

The Sacred Flora of India: A Case for Biodiversity Conservation

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ABSTRACT

In ancient Greece, the spirit of conservation of plants and animals was represented by the Goddess Artemis. Numerous ancient Greek texts testify the role played by Artemis in the protection of plant and animal life and the same has been depicted in paintings and sculpture of the succeeding period. In India people have been worshipping forces and elements of nature from the time of the ancient Indus Valley civilization through various sculptural artefacts like the seals and figurines. Vedic texts, the Ramayana and Mahabharata as well as other religious texts and treatises are full of examples of interdependence on nature. To this day, plants and animals are worshipped throughout the length and breadth of the country. From the Himalayan landscape in the north and north-east to the southernmost tip of the country, from Eastern to the Western Ghats, people and societies have evolved religio-cultural mechanism for the conservation of natural habitat by way of sacred trees and sacred grooves. Sacred plants like Pipal, Banyan, Siris, Neem, Khejri etc. to animals are all revered by the people of the subcontinent. Protection of these sacred species through religious and cultural practices has resulted in their conservation and enrichment of the biodiversity of the region which is very crucial for the overall livelihood of all living beings. The present paper, thus seeks to explore some of these traits and mechanisms through which the rich biodiversity of the region has been ensured. It is interesting to note here that people have made it a part of their lives and internalised these practices so that a better liveable environment is ensured. The onslaught of modernity and development, however, has eroded many of these practices leading to loss of flora and fauna which has ultimately led to many man-made crises and has disturbed the equilibrium of the planet. The attempt, therefore, should be to ensure the balance of nature through our long-standing cultural practices in order to avert any catastrophe.

Key words: Sacred groves, Religious texts, Cultural practices, Conservation of biodiversity

Flora in Historical Texts

Trees have always been an integral part of Indian culture. From individual houses to community buildings to places of worship, community forests, sacred trees have dotted the length and breadth of the country. In a nutshell, they 'form the ecological heritage of India' (Nanditha Krishna and Amirthalingam, 2014). Some plants are associated with deities while others have mythological or cul-

tural linkages while some others have medicinal properties. Overall, trees, sacred groves and forests are intricately associated with the lives of the people. Certain plants like *Tulsi* and *Pipal* are found from north India to the southern tip of the country and are worshipped. From the times of Indus valley civilization, people have been worshipping various forms of nature including trees. Cultivation and food production led people to worship the earth as

Mother Goddess signifying fertility and creation and plants and animals were accordingly worshipped as the creation of mother earth. Trees have also been associated with places of worship and temples erected around them as it was believed that Gods resided on these sacred trees. Such tree was also known as the *Sthal Vriksha* and became an integral part of the mythology associated with that particular temple or place of worship. In many ways, the *Sthal Vriksha* becomes an important source of genetic conservation and it plays a significant role in the conservation of local ecology and biological diversity.

All forms of flora are of immense importance for the humankind. Plants are utilized for a variety of reasons, some for their medicinal properties, others for economic usage, ecological restoration or for their socio-cultural beliefs. Thus, plants and trees find elaborate mention in religious as well as other texts from the ancient times. Even though the Indus script has not yet been deciphered, the seals, amulets, copper tablets of the period depict tree and their worship with inscriptions below them which underline the importance of trees among the people of Harappan culture. Sometimes, there is a figure peering out from between its branches, possibly a tree-spirit (Upinder Singh, 2012). Pipal tree is depicted several times showing its prominent position while worshipping during the Harappan period. So many animals like elephant, lion, humped and humpless bull, snake, rhinoceros, antelopes, tiger etc. found on the seals demonstrate that there was very thick vegetative cover all around which supported a rich fauna.

Entire Vedic literature is full of reference to trees, forests and their usage in form of household requirements, cultivation, shelter, medicinal value and climatic conditions. Several verses are exclusively devoted to the importance of various species of plants. The Rig Veda defines plants as personification of the divine. The Atharva Veda is full of praise for the importance of plants and their medicinal value as well as their religious and cultural importance. The Pipal tree, for instance, has been universally represented from the time of the Harappan culture to the Vedic period, the Buddhist and Jain texts, the Ramayana, Mahabharata and other religious as well as secular texts. Soma, for example, is the most prominent plant mentioned in the Rig Veda in Mandala IX which is also called the Soma Mandala and is dedicated to the purification of the Soma.

During the Vedic period roughly spanning 1500 BC to 500 BC, all forms of nature were considered divine-part of an indivisible life force uniting the world of humans, animals and vegetation (Nanditha and Amirthalingam, 2014). There is an elaborate list of plants mentioned in the Rig Veda which are sacred and are worshipped in many rituals associated with religious practices.

It is believed that each *Yuga* (era) was characterised by a sacred tree and was revered by all. Thus, while the sandalwood tree (*Santalum album*) is attributed to the *Krita Yuga*, Champaka (*Micheliachampaka*) is the tree of *Treta Yuga* and Caper bush (*Cleome fruticosa*) and Jackfruit tree (*Artocarpus heterophyllus*) are the sacred trees of the *Dwapar* and *Kali Yuga* respectively (Amirthalingam and Nanditha, 2014). Our sacred texts like the Ramayana and Mahabharata are full of reference to sacred trees, their types, usage and importance in one's life emphasising the importance of trees in general and special significance of sacred trees in particular.

Apart from the Brahminic texts, trees find extensive mention in Jain and Buddhist religious scriptures. Jainism has been associated with the life in natural world and there is great emphasis on the importance of trees. Each of the Jain Tirthankaras (24 Holy saints) have been associated with a particular tree species. So, while Adinatha, the first Tirthankara is associated with the banyan tree (*Ficus benghalensis*), Mahavira, the 24th Tirthankara is linked to the Sal tree (*Shorea robusta*). Other Tirthankaras are also associated with different tree species. These include the Shirisha (*Albizia lebeck*), Vilva (Bengal Quince, *Aegle marmelos*), Jamun (*Syzygium cumini*), Pipal (*Ficus religiosa*), Asoka (*Saraca asoka*), Mango (*Mangifera indica*) etc.

Buddha attained enlightenment under a Pipal tree and hence it is the most revered tree for the followers of Buddhism. Prior to his worship in human form, Buddha was symbolically represented as a tree. Several motifs of the later period also had the tree as the central theme and Buddha can be seen meditating or giving sermon sitting beneath a tree. Buddhist texts like Tripatakas, Attakathas and the Jataka extensively mention the trees and forests associated with the life and time of the Buddha. Some of the forests associated with Buddha include the Jetavana, Nyagarodhavana, Mahavana, Lumbini vana, Venuvana, Amarvana and the Ambapalivana. Many trees associated directly with the life of Bud-

dha include the Ashoka tree (the tree under which Buddha was born), the Pipal tree (the tree under which Buddha attained enlightenment), the Sal tree (Buddha attained *Mahaparinirwana* under this tree), the Mango tree, Plaksha or Pakad tree, the Banyan tree, Jamun tree, Tada tree, Bamboo etc.

The Sangam literature of Tamil Nadu has attributed the importance of trees and the Gods and Goddesses associated with them. The banyan tree, for example is revered and associated with Lord Shiva who is mentioned sitting under it and delivering sermons to his disciples. It is also associated with Vishnu. Most famous temples in Tamil Nadu came up around sacred trees which were associated with a particular deity. The tree was thus called the *Sthala Vriksha*. Some places too were named after a particular tree. For example, Kanchipuram was named after the Kanchi tree. Similarly, few dynasties were named after trees like the Pallava dynasty and the Kadamba dynasty, Pallava being the leaf of a tree and Kadamba, a plant species. Sacred trees like the Pipal and Neem are still worshipped in large parts of Tamil Nadu as they are considered the *Vriksha Devta* and symbols of longevity and fertility.

The *Yakshas* and *Yakshis*, believed to be the spirit of the tree and protectors of the living beings, have been worshipped in Indian mythological traditions from the very beginning. Rig Veda, Athar Veda, Upanishads and Brahmanas are full of examples of the importance and role of Yakshas who generally belonged to the category of lower deities. It was believed that the Yakshas lived on tree and hence the worship of the Yaksha meant the worship of the tree itself. In the Hindu mythology, Yakshas are also considered to be associated with fertility. "Yakshas bestowed wealth and progeny; they were supposed to bring about marriages, safeguard woman's chastity (*Rajtarangini*), grant children and grandchildren (*Avasyaka Sutra*) and protect the foetus (*Mahavamsa*)" (Amirthalingam and Nanditha, 2014). Several Buddhist texts as well as monuments refer to or depict the role played by the Yaksha/tree in everyday life. Yakshis are considered to look after the well-being of the Tirthankaras who are depicted as attendants with supernatural powers.

Several tree species in the Indian mythology are of special significance. As mentioned in the Rig Veda (I. 75), the *Kalpa Vriksha* is known as the wish-fulfilling tree. There are many legends associated with the origin of the *Kalpa Vriksha*. According to one of the legends, the tree was one of the gems that

came out of the *Samudra Manthan* and it was taken away by Indra. Apart from bearing different types of fruits and fulfilment of wish, this tree symbolises life and prosperity, endurance, growth and generosity. Tree species like the banyan, pipal, coconut and Parijat are associated with the *Kalpa Vriksha*. The *Chaitya Vriksha* was a tree with dense foliage and fruits which provided shelter to the human as well as avian and other faunal species. It was believed that the Yakshas lived on this tree and provided safety to the species residing on the tree. The importance of this tree is mentioned in Ramayana, Mahabharata and the Buddhist literary texts. *Sthala Vriksha* which, in most instances, is synonymous with the *Chaitya Vriksha*, is associated with a particular deity or a temple. *Sthala Vriksha* is generally found in and around the temple complex and is worshipped differently at different places which can be by way of offering of coconuts, flowers, lighting of lamp, tying thread in the branches or around trunk of the tree, taking rounds of the tree itself etc. Pipal is a common tree under this category and can be found in the temple complex of most of the temples. Buddha attained enlightenment under this tree. Lord Shiva is seated under a banyan tree as *Dakshinamurty* in the southern entrance of the Meenakshi temple in Madurai. Our mythological and other religious texts are full of examples of the sacred nature of the tree and rituals associated with them. Many religiously important cities like Chidambaram, Vrindavan, Badrinath etc. have been named after trees that are found in the region.

There are numerous examples of trees being part of the popular culture. Several examples of stories associated with trees in and around sacred shrines bear testimony to this fact. For example, it is believed that the Adi Shankara wrote the *Kalpa Shakti Sthavam* in praise of the Pipal tree at Joshi Math. Similarly, many Sufi saints who meditated beneath trees were buried there itself and these trees eventually became symbols of worship among Muslims who would often tie string around it for wish fulfilment. This tradition continued when mausoleums were built in honour of a particular Sufi saint. It is also believed that the Parijata plant (Night Queen) is the sacred plant of these shrines. For many Christian sects, the Olive tree is considered sacred and its oil is used for ritualistic practices like baptism and communion. Guru Nanak Dev attained enlightenment under the Ber tree (*Ziziphus mauritiana*). He described "tree as a saviour of cre-

ation and said, 'O God, you are an infinite tree and I am a bird under thine protection'." (Kaler, 2012). Branches and leaves of many plants and trees were used for their medicinal value as also to ward off evil spirits and were used as amulets. We find numerous mentions of it in the Atharva Veda, a religious text of the Hindus. Many such practices are prevalent among the tribal population across India.

Sacred Groves

Sacred groves in different forms are found all around the world. In India also, they abound the length and breadth of the subcontinent. However,

there are four distinct regions with most clusters of these groves. These are "the Khasi and Jaintia hills in the North East, the Western Ghats, Aravalli hills and Surguja Chanda and Bastar areas of Central India"(Harikrishnan Nair *et al.*, 1997). Sacred groves or forests are traditional forms of community-based conservation and have been revered and conserved throughout the world for a variety of reasons. Numerous historical as well as mythological texts bear testimony to this fact. They are preserved and worshipped on account of religious beliefs, burial practices, ecological value etc. Thus, they provide different ecosystem services and act as instruments of

Sacred Plants of the Rig Veda (Amirthalingam M. and Nanditha Krishna, p.13)

Plant Name (Rig Veda)	Plant Name (Vernacular)	Scientific Name	Reference in Rig Veda Trees and Herbs
Ashvattha	Pipal	<i>Ficus religiosa</i>	VI.24;I.611;I135.8
Pippala	Pipal	<i>Ficus religiosa</i>	I.164,20
Bhanga	Indian hemp	<i>Cannabis sativa</i>	IX.61, 13
Karanja	Indian beech	<i>Pongamiaglabera</i>	I.53.8;X.48, 8
Karkandhu	Jackal jujube	<i>Ziziphuaoenoplia</i>	I.112, 6
Khadira	Cutch tree	<i>Acacia catechu</i>	III. 53, 19
Kimsuka	Flame of the Forest	<i>Butea monosperma</i>	X. 85, 20
Palasha, parna	Flame of the Forest	<i>Butea monosperma</i>	X. 97, 5
Nyagrodha	Banyan	<i>Ficus indica/Ficus benghalensis</i>	I. 24, 7
Shalmali	Silk cotton tree	<i>Salmaliamalabarica</i>	VII. 50, 3
Shami	Indian mesquite	<i>Propisspecigera</i>	X. 95.1-18
Shimbala	Flower of sameli (silk cotton)	<i>Salmaliamalabarica</i>	III. 53, 22
Shimshapa	Sissoo, Indian Rosewood	<i>Dalbergia sisu</i>	III. 53, 19
Soma			Mandala IX
Urvaruka	Cucumber	<i>Cucumis sativus</i>	VII. 59, 12
Vibhaidaka	Bastard myrobalan	<i>Terminalia bellarica</i>	VIII. 86, 6; X. 34, 1
Aquatic Plants			
Kiyambu	Water Lily	<i>Nymphaea alba</i>	X. 16, 13
Pundarika	White Lotus	<i>Nelumbo caerulea</i>	VI. 16, 13; VII. 33, 11
Pushkara	Blue Lotus	<i>Nymphaeacaerulea</i>	VI. 16, 13; VII. 33, 11
Grasses			
Durva	Bermuda grass	<i>Panicum dactylon</i>	X. 16, 13; 134, 5; 142, 8
Kasha	Wild sugarcane	<i>Saccharum spontaneum</i>	X. 100, 10
Kusha	Grass of Lucky augury	<i>Poa cynosuroides</i>	I. 191, 3
Munja	Bengal cane	<i>Saccharum munja</i>	I. 191, 3
Pakadurva	Bermuda grass	<i>Penicumdactylon</i>	X.16, 13
Shara	Bengal cane (a reed)	<i>Saccharum sara</i>	1.191.3
Trina	Lemongrass	<i>Cymbopogon curates</i>	1.161, 1;162, 8, 11; X.
102.10			
Ulapa	Cogon grass	<i>Imperataarundinacea</i>	X. 142. 3
Vamsha	Bamboo	<i>Bambusaarundinaceae</i>	
Yava	Barley	<i>Hordeum vulgare</i>	1.23.15; 66.3; 117.21; 135.8; 176.2; II.5, 6; 14, 11; V.86; VII, 3, 4; VIII, 2, 3; 22, 6; 9, 78

conservation of a wide variety of flora and fauna. These may be generally dedicated to certain ancestral beliefs, dedicated to local deities or the tree spirit. It is estimated that India has one of the largest collectives of sacred forests ranging between 1,00,000 and 1,50,000 (Malhotra *et al.*, 2007). These groves serve as reservoir of not only a variety of flora and fauna but are also credible source of information for anthropological, cultural, economic and ecological studies. These sacred groves are not generally exploited for the economic use primarily because of the belief in the relationship between nature and human beings.

The traditional knowledge base of the Indians has been instrumental in the preservation and conservation of plants and animals. "All forms of life from sedges to fig trees, and from crabs to peacocks and tigers continue to be regarded as sacred and inviolable by a variety of primitive cults" (Gadgil and Vartak, 1976). Owing to taboos, restrictions, legends prevalent world over, the traditional societies have been able to maintain a healthy relationship with nature. According to Gadgil and Vartak, sacred groves originated in the hunting-gathering stage of human social evolution (Gadgil and Vartak, 1976). They go on to further elaborate that the deities of the sacred groves were fierce and would punish anyone with death who violated the norms. A significant category of sacred groves in the Western Ghats is called the 'Inam Groves'. In this category, it was believed that no deity lived in these forests but were used by the priests of the deities who would use various forest produce like fruits and fodder but would refrain from destroying the forest itself.

Overall, sacred groves have been a reservoir of a variety of flora and fauna and have been instrumental in the maintenance of ecological balance and biological diversity. Restricted access to these forests due to cultural and religious traditions preserved its pristine glory for a very long time. However, demographic as well as developmental factors in the recent past has led to encroachment and exploitation of these forests for economic use. It has also led to the loss of a variety of plant and animal species which has ultimately disturbed the intricate ecological balance maintained from ages. At the same time, loss of traditional values over a period of time has significantly altered our belief system. As a result, the sacred groves which were revered and preserved for their cultural and religious values, has been encroached upon and used for a variety of pur-

poses including tourism and pilgrimage activities apart from its economic exploitation. The need of the hour is to integrate traditional beliefs with modern scientific forestry practices for a better management and preservation of these forests and these could become useful models of biodiversity conservation (Tripathi, 2001).

Various world bodies like the IUCN (International Union for Conservation of Nature), WCPA (World Commission on Protected Areas), Specialist Group on Cultural and Spiritual Values (<http://www.csvp>) and many other governmental and institutional bodies are also working for the conservation of sacred groves. These forest clusters are conserved not only primarily for spiritual reasons but also for their role in biodiversity conservation and ecological services like soil conservation, watershed management and the use of forest products for food, fodder and medicine.

Conclusion

Although sacred groves are spread across the whole of Indian sub-continent, there are few clusters which have forests under this category. Some of these are the Western Ghats, the Khasi and Jaintia Hills in the North East, the Aravalli hills, Surguja and Bastar areas of Central India etc. Many of these areas are declared biodiversity hotspots and have reservoir of flora and fauna and gene pool. These forests are also examples of community-based natural resource management.

Elsewhere in the world, due to heavy industrialization and resultant urban expansion, sacred groves were damaged to a great extent. But due to flexibility and inclusiveness in Hindu ritualistic practices, most of the sacred groves were protected and are still found in large numbers throughout the country. Even Brandis (1897), the first Inspector General of Forests in India observed the wide presence of these forests in the Garo and Khasi hills, the Coorg region, the Salem district of Madras presidency, the Rajputana region and many more. He sites one instance of a sacred grove in the Gorakhpur region which was maintained by a Muslim saint, Mian Sahib. The Malabar Manual of William Logan (1920) and the 1921 Census Report of Travancore suggests of large patches of sacred groves in the region. Similarly, the Bishnois of Rajasthan have been instrumental in the protection of the Khejri tree (*Prosopis cineraria*) for a very long

time. The *Sharana forests* of Surguja district of Madhya Pradesh spread over 20 hectares is abode to a variety of plant and animal species which are still protected.

Shifting cultivation has played an important role in origin and maintenance of sacred forests in the hilly and mountainous regions of the country. In the Western Ghats in particular, these were part of the patches of cultivable land and thus were integral part of the agricultural settlements. The colonial administrators, while demarcating forests for commercial use, paid little regard towards the sacred forests and very often these were made part of the working plan for the extraction of timber and other forest produce. As a result, many of these forests were either destroyed owing to commercial activity or were substantially damaged. Nevertheless, these forest patches still serve as great reservoir of biodiversity and gene-pool.

Overall, the importance of sacred trees and sacred groves lies in the preservation and continuity of idea and belief system from the ancient times and has upheld the socio-religious traditions. Beliefs and taboos have had positive impact in the preservation of several endangered species of plants and animals. Restricting the use of these forests for common use over a period of time, therefore, has led to its preservation and proliferation of many species. Apart from preserving our systems and beliefs, sacred groves have also served various ecological services like conservation of flora and fauna, soil conservation, landscape restoration, maintaining conducive climatic condition etc. It has also led to several ethno-botanical studies which underline the relationship between plants and animals especially the tribal population. Study of the flora has also led to researches in medicinal plants and traditional

healthcare systems and has led to preservation of many endangered rare and almost extinct medicinal and herbal species especially in the upper reaches of the mountains. The importance of sacred groves and beliefs and its floral and faunal diversity have been documented for many areas. However, wide ranging interdisciplinary studies involving biological sciences, anthropologists, sociologists and experts from cultural studies need to be undertaken for a better understanding of the region in totality.

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