

**ANIMAL DIVERSITY FROM SACRED GROVES FROM ARID REGION OF SANGLI DISTRICT
(MAHARASHTRA), INDIA**

Sanjay S. Sathe, Vikas V. Jadhav and R. M. Ganeshwade

Department of Biological Sciences, P. D. Vasantiaodada Patil Mahavidyalaya, Tasgaon- 416 312,
District: Sangli (M. S.), India.

ABSTRACT

The Sacred grows are rich in biodiversity and harbor many rare species of plants and animals. In India they are scattered all over the country. These sacred groves were maintained by local communities. During the present investigation animal diversity from groves from arid region of Sangli was studied. During the study reptiles Aves Mammals were recorded from Arewadi, Banali, Dandoba, Raywadi, Sagarshwar and Shukaracharya Sacred groves.

KEY WORDS: Animal Diversity, Sacred Groves and Arid region.

INTRODUCTION

Sacred groves were a feature of the mythological landscape and the cultural practice of old Europe, of the most ancient levels of Scandinavian mythology, Greek mythology Slavic mythology, Roman mythology and in Druidic practice. Sacred groves also feature prominently in many Asian and African mythologies and cultures, most notably in India, Japan, West Africa and Anatolia. In India, sacred groves are scattered all over the country and do not have any federal legislation. Each sacred grove is associated with presiding deity and the groves are referred to by different names in different parts of India. They were maintained by local communities with hunting and logging strictly prohibited within these patches. The sacred groves are mainly associated with local Hindu gods, but sacred groves of Islamic and Buddhist origins are also known. Sacred groves occur in variety of places like scrub forests in the Thar desert of Rajasthan to tropical rain forest of Kerala, Western Ghats.

It can be also stated as, sacred grove is a small or large, isolated area that has escaped the extreme changes undergone by the surrounding area, as during a period of glaciations, allowing the survival of plants and animals from an earlier period. Each sacred grove has got its own flora and fauna as well as an associated deity. There are about 14,000 sacred groves have been reported from all over India, which acts as reservoirs of rare fauna and more often rare flora, rural and even urban setting. They have received threats due to urbanization, over exploitation of the natural resources and environmental destruction from Hindu religious practices (Malhotra *et.al*, 2001, Ramchandra 2000). Sacred groves are traditionally protected small patches of vegetation types and managed by local communities through a wide range of management practices are biological heritage. They are dedicated to local deities or ancestral spirit is protected through social traditions by local people and taboos that incorporate spiritual and ecological values.

These sacred groves are preserved over course of many generations; represent native vegetation in a natural or near natural state. These groves are rich in biodiversity and harbor many rare species of the plants and animals. There is a vast diversity among Indian sacred groves. These groves vary considerable in size from few acres to hundred acres. In many sacred groves, villagers perform annual ritual and ceremonies to appease the presiding deity and to ensure the well beginning of their community.

The sacred groves are our biological heritage (Gadgil and Vartak, 1975). Many traditional societies all over the world, value a large number of plant species from the wild for a variety of purposes food, fiber, shelter or medicines (Ramkrishnan, 1998). Due to absence of human interference these sacred forest supports the climax vegetation, commensurate to their particular locality. This climax vegetation is rich in the species of trees, climbers, epiphytes, heterotrophs and decomposers

MATERIALS AND METHODS

The sacred groves from arid region of Sangli District were visited regularly from May 2010 to April 2012. The observations on reptiles, aves and mammals were recorded. The birds were identified as per standard reference books by Ripley (1982), Salim Ali and Ripley (1983 a,b), Gole (1988) and Salim Ali (1996). The reptiles were

identified by Standard books by Deoras (1969) and Daniel (2002) and mammal were identified by the books of by Prater (1971) and Sheshadri (1994). The data on wild carnivore animals was collected from local inhabitants. It is based on folk information. Similarly, data on status, deities, trust etc. was collected from local inhabitants by personal discussion as well as visits (Table 1.).

STUDY AREA

Sangli District is located in western part of Maharashtra State having area 8522 Sq. kms. Geographical area. This district is situated between 16° 4' to 17° 1' North latitude and 73° 43' to 75° 00' East longitude. The average rain fall is about 62cm per year due to South-West Mansoon. This district consists of 12 Tahsils with total 723 villages. The district is divided into two major regions viz., Western area along Krishna river basin with abundant water supply and arid region includes drought prone zone along Eastern part. The arid region includes Kadegaon, Khanapur, Atpadi, Tasgaon, Jath, and Kavathe-Mahankal Tahsils and Eastern part of Miraj Tahsil. The present sacred groves under study viz Arewadi, Banali, Dandoba, Raywadi, Sagreshwar and Shukacharya are reported from scarcity zone or drought prone zone with uncertainty of rains from Sangli district of Maharashtra State. The soil substratum is hard with calcareous soil: The average temperature of this area ranges from 13°C to 45°C. These above mentioned sacred groves under study were visited regularly from May 2010 to collect information on the sacred status.

Table 1. Salient features of the sacred groves from arid region of Sangli district.

Sr No	Name of the Grove	Deity	Area (Acres)	Tahsil
1	Arewadi	Biroba	350.00	Kavathe Mahankal
2	Banali	Banshankari	27.00	Jath
3	Dandoba	Dandnath	200.00	Miraj
4	Raywadi	Shiva	20.00	Kavathe Mahankal
5	Sagreshwar	Lord shiva	12.34	Kadegaon
6	Shukacharya	Shukdev	500.00	Khanpur-Atpadi

1.Arewadi

This is medium sized sacred grove having an area 350 – 360 acres. This area is having temple of Lord Shiva. The area around the temple is plain having low population density of plants. The vegetation can be described as dry- deciduous forest. The soil type is laterite associated with basalt rock. This area is also called “*Biroba Ban*” and is a holy place for Dhanagar Community people. It is owned by “Biroba Devsthan Trust”.

2.Banali

This is a small sized sacred grove having an area of 27 acres with temple of Godess Banashankari. The area around the temple is surrounded by small hills. The population of plants tree cover near the temple is fairly good and well managed by the trust. The soil is blackish and fertile. This area is also called “*Banashankari Ban*”. It is owned by “Banashankari Devsthan Trust”.

3.Dandoba

It is a medium sized grove having an area about 200 acres. This area shows a temple of Dandanath and is associated with hilly region. The soil type is laterite calcareous with basalt rock. It is owned by trust of Gurav community of Bhoze village.

4.Raywadi

It is a smaller sized grove having an area of 20 acres only. This area shows a temple of Harneshwar Lord Shiva. This temple has got old history. The temple is situated in a valley surrounded by small hills. This soil is calcareous with basalt rock. This area shows a wetland nearby a small water fall channel. It can be seen during rainy season.

5.Sagareshwar

It is a small sized grove having an area of 17.34 acres adjoining to Sagreshwar man made wild life sanctuary. This area shows about 47 small temples as well as some area with hilly region. The main diety in this area is Sagreshwar. The soil type is laterite associated with basalt rock. Sagreshwar sacred grove shows natural water sources which is collected

in small wells (Kunda). This water is used for drinking purpose by pilgrims. This grove is owned by a private Sagreshwar Trust.

6. Shukacharya

It is moderately large sized sacred grove located at the frontiers of Khanapur and Atpadi Tahsils. This area shows about 500 acres of land having two vallies with hill top point of Bhavani Mandir. There are two small forts near this hilly region viz Bhopalgad (Banurgad) and Kuldurg-old fort. The soil type is of black-red laterite type. This area shows a continuous natural source of water whose exact origin is undiscovered yet. This natural water is used for drinking purpose by pilgrims. There is temple of Lord Shukdev in the middle region of the hills. The central large valley separates this hill into two parts.

During rainy season the entire area shows green cover due to vegetation cover. The area of Dandoba, Raywadi, Sagreshwar and Shukacharya is visited by pilgrims on every Monday in the month of August (Shravan month of Marathi calendar). The Arewadi is visited regularly by Dhangar community people and main festival (Yatra) is celebrates in April month while Banashankari area is having main festival in the month of October-November every year.

RESULTS AND DISCUSSION

The existence of sacred groves in India most likely dates back to an ancient pre agrarian era. Their presence has been documented since the early 1800 century. Due to protective restrictions preserved over many years, the sacred groves are now become important reservoirs of biodiversity. India's rich vegetation wealth and diversity is undoubtedly due to the immense variety of the climatic and altitudinal variations coupled with varied ecological habitats. The Deccan Peninsular biogeography zone of India is the most extensive but relatively homogenous zone covering about 43% of the total Indian landmass. In this Deccan Peninsular region of Maharashtra, the present sacred groves are located in Sangli districts. This is an important locality for ecological and biological studies. A systemic and scientific studies of six different 'sacred grooves' in arid region of Sangli District is carried out for the first time in relation to animal diversity. The sacred groves are located in arid region and they show typical animal diversity of varied and unique nature. During the present study we have recorded different reptiles, birds and mammal species as described below.

Reptiles

Reptiles are the cold-blooded animals and most highly developed creatures. During our present survey following reptiles were observed in this area at various places like grass-land area, allies and on plains. The recorded animals are common in occurrence in all six sacred groves (Table 2).

Table 2. List of Common Reptiles recorded at Sacred Groves

Sr. No.	Common Name	Scientific Name	Order	Family
1	Common Garden Lizard	<i>Calotes versicolor</i> Daudin	Squamata (Lepidosuaria)	Agamidae
2	Indian Chameleon	<i>Chamaeleon zeylanicus</i> Laurenti	Squamata (Lepidosuaria)	Chamaeleontidae
3	Common Indian Monitor	<i>Varanus bengalensis</i> Schneider	Squamata (Lepidosuaria)	Varannidae
4	Indian Rat Snake	<i>Ptyas mucosus</i> Linn	Serpentes	Columbridae
5	Common Indian Krait	<i>Bungarus caeruleus</i> Schneider	Serpentes	Elapidae
6	Spectacled Cobra	<i>Naja naja</i> Linn	Serpentes	Elapidae
7	Russell's Viper	<i>Daboia russelli</i> Shaw and Nodder	Serpentes	Viperidae

Table 3. : List of Common Birds recorded at Sacred Groves

Sr. No.	Common Name	Scientific Name	Family	A	B	D	R	S	S
1	Indian Pond Heron	<i>Ardeola grayii</i> Skyes	Ardeidae	+	+	+	+	+	+
2	Cattle Egret	<i>Bubulcus ibis</i> Linn	Ardeidae	+	+	+	+	+	+
3	Little Egret	<i>Egretta garzetta</i> Linn	Ardeidae	+	+	+	+	+	+
4	Black Shouldered Kite	<i>Elanus caeruleus</i> Desfontaines	Accipitridae	+	+	+	+	+	+
5	Black Kite	<i>Milvus migrans</i> Boddaert	Accipitridae	+	+	+	+	+	+
6	Pallid Harrier	<i>Circus macrourus</i> S.G. Gmelin	Accipitridae	+	+	+	+	+	+
7	Indina Peafowl	<i>Pavo cristatus</i> Linn	Phasianidae	+	+	+	+	+	+
8	Black winged stilt	<i>Himantopus himantopus</i> Linn	Recurvirostridae	+	+	+	+	+	+
9	Chestnut-Bellied Sandgrouse	<i>Pterocles exustus</i> Temminck	Pteroclididae	+	+	+	+	+	+
10	Rock Pigeon	<i>Columba livia</i> Gmelin	Columbidae	+	+	+	+	+	+
11	Laughing Dove	<i>Stereoptelia senegalensis</i> Linn	Columbidae	+	+	+	+	+	+
12	Asian Koel	<i>Eudynamys scolopacea</i> Linn	Cuculidae	+	+	+	+	+	+
13	Greater Coucal	<i>Centropus sinensis</i> Stephens	Cuculidae	+	+	+	+	+	+
14	Barn Owl	<i>Tyto alba</i> Scopoli	Strigidae	+	+	+	+	+	+
15	Eurasian Eagle Owl	<i>Bubo bubo</i> Linn	Strigidae	+	+	+	+	+	+
16	Spotted Owlet	<i>Athene brama</i> Temminck	Strigidae	+	+	+	+	+	+
17	Common Indian Nightjar	<i>Caprimulgus asiaticus</i> Latham	Caprimulgidae	+	+	+	+	+	+
18	House Swift	<i>Apus affinis</i> J.E.Gray	Apodidae	+	+	+	+	+	+
19	White-Throated Kingfisher	<i>Halcyon smyrnensis</i> Linn	Alcedinidae	+	+	+	+	+	+
20	Common Hoopoe	<i>Upupa epops</i> Linn	Coraciidae	+	+	+	+	+	+
21	Yellow-crowned Woodpecker	<i>Dendrocopos mahrattensis</i> Latham	Picidae	+	+	+	+	+	+
22	Baybacked Shrike	<i>Lanius vitatus</i> Valenciennes	Laniidae	+	+	+	+	+	+
23	Long-Tailed Shrike	<i>Lanius schach</i> Linn	Laniidae	+	+	+	+	+	+
24	Chestnut-Tailed Starling	<i>Sturnus malbaricus</i> Gmelin	Sturnidae	+	+	+	+	+	+
25	Brahminy Starling	<i>Sturnus pagodarum</i> Gmelin	Sturnidae	+	+	+	+	+	+
26	Common Myna	<i>Acridotheres tristis</i> Linn	Sturnidae	+	+	+	+	+	+
27	House crow	<i>Corvus splendens</i> Vieillot	Corvidae	+	+	+	+	+	+
28	Large-Billed crow	<i>Corvus macrorhynchos</i> wagler	Corvidae	+	+	+	+	+	+
29	Small Minivet	<i>Pericrocotus cinnamomeus</i> . Linn.	Campephagidae	+	+	+	+	+	+
30	Common Iora	<i>Aegithina tiphia</i> Linn	Irenidae	+	+	+	+	+	+
31	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i> Linn	Pycnonotidae	+	+	+	+	+	+
32	Red-vented Bulbul	<i>Pycnonotus cafer</i> Linn	Pycnonotidae	+	+	+	+	+	+
33	Yellow-eyed Babbler	<i>Chrysomma sinense</i> Gmelin	Muscicapidae	+	+	+	+	+	+
34	Common Babbler	<i>Turdoides caudatus</i> Dumont	Muscicapidae	+	+	+	+	+	+
35	Jungle Babbler	<i>Turdoides striatus</i> Dumont	Muscicapidae	+	+	+	+	+	+
36	Asian paradise-Flycatcher	<i>Terpsiphone paradisi</i> Linn	Muscicapidae	+	+	+	+	+	+
37	Ashy Prinia	<i>Prinia socialis</i> Skyes	Muscicapidae	+	+	+	+	+	+
38	Common Tailorbird	<i>Orthotomus sutorius</i> Pennant	Muscicapidae	+	+	+	+	+	+
39	Oriental magpie Robin	<i>Copsychus saularis</i> Linn	Muscicapidae	+	+	+	+	+	+
40	Indina Robin	<i>Saxicoloides fulicata</i> Linn	Muscicapidae	+	+	+	+	+	+
41	Blue Rock Thrush	<i>Monticola solitarius</i> Linn	Muscicapidae	+	+	+	+	+	+
42	Great Tit	<i>Parus major</i> Linn	Paridae	+	+	+	+	+	+
43	Paddy field Pipit	<i>Anthus novaeseelandiae</i> Gmelin	Motacillidae	+	+	+	+	+	+
44	House Sparrow	<i>Passer domesticus</i> Linn	Ploceidae	+	+	+	+	+	+
45	Baya	<i>Ploceus philippinus</i> Linn	Ploceidae	+	+	+	+	+	+
46	Red Avadavat	<i>Estrilda amandava</i> Linn	Ploceidae	+	+	+	+	+	+
47	White-Rumped Munia	<i>Lonchura striata</i> Linn	Ploceidae	+	+	+	+	+	+
48	Scally-Breasted Munia	<i>Lonchura punctulata</i> Linn	Ploceidae	+	+	+	+	+	+

+ Present - Absent

Aves

The Oriental region includes Indo-Malayan Indo-Chinese and sub-tropical forest. Larger division of Indian sub-region is arid and near desert areas where the species of Ethiopian connections are found. The sacred groves form an important locality for the birds because of natural set up. The area shows plains, allies, and hilly regions with different plant communities. They include naturally occurring herbs, shrubs and trees. Many birds are reported along the different plants for their nesting as well as for residence. During present study 48 different species of birds from the six sacred groves has been recorded (Table 3).

Mammals

Mammals are the warm-blooded animals. During present survey, 12 different mammals were observed in this area at various places. The animals recorded are observed occasionally by villagers. Some of the animal's presence is based on folk information. (Table 4)

Table 4. List of Common Mammals recorded at Sacred Groves

Sr. No.	Common Name	Scientific Name	Order	Family
1	Rhesus Monkey	<i>Macaca mulatta</i> Ziammerman	Primates	Cercopithecidae
2	Wolf	<i>Cans lupus</i> Sykes	Carnivora	Canidae
3	Jackal	<i>Canis aureus</i> Linn	Carnivora	Canidae
4	Indian Fox	<i>Vulpes bengalensis</i> Shaw	Carnivora	Canidae
5	Common Mongoose	<i>Herpestes edwardsi</i> Geoffray	Carnivora	Viverridae
6	Striped Hyena	<i>Hyaena hyaena</i> Linn.	Carnivora	Hyaenidae
7	Jungle Cat	<i>Felis chaus</i> Guldenstaedt	Carnivora	Felidae
8	Indian Blacknaped Hare	<i>Lepus nigricollis</i> Cuvier	Lagomorpha	Leporidae
9	Three Striped Palm Squirrel	<i>Funambulus palmarum</i> Linn	Rodentia	Scuiridae
10	Indian Sayal	<i>Hystrix Indicca</i> Keer	Rodentia	Hystriidae
11	Bat	<i>Pteropus gigantus</i>	Chrioptera	Pteropodidae
12	Pakoli	<i>Tophozus longimanus</i>	Micro Chrioptera	Emballonuridae

Reddy (1998) has given a detailed account of biodiversity of Dangs and Dharmapur forest of Gujarat State. He has recorded 12 mammals, 10 reptiles and 88 birds from this area. This area shows moist deciduous forest. The area shows network of Sahyadri Range of mountains. Our study area is showing similar type of topography. Chavan and Lal (2004) has also recorded biodiversity status of important ecosystem of Gujarat. They have also recorded important animal species with their occurrence status. They have enlisted many bird species in the grassland as well as wetland habitats. Sathe *et. al.*, (2010) has recorded animal diversity of Shukachrya Hills from Sangli District. They stated that Shukachrya. Hill is a good natural habitat for animals and recorded 7 reptiles, 48 birds and 9 mammal species from this area.

In India one of the earliest documented work on Oran dates back to 1897 when the first Inspector general of forests, D. Brandis wrote "very little has been published regarding sacred grooves in India but they are, or rather were very numerous. Most of the traditional societies in India depend upon the biodiversity contained in their rural environment for meeting the livelihood concerns. In India, about 4% land is under such areas. The numbers of sacred groves in India is variable.

Gadgil and Vartak (1973) have reported 350 sacred grooves in Maharashtra. Deshmukh (1999) has documented conservation and developmental aspects of the sacred groves in Maharashtra. They have divided sacred groves into nine different zones based on rainfall, soil condition and other ecological parameters. Deshmukh (1999) has reported 2808 sacred groves from the state of Maharashtra that covers 5119.42 hectares of geographical area because the size of sacred groves varies from few gunthas to 200 hectares. Sacred groves vary in size, form, a few trees to dense forest covering vast tracts of land. These groves are important today as they are banks of genetic and plant diversity that have to be preserved and sustained. These areas often contain species that have disappeared from the regions outside the

groves. Sacred groves in India refer to forest fragments of varying size, which are communally protected and which usually have a significant religious connotation for the protecting community. Hunting and logging are usually strictly prohibited within these patches (Gadgil and Vartak, 1975)

Traditionally these groves were community owned and treated as social assets. These groves may count as common property resources or local common resources shared by inhabitants of that area. Deshmukh and Gogate (1997) observed that sacred groves were established with a view to preserve, share and save water resources from the region where they exist.

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