnants of the primary forest left untouched by the local inhabitants due to the belief that deities reside inside these groves. In India, various communities worship the nature based on the premise that all creations of nature have to be protected. As a result, sacred groves still poses a great heritage of diverse gene pools of many forest species having socio-religious attachment and possessing medicinal values. The overall concepts of the sacred groves are traditional values, religious beliefs, taboos and socio-cultural practices. However, it is also one of the *in situ* conservation methods of plant diversity. In this advanced era the traditional values and socio-cultural practices have been weakened among the people mainly young generations. The importance of groves also declined due to various factors and it resulted to disappearance of sacred groves in villages.

River Kumaradhara is one of the main river of South Canara (Karnataka state, India) which originates in Central Western Ghats. The river basin spreads across South Canara, Hassan and Kodagu districts. The presence of many endemic, endangered and rare plant species have been reported in the river basin and adjoining areas of Kumaradhara [2] (Figure 2). However, many sacred groves and religious centers are also reported in this area. Presently, the surrounding vegetations including sacred groves are facing major threats from the various destruction factors such as expansion of agricultural crops, implementation of cables, roads and mini hydro power projects. Hence, an attempt has been made to record the number of sacred groves present and their plant diversity in two villages of Puttur Taluk (DK dist), Karnataka and also know the exact reasons for depletion of sacred groves.

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Figure 2: Local people inside the sacred grove.



Figure 3: A special spirit: Panjurly inside the grove.



Figure 4: Worshipping the special spirit inside the grove.

Materials and Method

A preliminary survey has been carried out to record the plant diversity of sacred groves located along the river basin and adjoining area of the Kumaradhara with a special reference to the Kunthoor-

Perabe and Dholopady Village, Puttur Taluk, DK District, Karnataka, India. The plant species specimens were collected and identified based on the plant key characters. The collected specimens were preserved as herbarium in the laboratory. The floristic diversity and the importance of the sacred groves have been recorded. Similarly the destruction factors also visually observed and recorded.

Results and Discussions

The river basin and adjoining area of the river with special reference to Kunthoor-Perabe and Dholpady village (Puttur Taluk, DK dist, Karnataka) showed presence of number of sacred groves which maintained by the local/indigenous people from their ancestors time itself. In this region, nature is worshipped mainly by the serpent god "Naga" followed by other local special spirits which are called by various names in local languages. Similar results have been reported in DK and Udupi districts [3].

The number of sacred groves per family varied from one to many as per their customs and beliefs. The majority of the farmers maintained the groves along with their agricultural lands. Generally, farmers believed that the nature and its components were created by the special spirits and they reside inside the nature. So people worship the nature as special spirits. In this village more number of 'Naga banas' are observed and followed by the rest of the deities. The 'Naga banas' are maintained by most of the Hindu communities including brahmins but the rest of the sacred groves like 'Bhutha banas' are by gowdas, bunts, billavas, mugeras and local tribal community people. Sacred groves like 'Naga banas' and 'bhutha banas' are showed wide type of plant biodiversity. The plant diversity of the sacred groves has shown in Table 1. Among the species, more or equal number of species belongs to the family Moraceae, Rubiaceae and Liliaceae. Some species are endemic to the Western Ghats (Table 1). However, maximum numbers of plant species are highly medicinal. Hence, conservation of endemic and medicinal plant species is very essential. These important plant species are conserved in sacred groves which are untouchable patches and maintained from time immemorial. The sacred groves are the shelters for various organisms including lower forms to higher plants.

Threat factors for sacred groves

The study showed that many factors are threat for the sacred groves and its floristic composition in the village. The study area showed that most of the farmers preferred to cultivate cash crops like are coconut, cashew and rubber which require large area for the cultivation. It resulted into fragmentation of sacred groves and its green compositions. In many areas, naturally occurring sacred groves are replaced by the concrete structures mainly 'nagabanas', which resulted to depletion of plant species and other related organisms. Further, the study area showed the expansion of roads and implementation electric cables, also the destruction factors for the fragmentation sacred groves. Similarly, the mini hydel power projects in Kumaradhara river, also the main factor for the erosion of the sacred groves and plant diversity. The mini hydel power projects damage large amount of local biodiversity including human lives, reserve forests, sacred groves, agricultural lands, poultry and dairy activities. The project affects more than 575 families who will lose agriculture land, dairy and poultry activities. Similarly, many sacred groves of this area will be submerged which maintained by the local people and farmers. These sacred groves possess a large number of endemic and endangered plant species (Table 1) and sheltered to many organisms. More than 70 endemic plant species have been recorded along the river basin and adjoining area of Kumaradhara including sacred groves. Similarly, fragmentation of the grove owning

SI No	Plant species	Family	Status	Common name
1	<i>Ixora brachiata</i> Roxb.	Rubiaceae	Endemic	Kureji (Tulu)
2.	<i>Hopea ponga</i> Mabb.	Dipterocarpaceae	Endemic	Karamara
3.	<i>Hopea parviflora</i> Bedd.	Dipterocarpaceae	Endemic	Kiraalbogi
4.	<i>Artocarpus hirsutus</i> Lam.	Moraceae	Endemic & threatened	Hebbalasu
5.	<i>Strychnos nuxvomica</i> L.	Loganiaceae	-	Kasaaraka
6.	<i>Holigarna ferruginea</i> Mar.	Anacardiaceae	Endemic	Chera
7.	<i>Melastoma malabathricum</i> L.	Melastomataceae	-	Nekkare
8.	<i>Ixora coccinea</i> L.	Rubiaceae	-	Kepula
9.	<i>Cinnamomum zylanicum</i> Blume.	Lauraceae	-	Ijiru
10	<i>Olea dioica</i> Roxb.	Oleaceae	-	Bilisaroli
11.	<i>Terminalia bellirica</i> Roxb.	Combretaceae	-	Shanthi
12.	<i>Memecylon malabaricum</i> Cogn.	Melastomataceae	Endemic	Ollekodi
13.	<i>Ficus hispida</i> L.	Moraceae	-	Paajovu
14.	<i>Alstonia scholaris</i> R. Br.	Apocynaceae	-	Paalemara
15.	<i>Lophopetalum wightianum</i> Arn.	Celastraceae	-	Bolpale
16.	<i>Xylia xylocapa</i> Taub.	Fabaceae	-	Chiruve/ Sirve
17.	<i>Caryota urens</i> L.	Palmae	-	Eeindu
18.	<i>Aporusa lindleyana</i> Baill.	Euporbiaceae	-	Saroli
19.	<i>Gloriosa superb</i> L.	Liliaceae	-	Gowrihoo
20.	<i>Smilax zeylanica</i> L.	Liliaceae		Chennere booru
21.	<i>Asparagus racemosus</i> Willd.	Liliaceae		Piliuguru
22.	<i>Artocarpus heterophyllus</i> Lam.	Moraceae	Endemic	Halasu
23.	<i>Chasallia curviflora</i> Wall.	Rubiaceae	-	Chasalia
24.	<i>Mesua ferrea</i> L.	Clusiaceae	-	Nagasampige
25.	<i>Uvaria narum</i> Wall.	Annonaceae		Kariballi
26.	<i>Mussaenda laxa</i> Hutch.	Rubiaceae	-	Bolletappu
27.	<i>Calycopteris floribunda</i> Roxb.	Combretaceae	-	Aenjiru
28.	<i>Syzygium caryophyllatum</i> Gaertn.	Myrtaceae	-	Kuntaala
29.	<i>Bamboo sp .</i>	Poaceae	-	Bidhiru
30.	<i>Ficus racemosa</i> L.	Moraceae	-	Attimara

Table 1: Commonly found Plant species in sacred groves in the village.

families, migration of young generations towards urban area, erosion of cultural and religious beliefs and taboos are some of the factors for disappearance / reduction of sacred groves.

Conclusion

The preliminary study showed the presence of floristic diversity in the sacred groves of the area which are maintained for special spirits. Many plant species of the groves are endemic and endangered which are economically and medicinally very important. The conservation of such plant species is very essential. In these villages, sacred groves are mainly maintained by the farmers and varied sacred groves were observed among various communities. The study also showed the destructing factors such as agriculture and road expansions, implementation of cables and some of the hydel projects. All these factors responsible for complete disappearance of sacred groves and floristic diversity in future days. Therefore, immediate actions like exploration, scientific documentation, creating awareness on conservation of naturally occurring sacred groves to be initiated. Similarly, development and modernization must be restricted in sacred grove areas of the villages.

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