SACRED GROVES OF INDIA : AN ANNOTATED BIBLIOGRAPHY

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Cover image: A sacred grove from Kerala.
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FOREWORD

In recent years, the significance of **sacred groves**, patches of near natural vegetation dedicated to ancestral spirits/deities and preserved on the basis of religious beliefs, has assumed immense anthropological and ecological importance.

The authors have done a commendable job in putting together **146** published works on **sacred groves of India** in the form of an annotated bibliography. This work, it is hoped, will be of use to policy makers, anthropologists, ecologists, Forest Departments and NGOs.

This publication has been prepared on behalf of the National Committee for Scientific Committee on Problems of Environment (**SCOPE**).

On behalf of the SCOPE National Committee, and the authors of this work, I express my sincere gratitude to the Indian National Science Academy, New Delhi and Development Alliance, New Delhi for publishing this bibliography on sacred groves.

August, 2001

Kailash C. Malhotra, FASc, FNA
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PREFACE

In recent years, the significance of **sacred groves**, patches of near natural vegetation dedicated to ancestral spirits/deities and preserved on the basis of religious beliefs, has assumed immense importance from the point of view of anthropological and ecological considerations. During the last three decades a number of studies have been conducted in different parts of the country and among diverse communities covering various dimensions, in particular cultural and ecological, of the sacred groves.

These studies spanning over a period from 1891 till recent times have been published in various forms- monographs, books, journal-articles, seminars, workshop proceedings. Several publications are not readily accessible to researchers and practitioners. Therefore, a strong need was felt to put together various published studies related to the sacred groves in one publication. The present endure attempts to fill in this felt gap.

We have tried our best to include in this work most of the published material on sacred groves of India, however we are aware that we might have missed several studies published in local regional languages.

For each study we have provided reference, summary and a few key words. Based on the key words we have also provided a subject index.

Many persons have helped us in this work; we thank all of them. Our special thanks are due to the Director, Indira Gandhi Rashtriya Manav Sangrahalya, Bhopal for his support and encouragement, and to Dr. Debal Deb for help in editing.

We are grateful to the Indian National Science Academy, New Delhi and Development Alliance, New Delhi for publishing this annotated bibliography on sacred groves of India.

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Kolkata
August, 2001

1) Adhikary, A. K. 1984 *Society and World View of the Birhor*. Memoir No. 60. Anthropological Survey of India, Calcutta.

The members of each clan of Birhor tribe think themselves to have descended from a common ancestor belonging to a particular hill or mountain and feel kinship relation among all of them. Each clan has a deity or Buru Bonga who is supposed to live in its traditional site or sites on forest clad hills or mountain. They worship and make sacrifices to their respective Buru Bonga from time to time facing the direction in which their traditional home are situated. Members of each clan not only affiliate themselves with a particular territory in jungles but also sacrifice animal to their clan deity. All the malevolent spirits are included within the category of Churgin, includes the spirits of the dead who wander around and live in uninhabitable places on the earth. The Draha and Khut live beneath the big trees or big boulders while small bushes are abodes of the Bhulah and the Bhulah Chandi. The Bhagat live in deep jungles.

KW: Chhotanagpur, Bihar, Deities, Birhor

2) Amrithlingam, M. 1998 *Sacred Groves of Tamilnadu - A Survey*. C.P.R. Environmental Education Centre, Chennai.

The sacred groves or Kovilkadugal are an inherent feature of the ecological heritage and tradition of the southern state of Tamilnadu in India. These groves are the last remnants of the forests that once thrived in these areas. In the shade of the trees there is to be found a shrine, generally of the mother goddess, which is worshipped by the local community. In order to preserve both the environment and sanctity of the grove, several taboos and customs laid down way back in the past are still existent. In all 448 groves were studied from 28 districts of the state in order to understand size, cultural practices and vegetation of the groves.

KW: Tamilnadu, Vegetation, Ecology

3) Amrithalingam, M. 1998 *Sacred Trees of Tamilnadu*. C.P.R. Environmental Education Centre, Chennai.

The sacred trees or sthalavrikshas along with the sacred groves and sacred tanks are the three most important ecological traditions of Tamilnadu that have played a significant role in the protection and preservation of the environment. Each sacred tree is associated with a deity and a temple. Sacred trees are revered and worshipped by the devotees with specific taboos and customs. The 60 sthalavrikshas surveyed and recorded in this book were all found to have medicinal and other uses. The plants are linked with more than one deities in mythological stories. The habit and temples associated with the tree have also been discussed for each tree with accompanying sketches and photographs.

KW: Sthalavriksha, Tamilnadu, Vegetation, Ecology

4) Amrithalingam, M. 1997 Sthala vrikshas of Tamilnadu. In: N. Krishna and J. Prabhakaran (eds.). *The Ecological Traditions of Tamilnadu*. C.P.R. Environment Education Centre , Chennai, pp. 83-93.

The tradition of associating trees with gods and goddesses in Tamilagam can be traced back to 'Sangam' literature, which is full of references to more than hundred plants. In Tamilnadu 265 temples were visited and 60 'Sthala Vrikshas' were recorded. Out of 60'Vrikshas', twelve are worshipped for early marriage and fertility. 7 'Vrikshas' are specifically worshipped to have male child. 8 Vrikshas are worshipped to be free of illness and disease. Rare species are also worshipped as 'Sthala Vrikshas'.

KW: Sthala Vriksha, Tamilnadu, Vegetation, Ecology

5) Anon. 1995 *The United Khasi-Jaintia hills autonomous district (Management and Control of Forests) Act, 1958 and Rules 1960 (As Amended*). Published by Khasi Hills Autonomous District Council.

Law Lyngdoh, Law Kyntang, Law Niam: These are forests set apart on religious purpose and hither to managed or controlled by the Lyngdoh or person to whom the religious ceremonies for the particular locality or village or villagers are entrusted.

No timber or forest produce from Law Lyngdoh, Law Kyntang shall be removed for sale, trade or business but if any timber or forest produce is required for religious purposes, a free permit for the purpose shall be obtained from the Chief Forest Officer or any forest officer authorised by the Executive Committee on his behalf on application by the Lyngdoh or other persons to whom the religious ceremonies for the particular locality or village or villages are entrusted with the recommendation of the Lyngdoh through the local administrative heads.

KW: Meghalaya, Jaintia hills, Khasi hills, Act

6) Appffel - Margalin, F and Parajuli, P. 2000 Sacred grove and ecology: Ritual and science. In: A. Sharma and C. Chapple (eds.), *Hinduism and Ecology - Ecology and World Religions series of the Center for the study of World Religions*. Harvard University .

In this paper authors look closely at the practices of coastal small holder peasants and craft fisher folk in Orissa (Puri district) during their most important festival of the year, Rajapraba, which takes place (in part) in a grove dedicated to Goddess Bali Haracandi (Haracandi of the sand). These coastal dwellers are caste Hindus (although Brahmins do not observe this festival). What authors show is that their practices share a great deal with those of adivasis as well as Muslims and Buddhists. They highlight the role of Muslims in the festival and draw parallels from Nepal and the Jharkhand region. Authors

emphasize the historical links between these communities and emphasize what they share, namely a place and a way of acting in that place and relating to the non-human collectivity of that place.

Authors pay close attention to who participates as well as to what is done and said by whom; this has enabled to raise issues concerning the categories of "Hinduism", of "ecology", of "conservation" and "science" as well as of "ritual". In so doing the authors formulate an alternative to both a religion based ecological movement and one based on the modern Western model of parks, preserves and the scientific ontology.

KW: Ritual, Rajapraba, Orissa, Buddhism, Hinduism

7) Basha Chand, S. 1998 Conservation and management of sacred groves in Kerala. In: P.S. Ramakrishnan, K.G.Saxena and U.M. Chandrashekhara (eds.), ***Conserving the Sacred for Biodiversity Management.*** **Oxford and IBH Publishing Co. Pvt. Ltd., pp. 337-347.**

Ownership of the groves and the belief of the people on Good/Gods "living" inside the grove are two decisive factors which decide the conservation of the sacred groves in Kerala. The fact that about 79% of them are small i.e., below 0.02 ha in extent should never be taken as a criterion to neglect the groves. By appropriate management practices many of them can be developed or atleast kept in their existing condition with a possibility for improving the vegetation. Neglecting the smaller groves will lead to the disappearance of both vegetation and cultural diversity. Therefore, it is necessary to encourage conservation by appropriate funding for development as these are the last resorts of existing relicts of natural vegetation in the unforested areas of Kerala.

KW: Management, Ownership, Kerala

8) Bhasin, V. 1999 Religious and cultural perspective of a sacred site - Sitabari in Rajasthan. ***J.Hum.Ecol*****., 10 : 329-340.**

The paper dealts with the religious and cultural aspects of a sacred grove of Sitabari in Rajasthan. The grove is of great socio-religious importance to Sahariya tribals. It serves as a rallying point of a Sahariya rights movement. The grove is experiencing a variety of pressures - grazing, illicit tree cutting, etc.

KW : Sahariya, Rights Movement, Rajasthan.

9) Bhowmik, P.K. 1963 ***Lodhas of West Bengal*****. Punthi Pustak, Calcutta.**

In Lodha tribals the shrines are rectangular with mud walls and thatches of straw. There is only one door for each shrine facing the east. Several such shrines are found to have roofs while a few others without any roofs. Temporary sheds used for shrines are found. These sheds are double sloped and roof being thatched and serving the purpose of walls too. These huts face the east, the western portion being completely blocked by

straw or branches of trees The shrines are treated as communal property. Inside the hut there is an earthen platform, locally called bedi.

Ceremony/Festivals	Month associated	Deity associated	Priesthood
Sitala	Mar-Apr Apr-May Jan-Feb	Sitala	Dehri
Jathel	Mar-Apr Dec-Jan	Baram/Garam	Dehri with assistant
Chandi	Dec-Jan Mar-Apr Apr-May	Chandi	Dehri

KW: Midnapur, Jhargram, West Bengal, Festivals, Lodha

10) Biswas, P.C. 1956 *Santals of the Santal Parganas*. Bharatiya Adamjati Sevak Sangh, Delhi.

The *Jaherthan* is a place where religious ceremonies of the village are performed by the Santal. It is situated at the end of the village, and it must be within the boundary of the village. A cluster of sal trees about 20 to 25 in number is always required. Among these three trees are essential and they must stand in a row. At the base of each of these three trees a small stone is placed representing the deities Jaher era, Truko Muruko and Marang Buru. The fourth is an ashan tree which grows anywhere near those three sal trees, and a stone is put on its base representing the deity pargana Bonga. The 5th and the last is a Mowah tree; on its foot a stone representing the deity Gosain era is kept. This is known as Lady of the grove.

Ceremonies/Festivals	Months associated	Deity associated	Priesthood
Baha parab	Feb-March	Jaher era, Turuko Moreko, Naike & Marang buru, Gosain era	Kudum Naike
Eroke puja	June-July	-do-	-do-
Janathar puja	Nov-Dec	-do-	-do-
Irigrudli Nawai	Aug-Sept	-do-	-do-
Mak More	At an interval of five years	Makmore	-do-

KW: Santal, Bihar, Festivals, Jaherthan

11) Boal, B.M. 1984 *The Khonds: Human Sacrifice and Religious Change*. Aris & Phillips Ltd. Warminster. England. The modern Book Depot, Bhubaneswar.

The groves of Khond are known now simply as `God's tree' -all have their own custodians but they are devoted to the safeguarding of that particular village against witches and all forms of incoming evil.

KW: Koraput, Kalahandi, Orissa, Khond

12) Brandis, D. 1897 *Indian Forestry*. Oriental Institute, Woking.

Very little has been published regarding sacred groves in India, but they are, or rather were very numerous. I have found them in nearly all provinces. As instances I may mention the Garo and Khasia hills.. the Devara kadus or sacred groves of Coorg ... and the hill ranges of the Salem district in the Madras Presidency .... Well known are the Swami shola on the Yelagiris, the sacred forests on the Shevaroys. These are situated in the moister parts of the country. In the dry region sacred groves are particularly numerous in Rajaputana..... In the southernmost states of Rajaputana, in Partabgarh and Banswara, in a somewhat moister climate, the sacred groves consist of a variety of trees. These sacred forests, as a rule, are never touched by the axe except when wood is wanted for the repair of religious buildings or in special cases for other purposes.

KW: Coorg, Garo hills, Khasi hills, Shevaroys, Rajputana

13) Chandrakanth, M. G., Gilless, J. K., Goramma, V. and Nagaraj, M. G. 1990 Temple forests in India's forest development. *Agroforestry Systems*, 11: 199-211.

Historically the temple forests in India have served many spiritual and religious purposes. This paper stresses on the use of the underused repertoire of sacred acts to integrate the benefits of temple forests in rural development. The tree/plant species, planting design and the rituals related to their worship documented in the great epics, vedas and upanishads are of great value especially in the wake of promoting forest development and the forest development led agricultural development. The Star, Planet and Zodiac forests contain a large number of native tree species ideally suited to tropical stress and drought. The promotion of temple forests would help developing forests in the upstream areas which can help create climax forests and aid in soil and moisture conservation to help improve the productivity of downstream agriculture. As the chief utilitarian value of these temple trees and plants is in terms of the native (ayurvedic) medicine, their propagation would not only develop the downstream farming opportunities, but also promotes the native medicine sector.

KW: Temple, Institution, Star, Planet, Zodiac

14) Chandrakanth, M. G. and Nagaraj, M. G. 1997 Existence value of Kodagu sacred groves: Implications for policy. In: *The Challenge of the Balance: Environmental Economics in India.* Centre for Science and Environment, New Delhi, pp. 217 - 224.

This paper highlights Coorg's *Devara Kadu* (sacred groves) tradition and the role of village communities in consciously providing a social fence for its sustainability. The paper examines the status of *Devara Kadus* in Coorg. The number of *Devara Kadus* has reduced from 755 to 346 during the period 1900 to 1992. The area has reduced by about 60%. The *Devara Kadus* have both the Central and the State government survey numbers. The paper addresses various aspects of the *Devara Kadus* including : history of tree worship in Coorg; naming of *Devara Kadus*; inscriptional evidences; classification and role of *Devara Kadus*; encroachment; existence value and the future of this institution. The paper analyses *Devara Kadus* within the frame work of Existence Value (EV) concept and shows that EV has considerably fallen in Madikeri taluk (77%) followed by Somwerpet taluk (39%) and Virajpet taluk (30%). The paper concludes : *Devara Kadus* are unique to the Coorg tradition. Their very existence provides ecological and watershed functions. More than 60% of the area under *Devara Kadus* have been encroached over the last century. Hence, the village community, the Kodagu Ekikarna Ranga, the government, political organizations and the judiciary have great responsibility in preserving the *Devara Kadu* institution.

KW: Coorg, *Devara Kadu*, Kodagu, Existence Value, Encroachment

15) Chandran, M. D. S. and D., Mesta 2001. On the conservation of the Myristica swamps of the Western Ghats. In U., Shaanker, R., Ganeshaiah, K. N. and K. S. Bawa (eds) Forest Genetic Resources: Status, Threats, and Conservation Strategies. Oxford & IBH Publishing Co. Pvt. Ltd., pp. 1-19.

Myristica swamps form one of the unique ecosystems in the Western Ghats, a global megadiversity hot-spot. These swamps, as their name indicates, are the only sites of occurrence of certain members of the ancient family Myristicaceae such as *Myristica fatua* and *Gymnacranthera canarica.* Out of 51 swamps surveyed in Uttara Kannada district 17 are the sacred groves of the local people. Authors review the status of, and threats to, the *Myristica* swamps based on the study of vegetation structure and composition in the swamps.

KW: *Myristica* swamps, Uttara Kannada, Western Ghats

16) Chandran, M.D.S. 1997 On the ecological history of the Western Ghats. *Current Science*, 73: 146-155.

Over three millennia of forest utilization and management by traditional societies, and the practice of state forestry, since last 200 years, have moulded the forest ecosystems of the Western Ghats. Major vegetational changes here began with the migrations of agri-pastoral people, beginning in the middle of 4th millennium BP. The pre-colonial times

had mostly village oriented traditional landscape management. Since colonial times, the forestry became more state centered, paying scant consideration to traditional management and to other forces of history, which moulded the Western Ghat landscapes. The present landscape and vegetation of the region are replete with reflections of history, which may be of great ecological interest. Under the influence of a cultural change that has been sweeping through the Western Ghats, the pre-Vedic deities of the sacred groves are related to the deities of organized Hinduism and temples are being erected to house them, the groves suffering in the process.

KW: Western Ghats, History, Pre-vedic deities, Hinduism

17) Chandran, M.D.S. 1997 Review of 'Sacred Groves in Kodagu District of Karnataka (South India): A Socio-historical Study by M.A. Kalam'. *South Indian Studies*, 3, Jan-June 1997.

Kalam's introduction truly reflects the plight of the groves in Kodagu which are getting engulfed in commercial plantations of coffee, tea, rubber and other agricultural crops. Although the practice of sacred groves is millennia old, the author buttresses these arguments with the recorded history of barely 150 years and some contemporary evidence, i.e., with insufficient insight into the historical background of sacred groves. The strength of Kalam's work is in the historical account of the British colonial period as well as in portraying the pathetic state of the groves today.

KW: Kodagu, *Devara Kadu,* Commercial plantations

18) Chandran, M.D.S. and Hughes, J. D. 1997 The sacred groves of South India: Ecology, traditional communities and religious change. *Social Compass,* 44 (3) : 411-425.

In South India sacred groves still exist although the importance given to them is commonly, if sporadically, declining. The authors selected Uttara Kannada and adjoining areas in Karnataka State towards the center of South India's West Coast. The original dedication of the groves is to local deities of the groves were not, and in many cases still are not, the characteristic gods of Hindu devotion such as Shiva, Vishnu, Parvati, Lakshmi, Ganapati, etc., but pre-Brahmin deities, mostly indistinct beings that may be represented aniconically. The presence of these deities is perceived in the entire grove by the Karivokkaliga peasants, and it is their place of worship to this day. An attitude that nature itself within the grove is sacred dominates the worldview of many village societies. Stones or termite mounds may be present as cult objects. The groves in the Western Ghats broadly come under two classes. The smaller groves are entirely protected; no tree felling or other biomass extraction may be carried out. On the other hand, larger groves function as resource forest also, offering both sustenance and ecological security.

KW: Western Ghats, Uttara Kannada, Pre-Brahaminic deities

19) Chandran, M.D.S. and Gadgil, M. 1993 Kans-safety forests of Uttara Kannada. In : M. Brandl (ed.) *Proceedings of the IUFRO Forest History Group Meeting on Peasant Foresty* 2-5 September 1991, No. 40. Forstliche Versuchs-und Forschungsanstalt, Freiburg, pp. 49-57.

Ecologists, of late, have come out with studies on the remarkable systems of resource management by many traditional societies, which, while based on simple rules of the thumb, in many ways parallel the modern ecosystem approach. Such societies existed in different countries. Sacred groves are one of the finest instances of traditional conservation practices. The Bishnois of Rajasthan never uproot or kill any khejadi (*Prosopis cineraria*) tree. To a great extent, sacred groves in the hilly and mountainous regions of India are a legacy of the shifting cultivators. The depletion of forest resources due to over-exploitation for commercial purposes resulted in inclusion of numerous sacred groves in forest working plans for selective felling as in Uttara Kannada and Coorg. Another insidious threat resulting in clearance of sacred groves is the identification of the wild woodland spirits and deities of the pre-Brahamanic societies with the gods of the Hindu pantheon. The time has come to carefully retrospect the course of Hindu religion and cultural heritage and redefine what is sacred.

KW: Kan, Uttara Kannada, Coorg

20) Chandran, M.D.S. 1998 Sacred groves and sacred trees of Uttara Kannada. In: Baidyanath Saraswati (ed.), *Culture and Development no. 5 - Life Style and Ecology*. Indira Gandhi National Centre for the Arts, New Delhi. D. K. Printworld (P) Ltd. New Delhi, 85 -138.

The study is based on the survey of sacred groves and trees in 25 sq. km area of Siddapur taluk of Uttara Kannada district of Karnataka. The area harboured about 54 sacred groves. Based on the local history as well as interviews the historical land use pattern of the study area was reconstructed as - sacred groves - 5.85%, supply forests - 24.14%, shifting cultivation area - 23.40%, grazing land - 6.46%, fields - 28.19%, miscellaneous uses - 6.12%, ponds and streams - 2%, hamlets - 3.84%. Presently sacred grove area has shrunk from almost 6% to 0.31%. The impact on the tradition is studied with the help of caste composition, livelihood activities of the local people in the study area. Plants, animals and birds were also listed from the study area.

KW: Karnataka, Uttara Kannada, Siddapur

21) Chandran, M.D.S., Gadgil, M. and Hughes, J. D. 1998 Sacred groves of the Western Ghats of India. In: P.S. Ramakrishnan, K.G. Saxena and U. M. Chandrashekhara (eds.), *Conserving the Sacred for Biodiversity Management*. Oxford and IBH Publishing Co. Pvt. Ltd., pp. 211-231.

The authors in this article review the existing literature on sacred groves of the Western Ghats of Kerala, Karnataka and Maharashtra. The article covers a wide range to topics : sacred groves for conservation of biodiversity, animal diversity of the sacred

groves; sacred groves and watershed protection; sacred groves and subsistence; threats to the sacred groves; state forestry in sacred groves; socio-cultural causes of decline of the sacred groves; and sacred groves : A fading legacy and survival. In the concluding section the authors suggest a number of measures to rescue and restore the sacred groves in the Western Ghats.

KW: Western Ghats, Kerala, Maharashtra, Karnataka

22) Chandrashekhara, U. M. and Sankar, S. 1998 Structure and functions of sacred groves: Case studies in Kerala. In: P.S. Ramakrishnan, K.G. Saxena and U. M. Chandrashekhara (eds.), ***Conserving the Sacred for Biodiversity Management*****. Oxford and IBH Publishing Co. Pvt. Ltd., pp. 323-335.**

In this paper the authors discuss the influence of different management systems on the vegetation structure and composition, the present strengths and weaknesses of all important stakeholder groups and the strategies to be adopted for effective conservation and management of sacred groves. Three sacred groves with different management systems studied were : Sri Bhagavathi Kavu at Iringole, Shri Shangukulangara Bhagavathi Kavu at Sree Narayana Puram and Sarpa Kavu at Ollur. They conclude : the sacred groves can be regarded as the treasure houses of rare and endemic species; the size class distribution of trees shows poor regeneration in Ollur kavu; increased contribution by the stakeholders in terms of man-power, financial and change in their neutral or negative attitude towards sacred groves in to positive attitude would be to better conservation of groves.

KW: Kerala, Size class distribution, Management

23) Chatterjee, A. and Das, T.C. 1927 The ***Hos of Seraikella.*** **University of Calcutta, Calcutta.**

In the villages of Ho tribals, there is no special common meeting ground, but *Sasans* of the different kinds often serve the same purpose. In these villages, a few large trees such as the nim (*Melia azadirachta*), tetul (*Tamarindus indica*), asan (*Terminalia tomentosa*) and mahua (*Bassia latifolia*) could be seen scattered about and were commonly met within the *Sasans* of different kinds. These are located on prominent sites and are almost invariably shaded by large trees. They are well kept and regarded as sacred. When firewood is not available, the body is buried in the *Sasan*.

KW: Ho, Bihar

24) Das, A. K. and Raha, M. K. 1963 The ***Oraons of Sunderban*****.** ***Bulletin of Cultural Research Institute,*** **pp. 240-343.**

In the Sundarban area, the Oraon tribals have no temple as that of the Hindus, but have village Than i.e., sacred spot marked for the village deities. In the villages, sheds are erected for Devi Mai or Mother -Goddess, who is apparently a deity borrowed from the

Hindus. Besides sheds of Devi Mai, they also have one or more sal (*Shorea robusta*) groves or one or more solitary trees, constituting the shrine of the village deities. The place of worship is generally situated in the centre of the village, is regularly cleaned and plastered with cow dung paste by the assistant of the Pahan. There is an earthen platform in the middle of the Than on which there are a number of earthen balls, each of which represents a particular deity of the village. The number of earthen balls vary from five to nine. The babla tree represents the tree for Jhakarburia and also for Bon bibi. Sometimes, a few Tulsi plant can also be seen near the Than.

Ceremonies/Festivals	**Month associated**	**Deities associated**	**Priesthood**
Garam puja	Nov-Dec June-July	Devimai (Lady of grove)	Pahan, Ojha, assistant Bhakat
Karam puja	Sep-Oct	Karma	-do-
Dharm puja	-do-	Dharma	-do-
Tusu	Dec-Jan	Laksmi	Pahan, Bhakat
Kali puja	Jan-Feb	Makali, Sitala	Pahan, Ojha

KW: Oraon, Sunderban, West Bengal, Festivals

25) Das, K. and Malhotra, K. C. 1998 *Sacred Groves Among the Tribes of India: A Literature Survey of Ethnographic Monographs*. Integrated Rural Development of Weaker- Sections in India, Semiliguda. Mimeograph.

The authors studied 36 monographs on the tribes of India among whom sacred groves are found for each tribe a brief description of the sacred grove is given some of the key observations that emerged from the analysis are; the 36 tribes belong to Assam, Bihar, Madhya Pradesh, Orissa and West Bengal; the studies were carried out during 1891-1996; all studies mention the location of the sacred groves in the village; the groves are known by the different name among tribes; all study give elaborate account of rituals associated with groves and the nature of priesthood; only a few studies have mentioned about harvesting of biomass from the groves; size of the groves is rarely mentioned; none of the studies say much about ecological significance of the groves; and systematic studies on ecological dimensions started only from early seventies.

KW: Assam, Bihar, Madhya Pradesh, Orissa, West Bengal, Tribe, Ethnography

26) Deb, D. and Malhotra, K. C. 1997 Interface between biodiversity and tribal cultural heritage: An exploratory study. *J. Hum. Ecol.*, 8(3): 157-163.

The use of forest products for socio-religious purposes has hardly been brought into focus in recent studies concerning indigenous forest use patterns in the Indian context. This study of five West Bengal tribes has identified all the bio-resources used in rituals performed at both the family and community levels, and has produced an inventory of the flora and fauna which are protected through taboos. The study also reports for the first

time the existence of a number of evanescent sacred groves in West Bengal. Despite the historical processes causing much attenuation, these sacred groves are still maintained by the tribal villagers. In the face of severe economic hardships of the tribals in the region under study, the persistence of much of the socio-religious ethos of protecting the bio-resources reveal the strength of the conservationist tradition of our indigenous cultures.

KW: Biodiversity, Forest, Religion, Tribal culture

27) Deb D., Deuti, K. and Malhotra, K. C. 1997 Sacred grove relics as bird refugia. *Current Science,* 73(10) : 815-817.

The observations are a fall out of an ethnobiological survey conducted from early April to end-June, 1996 in Jamboni, Jhargram, Gidhni, Belpahari and Banspahari Forest Ranges of western Midnapore district. A total of 42 species of resident land birds were sighted in the sal forests, Sacred groves, farm fields and vegetations in the settlements. While many birds were sighted in both the sal forest and sacred groves, four species of birds were recorded only from the protected sacred groves.

KW: Midnapore, Birds, West Bengal

28) Deshmukh, S., Gogate, M. G. and Gupta, A. K. 1998 Sacred groves and biological diversity : Providing new dimensions to conservation issues. In : P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekhara (eds.), *Conserving the Sacred for Biodiversity Management.* Oxford and IBH Publishing Co. Pvt. Ltd., pp. 415-421.

The authors in this paper pose several questions and issues related to conservation and development of sacred groves in Maharashtra. They also provide criteria for genetic conservation based on primary information on each of the sacred groves that exist today. The authors hope that the results of this study will eventually lead to defining the critical role of scientific community as well as Forest Department in the legal context which will not only help it organize peoples' movement in recognizing the importance of sacred groves, but also achieve their conservation and development for posterity. The authors list a number of unanswered questions regarding sacred groves : age of sacred groves, changing proportion of species, occurrence of uncommon species, decrease in plant cover, regeneration status and extraction to wood from sacred groves. Detail such as district-wise distribution and size distribution of 953 sacred groves in Maharashtra is given in the paper. A number of suggestions have been given under "Agenda for future".

KW: Maharashtra, Genetic conservation

29) Ekka, W. and Danda, A. K. 1984 *The Nagesia of Chattishgarh*. Anthropological Survey of India, Memoir No: 58. Calcutta.

The deities of Nagesia tribe reside in *Sarna*, a grove of sal trees (*Shorea robusta*) of the

mouja. It is here that these deities are mostly worshipped. Supernatural fear prevents the people from cutting trees of the *Sarna*. Woe would fall on a person who has audacity to cut any tree or its branches, in the *Sarna*.

Ceremonies/Festivals	**Month associated**	**Deities associated**	**Priesthood**
Dalha khrauj	Aghan (Dec-Jan)	Mouja deities, Dharti, Ankuari.	-
Gaon kharuj	-do-	Mouja deities and other deities	-
Magh Parab	Magh	Dharti, Mahadev	-
Dhela puja	Chaitra (Mar-Jun)	Mauja deities	-
Sarhul parab	Jeth (May-June)	-do-	Baiga

KW: Nagesia, Chhattisgarh, Madhya Pradesh, Festivals

30) Elwin, V. 1943 *Maria Murder and Suicide*. Oxford University Press, London.

The religion of the Maria centres round the earth, the state and the clan. On the outskirts of the village will be found the shrine of the village mother, and in a grove nearby there may be the temple of one of the clan gods.

KW: Madhya Pradesh, Maria, Bastar

31) Elwin, V. 1947 *The Muria and Their Ghotul*. Oxford University Press, London.

In a few Muria villages there are no temples. In Almer there is nothing but a few stone seats under saja trees, where the village Mother is worshipped and the New Eating ceremonies performed. In Kajen the village Mother forbade the erection of any shrine. But in most villages there are several buildings that fulfil the above definition of a temple. Sometimes these are scattered about the village, one put in the jungle, another in someone's field, a third actually in the compound of a house. In Markabera there was only one temple. In Bayanar there are eight grouped together round a wooded hill covered with fantastic rocks amid which the little shrines are built. These temples on the hillside were curiously impressive, old gods of hill and forest seemed very present there. We went on towards a great grove of mango trees till we came to a close temple, again of the Naitami, in which was a characteristic Anga Deo, Baiha the mad god, a stone to represent Bangaram consort of Danteshwari and two other stones for Kotgudi Matal and Dulardei Matal. Here we were in a definitely Hindu atmosphere. There was a large clay elephant for Bangaram and in front of the shrine a pile of old clay elephants, bulls and horses.

KW: Madhya Pradesh, Muria, Bastar

32) Elwin, V. 1946 *The Pardhans of the Upper Narbada Valley*. Oxford University Press, London.

In Pradhan tribals Baro pen, who is also called Bara Deo, Budha Pen or Burha Deo, is on the whole a good and useful god. His traditional abode is in the forest in the saja tree. But for the Pradhans he has a nearer and more familiar home, his special portable temple, the sacred Bana fiddle.

KW: Pradhan, Madhya Pradesh, Deities

33) Elwin, V. 1950 *Bondo Highlander*. Oxford University Press, London.

Near Bodoballe village of Bondo tribals is a fine sacred grove and in the middle of the settlement a stone shrine for Hundi and several well shaded sindibor. In Mundlipada village in the foothills, is the fine grove of mango trees and the spring called Kingu Bodak. In the midst of the trees is a spring of exquisitely clear water built up on either side with stone walls, while among the surrounding rocks are a number of Menhirs. This is the site of the origin of Bondo tribes. Higher up the hill is another grove where, in a giant banyan at the centre of the grove, is hidden the ancient sacred sword of Pat Khonda Mahapravu , and three times in the year - at Dassera, at full moon of Magh and during the giag-gige, it is brought down and worshipped. The sword has become the symbol of an important local deity. The grove is taboo for entry of women. Within its shade it is forbidden to point with finger, and no one may cut down a tree on pain of death, which the dead will certainly send on the offender.

Ceremonies/Festivals	**Month associated**	**Deities associated**	**Priesthood**
Sume gerlirak	Pus(Jan-Feb)	Bursung	Sisa
Susu gige	Magh	-do-	-do-
Giag-gige	April	Bursung & Pat Khanda	-do-
Gewursung	Kartik (Oct-Nov)	Bursung	-do-

KW: Koraput, Bondo, Orissa, Festivals, Deities

34) Elwin, V 1986 *The Baiga*. Gain Publishing House, Delhi.

Bara Deo has always been regarded as the chief deity of the Baiga and Gond. Bura Deo, who is supposed to reside in a saj tree, he is worshipped in the month of Jeth (May), when goats, fowl, coconuts, and the liquor of the new mahua crop are offered to him. He

lived in an anthill. Then he went to the Nanga Baiga in a dream, began to live with him. Nanga Baiga took him to the forest, and put him in the stump of a saj tree. From that time, they do never cut the saj down to the ground, they always leave a stump carefully preserved. In the Madhuban, the sweet forest, under a clump of bamboos were born two children who were to be the lords of the earth. They were the Nanga Baiga and Nanga Baigin. They became mated among the trees on the bank of the pond. In the place where they lived, there was the stump of a saj tree on one side, on the other side a stone, on the third side bamboos. In the midst sat Nanga Baiga & Nanga Baigin. Bara Deo was living in the saj stump, Basin Kaniya in the bamboo, Baba Bastar Rai & Karam Rai were living in the stone. Thakur Deo is the Lord of the village, and its headman. He lives on earth in the pipal tree. He sometimes rides abroad on a white horse. If there is a madhia or a shrine for Dharti Mata or Thakur Deo this is generally built at some distance from the village.

KW: Baiga, Gond, Deities

35) Freeman, R. 1994 ***Forests and the Folk: Perceptions of Nature in the Swidden Regimes of Highland Malabar. Pondy Papers in Social Sciences*** **(15), French Institute, Pondicherry.**

This paper explores the popular attitude towards the forests and its natural resources as reflected in the memories, folk-sources and religious institutions of former swidden agriculturists living in the highlands of Kasargod District in Northern Kerala. The central focus of this piece is on "sacred groves" (*Kavu*) which are subjected to a closure cultural analysis than is usual, particularly in light of the frequent claims made of their religiously inspired conservationist rationale. The author also questions the extension of values regarding sacred groves to the non-sacred forests as a general model for pre-colonial attitudes to the environment and present a far more ambivalent set of popular attitudes towards forest resources and the dangers and labour required in the utilization. Finally the author turns to a consideration of the social inequalities of labour relations in the caste based swidden regimes and conclude with the suggestion that much of the antagonism generated in the social struggle over resources was read back into the forest as a reflection of nature's own violence.

KW: Swidden regime, Kerala, Kavu

36) Fuchs, S. 1960 ***The Gond and Bhumia of Eastern Mandala.*** **Asia Publishing House, New York.**

The Bhumia tribals call their main god Thakur Deo is supposed to have his abode in each Bhumia village, usually in tree. It can be any tree which the god selects as his home, a semur, mahua or sag tree. The Thakur Deo is supposed to keep the village immune from disease and misfortune and to help the villagers to prosper by securing for them a fair annual harvest. The place in front of the tree is cleared of all shrubs and grass, the ground levelled and covered with a layer of cattle manure. A stone slab is brought and laid on the ground at the base of the tree. On the slab another stone slab is placed on a vertical

position and made to lean against the trunk of the sacred tree. The village priest (Dewar) anoints the stone slabs with turmeric after which he sacrifices a goat and several fowls and offers liquor and coconuts. It is believed that Thakur Deo is actually present after this first sacrifice has been performed in the stone slabs as also in the tree. This place is now called kher (village). On the same platform other stone slabs are erected to represent various gods, as Kher Kima, Ghamsen, Dharti Mata and others. The veneration which Thakur Deo receives from Bhumia as their main god is extended among the Gond of eastern Mandala to Bara Deo. This god always takes his abode in a saja tree (*Terminalia tomentosa*) near the village. They build a mud platform under the tree and place a flat stone on it and another stone slab in the vertical position, leaning against the tree.

KW: Mandala, Madhya Pradesh, Bhumia, Deities

37) Gadgil, M. 1995 Traditional conservation practices. In: William A. Nierenberg (ed.) *Encyclopedia of Environmental Biology*. Academic Press, pp. 423-425.

The author reports a number of cultural traditions from India, that have exhibited deliberate restraints on resource harvests that have promoted the sustainable use of biological resources and the conservation of biodiversity in many different places and times. The author illustrates this by giving examples of sacred groves, keystone species, etc. He mentions that the Botanical Survey of India discovered a new species of a leguminous climber, *Kunstleria keralensis* from a sacred grove of Kerala.

KW: Keystone species, Endemic species

38) Gadgil, M. 1985 Social restraints on resource utilisation: The Indian experience. In: Jeffrey A. McNeely and David Pitt (eds.), *Culture and Conservation-The Human Dimension in Environmental Planning*. Croom Helm, London, pp. 135-154.

The author in this paper argues that an understanding of the conditions under which human societies did evolve effective methods of prudent utilization of the resources, and of the circumstances under which these practices broke down is therefore of vital importance in our endeavor to steer ourselves on to a course of sustainable utilization of the earth's resources. He gives several specific examples of various practices of restraints on the exploitation of wild plant and animal resources being practiced by the Indian society. The examples include among other aspects, sacred groves, pools and ponds from the Indian sub-continent.

KW: Prudent utilization, Sacred pond

39) Gadgil, M. 1989 Heritage of a conservation ethic. In: B. Allchin, F. R. Allchin and B. K. Thapar (eds.), *Conservation of an Indian Heritage*. Cosmo Publications, New Delhi, pp. 13-22.

The traditional Indian society had elaborated an organization of resource use that strongly favoured prudent utilization of natural resources over a wide cross-section of the Indian society. This had fostered a widespread ethic of conservation that has been rudely shaken by the impact of the British industrial society over the last two centuries. The most notable of such traditions are sacred groves totally inviolate to any human interference and village groves where only limited, regulated use by members of a local community is permitted.

KW: Prudent utilization

40) Gadgil, M. 1989 Husbanding India's natural resources: The tradition and the prospects. In : Carla M. Bondin (ed.), ***Contemporary Indian Tradition*****. Smithsonian Institute Press, Washington & London, pp. 323-331.**

In this article the author describes a sacred grove at Gani village located in a remote area of Konkan, in Maharashtra. He explains how he persuaded the Forest Department (FD) to abandon plan to fell this sacred grove. Many foresters thought of it as a stand of over mature timber. The grove had been preserved over time not because of any economic or practical arguments but rather on the basis of religious beliefs. The author argues that the benefits of groves accrue to the social group on a long-term basis. It then seem probable that cultures have cast prescriptions that lay in long-term interest of the group, and against the short-term interest of individuals, in the form of religious sanctions.

KW: Konkan, Maharashtra, Forest department

41) Gadgil M. and Chandran, M.D.S. 1992 Sacred Groves. ***India International Centre Quarterly,*** **19(1-2), 183-187.**

Ecologists, of late, have come out with studies on the remarkable systems of resource management by many traditional societies, which, while based on simple rules of the thumb, in many ways parallel the modern ecosystem approach. Such societies existed in different countries. Sacred groves are one of the finest instances of traditional conservation practices. The Bishnois of Rajasthan never uproot or kill any khejadi (*Prosopis cineraria*) tree. To a great extent, sacred groves in the hilly and mountainous regions of India are a legacy of the shifting cultivators. The depletion of forest resources due to over-exploitation for commercial purposes resulted in inclusion of numerous sacred groves in forest working plans for selective felling as in Uttara Kannada and Coorg. Another insidious threat resulting in clearance of sacred groves is the identification of the wild woodland spirits and deities of the pre-Brahamanic societies with the gods of the Hindu pantheon. The time has come to carefully retrospect the course of Hindu religion and cultural heritage and redefine what is sacred.

KW: Rajasthan, Khejadi, Coorg, Uttara Kannada

42) Gadgil, M. and Thapar, R. 1990 Human ecology in India - some historical perspectives. ***Interdisciplinary Science Review,*** **15(3) : 209-223.**

Before the spread of extensive cultivation, the Indian subcontinent would have been inhabited by territorial hunter-gatherers and shifting cultivators with cultural traditions of prudent resource use. The disruption of closed material cycles by export of agricultural produce to centres of non-agricultural population would have weakened these traditions. Indeed, the fire-based sacrificial ritual and extensive agricultural settlements might have catalyzed the destruction of forests and wildlife and the suppression of tribal peoples during the agricultural colonization of the Gangetic plains. Buddhism, Jainism and later the Hindu sects may have responded to the need for a reassertion of ecological prudence once the more fertile lands were bought under cultivation. British rule radically changed the focus of the country's resource use pattern from production of a variety of biological resources for local consumption to the production of a few commodities largely for export. The resulting ecological squeeze was accompanied by disastrous famines and epidemics between the 1860s and the 1920s. The counterflows to tracts of intensive agriculture have reduced such disasters since independence. However, these are quite inadequate to balance the state-subsidized outflows of resources from rural hinterlands. These imbalances have triggered serious environmental degradation and tremendous overcrowding of the niche of agricultural labour and marginal cultivator all over the country.

KW: Human ecology, Prudent resource use, Budhism, Jainism

43) Gadgil, M. and Vartak, V. D. 1975 Sacred groves of India: A plea for continued conservation. ***Journal of Bombay Natural History Society,*****72: 314 - 320.**

Authors illustrate the phenomenon of these sacred groves with the help of two examples from Maharashtra; one, a grove of the goddess Janni at Mangaon in Velhe taluka of Poona district and the second, a grove of the goddess Kalkai at Gani in Shrivardhan taluka of Kolaba district. Scattered, apparently throughout India, are a large number of forest tracts, which have remained immune from human interference because of religious beliefs. As deforestation has been taking place at a rapid rate in many areas, such forests have come to be the only remnants of the original forest in a number of cases. Because of the absence of human interference the sacred forests support the climax vegetation appropriate for their particular locality. Such a climax vegetation is very rich in species of trees, climbers and epiphytes. As such these sacred groves serve the vital function of preservation of plant species which have become very rare or extinct elsewhere. Preservation of these species could be of great economic significance. Some of the species so preserved are already of medicinal significance; others could acquire such significance in future. Even in the case of species not in any danger of extinction, the sacred forests may serve to preserve genotypes, which may be useful in a future forest free breeding programme. The sacred forests are also of great silvicultural interest as indicators of the natural productivity of the region. It is, therefore, imperative to survey these sacred forests and properly assess their role in nature conservation so that these forests may continue to be preserved even if the religious beliefs associated with them weaken and may disappear.

KW: Western Maharashtra, Medicinal plants, Breeding programme

44) Gadgil, M. and Vartak, V. D. 1976 Sacred groves of Western Ghats of India. *Economic Botany,* 30: 152-160.

The sacred groves harbour vegetation in its climax formation, and probably constitute the only representation of forest in near-virgin condition in many parts of present-day India. Such sacred groves occur in many parts of India and in some other parts of Asia and Africa as well. Our field studies were conducted in the hilly regions of western Maharashtra. We have chosen the catchment area of Panshet Dam, which lies to the west of Poona at a distance of 40 kms. As a representative area for a description of the phenomenon, this area lies at the border of Velhe and Mulsi Talukas of the Poona district at a latitude of 18°25' N and a longitude of 73° 25'E. The trees left around settlements and the sacred groves are the only arboreal vegetation left standing except for the reserved forest in the more remote hill regions. The deities are very ferocious in nature, and met out serious illness or death to any offender. They generally demand animal sacrifices to be placated and stories of human sacrifices in the recent past are still current. The groves lie at all locations, ranging from the floor of the river valley, slopes at various distances to the top, plateaus at intermediate levels and the crest of the hill. Thus they serve to represent all sorts of vegetation from the stunted forest on the exposed hill crests to the tall luxurious growth in the ravines. Besides medicinal plants such as *Entada phaseoloides*, they supply deadwood for fuel and leaf litter for the initial burning of the plot in paddy culture. The sacred groves also occasionally supply timber in an emergency such as the destruction of an entire village settlement through fire.

KW: Western Ghats, Poona, Climax vegetation, Medicinal plants

45) Gadgil, M. and Vartak, V. D. 1981 Sacred groves of Maharashtra: An inventory. In: S. K. Jain (ed.), *Glimpses of Ethnobotany*. Oxford University Press, Bombay, pp. 279-294.

Authors present here an inventory of the sacred groves or *Devrais* of the State of Maharashtra. Detailed information on the location, area and associated deity is available for 233 groves from the districts of Thana, Kolaba, Jalgaon, Pune, Satara, Kolhapur, Yewatmal, Bhandara and Chandrapur. Gross information on hectarage per taluka is available for the district of Ratnagiri. The total area thus reported comes to 3,750 hectares. It is estimated that when more complete information becomes available, the total area under sacred groves will be at least 5,000 and perhaps as much as 10,000 hectares or more. These sacred groves are the only remnants of the original forest maintained in near climax condition in many parts of Maharashtra. As such, these groves are now serving a vital role in the preservation of plant species diversity and every attempt should be made to fully protect them as a part of a system of nature preserves.

KW: Maharashtra, Nature preserves, *Devrais*

46) Gadgil, M., Hemam, N. S. and Reddy, B. M. 1998 People, refugia and resilience. In : F. Berkes, C. Folke and J. Colding (eds.), *Linking Social and Ecological Systems - Management Practices and Social Mechanisms for Building Resilience.* Cambridge University Press, pp. 30-47.

Authors demonstrate that practices leading to sustainable use may be arrived at through a trial-and-error process based on very simple rules of thumb. Secondly, they present a case study of a resource conservation practice (sacred groves) grounded in religious beliefs that was abandoned and then revived essentially in the original form when the community realized its value in the provision of ecosystem services. This natural experiment suggests that pre-scientific societies can and do adopt conservation practices on the basis of their experience; practices that in the past were implemented through the medium of religious beliefs. A case study of villages of Gangte, a group of Kuki tribe in Churachandpur district, Manipur state in northeastern India is discussed for the above mentioned objectives. Gangte villages were surrounded by Forest belts, which were considered as abodes of nature spirits. These forest belts, locally known as 'gamkhap', fire breaks during burning operations of shifting cultivation. Market value of timber and conversion to Christianity resulted into clear felling of 'gamkhap' forests. But realisation of fire protection due to 'gamkhap' has revived the protection to them in Gangte villages.

KW: Kuki, Gangte, Manipur

47) Gandhi, K. 1997 *Kesar Chirkav* - Traditional system of forest protection. Newsletter, Sevamandir. Udaipur.

Kesar Chirkav (sprinkling saffron) is a traditional system of forest protection, wherein saffron is sprinkled over the forests and the felling of green wood is prohibited in the area. This tradition finds it origin from the temple of "Kesariyaji" a place of worship for the Bhil tribal community living in Udaipur District, Rajasthan. Villages of Shyampura and Bada Bhilwara are located in Bichiwara panchayat of Jhadol block in Udaipur District at a distance of 80 kms from Udaipur. Under the Joint Forest Management Programme, Forest Protection Committees(FPC)were formed in both of these villages. Eventually tired of trying to regulate the use of forests and of promoting the use of dry wood as fuelwood, the FPC decided to sprinkle saffron to protect the forests. Villagers framed certain regulations for *Kesar Chirkav* which were to be strictly maintained.

KW: Udaipur, Rajasthan, *Kesar Chirkav*

48) Godbole, A., Watve, A., Prabhu, S. and Sarnaik, J. 1998 Role of sacred groves in conservation with local people's participation: A case Study from Ratnagiri district, Maharashtra. In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekhara (eds.), *Conserving the Sacred for Biodiversity Management.* Oxford and IBH Publishing Co. Pvt. Ltd., pp. 233-246.

The authors in this paper report results of an action-oriented case study undertaken is 11 sacred groves of Sangameshwar Tehsil of Ratnagiri district in Maharashtra. The article

gives a list of floral species found in these groves as well as the typology of sacred groves : (i) groves maintained for village deities in a formal way; (ii) groves preserved for deity in an informal way; and (iii) groves preserved as cremation/burial grounds. The paper gives detail of the approach adopted by Applied Environmental Research Foundation, Pune to involve the local people in protection of sacred groves. The paper concludes : Awareness generation and participatory management are the key aspects of biodiversity conservation.

KW: Ratnagiri, Maharashtra, Typology, Participatory management, NGO

49) Gokhale, Y. 2001 Biodiversity as a sacred space. In *The Hindu Folio* supplement May 20, 2001.

In many parts of India, local people even now follow several such traditional conservation practices. They include totemism in which one or more species of plants or animals are protected as spiritual ancestors, restraint on hunting female animals, conserving certain species for rituals, keeping aside patches of forests and waterbodies in the name of local deities and so on. The sacred conservation practices followed by local people have come into focus of late due to their importance for protecting several delicate ecosystems and threatened species, the explicit connections they show between cultural and biological diversity, and their potential of people oriented conservation efforts.

KW: Totemism, Conservation practices

50) Gokhale, Y. 2001 Management of *Kan*s in the Western Ghats of Karnataka. In U., Shaanker, R., Ganeshaiah, K. N. and K. S. Bawa (eds) Forest Genetic Resources: Status, Threats, and Conservation Strategies. Oxford & IBH Publishing Co. Pvt. Ltd., pp. 570-573.

*Kan*s are the patches of historical sacred evergreen forests in the Western Ghats of Karnataka. Author reviews here the historical management status of *kan*s in Uttara Kannada and Shimoga districts with reference to Sorab taluk and Sidapur taluk respectively. Author explores the joint relationship of local people and the state forest department in the earlier management system and compare that with the present day programme of Joint Forest Management.

KW: *Kan*, Joint Forest Management, Uttara Kannada, Shimoga, Karnataka

51) Gokhale, Y., Velankar, R., Chandran, M. D. S. and Gadgil, M. 1998 Sacred woods, grasslands and waterbodies as self-organised systems of conservation. In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekhara (eds.), *Conserving the Sacred for Biodiversity Management.* Oxford and IBH Publishing Co. Pvt. Ltd., pp. 365-398.

Authors have examined the history and current status of sacred sites based on collaborative studies in several states of the country. The studies suggest a steep ongoing

decline in the coverage of sacred land, water areas of the country from an estimated original coverage of 10% to 0.01% or less. This decline may be viewed in light of Ostrom's 7 principles of design of self organized systems of management of natural resources:

1. The long term benefits flowing from the restraints on resource use should be commensurate with the costs incurred by the community.
2. The conservation system should deal with a well defined resource under reasonably secure control of a well defined social group.
3. The group responsible for the conservation system should be effectively organized to administer the system.
4. Existence of a monitoring machinery (in this case including the deity) accountable to and respected by the actors.
5. Existence of collective choice agreements.
6. Flexible rules relating to resource use patterns.
7. Graduated sanctions against violation of management rules.

Authors analyse the available evidence of erosion, as also of persistence and special cases of revival or new emergence within this framework. To nurture these self organized systems of conservation in years to come the larger societies would have to create special incentives to enhance the levels of tangible benefits flowing therefrom, as well as further strengthen decentralized systems of governance.

KW: Erosion, Design principles, Incentives

52) Gold, A. G. and Gujar, B. R. 1989 Of gods, trees and boundaries: Divine conservation in Rajasthan. *Asian Folklore Studies,* 48:211-229.

Although the authors in this do not deal explicitly with sacred groves, but give a vivid description of several stories from Rajasthan that illustrate the cultural conviction that deities can and will protect the purity and intequity of their domains, either reinforcing the efforts of devotees or independently of human efforts. Based on the content analysis and interpretation of the stories, the authors suggest "that a fruitful direction of environmentalists to explore would be how to extend the powerful moral authority and refined aesthetic values underlying divine conservation beyond the sima (boundary) of the gods and goddesses. Discussions on environmental problems and potential solutions in India often focus on the obvious but crucial point that people won't participate in conservational efforts unless they understand the benefits of these efforts for their own lives and in their own terms. The major question then, would be how to instigate and cultivate such understandings. The successes of deities in defending their boundaries would seem to offer some clues".

KW: Rajasthan, Deities, Bishnois, Belief

53) Griffiths, W. G. 1909 *The Kol tribe of Central India.* The Asiatic Society. Calcutta.

Kol tribals quite often think of Barum Baba as an evil spirit. In the Kaimur hills it is said that he always lives in the pipal trees. No image or sign of his presence is made. It was also asserted that he likes to have the sacred thread hung on the tree in which he is found. Animals are never sacrificed to him. As far as possible Kols avoid trees inhabited by him particularly after dark. Bas Deo and Barum Deo are probably the same in the thought of the Kol. These spirits prefer to live in the bar or Banyan tree, though they are reported as living in pipal trees as well.

KW: Kol, Deities

54) Guha, U., Siddiqui, M. K. A. and Mathur, P. R. G. 1968 *The Didayi - A Forgotten Tribe of Orissa*. Anthropological survey of India, Memoir No. 23. Calcutta.

Didayi tribals have their deities associated with hill ranges. They also have floklores associated with these hill ranges. The deities in these hills help them during hunting expeditions.

KW: Diadyi, Folklore, Koraput, Orissa

55) Gupta, A. K. 1998 Policy and Institutional aspects of sacred groves: tending the spirit, sustaining the sacred. In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekhara (eds.), *Conserving the Sacred for Biodiversity Management*. Oxford and IBH Publishing Co. Pvt. Ltd., pp. 397-414.

In this paper the author argues that the concept of sacredness is at the very root of our civilization. Whenever consciousness and any boundary of sacredness in violated, we are reduced to that extent in our civil consciousness. The materials of the paper have been organized in three parts. Part I reviews the debate on sacredness in the context of the sacred groves as well as species. Part II is devoted to a review of global experiences with sacred groves and sacred species particularly insects. In part III the author isolates principles and options for developing future strategies. The author argues that sacred and profane (and secular) and reductionism and holism intertwine like a double helical structure of DNA, one without the other is not sustainable.

KW: Sacredness, Policy, Secular

56) Gurdon, P. R. T. 1914 *The Khasis.* Macmillan & Co. Ltd. London.

In the vicinity of Khasi village, often, just below the brow of the hill are to be seen darkwoods of oak and other trees. These are the sacred groves. Here the villagers worship U ryngkew U basa, the tutelary deity of the village. These groves are taboos and it is an offence to cut trees there in for any purpose other than for performing funeral obsequies. The groves are generally not more than a few hundred yards away from the villages. The War villages nestle on the hillsides of the southern border, and are to be seen peeping out from the green foliage with which the southern slopes are clad. In the

vicinity of, and actually up to the houses, in the War villages, are to be observed large groves of arecanut, often twined with the pan creeper and of plantation trees, which much enhance the beauty of the scene. Looking at a War village from a distance a darker shade green is seen; this denotes the limits of the extensive groves. It is believed that the spirits of the dead, whose funeral ceremonies have been duly performed, go to the house or garden of God, where there are groves of betel nut trees hence the expression for the departed, Uba ba kwai ha iing u blei (he who is eating betelnut in God's house), the idea of supreme happiness to the Khasi being to eat betel-nut uninterruptedly. They never symbolise their gods by means of images, their worship being offered to the spirit only.

KW: Khasi, Meghalaya, Deity

57) Hajra, D. 1970 *The Dorla of Bastar*. Anthropological Survey of India, Memoir No. 17. Calcutta.

The important gods and goddesses of the Dorla tribals are commonly included in their pantheon are - Mutta-lemma, Gamam, Kora, Ganga namma and Murpu. They are enshrined within the settlement; sometimes a few of them viz., Kora and Ganganamma are found to be placed in the outskirt jungle. All these gods and goddesses are found common in almost all the Dorla villages. They are worshipped regularly on important festivals and religious functions. They are enshrined under some trees like saja, mahua, semur, tendu etc. Except gamam and Murpu, all others are represented by some stones, usually flat in nature. Except Gamam, all these are thought to be of female sex. Though most of them are worshipped in important religious festivals, some specific festivals are associated with some of them.

KW: Bastar, Dorla, Madhya Pradesh, Deities

58) Jha, M., Vardhan, H., Chatterjee, S., Kumar, K. and Sastry, A. R. K. 1998 Status of Orans (Sacred Groves) in Peepasar and Khejarli villages in Rajasthan. In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekhara (eds.), *Conserving the Sacred for Biodiversity Management*. Oxford and IBH Publishing Co. Pvt. Ltd., pp. 263-275.

In this paper the authors give descriptions of *Orans* (sacred groves) in two villages - Peepasar and Khejarli - of Nagaur and Jodhpur districts, respectively of Rajasthan. The four well-preserved Orans in Peepasar cover an area of 36.8 ha (range 2.08 ha to 17.18 ha) while the one degraded *Orans* in Khejarli cover an area of 157.56 ha. Both villages are inhabited by Bishnois. The paper gives a historical account of the *Orans* as well as the area, species composition and nature of resource use in the *Orans.* They also suggest several strategies for conservation of the *Orans*.

KW: Nagaur, Jodhpur, Rajasthan, Bishnoi

59) Joshi, N. V. and Gadgil, M. 1991 On the role of refugia in promoting prudent use of biological resources. *Theoretical Population Biology*, 40(2) : 211-229.

The authors explore a model of utilization in a pre-market economy of a biological resource population by a social group, which is the sole owner of the resource. The group is assumed to be motivated to derive as large a harvest as possible while at the same time attempting to keep the risk of extinction of the resource population at a low level. It is shown that this can most likely be achieved through total protection of the resource population in parts of its range set aside as refugia. Many primitive societies indeed follow this strategy, which deserves to be given more serious attention as a tool for the management of renewable resources.

KW: Refugium, Harvest, Renewable resources

60) Kalam, M.A. 1996 *Sacred groves in Kodagu district of Karnataka*. Pondy paper on Social Sciences. French Institute, Pondicherry.

This paper traces the way *Devara Kadus*, sacred groves, in Kodagu district of Karnataka, have been affected since the latter half of the last century. In 1905 the Forest Department handed over the management of the Devara Kadus to the Revenue Department. After a period of eighty years, *Devara Kadus* were declared as Reserve Forests and a notification was issued by the Karnataka Government to hand over the *Devara Kadus* back to the Forest Department. In spite of the 1985 Notification the *Devara Kadus* have not been returned, formally, to the Forest Department. Currently there appears to be a dual control over them. The Forest Department, however, has gone ahead and surveyed and demarcated some of the *Devara Kadus*. At present concerted attempts are on to vegetarianism the deities in the *Devara Kadus* and to convert them into hal mathu hannu (milk and fruit) deities. Human interventions and encroachments of various kinds and degrees are in direct conflict with romanticised notions of the *Devara Kadus* as patches set aside for conservation. Those most affected are the ones that are in close proximity to human habitations.

KW: Kodagu, Karnataka, *Devara Kadu*

61) Khan, L. M., Menon, S. and Bawa, K. S. 1997 Effectiveness of the protected area network in biodiversity conservation: A case-study of Meghalaya state. *Biodiversity and Conservation,* 6: 853-868.

The North-Eastern region of India is significant for biodiversity conservation because of its floristic richness and high levels of endemism. Deforestation levels are high in region due to anthropogenic pressures. The authors accessed various literature sources to create a database for Meghalaya state containing information on plant species, habit, altitudinal distribution, endemism and endangered status. Information on the existing protected area network (type, extent and altitudinal representation) was added to the database. The database was used to assess the effectiveness of the existing protected area network in

conserving the floristic biodiversity of the state. Of a total of 3331 plant species, 1236 (37.11%) are endemic of Meghalaya and 133 (4%) are confined to 'sacred forests'. However, 'sacred forests' are not legally protected areas. Only 32220 ha (1.43% of the state's geographical area) is protected under the category of National Park or Sanctuary. Although 212 species (17.15% of the state's endemic species) occur only in Meghalaya at altitudes above 1500 m, none of the forests at these altitudes are protected as National Parks or Sanctuaries. We conclude that the existing protected are network does not effectively conserve the state's unique biodiversity and suggest measures by which its effectiveness might be increased.

KW: Protected area network, Biodiversity, Conservation, North-East India, Meghalaya

62) Khiewtam, R. S. and Ramakrishnan, P. S. 1989 Socio-cultural studies at the sacred groves at Cherrapunji and adjoining areas in north-eastern India. *Man in India,* 69: 64-71.

The study pertains to the sacred groves locally known as "Law Kuntang" at Cherrapunji and its adjoining areas in Meghalaya in north-eastern India. These represent relict forests of the region maintained by the local people for religious and cultural reasons. Therefore, they are strictly protected. The significance of the sacred grove concept in conserving germ plasm of endangered species, its role as seed source for revegetation of damaged sites and in conservation education for the local people are discussed.

KW: Cherrapunji, Meghalaya, Endangered species

63) Khurana, I. 1998 Best kept sacred. *Down to Earth* April 1998, pp. 34-39.

This paper is based on the interaction the author had with a number of scholars participating in Regional Workshop on "Role of Sacred Groves in Conservation and Management of Biological Diversity" held at the Kerala Forest Research Institute, Peechi, Kerala in December 1997. The author expresses the views of these scholars on different dimensions of the sacred groves. The author concludes "With changing values, increase in population, development pressure and apathy on the part of the government departments - many of which did not give the concept due merit - sacred groves are fast deteriorating. If steps are not taken to stop their decline, these microcosms will disappear from the face of earth, leaving it deprived of valuable species of flora and fauna. Both Union and state governments should accord high priority to identifying and managing these sources of genetic wealth, and act fast.

KW: Flora, Fauna, Peechi, Kerala

64) Krishna, N. 1997 The terracotta tradition of the sacred groves. In: N. Krishna and J. Prabhakaran (eds.), The Ecological Traditions of Tamilnadu. C. P. R. Environment Education Centre, Chennai, pp. 76-82.

The votive offerings-the horses, bulls, elephants and ram are always made of clay and left in the open to go back to the mud they came from. It is interesting to note that generally only working animals are given as votive offerings. The potter is the priest at the grove. He performs both the ritual of making the terracottas and the ritual of worship at the temple, before the clay figures are offered to Ayyanaar. Potter belongs to Velar or Vishwakarma, (creator of the world) caste. His tools are few-the potter's wheel and his own hand. For the figurines, he uses a mixture of sand, husk and clay, unlike the mixture of sand and clay used for pots.

KW: Terracotta, Offerings, Tamilnadu

65) Kulkarni, D. K., Barve, J. P., Jagdale, R. P. and Inamdar, A. C. 1993 Floristics of a sacred forest patch from Sundergad district, Orissa state. *J. Econ. Tax. Bot*., 17(2).

The paper gives floristic account of a sacred groves near village Bijadihi (Dist. Sundergad, Orissa State) occupying an area of 0.5 ha. In a sharp contrast to surrounding area which contains rice fields, the sacred grove has a rich varied and storeyed vegetation. Human and animal interference is scrupulously avoided in the grove, resulting in growth of plants of great dimensions.

KW: Flora, Sundergad, Orissa

66) Kumbhojkar, M. S., Upadhye, A.S. and Kulkarni, D. K. 1996 Religious forest patches among Mahadeo Koli tribal localities - social, cultural and environmental relationships. In: S. K. Jain (ed.), *Ethnobiology in Human Welfare*. Deep Publications, New Delhi, pp. 349-351.

Forests and tribals have had an intimate relationship from ancient times. Tribals preserve forest patches traditionally on religious grounds, worship forest gods and maintain lasting relationship with nature. Flora in the forests preserved on the basis of such religious beliefs is rich. These sacred groves in tribal areas are worshipped for different religious functions and play an important role in social and cultural aspects. This tradition also helps to maintain ecological balance and support climax vegetation. Floristic survey of religious forest patches in Maharashtra state has been carried out during the last two decades. The present communication deals with Mahadeo Koli tribe in respect of social, cultural and environmental relationship.

KW: Mahadev Koli, Western Ghats, Maharashtra

67) Kushalappa, C.G. and Bhagwat, S. A. 2001 Sacred groves: Biodiversity, threats and conservation. In U., Shaanker, R., Ganeshaiah, K. N. and K. S. Bawa (eds) Forest Genetic Resources: Status, Threats, and Conservation Strategies. Oxford & IBH Publishing Co. Pvt. Ltd., pp. 21-29.

Authors focus on the sacred groves of Kodagu district in the Western Ghats, south India

which perhaps has the highest density of the groves in the world. The groves are named after a variety of gods and managed by the local village communities. In the recent past, the groves have undergone considerable changes in their physical extent and condition. Between 1905 and 1985, the total area under groves decreased by 42% with about 80% of the groves being less than two hectares in size. Authors inventoried 25 sacred groves and the adjoining reserve forests and coffee plantations for tree, bird and fungal diversity. About 14% of tree species, 26% of bird species and 44% of the fungal morpho types occurred exclusively in the sacred groves. The tree diversity in the groves included many red listed endemic medicinal trees of south India. A new species of fungal genus *Xylaria* was also reported from the sacred grove.

KW: Kodagu, Threats, Status, Conservation

68) Kushalappa, C.G., Bhagwat, S. A., and Kushalappa, K. A. 2001 Conservation and management of sacred groves of Kodagu, Karnataka, SouthIndia – A unique approach. In K. N. Ganeshaiah, R. U. Shaanker and K. S. Bawa (eds) Tropical Ecosystems: Structure, Diversity and Human Welfare. Proceedings of the International Conference Tropical Ecosystems. Oxford-IBH, New Delhi., pp. 565-569.

The district has 1214 sacred groves covering an area of 2550.45 ha. The density of these groves in the landscape is very high with one grove for every 300 ha of land. Every village has one and in many cases more than one grove. There are 14 villages with more than 10 groves and Thakari village in Somwarpet taluk has the largest number of 17 groves. Though the district has large number of groves, most of them are today very small islands. Out of 1214 groves in Kodagu, 997 groves (80%) are less than 2 ha and there are only 123 groves which are more than 4 ha.

KW: Kodagu, Community management, Joint forest planning

69) Malhotra, K. C. 1998 Anthropological dimensions of sacred groves in India: An overview. In: P.S. Ramakrishnan, K. G. Saxena and U. M. Chandrashekhara (eds.), Conserving the Sacred for Biodiversity Management. Oxford and IBH Publishing Co. Pvt. Ltd., pp. 423-438.

In this paper based on both secondary and primary sources, the author provides an overview of the various anthropological dimensions of sacred groves (SGs) in India. The dimensions covered are: the antiquity of SGs; spatial distribution of SGs; number and size of SGs; legal status and management of SGs; ethnicity and SGs; gender and SGs; interface between people and SGs (sacred as well as socio-cultural, economic and political); and areas for future research. The author among several suggestions, suggest that a multi-location action oriented project using different approaches and involving scientists, local communities and NGOs should be initiated in groves which are under threat or being destroyed to see which approach (es) work better.

KW: Anthropology

70) Malhotra, K. C., Stanley, S., Hemam, N. S. and Das, K. 1998 Biodiversity conservation and ethics : Sacred groves and pools. In: N. Fujiki and R. J. Macer (eds.), ***Bioethics in Asia.*** **Proceedings of the UNESCO Asian Bioethics Conference, pp. 338-345.**

The materials presented in the paper comprises of field surveys carried out in sacred groves (SG) of seven villages of West Bengal and 220 villages in Orissa. Besides, a sacred pool in Orissa has also been described. The main findings of the present study are : (1) in all SGs there are strict cultural taboos in harvesting of plant biomass and hunting of animals; (ii) none of the forest products in the SG can be exploited for commercial purposes; (iii) most of the SGs were found undisturbed; (iv) in the sacred pool harvesting of fishes and other aquatic fauna and flora are strictly forbidden; (v) the protection of sacred sites is maintained by the belief in powers of resident spirits and deities, and no policing or monitoring is carried out by humans, and (vi) persons violating the established norms and values are generally not punished, instead are punished by local nature spirits/deities. In all studied villages, the communities, irrespective of ethnicity, religion, language, age or gender observed traditional values and ethics in maintaining the biological and cultural integrity of the sacred sites. Such values and ethics related to sacred sites have a strong bearing on the conservation of dwindling biodiversity. There is plenty to learn from such prudent cultural practices related to care and use of natural resources.

KW: West Bengal, Orissa, Tribe, Caste, Ethics, Pool, Midnapore

71) Malhotra, K. C., Gokhale, Y., Chatterjee, S. and Srivastava, S. 2000 ***Sacred Groves in India*** **:** ***An overview*****. Indira Gandhi Rashtriya Manav Sangrahalaya, Bhopal.**

The authors provide an overview of the various dimensions of sacred groves in India. The dimensions covered are: (I) anthropological; (ii) biological and ecological; and (iii) threats and opportunities. The publication in profusely illustrated, and gives large number of references related to sacred groves.

KW : India, Biodiversity, Threats, Opportunities

72) Malhotra, K. C., Chakravarty, K. K., Bhanu, B.V., Chatterjee, S., Deb, D., Gokhale, Y., and Srivastava, S. 2000 ***Sacred Groves in India*** **:** ***A Travelling Exhibition*****. Indira Gandhi Rashtriya Manav Sangrahalaya, Bhopal.**

This booklet gives an overview of the travel exhibition presently housed at Indira Gandhi Rashtriya Manav Sangrahalaya, Bhopal. The aim of the exhibition is to interact with local organisations and people to learn more about sacred groves- related local management practices and knowledge systems.

KW : Exhibition, Management

73) Malhotra K. C. 2000 Are sacred groves a common property resource? In : K.P. Krishna Shetty (ed.), ***A Lifes Journey Forward a Just Society.*** **Image works, Chennai, pp. 77-91.**

This paper examines whether the concept of common property resources (CPRs) can be extended to the institution of sacred groves. The paper concludes that based on use rights, some types of sacred groves do not fall under CPRs, whereas a large number of the, primarily found among different tribal communities, confirm to the definition of CPRs.

KW : Common Property Resources, Tribe

74) Marimuthu, G. 1988 The sacred flying fox of India. ***Bat Conservation International,*** **6(2) : 10-11.**

The Indian Flying Foxes (*Pteropus giganteus*) are considered sacred at 4 places near Madurai in Tamilnadu State of southern India. These bats are believed to get protection from the deities associated with the roosting sites at these 4 sites. Hence, due to the fear of deities, local people do not allow hunting of the Indian Flying Foxes.

KW: Indian flying fox, Tamilnadu

75) Meher-Homji, V. N. 1997 Conservation of ecological heritage. In: N. Krishna and J. Prabhakaran (eds.), ***The Ecological Traditions of Tamilnadu*****. C. P. R. Environmental Education Centre, Chennai, pp. 32-44.**

The strong tradition of the Indians of respecting all forms of life is well known. In the sacred groves, the trees are protected with religious fervour. However today scant respect is given to the denizens of the forests, both trees and animals. The sacred groves are the repositories of biological resources. In the northern portion of the Western Ghats biodiversity is sheltered in the sacred groves, smaller in size but widely distributed. The reserved forests are depleted. The ecological studies of these species rich smaller pockets should try to understand whether viable populations of rare species occur in the scattered pocket? Does it make sense protecting these pint-sized pockets? Or can we just forget them?

KW: Biological repositories, Viable populations, Western Ghats

76) Meher-Homji, V.M. 1987 Puttupet: A sacred termite-mound protects a forest.
Blackbuck, **2(4) : 1-4.**

A remarkable example of natural vegetation surviving in the midst of cultivation due to religious sentiments is found at Puttupattu Chavadi, commonly called Puttupet, about 13 kms north of Pondicherry on way to Marakkanam, at the southern edge of the Kaliveli tank. At first it appeared that the profuse growth of vegetation was due to the availability of moisture from the nearby lake. However, a closer inquiry revealed that not only is

there a temple of God Manjiny inside with the Ayyanars (deities with horses, guardians of the village) but also another object of veneration, a puttu, i.e., a termite mound with snake-holes. This is one of the rare instances of a miniature termite "hillock" being worshipped because of the belief that wishes asked for here (both beneficial and evil) are fulfilled. In the bargain, the scrub-jungle receives due protection, reminiscent of the sacred groves of Maharashtra.

KW: Tamilnadu, Deities

77) Mitra, A. and Pal, S. 1994 The spirit of the sanctuary. *Down to Earth*, January 1994.

The article takes into account various issues associated with sacred grove tradition in Meghalaya, Rajasthan, Maharashtra and Kerala. Authors have also interviewed experts for present day conditions of the tradition. Scholars say the advent of Christianity in the northeast swept away old beliefs and ritualistic traditions of most tribes in the region. Sanctified forests existed among the Angmi tribe in Nagaland and the Rongmel tribe in Manipur. But except for the Khasis, the other tribes have abandoned their beliefs. Though the *Sarnas* of south Bihar have declined under pressure from development projects and urbanisation, there are instances when survival instincts revived them. The *Sarnas* were one of the factors that stalled the Koel-Karo twin-dam project a decade ago. The Munda tribals living in the 112 villages in the submergence area refused to give up their sarnas and sasandiris (burial grounds) as well as their lands without suitable rehabilitation. The Orans of western Rajasthan consist of, at best, 3 or 4 varieties of trees. Though part of this degeneration can be attributed to the breakdown of the local self-government system, the people have also ignored traditional values and principles of community conservation. Reviving the *Orans* is fraught with various problems. Gadgil and Vartak first warned about deforestation in the state's groves about 20 years ago. And, the deforestation has accelerated.

KW: Munda, Oraon, Meghalaya, Rajasthan, Maharashtra, Kerala

78) Mohan, H. 1975 *The Parhaiya: A Study in Culture Change*. Bihar Tribal Welfare Research Institute, Patna.

The Parhaiya settlements are mostly located in the hills in Palamau district of Bihar. Each settlement has a sacred grove. In a Parhaiya settlement, the following sacred places like Gaonhel Asthan, Devi Asthan are found. The Parhaiya also worship various deities like Raksel, his wife Rakselin, Darha, Chandi, Dharti, Gaonhelor or Dihwar, Satbahini. These deities are located in respective sacred groves.

KW: Parhaiya, Palamau, Bihar, Deities

79) Mukherjee, C. 1962 *The Santals.* A Mukherjee & Co. Pvt. Ltd., Calcutta.

The Santals have several village spirits, whom they worship during all public festivals.

They are supposed to preside over particular rural areas in which they live. The chief presiding deity of the Santals is `Maran Buru'. It is said that he possesses the widest possible powers and is associated both with good and mischievous godlings. Another village deity is `Monrenko Turuiko'. The Santals believe that they were five brothers. They are supposed to preside over the welfare of the village. His younger sister `Gosane era' constitutes a separate deity of Jaherthan (Holy grove) and is offered worship in a different hut, 'Jaher era', another sister of Morenko is the goddess of Jaherthan named after her. She has a stone assigned as her symbol. The Santals worship her for the general welfare of the village, so that their children may have good health, crops may grow in plenty and youths and maids of the tribe may be married quickly. Manjhi has his place no doubt, but he is worshipped at the Manjhithan, a separate shrine in the village.

KW: Santal, Deities, Mayurbhanj, Orissa

80) Murthy, R. S. S. 1991 Environmental awareness of Kautilya. *Proceedings of the National Seminar on Ecological Awareness reflected in Sanskrit literature*. V.N. Jha (ed.) Univ. of Poona, Poona, pp. 51-60.

Kautilya's Arthasastra is replete with his concern for nature. While human society depends entirely on nature for its existence and enjoyment, Kautilya appears to underline the principle that there must be a judicious and intelligent use of nature. He visualises two kinds of environmental problems - a) created by people and b) created by nature. For (a) he suggests law court should tackle these and for (b) he depends on forecasting; based on which King should take the precautions.

KW: Kautilya, Arthasastra

81) NAEB 1995 Sacred groves of Kurukshetra, Haryana. Agricultural Finance Corporation Ltd., Bombay Regional Centre, National Afforestation and Eco-development Board. Ministry of Environment and Forest, Govt. of India, New Delhi.

Unlike in other states there seems to be no common name for these groves even though these enjoy protection due to similar reasons. There are in all 248 sacred groves in Kurukshetra district out of which Kurukshetra tehsil has 190, Pehowa 30 and Shahabad 28. The groves attached to temples account for 38.0 per cent, Tirath 20.0 per cent, Gurudwaras 18.0 per cent, Samadhis 8.0 per cent and others (under Ashram, Dharamshala, Vidyapeeth, Church etc.) 16.0 per cent. For detailed studies 36 sites were selected with the break-up of 20 temple groves, 6 Tirathsthans, 4 Gurudwaras and 4 Samadhis and one each of Church and Museum.

KW: Haryana, Kurukshetra

82) Nath, Y.V.S. 1960 *Bhills of Ratanmal*. The Maharaja Sayajirao University of Baroda, Baroda.

Every Bhill village in this part of the country has spirits as their dwelling place. This grove is named "the forest of the gods" (*Devnu van*). No trees may be cut in this grove nor the ground ploughed under any circumstances. All the `good spirits' of the village are invited to reside in this grove and look after the interests of their descendents. Once a year in Divali, the villagers make offerings of food and liquor to all the spirits resident in this grove.

Ceremonies/Festivals	**Month associated**	**Deities associated**	**Priesthood**
Akhatrij	April-May	Mahadev, Indraj, Hadarjokuvar	Pujari

KW: Bhill, Festivals, Madhya Pradesh

83) Nayak, R., Boal, B. M. and Soreng, N. 1990 *The Kondh: A hand book for development*. Indian Social Institute, New Delhi.

Jhakeri god for the Dongaria is the male aspect of the creator protector deity, dwelling in his sacred shed, the Sadar. Though this is a male presence, the hut also contains carved female symbols associated with the earth deity.

KW: Koraput, Kondh, Dongaria, Orissa

84) Nayak, R., Boal, B.M. and Soreng, N. 1996 *The Gadabas: A Handbook for Development*. Indian Social Institute, New Delhi.

The next sphere in the spiritual world of the Gadabas is at village level. At the center of village is enshrined the Hundi, and the outskirts the thakurani (Jhakar). While the Daran Deli is the guardian of the individual household, the hundi and jhakar look after the entire village community under their jurisdiction guarding it against all evils and blessing them with abundance and prosperity. The well being of the people in the village, or of the village as a whole, is dependent not only on the Daran delli and the village deity but also on a harmonious relationship with the deities resident outside the village. One agent of pollution is woman during her menstrual period. In the past, the bleeding woman was considered unclean, even her husband was considered impure during her menstrual period.

KW: Gadaba, Orissa, Deities

85) Nayak, R., Boal, B.M. and Soreng, N. 1993 *The Juangs: A handbook of development*. Indian Social Institute, New Delhi.

The Thana pati (deity of the locality worshipped under the sal tree) is the paramount tutelary deity of all the territory belonging to village of Juang tribals. Deity is worshipped

under a sal tree within a grove of sacred trees some little distance from the village. For many villages she is a female deity. The groves are known to symbolise the earth mother, beside her tree sometimes there is a wooden pillar which is commonly a male symbol. Animal sacrifice is not usually offered to her. Gram Siri is the other tutelary deity. Her shrine is to be found at the heart of every Juang village. She dwells in a Katho Champa, the temple flower tree.

KW: Orissa, Juang, Deities

86) Nipunage, D. S., Kulkarni, D. K. and Vartak, V. D. 1993 Floristic studies on sacred groves from Sinhagad hills in Pune district, Maharashtra state. In: *Higher Plants of Indian subcontinent*. Vol. IV, pp. 153-159. B.S.M.P.S., Dehradun, U.P.

The study area of Sinhagad hills is situated about 24 km south west of Pune City. It lies between 18°33'-18°41' N and 73°77'-73°84' E. The work was carried out on the following lines: To collect plant specimens from sacred groves; to note common plant associations; and to study the habit, general appearance and abundance of individual species. Seven sacred groves were recorded and studied from the Sinhagad and adjoining areas in Pune District. Occurrence of common but valuable medicinal plant, *Helicteres isora L.* in pure stand in Bapujiboovache Ban is a remarkable point. Fruits of *Helicteres isora L.* are used in the treatment of gastric and intestinal disorders. Pure stand of *Miliusa tomentosa (Roxb.)* is also a striking feature which can be seen exclusively in sacred groves.

KW: Flora, Pune, Maharashtra

87) Oliver, E. D. I., Viji, C. and Narasimhan, D. 1997 Socio-biological aspects of sacred groves of different ecological zones of Tamilnadu. In: N. Krishna and J. J. Prabhakaran (eds.), *The Ecological Traditions of Tamilnadu*. C.P.R. Environment Education Centre, Chennai, pp. 54-64.

Most of the groves in Tamilnadu are associated with the village folk deities. The mythological stories, staunch belief systems and taboos associated with deities have preserved number of forest pockets. Common taboos and beliefs associated with sacred groves in Tamilnadu are:

-The felling of trees is strictly prohibited.
-Footwear is to be removed at the entrance of the path leading to the deity.
-Women are not allowed into the sacred groves at certain places.
-Animals are not to be harmed.
-Offenders will be punished by God by bringing illness.
-Any disturbance to the sacred grove causes failure of crops and diseases.

KW: Taboos, Tamilnadu

88) Panda, G.P. 1991 The attitude towards environment reflected in Kautilya's

Arthasastra. In: V. N. Jha (ed.), ***Proc. of the National Seminar on Environmental Awareness Reflected in Sanskrit Literature*****. University of Poona, Pune, 47-50.**

In country like India the kings were the rulers with all kinds of sovereignty over their states in ancient times. Kautilya's Arthasastra being a work in Indian polity laid down certain rules and principle of statecrafts for the kings whereby the environment was maintained as a part of their machinery. The subject matter in this paper is discussed under two broad headings i) the attitude towards flora, and ii) the attitude towards fauna.

KW : Kautilya, Arthasastra

89) Pandey, D. N. 1998 ***Ethnoforestry-Local Knowledge for Sustainable Forestry and Livelihood Security.*** **Himanshu Publications, Udaipur.**

To restore the sacred groves of Aravalli hills in India, a programme, Aravalli Sacred Grove Conservation, was launched in 1992. This programme includes protection of groves, planting of indigenous species, soil and water conservation and participatory approach to restoration. Important technical inputs being addressed are : constitution of Village Forest Protection and Management Committee; training on sacred groves conservation to people; Non-Governmental Organisations (NGOs) and foresters; documentation of sacred groves and biodiversity; participatory planting and seed sowing of local species; soil and water conservation; restoration; planting of ethno-silvicultural refugia; seed collection from species growing in sacred groves; afforestation of local; and rare and threatened trees around the sacred groves located in forest lands. Societal and legal issues addressed include public education, awareness and socio-legal action against those who violate the community protection norms. Similar programme is being launched in Kota under Forestry Development Project.

KW: Ethnoforestry, Rajasthan

90) Parthasarathy, N. and Karthikeyan, R. 1997 Plant biodiversity inventory and conservation of two tropical dry evergreen forests on the Coromandel coast, south India. ***Biodiversity and Conservation*****, 6 (8): 1063-1083.**

Species diversity, population structure, abundance and dispersion patterns of all woody plants above 10 cm gbh (girth at breast height) were inventoried in two 1-ha plots of tropical dry evergreen (sacred grove or temple) forests at Kuzhanthaikuppam (KK) and Thirumanikkuzhi (TM) on the Coromandel coast of south India. Site KK is a stunted forest (average tree height ca 6 m) and TM a tall forest (average tree height ca 10 m). A total of 54 species (in 47 genera and 31 families) were recorded. Species richness and stand density were 42 and 38 species and 1367 and 974 individuals ha-1 respectively for the sites KK and TM. About 50% of the total species were common to both the sites. Site TM is twofold more voluminous (basal area 29.48 m-2 ha-1) than KK (basal area 15.44 m-2 ha-1). Nearly one third of the individuals are multi-stemmed in the low-statured site KK whereas one fourth of the tree density is multi-stemmed in TM. Species abundance

pattern varied between the two sites. The abundance of three species in KK and two species in TM is pronounced. *Memecylon umbellatum*, the most abundant species contributing to one third of total stand density in KK, is least represented in TM. Species richness, density and diversity indices decreased with increasing girth threshold. Most species exhibited clumped dispersion of individuals both at 0.25 and 1-ha scales. Population structure for girth frequency is an expanding one for both the sites, except for basal area distribution in KK. Variations in plant diversity and abundance are related to site attributes and human impacts. In the light of habitat uniqueness, species richness and sacred grove status, the need for conservation is emphasized.

KW: Species diversity, Tamilnadu, Population structure, Tropical dry evergreen

91) Parthasarathy, N. and Sethi, P. 1997 Trees and liana species diversity and population structure in a tropical dry evergreen forest in south India. *Tropical Ecology,* 38(1): 19 - 30.

Biodiversity, density, population structure and dispersion of all trees and lianas above 10 cm gbh were investigated in two hectares (four 0.5 ha plots) of a sacred grove tropical dry evergreen forest at Puthupet in the Coromandel coast of south India. Woody species richness in 2-ha area was 51 (in 46 genera and 30 families) in a total stem density of 2675. Population density, basal area and importance value index (IVI) of species varied greatly. *Canthium dicoccum, Flacourtia indica, Garcinia spicata, Memecylon umbellatum* and *Pterospermum canescens* were the five dominants contributing to 78% of IVI and basal area and 71% of stand density. Among the four 0.5 ha plots difference in species richness was narrow, whereas that of stand density was wider. Mean stand density was 1338 stems ha-1 and mean basal areas was 32.8 m-2 ha-1. Rubiaceae was the most speciose (5 species) family. Density-wise Melastomataceae accounted for 40% of total stems represented only by *Memecylon umbellatum*. Species richness, Shannon-Wiener index and stem density mostly decreased with increasing tree size class. Of the 18 lianas recorded, most were in lower girth class (10 - 60 cm). Stand population structure of all four plots was an expanding type with varying trends in basal area. Most species, particularly the dominants exhibited clumped dispersion. The present extent of forest cover and biodiversity are attributed to sacred grove status of the site which deserves protection.

KW: Species diversity, Tamilnadu, Liana, Tropical dry ever green

92) Pascal, J. P., Ramesh, B. R. and Bourgeon, G. 1988 The "Kan forests" of the Karnataka plateau (India): Structure and floristic composition, trends in the changes due to their exploitation. *Tropical Ecology,* 29 (2): 9-23.

"Kan forests" are patches of evergreen forest on the Karnataka plateau (India) growing under bioclimatic conditions that are more favourable to deciduous formations. They are now highly degraded as a result of prolonged exploitation. Floristic composition, structure and stages of degradation have been studied in 4 selected plots. The floristic composition varies very little from one kan to another. On the other hand, the relative

importance of species differs appreciably. The structural changes are seen in the opening and height of the stand, in the height of inversion level (sensu Oldeman) as well as in the biomass which may vary from simple to double. The plot in which the canopy was least disturbed shows a structure which is quite similar to the dense forests of the evergreen belt at the same latitude. The problem of safeguarding the kans is discussed.

KW: Karnataka, Kan, Vegetation structure, Floristic composition, Degradation stages, Anthropic effect

93) Patnaik, N. R. 1992 *History and Culture of Khond Tribes*. Common Wealth Publishers, New Dehi, India.

The important god of the Khond pantheon was Gossa Pennu, the God of Forests. They also maintain a sacred grove dedicated to Gossa Pennu. There is a range of taboos for harvesting the resources from the grove. The sacrifices are offered to the deities. The tribe also has other deities like Pitabaldi literally signifying `Great father God', Loha Penu - the war god or god of arms of the Khonds, who are worshipped in the groves.

KW: Orissa, Khond, Deities

94) Patnaik, S. and Pandey, A. 1998 A study of indigenous community based forest management system: Sarna (sacred grove). In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekhara (eds.), *Conserving the Sacred for Biodiversity Management*. Oxford and IBH Publishing Co. Pvt. Ltd., pp. 315-321.

The authors report in this paper results of their study on sacred groves (*Sarna*) in Jaspur Forest division of Raigarh district of Madhya Pradesh. The study area in predominantly inhabited by tribals (66%). Sarnas with varying sizes, 0.02 ha to 21 ha are found from mountaintop to plateau. They report four types of *Sarnas* - *Sarhul*, *Kadamara*, *Mahadani* and *Phool*. The *Sarnas* are fairly degraded with poor regeneration due to grazing, NTFP collection and other biotic pressures especially encroachment. Rehabilitation of degraded *Sarnas* with local people's involvement is essential.

KW: Raigarh, Madhya Pradesh, *Sarna*

95) Parkin, R. 1992 The Munda of Central India : *An account of their Social Organisation*. Oxford University Press, New Delhi.

The meeting place among the Mundas is the majhithan or sacred grove dedicated to the spirits of past headman.

KW : Munda, Majhithan

96) Pushpangadan, P., Rajendraprasad, M. and Krishan, P. N. 1998 Sacred groves of Kerala - A synthesis on the State. In: P.S. Ramakrishnan, K.G.

Saxena and U.M. Chandrashekhara (eds.), ***Conserving the Sacred for Biodiversity Management.*** **Oxford and IBH Publishing Co. Pvt. Ltd., pp. 193-209.**

The authors in this very comprehensive paper give an overview of the status of sacred groves in Kerala. The various aspects covered are Distribution of sacred groves in Kerala (an estimated over 2000 reasonably well preserved sacred groves are present in Kerala); Vegetation structure and dynamics (Physiognony, biological spectrum, species diversity); Ecological functions; and Rituals, worship and celebrations. The authors conclude: "A holistic understanding on the current status, structure, function and dynamics of sacred grove ecosystems is an essential prerequisite for assessing their ecological role, productive potentials and conservation values. There is an urgent need for launching a coordinated action oriented multidisciplinary programme on sacred groves of Kerala.

KW: Kerala, Vegetation structure, Festivals

97) Raddi, A. G. 1998 Biodiversity conservation through sacred groves (*Deorais*) in Maharashtra: Retrospect and prospect. In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekhara (eds.). ***Conserving the Sacred for Biodiversity Management.*** **Oxford and IBH Publishing Co. Pvt. Ltd., pp. 349-355.**

In this article the author critically examines various problems confronting the survival of sacred groves, and evaluates management options. The problems discussed are: erosion of sanctity and values; legal limitations; and imbalances in observational studies. The management options evaluated are: notify sacred groves a forest areas; Wild life (Protection) Act 1972; and linkages with the village ecodevelopment and the UNESCO Biosphere Reserve Concept. The author concludes: What is important is to integrate the spirit and philosophy of Biosphere reserve management into village ecodevelopment approach. This will not only give a qualitative boost to biodiversity conservation in the villages but also provide supplemental support to the biodiversity conservation work being done by the forest authorities.

KW: Maharashtra, *Deorai,* Management

98) Rai, S. C. and Sundriyal, R. C. 1997 Tourism and biodiversity conservation: The Sikkim Himalaya. ***Ambio,*** **26(4): 235-242.**

The Sikkim Himalaya is an area of high biodiversity and cultural heterogeneity with distinctive ethnic groups, mountain peaks, sacred lakes, and monasteries, making it a place of tourist attraction. The annual influx of visitors into Sikkim has increased by about 155% over a span of 15 years (1988-1994). Trekking, nature and recreational tourism are growing very rapidly in the Sikkim Himalaya. The socioeconomic conditions for people involved in the tourism business have also improved. The State has a rich tradition of nature conservation. However, local needs and increased tourist activities are causing some environmental degradation to this unspoiled region. Based on three of the

most commonly used tourist destinations, the perception of local stakeholders and their attitudes, and discussions with authorities, this paper analyzes the dynamics of tourism growth and biodiversity and its impact on resources, environment, local communities and the state economy. Tourism in Sikkim is growing and is expected to reach ca. 400 000 tourists per year by the end of this century. There is a vast scope for increased tourism in Sikkim that must be viewed with response to environment preservation, and local communities must be involved with such programs. This paper illustrates how tourism activities may be implemented and managed sustainably so that vegetation and culture are protected, and tourist benefits can reach the local community.

KW: Sikkim, Tourism

99) Ramakrishnan, P.S. 1998 Conserving the Sacred: Where do we stand? In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekhara (eds.), *Conserving the Sacred for Biodiversity Management.* Oxford and IBH Publishing Co. Pvt. Ltd., pp. 439-455.

The author in this paper mention that while structural attributes of sacred groves from different parts of the globe are well documented, the functional attributes of these groves and their value for conservation of biodiversity and the policy issues that need to be addressed are less investigated. The author suggests that in view of rapid and continued decline occurring in the quality and the number of sacred groves, there is an urgent need to document and monitor existing groves, analyze the scientific basis of these relict ecosystem functional units, and evaluate their value for biodiversity conservation. The research should particularly evaluate keystone species in these ecosystems, the range of sub-specific variability met within them, and to exploit them for nature reserve management and for rehabilitation of degraded landscape. The research and management of these groves should be part of larger effort, extending beyond the sacred sites, to develop an action plan for natural resource management at the landscape level, based on traditional knowledge and technology in regions where traditional societies live. In doing this ecological perceptions should be knit with socio-economic and cultural concerns of local communities. The author also suggest that a few selected groves representing different ecological zones in the country be declared as "National Heritage" sites.

KW: Function, National heritage sites

100) Ramakrishnan, P.S. 1998 Conserving the sacred : For biodiversity management - conclusions and recommendations. In: P.S. Ramakrishnan, K. G. Saxena and U.M. Chandrashekara (eds.), *Conserving the Sacred for Biodiversity Management.* Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi, pp. XIII-XXIII.

In this article the author gives conclusions and recommendations based on the papers presented in a UNESCO sponsored workshop on *`Role of Sacred Groves in Conservation and Management of Biological Diversity'* held in Kerala in 1998. The author critically

reviews various papers presented in the workshop. Among several observations the author concludes, "In the ultimate analysis, enough data exist on conservation biology, but not enough on those aspects linking biological conservation with cultural integrity. Filling this gap is considered crucial as it will provide an additional tool for biodiversity conservation and management". (p. XXII).

KW: Management, Conservation

101) Ramakrishnan, P.S. 1998 Conserving the sacred for biodiversity : The conceptual frame work. In: P.S. Ramakrishnan, K.G. Saxena and U. M. Chandrashekara (eds.), ***Conserving the Sacred for Biodiversity Management.*** **Oxford and IBH Publishing Co. Pvt. Ltd., pp. 1-15.**

The author in this paper develop a framework for an ecological analysis of the `concept of the sacred' (the sacred groves, sacred landscape and sacred species) from a biodiversity perspective, in the Indian context, largely drawing upon author's own experiences from the north-east Indian situation.

KW: Northeast India, Sacredness

102) Ramakrishnan, P.S., Saxena, K.G. and Chandrashekara, U.M. (eds.) 1998 ***Conserving the Sacred For Biodiversity Management.*** **Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.**

This book contains papers presented at a UNESO sponsored Workshop - Role of Sacred Groves in Conservation and Management of Biological Diversity - held at Kerala Forest Research Institute, Peechi, Kerala in December 1997. The 37 papers contributed by scholars from India and abroad cover a wide range of topics related to sacred groves such as conceptual, historical and socio-cultural, case studies, and functional attributes, conservation, management and policy. The book emphasizes upon conserving the `sacred', in all its spatial dimensions ranging from species to landscape levels. It contains a wealth of information. It aims at synthesizing the current state-of-art on sacred groves. The authors "hope that this publication will be of interest to national government, international, bilateral and multilateral donor agencies, scientist researchers, managers, NGOs and students concerned with approaches to sustainable use of biodiversity and its management" (p. iv).

KW: Conservation, Management, Policy

103) Raman, K.V. 1997 The ecological tradition in Tamil literature and epigraphy. In: N. Krishna and J. Prabhakaran (eds.), ***The Ecological Traditions of Tamilnadu*****. C.P.R. Environment Education Centre, Chennai, 17-27.**

The Tamil language is blessed with one of the oldest and richest literary traditions going back to the 'Sangam' age. The five-fold classification of the tamil land (Five 'tinais') is

described in the ancient work 'Tolkappiam'. This finer classification of the ecological zones also describes pattern of human lifestyle in the respective zones. Each zone was named after a flower unique to the area. The literature and epigraphic sources depict that the temples were located amidst groves and fertile fields e.g. Alagarmalai which was called 'Maal-irum-solai'.

KW: Tamil literature, Epigraphy, Tamilnadu

104) Raman, A. and Palavarayan, A. 1997 Recognition and conservation of plant resources in ancient Tamilgam: Some random thoughts. In: Krishna and Prabhakaran, J. (eds.), ***The Ecological Traditions of Tamilnadu. C.P.R. Environment, Education*** **Centre, Chennai., pp. 45-53.**

Ancient Tamil civilization worshipped trees a trait that exists even today. This practice originated for the following reasons:
-Trees represented God and the worship of trees would enable the people to invoke God's blessings.
- Resided evil spirits in trees were believed to be pleased by worshipping the trees.
- Good health was the grace of Amman who resided in trees. Her worship would bless better health.

-Worship of trees by young girls believed to get ideal husbands and offsprings.
The ancient literature and folklores refer to worship of sacred groves. Such places of worship eventually turned into places of habitation.

KW: Tamilnadu, Tree worship

105) Risley, H. H. 1981 ***The Tribes and Castes of Bengal*****. Vol. I. Firma K. L. Mukhopadhyay, India, Calcutta (Original Publication in 1891).**

Bhuiya tribals have their own priests and their sacred groves called `Deotasara' dedicated to four deities - Dasum Pat, Bamoni Pat, Koisar Pat and Boram. Boram is the sun. Stones in the Sara represent the three minor deities, but Boram has no representation.

KW: Bhuiya, West Bengal

106) Risley, H.H. 1981 ***The Tribes and Castes of Bengal*****. Vol. II. Firma K.L. Mukhopa dhyay, India, Calcutta (Original Publication in 1891).**

The popular gods of Santal tribe are: Marang Buru, Moreko, Jair era, Gosain era, Pargana, Manjhi. All the gods have their allotted place in the sacred grove, and are worshipped only in public. Marang Buru alone is also worshipped privately in the family.

KW: Santal, West Bengal, Deities

107) Risley, H.H. 1981 ***The Tribes and Castes of Bengal*****. Vol. II. Firma K.L. Mukhopadhyay, India, Calcutta (Original Publication in 1891).**

Deswali or Kara sarna is the god of the village who lives with his wife Jahir Burhi on Sarhul sarna in the sarna or sacred grove, a patch of forest primeval left intact to afford a refuge to the forest god. Every village among the Mundas has its own Deswali, who is held responsible for the crops and receives periodical worship at agricultural festivals.

KW : Munda, Bihar, Sarhul sarna

108) Risley, H.H. 1981 *The Tribes and Castes of Bengal*. Vol. II. Firma K.L. Mukhopadhyay, India, Calcutta (Original Publication in 1891).

The Oraons of the Western portion of Chhotanagpur plateau, where there are few Mundas ignore the bongas and pay their devotion of Darha, the sarna burhi (lady of the grove) and the village bhut. The sacred groves are remnant of old sal forest in which the Oraons locate their popular deity sarna burhi.

KW: Oraon, Chhotanagpur

109) Risley, H.H. 1981 *The Tribes and Castes of Bengal*. Vol. II. Firma K.L. Mukhopadhyay, India, Calcutta (Original Publication in 1891).

The Savaras worship of the brahamanical deities is gaining ground among them, but the elder gods, Thanpati dwells in the than or sacred grove.

KW : Savaras, Brahamanical deities

110) Rodgers, W. A. 1994 The Sacred Groves of Meghalaya. *Man in India,* 74(4): 339-348.

The paper details the origins of the sacred groves in Meghalaya, and contrasts the density of groves found there with groves elsewhere in south Asia. The pressures of deforestation for iron smelting etc, are discussed. The types of groves in Meghalaya are classified and described. Botanical details are given in some cases. The paper ends with a review of the value of traditional conservation mechanisms, such as sacred groves, in a modern protected area conservation system.

KW: Meghalaya, Conservation

111) Roy, S.C. 1978 *The Birhors*: *A Little known Jungle Tribe of Chota Nagpur*. Man in India Office, Ranchi.

By the side of most Birhor settlements is a `sacred grove' called the Jayar or Jilujayar, marked by one or more trees and in some settlements a few blocks of stone. This is the seat of the Sendra-bongas or spirits presiding over the hunt, such as the Chandi-bonga and other Sangi bongas or spirits common to the community. The main deities besides Singbonga, the creator and Devimai or the Earth goddess, are certain hill spirits and

ancestor spirits. A few beast gods such Bagh bir (Tiger god), Hundar-bir (Wolf god) ,Bir Banhey (Orangutan), Bandar Bir (Monkey god) and Hanuman bir (Baboon god)are also propitiated. Although certain trees are believed to be the abode of spirits, tree-worship, as a cult, is unknown.

KW: Birhor, Bihar, Deities, Chotanagpur

112) Roy, S.C. 1935 *The hill Bhuiyas of Orissa*. Man in India Office, Ranchi.

Boram (also called Mangala) and Gaisri (also called Gram Sri or Basuri or Basuki Mata or Thakurani) are the general village gods of Hill Bhuiya tribals. The permanent sacred grove is known as Jahira. Boram is said to be the husband of Gai-sri.

KW: Hill Bhuiya, Orissa, Festivals

113) Roy Burman, J. J. 1998 Sacred groves in Islam. Wastelands News, August-October 1998, pp. 24-27.

In this paper the authors shows that wherever there is Hindu-Muslim syncretism is ubiquitous like West Bengal, the association of sacred groves or trees is a common phenomenon. The author gives several examples of this phenomenon in West Bengal, Andhra Pradesh, Delhi, etc. The author concludes, "Muslim religion is an open to local traditions (the so-called little traditions) as any other religion".

KW: Islam, West Bengal, Andhra Pradesh

114) Roy Burman, J.J. 1997 The role of sacred groves in social formation. *Vanyjati,* April 1997, pp. 15-18.

In this paper the author discusses the significance of Kabi Longtsok sacred grove in Sikkim. He shows that this sacred grove provides a rare illustration where it plays an extremely important role in providing a basis of political alliance of the Bhutia-Lepcha communities - which is indisponsable for these tribes for safeguarding their ethnic identities as against the large profligate Nepalese communities which have immigrated in to Sikkim in the last few decades.

KW: Sikkim, Bhutia, Lepcha

115) Roy Burman, J. J. 1996 A comparison of sacred groves among the Mahadeo Kolis and Kunbis of Maharashtra. *Indian Anthropologist,* 26: 37-45.

The author in this article has compared the social significance of the sacred groves among the Mahadeo Kolis and the Kunbis of western Maharashtra. The Mahadeo Kolis are a tribe, where as Kunbis are agricultural peasants. The main findings of the study are : The groves among the Mahadeo Kolis possess more Bamboo than the Kunbi groves; environmentally the groves among the both the communities are similar; among the

Kunbis groves are often associated with sacred ponds; the Kolis have more groves than the Kunbis; the groves among Kolis are bigger and better preserved; the nature of deities depict significant difference in the two communities; among the Kunbis sacred grove–temple is often seen; there are plenty of groves dedicated along the ancient trade routes in the Kunbi areas but are absent in the Koli areas; the ritual complex centering the grove is more elaborate among the Kunbis than the Kolis.

KW: Maharashtra, Kunbi, Mahadeo Koli, Sacred pond, Economic benefit, political significance.

116) Roy Burman, J.J. 1995 The Dynamics of Sacred Groves. *Journal of Human Ecology*, 6 (4): 245-254.

The institution of sacred groves in an age-old system which probably dates as far back as the pre-agrarian times. While the anthropologists had mainly studied it as a cultural manifestation, the environmentalists have of late been trying to figure it exclusively from the ecological domains. This paper, however, makes a modest attempt to depict it from an ontological and ecological and political economic perspective. It concluded that the sacred groves in a multifaceted institution which is subject to changes according to the shifting fundamentally manifesting itself as a symbol of self assertion and contours of which can be utilised for social development.

KW : Social Dynamics, Self assertion, Ethno-environment Management

117) Roy Burman, J.J. 1992 The institution of sacred grove. *Journal of Indian Anthropological Society*, 27: 219-238.

The institution of sacred refers to a very ancient prudent practice of nature conservation evolved by man. Succinctly speaking sacred groves are a clump of trees or a patch of forest dedicated to one or more deities. Usually many prohibitions and sanctions are attached to the groves for their protection. The guardian deities of the groves sanctify such taboos. The sacred groves are distributed widely in different parts of the world. In India they are spread right from the North-East to the southern tip of Kerala. In the recent times a rapid depletion of the sacred groves has been noticed in the country. Usually attenuation of religious feelings is ascribed to this. A close look at the problems related to the groves, however, indicates that application of the colonial laws of land regulation by the government is one of the major factors of their depletion. It is also apparent that contrary to general belief, depletion of the sacred groves is occurring despite an increase in their religiosity. In many areas the sacred groves again are providing the platform for social mobilisation against the state policies or for the purpose of social and environmental development.

KW: Deity, Kerala, State policies

118) Roy, S. C. and Roy, R. C. 1937 *The Kharias*. Vol. II. Man in India Office, Ranchi.

The sacred grove of Kharia tribals is known as Baram sal and in some villages as Thakuram sal and consists of one or more stones representing the deities, ceremonially installed under some large tree or trees. The baram sal is generally situated outside the settlement under the Jari or Aswatha tree or mango tree or some other large tree or clump of trees.

Ceremonies/Festivals	**Month associated**	**Deities associated**	**Priesthood**
Pardni	Feb-Mar	Pat	Dehuri
Am-Nuakhia	-do-	Baram/Basuki	-do-
Jeth-Nawakhia	-	Baram/Dharam	-do-
Dhan-Nuakhia	Aug-Sep	Baram/Basuki Basumata	-do-
Got puja	Oct-Nov	Baram or Basumata	-do-
Gohal puja	-do-	-do-	The master of family

KW: Kharia, Orissa, Mayurbhanj, Festivals

119) Santhakumaran, L. N., Singh, A. and Thomas, V. T. 1996 Further notes on the sacred grove at Bamber in Goa (India). ***Wood,*** **April-June 1996.**

The paper discusses the vegetation of the sacred grove at Bamber in Sateri taluk of Goa state. It categorizes the vegetation in the category of *Myristica* swamp forests of 'Moist Tropical Forests' according to Champion and Seth.

KW: Vegetation, ***Myristica*** **swamp**

120) Sarangi, A. C. 1991 Ecological awareness in Kalidasa's Dramas. In: V.N. Jha (ed.), ***Proceedings of the National Seminar on Ecological Awareness Reflected in Sanskrit Literature*****. Univ. of Poona 1991, Pune, pp. 128-142.**

Kalidasa in his Abhijnana - Sakuntalam introduces the drama with the holy environments of nature. The hero of the drama Dusyanta enters the sacred precincts of the tranquil hermitage to purify himself and he is refrained from killing of the hermitage - deer. He sees in the forest that the ground is strewn with Nivara-grains dropped down from the parrot's nests and the oily stones indicative of breakers of Ingudi - fruits (used by the pious foresters for softening their matted hair). He also observes the deer moving freely with confidence and water channels scattered throughout the forest. The tender foliage of trees has changed their colour because of the rise of the smoke from sacrificial ghee. This has a lasting effect on the people and is corroborated from the statement of Dusyanta when he remarks that "Penance - groves are indeed fit to be entered in a simple dress". The king is invited by Priyamvada to sit on the Saptaparna - dias cool on account of dense forest to remove his fatigue. Sakuntala, the heroine too is feeling then a change in herself, which she thinks unsuitable for the holy hermitage. Similarly in the second act

Dusyanta asks the General to warn his soldiers not to disturb the quiet atmosphere of the hermitage.

KW: Kalidasa, Abhijnana-Sakuntalam

121) Saraswati, B. 1998 The logos and the mythos of the sacred groves. In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekara (eds.), *Conserving the Sacred for Biodiversity Management.* Oxford and IBH Publishing Co. Pvt. Ltd., pp. 31-46.

The author in this paper demonstrates that ecology was a `sacred science' for the ancients who lived in a world of rich and vivid experience. Ecology needs a language, which the philosophers, poets and prophets know. Language is a body, a part of oneself. There cannot be a real representation of the ancient thoughts of the sages in another body.

KW: Sacred science

122) Saxena, K. G., Rao, K. S. and Maikhuri, R. K. 1998 Religious and cultural perspective of biodiversity conservation in India: A review. In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekara (eds.), *Conserving the Sacred for Biodiversity Management.* Oxford and IBH Publishing Co. Pvt. Ltd. pp. 153-161.

In this paper the authors present a critical review of the traditional nature worship practices in different parts of India, emerging trends and scope of these practices in promoting the national/regional goals of conservation.

KW: Nature worship

123) Shankar, B. 1997 Restoration of sacred groves. In: N. Krishna and J. Prabhakaran (eds.), *The Ecological Traditions of Tamilnadu.* C.P.R. Environment Education Centre, Chennai, pp. 65-75.

For the restoration of sacred groves the author suggest the following steps:
-Determination of site
-Clearing thorny shrubs and fencing
-Soil working
-Selection of species
-Different patterns of pitting
-Planting process
-Saucing and watering
-After-care of restored site.

KW: Restoration

124) Singh, G.S. and Saxena, K.G. 1998 Sacred groves in the rural landscape: A

case study of Shekhala village in Rajasthan. In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekara (eds.), ***Conserving the Sacred for Biodiversity Management.*** **Oxford and IBH Publishing Co. Pvt. Ltd., pp. 277-288.**

The authors in this case study give a detailed landscape level analysis of biodiversity management in a typical village Shekhala in Jodhpur district of Rajasthan. Details of land use pattern, human and cattle populations in the village are provided. The sacred grove covers an area of 83 ha (4.7% of total land-use cover) and 39 plant species. Presently 10% of fuel wood requirement, 20% of livestock feed, and 40% of other NTFPs are met from the scared grove. A detailed analysis of people's perceptions regarding ecosystem degradation has been given. The paper concluded: Utilization of biodiversity needs to be looked into at the scale of village landscape; biodiversity in scared grove could be enhanced through improvement in productivity in other lands; and biodiversity conservation can be enhanced only when the people realize economic benefits from conservation.

KW: Rajasthan, Jodhpur, Resource

125) Singh, G. S., Rao, K. S. and Saxena, K. G. 1998 Eco-cultural analysis of sacred species and ecosystems in Chhakinal watershed, Himachal Pradesh. In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekara (eds.), ***Conserving the Sacred for Biodiversity Management.*** **Oxford and IBH Publishing Co. Pvt. Ltd., pp. 301-314.**

This paper deals with social, cultural and ecological dimensions of sacred groves, forests and pastures at landscape scale, considering a micro-watershed as a unit. The Chhakinal watershed is in Kullu district of Himachal Pradesh. It has an area of 45 km2 with nine human settlements (322 households). Each settlement has its own sacred grove, sizes vary from 0.1 ha to 5.5 ha; there are 11 sacred groves. The paper gives species richness and dominance-diversity curves of sacred groves as well as in other areas. Nagoni sacred grove had highest species - 13 tree species, 6 shrubs and 34 herbs. The paper gives a detailed analysis of local perceptions of sacredness, and factors causing erosion of traditional conservation culture. The paper concluded: Conservation ethos needs to be capitalized upon for promoting biodiversity conservation through appropriate scientific management innovations.

KW: Landscape, Himachal Pradesh

126) Sinha, B. and Maikhuri, R. K. 1998 Conservation through 'Socio-cultural-religious practice' in Garhwal Himalaya: A case study of Hariyali sacred site. In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekara (eds.), ***Conserving the Sacred for Biodiversity Management.*** **Oxford and IBH Publishing Co. Pvt. Ltd., pp. 289-299.**

In this paper the authors provide a list of 22 sacred plant species in the central

Himalayan region, and report results of a detailed study of Hariyali sacred grove in Chamoli district of Uttar Pradesh. The area covered by the grove is 5.5 km2. Fifteen villages around Hariyali with 6,000 inhabitants of Brahmin, Rajput and Scheduled castes participate in different rituals performed at the grove. The paper gives details of the myth of Hariyali devi, rituals, taboos and folklores, socio-economic and ecological role of the grove, as well as phytosociological attributes of the grove and none sacred forest. The paper concludes : Priority needs to be given to strengthen traditional systems of conservation of natural resources.

KW: Uttar Pradesh, Garhwal, Sacred plant species

127) Srivastava, S. K. 1958 *The Tharus - A Study in Culture Dynamics*. Agra University press, Agra.

On the outskirts of every village of Tharu tribals, towards the east is to be found the *Than* of the village goddess Bhumsen collectively representing all the gods, goddesses and spirits under a pipal or nim tree. Each Bhumsen consists of mound of earth on which Bharara of the village ceremonially installs other deities in smaller mounds. The main deities to be represented in Bhumsen are seven mother goddesses, namely, Durga, Kalka, Sitala, Jwala, Parwati, Hulaka, and Purwa, the chief village deity Agarai and two other powerful spirits, Kharga and Pachhawar.

KW: Uttar Pradesh, Tharu, Deities, Nainital

128) Swamy, P. S., Sundarpandian, S. M. and Chandrasekaharan, S. 1998 Sacred Groves of Tamil Nadu. In: P.S. Ramakrishnan, K.G. Saxena and U.M. Chandrashekara (eds.), *Conserving the Sacred for Biodiversity Management.* Oxford and IBH Publishing Co. Pvt. Ltd., pp. 357-361.

This article deals with the ecological and socio-cultural attributes of sacred groves in Tamil Nadu. The residing deity in most of the groves is snake god. An inventory of floral species found in these groves is given. The author concludes: In general, the areas under sacred groves are fast depleting and are looked upon now as a source of income. Appropriate policy interventions are needed to promote venues of income such as eco-tourism so that biodiversity in sacred groves could be conserved together with development of local community.

KW: Tamilnadu, Deities

129) Tambat, B. S., Channamallikarjuna, V., Rajanikanth, G., Ravikanth, G., Kushalappa, C., G., Shaanker, R., U. and Ganeshaiah, K., N. 2001 Fragment sizes and diversity of species assemblages in sholas and sacred groves: Are small fragments any worth? In K. N. Ganeshaiah, R. U. Shaanker and K. S. Bawa (eds) Tropical Ecosystems: Structure, Diversity and Human Welfare. Proceedings of the International Conference Tropical Ecosystems. Oxford-IBH, New Delhi., pp. 314-318.

Smaller islands would exhibit high variation for their similarity than the larger islands. We tested these two predictions using two forest fragment systems, namely sacred groves and shola forests. Thus, our results indicate that smaller fragments of the forests are more diverse among themselves with respect to their species composition than the larger fragments and this may have important implications for designing the size of the protected areas.

KW: Smaller islands, Fragments

130) Thusu, K. N. 1965 *The Dhurwa of Bastar*. Anthropological Survey of India. Memoir No. 16. Calcutta.

The village shrines of Dhurwa tribals are located near the foothill of Dangar Chandi (hill), in the habitation areas of the village, even in the midst of the scrub jungles and the cultivated fields. Again, while most of these shrines are fitted with circular bamboo fencing with a bamboo door in the middle, a few of them are also provided with two sloped thatching roof. Two of the shrines (viz. Ladri mata and Maoli mata are fitted with a swing (ucal) which consists of two upright wooden posts joined together by a cross bar and provided with a wooden seat which is fitted with sharp-pointed iron nails over which the sirah (medium) sits when he is possessed by the deity. A small stone invariably found near the door of the fencing to represent the Duor (usia) Mandia - an attendant of the concerned deity. Within the precincts of the shrine, one finds an earthen plinth raised under the shades of such trees as the sulphi, mahua, mango etc and it is (shila) and / or the wooden post (kham) and /or carved stone image are placed to represent the presiding deity of the shrine. There may also be other small and uneven stones to represent the consort of the deity as well as other attendants.

Ceremonies/Festivals	Month associated	Deities associated	Priesthood
Danteshwari mata	March-April	Danteshwari mata	Dhakar
Bhandarin mata		Bhandarin mata	Dhurwa Pelac
Muttak		Muttak	-do-

KW: Dhurwa, Madhya Pradesh, Deities, Bastar

131) Thusu, K.N. and Jha, M. 1969 *The Ollar Gadaba of Koraput*. Anthropological Survey of India. Calcutta Memoir No. 27.

In the village of Gadaba tribals the shrine called Jhakir vendit (deity) is situated towards the northwest of the main habitation area of the village, close to the perennial hill stream. The shrine is located in an open, unoccupied piece of land, in the midst of stones or boulders, and surrounded by thick bushes or trees. The sacred objects are kept hidden in the hollow formed by stones under the shadow of trees, as also as the surrounding area, remains unkept and unattended. The Ganga vendit shrine lies hidden amidst the thick bushes and the creeping plants, directly under the Ganta tree. The sacred objects consisting of earthen vessels are kept in a cavity under a flat stone, being blocked by

another stone in such a manner as to give the appearance of a natural rock formation.

Ceremonies/Festivals	Month associated	Deities associated	Priesthood
Pus Parab	Pus(Dec-Jan)	Ganga mai	Pujari
Chaitra Parab	Chaitra (Mar-Apr)	-do-	-do-

KW: Gadaba, Orissa, Deities, Koraput

132) Tiwari, B. K., Barik, S. K. and Tripathi, R. S. 1999 *Sacred Forests of Meghalaya : Biological and Cultural Diversity.* Regional Centre, National Afforestation and Ecodevelopment Board, North-Eastern Hill University, Shillong.

Protecting the patches of forests on religious grounds is an age-old practice in Meghalaya. In the older days almost all the villages in Khasi, Jaintia and Garo Hills had well-preserved sacred forests in the vicinity of the village habitations. In spite of remarkable changes that have taken place in socio-cultural, religious and economic spheres of the people over the past few decades, these forests have been able to withstand the anthropogenic pressure and number of them are still found in good condition throughout the state. Based on the ownership pattern and management control and the tribe that preserves them, these forests (sacred groves), are locally known as *Law Kyntang, Law Niam* and *Law Lyngdoh* in Khasi Hills, *Khloo Blai* in Jaintia Hills and *Asheng Khosi* in Garo Hills. The sacred forests of Meghalaya are unique in many ways. Unlike their counterparts in the rest of the country and abroad, these forests are quite large in size, some of them being as big as 900 ha. These forests have definite legal status since they are considered as classified under the United Khasi-Jaintia Hills Autonomous District (Management and Control of forests) Act, 1958 and enjoy protection under such acts, rules and regulations. Owing to their large size, they perform a number of ecosystem services including protection of water sources and maintenance of clean environment. The traditional village level institutions exercise a strong control and influence over the society. Thus the involvement of such institutions in protecting the sacred forests has contributed immensely to their preservation. Unfortunately, the sacred forests of Meghalaya are now in danger. Both their size and number are shrinking day by day. Dense sacred forests are fast becoming sparse and the sparse ones are getting converted into degraded wastelands. With the degradation of the forests, large number of rare, endangered, threatened and other taxonomically and ecologically important plant and animal species are disappearing. Therefore, the process of degradation of sacred forests has to be halted with immediate external interventions. The need of the hour is to prepare a comprehensive plan for the conservation of sacred groves in the state and to implement it at the earliest so that these treasure houses of plants and animals could be saved before they are lost forever. In order to prepare such a plan, one would need to have information on the extent of sacred forests in the state, their biological content, cultural importance and needs of managerial interventions. All these informations are lacking in respect of the

sacred forests of Meghalaya. The book based on a study conducted in 1994-95 has four chapters and information on 79 sacred forests covering an area of about 12,000 ha . The book discusses the present status of sacred forests and suggests strategies for their conservation in the state.

KW : Meghalaya, Khasi hills, Jaintia hills, Garo hills, Law Kyntang, Law Niam, Law Lyngdoh, Khloo Blai, Asheng Khosi

133) Tiwari, B. K., Barik, S. K. and Tripathi, R. S. 1998 Sacred groves of Meghalaya. In: P. S. Ramakrishnan, K. G. Saxena and U. M. Chandrashekara (eds.), ***Conserving the Sacred for Biodiversity Management.*** **Oxford and IBH Publishing Co. Pvt. Ltd., pp. 253-263.**

In this article the authors provide a review of the literature available on sacred groves of Meghalaya, as well as results of their own study of 79 sacred groves. The aspects covered in this paper are: status of sacred groves (estimated area under sacred groves is 10,251 ha; the size of groves varies from 0.01 ha to 900 ha; only 12.5% (n=56) had 100% canopy cover and 42.5% had open canopy); ecosystem services of sacred groves (a majority located on catchment area of major rivers); conservation of biodiversity (at least 50 rare and endangered plant species of Meghalaya are confined to these groves; 514 species of 340 genera of 131 families are found in the groves, the species diversity being higher is groves than other forests); socio-cultural aspects; rituals; erosion of traditional beliefs; and conservation strategy for the groves.

KW: Meghalaya, Vegetation structure

134) Tiwari, B.K., Barik, S. K. and Tripathi, R. S. 1998 Biodiversity value, status and strategies for conservation of sacred groves of Meghalaya. India. ***Ecosystem Health*****, 4 : 20-32.**

The tribal communities of Meghalaya - Khasis, Garos, and Jaintias - have a tradition of environmental conservation based on religious beliefs. Certain patches are designated as sacred groves under customary law. The authors studied 79 sacred groves for their biodiversity value. The floristic survey revealed that at least 514 species representing 34.0% had dense forest, 26.3% had sparse canopy, and 30.3% had open forest. Based on the findings, the authors have suggested conservation strategies for the groves.

KW : Khasi, Garo, Jaintia, Meghalaya, Biodiversity, Conservation

135) Tripathi, R. S. 2001 Sacred groves: Community biodiversity conservation model in north-east India. In K. N. Ganeshaiah, R. U. Shaanker and K. S. Bawa (eds) Tropical Ecosystems: Structure, Diversity and Human Welfare (Supplement). Proceedings of the International Conference Tropical Ecosystems. ATREE, Bangalore, pp. 104-107.

The populations of several tree species in the sacred grove at Mawphlang comprise

relatively higher population of older trees compared to their saplings and seedlings, which is attributable to the poor regeneration of these trees due to increased shade caused by the dense canopy of the sacred grove. The regeneration in the well-protected sacred groves occurs mostly in the gaps created due to natural tree fall. If the religious beliefs associated with the sacred groves, and traditional wisdom contributing to forest protection could be suitably integrated with the modern scientific forest management practices, these sacred groves could become useful model for biodiversity conservation in the region.

KW: North-east India, Community conservation

136) Unnikrishnan, V. 1995 *Sacred Groves of North Kerala: An Ecofolklore Study* (in Malayalam). *Jeevarekha*, Thrissur.

The sacred groves of Kerala are known as Kavus. The Kavus formed the integral part of the declining traditional culture of Kerala. The concept of Kavus is rooted in fertile worldview of the early cultures of Kerala. But as the cavalcades of Aryan culture rushed through this land, the kavus and their associated culture waned. The sacred forests of Kerala are on verge of decimation. The Kavus are of different kinds. A Kavu basically is a patch of evergreen vegetation, which shelter several rare species of plants and animals. Kavus of northern Kerala are associated with about 400 Theyyams - traditional religious art of the region. Folklores, traditional practices, faiths, and knowledge systems protected Kavus through ages. The destruction of Kavus signify decline of culture.

KW: Kerala, Kavu, Folklore

137) Untawale, A. G., Wafar, S. and Wafar, M. 1998 Sacred mangroves in India. In: P.S. Ramakrishnan, K. G. Saxena and U. M. Chandrashekara (eds.), *Conserving the Sacred for Biodiversity Management*. Oxford and IBH Publishing Co. Pvt. Ltd., pp. 247-252.

In this paper the author provide descriptions of some sacred groves / sites with mangrove vegetation. The sacred groves described are: Shravan-Kavadia located in the Banni region of Great Rann of Kuchchh with trees more than 100 years old, girth ranging from 50-200 cm and height 12-15 m; Pirotan island with a `darga'; Khodiyar mata in also in Kuchchh - there used to be crocodiles in the mangroves swamp around the temple; Achra mangrove in Sindhudurg district of Maharashtra belongs to temple trust of Shri Rameshwar.

KW: Mangroves, Rann of Kachchh

138) Upadhye, A. S., Kumbhojkar, M. S. and Vartak, V. D. 1987 Note on magnificent *Tinospora sinensis* (Lour) Merrill in sacred groves of Pune district. *The Indian Forester* , 113(2): 154-157.

The authors in this paper report results of a study they conducted on *Tinospora sinensis*

(Lour.) Merill, a liana in 9 sacred groves of Pune districts in Maharashtra. The climber has multifarious uses including medicinal. The authors observed a magnificent specimen of this species in the Dakhane sacred grove in Mulshi taluk of Pune district. The height of the climber was more than 20 meters, and recommended that the specimen should be accorded full protection and be declared as a natural national monument.

KW : Medicinal plant, Maharashtra, Liana

139) Vartak, V. D. 1983 Observations on Rare imperfectly known and endemic plants in the sacred groves of Western Maharashtra. In : S. K. Jain and R. R. Rao (eds.), ***Assessment of Threatened Plants in India.*** **Botanical Survey of India. Calcutta, pp. 169-178.**

The climax type of vegetation in the sacred groves exhibits diversity in species of trees and other various life forms dependent for their very existence on trees, huge climbers, epiphytes and other shade loving plants. With the felling of the forest all around the sacred grove, these have become the last refuge for many plant species requiring special habitat preference. Present article includes enumeration of 38 species of endangered endemic plant species from 12 selected sacred groves along the Western Ghats.

KW: Endemic plants, Western Ghats, Endangered plants

140) Vartak, V. D. 1996 Sacred Groves for in situ conservation. In : S. K. Jain (ed.), ***Ethnobiology in Human Welfare.*** **Deep Publications, New Delhi, pp. 300-302.**

Nature conservation is very ancient in India. Useful animal and plant species have much reverence in Hindu culture. Forest pockets preserved on religious grounds are known as sacred groves or Deo-rai. Cutting plants or harassing animals is a taboo. These forest pockets show optimum growth of vegetation. Perhaps sacred groves could be called as the last refuge for species. Efforts should be made to protect these unique habitat locations by declaring them as national monuments. The paper presents pros and cons of the endeavour.

KW: Biodiversity, People's participation

141) Vartak, V. D. and Gadgil, M. 1981 Relic forest pockets of Panshet water-catchment area, Poona district, Maharashtra state. ***Biovigyanam*****, 7: 145-148.**

The sacred groves named after the goddess Janni, situated along the eastern slopes of low lying hills of Western Ghats near Mangaon village, Poona District, (18° 33' N. and 30° 50' E.) covers an area of 16 ha. Heavy rainfall in the area resulted in considerable soil erosion as forest areas have been greatly disturbed by ruthless removal of trees. However, the scattered patches of such forest relics provide an index of the pre-existing vegetation and may also serve as a guideline for afforestation programme.

KW: Maharashtra, Western Ghats

142) Vartak, V. D., Kumbhojkar, M. S. and Nipunage, D. S. 1987 Sacred groves of tribal areas along the Western Ghats: Treasure trove of medicinal plants. B.M.E.B.R., III(1-2):77-84.

The villagers and tribals of the Western Ghats have religious beliefs and respect for sacred groves. Indians are accustomed to dedicate forest pockets to various deities and various components of vegetation are supposed to be under the protection of the local deity of that forest grove. Such dedicated practices have led to preservation and conservation of forests and forest products. These sacred groves are living museums of plants and resources to carry out relevant research. These groves supply fresh medicinal plants to villagers.

KW: Medicinal plants, Western Ghats

143) Vartak, V. D. and Gadgil, M. 1981 Studies on sacred groves along the Western Ghats from Maharashtra and Goa: Role of beliefs and folklores. In: S. K. Jain (ed.), *Glimpses of Indian Ethnobotany.* Oxford University Press, Bombay., pp. 272-278.

Sacred groves are more or less pockets of climax vegetation preserved on religious grounds. Several such pockets are located in remote tribal areas along the Western Ghats in India. These forest patches preserved on religious grounds are the true indicators of the type of vegetation that once existed along these hilly terrains, long before the dawn of modern civilisation. The existence of such undisturbed pockets is mostly due to certain taboos, strong beliefs, supplemented by mystic folklores. Due to the advent of modern civilisation in these remote areas, life and culture of the aboriginals are gradually changing to the urban pattern. Consequently many of the beliefs, folklores are being ignored and are likely to be forgotten in the near future. Inconsiderate and self-centered urban folk have already started exploiting these sacred forests. The paper presents some folklores and traditional beliefs about sacred groves recorded near Mangaon village situated in the hilly region of Poona District, Maharashtra State.

KW: Maharashtra, Goa, Folklore

144) Vartak, V. D., Kumbhojkar, M. S. and Dabadghao,V. 1986 Sacred groves. A Sanctuary for lofty trees and lianas. *Proc. Seminar on Ecodevelopment of Western Ghats*, pp. 55-59.(Memiograph).

Forest pockets preserved on religious grounds are known as 'Sacred groves' or 'Dev-rai'. They usually show optimum growth of the vegetation relevant to local terrain and climate. Plants in the sacred groves often exhibit great vigour and magnificence and add grandeur to the locality. Efforts should be made to protect these unique plant entities by declaring them as national monuments. Twenty five such plant species are described here.

KW: Plant species, *Devrai*

145) Vidyarthi, L.P. 1963 The Maler. Bookland Pvt Ltd., Calcutta.

Manjhi *Than* is the sacred place of Maler tribal village. A very long bamboo with a piece of triangular red cloth on its symbolises the place of village deity, Jhanda-gossaiyan. The grove also has several deities like Singpate Nadu, gossaiyan of the village, Gram Devati. Other deities like Raksinadu, Kanhaiye Nadu, Bender Nadu, Muri Gossaiyan are placed in respective sacred groves. The Manjhiye performs all the religious functions concerning the village.

KW: Maler, Bihar, Deities

146) World Wide Fund for Nature - *Andhra Pradesh 1996 Sacred and Protected Groves of Andhra Pradesh*. WWF-AP State office, Andhra Pradesh.

Extensive documentation has been done by WWF - AP state office of Sacred and Protected Groves of Andhra Pradesh (1996). It records more than 750 sacred elements from 23 districts of Andhra Pradesh - (figures in parenthesis: number of groves in the respective district) namely: Adilabad (2), Anantapur (73), Chittor (133), Cuddapah (76), East Godavari (10), Guntur (17), Hyderabad (13), Karimnagar (4), Khammam (4), Krishna (12), Kurnool (115), Mahabubnagar (9), Medak (4), Nalgonda (9), Nellore (87), Nizamabad (7), Prakasam (59), Ranga Reddy (10), Srikakulam (30), Vishakhapatnam (30), Vizianagaram (32), Warangal (3), West Godavari (17). The documentation also takes account of the protection to vegetation given by temples, mosques and edgah, churches in these districts. About 134 species of medicinal rare and endemic plants are reported from the sacred sites in Andhra Pradesh.

KW: Andhra Pradesh, Plant species

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