FLORISTIC DIVERSITY OF PATESHWAR SACRED GROVE DIST-SATARA, MAHARASHTRA, INDIA

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Abstract:

The present study is based on preliminary field survey of floristic diversity of the Pateshwar sacred grove. During present survey about 363 species, 245 genera and 76 families are reported from Pateshwar Sacred grove out of which 22 were endemic to peninsular India and found in Pateshwar sacred grove.

Keywords: Sacred grove, Floristic diversity.

Introduction:

Pateshwar sacred grove is wrapped in a green thick blanket of trees. The jungle is of semi-deciduous type with Teak, Banyan, Jajmun, Anogeissus, Boswellia, Plumeria, Sterculia and other tree varieties. A survey of flowering plants of Pateshwar Sacred grove has been made through extensive and intensive field visits during 2007-2014. During present survey about **363** species, **245** genera and **76** families are reported from Pateshwar Sacred grove. Also some wild animals like monkeys, rat snakes, wild pigs found in this sacred grove. The sustainable exploitation of these plant resources is essential to meet the challenges of the 21 century for socio-economic development.

In present day the significance of sacred grove plays important role in Biodiversity and its conservation. The patches of natural vegetation preserved on the basis of religious beliefs. Sacred groves serves as unique examples of Insitu genetic resource conservation through the involvement of local people in the most economic and efficient manner.

Pateshwar is a village in Satara district of Maharashtra, known for rock-cut caves with shrines of Shiva. Pateshwar sacred grove is located about 11.26 km South East of Satara on the Satara-Kolhapur state highway in Maharashtra. Pateshwar has 8 ancient caves and many ancient stone carved deities of Lord Shiva, Kartik swami and other deities. The place is known for having more than 1000 Shiva-lings (Also known as Pinds). Most important amongst these is the Maha Shiva Lingam which has intricate carvings. Many of the deities find references in the ancient Hindu Vedas and Puranas. Some of the identified deities are as Ekmukhdhari Pind, Chaturmukhdhari Pind, Ashtadikpal Pind, Harihar Pind, Margalmhaisa

Pind, Yantra Pind. And Other Deities are Ekmukhi Bramhadev, Chaturmukh Shiv, Saraswati, Agni Sheshashayee Vishnu, Vainayaki, Tripura, Ashtadashbhuj Mahishasur Mardini Chamunda, Ashtamatruka, Navgraha, Dvadashavtar, Balibhadra.

Location- Degaon, Dist. Satara,

Name of Sacred grove- Shri Kshetra Pateshwar,

Area in Ha.- 11.00

Ownership- Deosthan Trust

Name of Deity- Kartik Swami

Reasons for undertaking present work:

Studies on all ecological aspects as well as complete inventory of pateshwar sacred groves still lacking. It is need to find out the present status of sacred grove with reference to various factors. Practical approach is to be develop for protection, conservation and development of sacred grove by strengthening symbiotic relation between sacred grove and people for their sustenance. It is essential to find out rare and endangered species of sacred groves for their conservation. To find out angiosperm diversity with reference to dicot, monocot, largest no. of genera, largest no. of species and its floristic analysis from sacred grove for its conservation with the help of forest department, local communities and non government organization.

Topography:

Satara is southern district of Maharashtra state. Pateshwar sacred grove is East to satara city. It is situated between 17° 36' N, 74° 03' E; is entirely in sahyadri ranges.. The average height from mean sea level is 3080 feet above mean sea level. Pateshwar sacred grove is wrapped in a green thick blanket of trees. The jungle is of semi-deciduous type with teak, banyan, Jajmun, Anogeissus, Boswellia, Plumeria, Sterculia and other tree varieties.

Soil:

Basalt, Murum

Climate:

The climate of Pateshwar is tropical monsoon pleasant and healthy. It can be divided in to three seasons' viz. summer from March to May, rainy season from June to October and winter from November to February.

Rainfall:

Pateshwar receives an average rainfall of over 142 cm or 2000 to 3000mm.

Temperature:

The temperature varies from 11° C to 37° C.

The average relative humidity is 50 to 55. It is maximum in

July and August and minimum in months of February and March.

Past Work and Review of literature:

In India Gadgil and Vartak (1975) are the pioneer workers in sacred groves field. They have studied floristic and ethnobotanical aspects of sacred groves of Maharashtra and North Karnataka (Gadgil and Vartak 1981 a and b, Vartak 1980 and 1987). Gadgil (1985) stated that sacred groves are distributed almost throughout India. They have been reported from states like Himalayas, North-Eastern states, Bihar, Orissa, Madhya Pradesh, Andhra Pradesh, Karnataka, Tamilnadu, Kerala and Maharashtra.

The record of groves from different parts of the country was carried out from the studies of Bor(1942), Hazra(1975), Sharruce and Kulkarni(1980 and 1983), Dutta(1982), Jain(1983), Vartak and Kumbhojkar (1984), Vartak et.al(1986), Bude(1987), Meher-Honji(1987), Malhotra(1988), Nipunge(1988) and Subramanyam and Sisadharam(1988). Almost all these publications deal either with listing of plants or ethnobotanical aspects.

Deshmukh(1990) has given an extensive account in his final report of conservation and development sacred groves in Maharashtra. Godbole and Sarnaik (2004) has discussed role of sacred groves biodiversity conservation with people's participation from Ratnagiri district of Maharashtra. Jadhav *et al.* (2010) as well as Sathe *et al.* (2012) has studied floristic composition of sacred groves flora arid region of Sangli district (Maharashtra). It clearly indicates that studies with respect to sacred groves from Satara district is not carried out till date. Hence, the work is undertaken to find out the status of sacred groves in relation to ecology and its environment.

Objectives of the study:

1. To Survey, mapping and documentation of the sacred grove.
2. To enumerate angiosperm plant diversity.

Method adopted:

An extensive floristic survey is carried out in the sacred grove at monthly intervals. Specimens of flowering plants were collected and identified with the help of different floras, University and Botanical Survey of India, BSI Circle Pune along with the experts. Lists of angiosperm plant diversity in the sacred grove prepared with the help of published works. The voucher specimens were deposited at the herbarium of LBS College.

In enumeration the sequence of families has been followed after Bentham and Hookers "Genera Plantarum"(1862-1883).

Vegetation:**Economically important plants:****Timber and Furniture:**

Tectona grandis, *Acacia nilotica*, *Albizia lebbek*, *Dalbergia sissoo*, *Gmelia arborea*, *Grewia tilifolia*, *Ougenia oojenesis*, *Bombax ceiba*, *Erythrina indica*, *Mangifera indica*, *Mitragyna parvifolia*.

Medicinal Plants:

Dolichandrone falcata, *Gloriosa superba*, *Bombax ceiba*, *Mallotus philippensis*, *Boehavia diffusa*, *Vitex negundo*, *Cajanus lineatus*, *Tylophora indica*, *Argeria cuneata*, *Ficus benghalensis*, *Gymnema sylvestre*, *Pongamia pinnata*, *Calatropis gigantia*, *Terminalia bellerica*, *Asparagus racemosus*, *Hemidesmus indicus*, *Cassia fistula*, *Wrightia tinctoria*, *Celastrus paniculatus*, *Ocimum tenuiflorum*, *Aegle marmelos*, *Achyranthus aspera*, *Leucas aspera*, *Wattakaka volubilis*, *Clitoria ternatea*, *Gmelina arborea*, *Flacourtia Montana*, *Lawsonia inermis*, *Mallotus philippinensis*, *Pergularia daemia*, *Plumbago zeylanica*, *Ricinus communis*, *Datura metal*, *Leonotis nepetifolia*, *Withania somnifera*, *Tinospora cordifolia*, *Melia azadirach*, *Capparis zeylanica*, *Aloe barbadense*.

Endemic Plants:

, *Pterocarpus marsupium* Rox., *Delphinium malbaricum var malbaricum*, *Cleome simplicifolia* Hook*, *Flacourtia montana* Grah.*, *Alysicarpus tertragonolobus* Edgew.*, *Crotolaria vestita* Balcer.*, *Indigofera prostrata* WilldL*, *Cajanus lineatus* Maesen*, *Vigna vexillata* Walp.*, *Jasminum malbaricum* Light*, *Argyrea cuneata* Kre Cwa*1, *Pogostemon prurpurascens* Dale.*, *Isachne elegans* Dalz.*, *Lophopogon tridentatus* (Roxb.) Hack.*, *Oropetium roxburghianum* (Steud.) S.M., *Oplismenus villosulum* Stapf. ex. Bor.*, *Sehima sulcatum* (Hack.) A. Camus, *Spodiopogon*

rhizophorus (Steud.) Pilger* *Tripogon. jacquemontii* Stapf.

Observations:

Table. 1-

Groups	Families	Genera	Species
Dicots	67	207	283
Monocots	09	38	80
Total	76	245	363

Table. 2- Statistical Analysis:

Dicot	283	Epiphytes	02
Monocot	80	Parasites	03
Trees	48	Aquatic	04
Climbers	23	Terrestrial	354
Shrubs	21	Cultivated	00
Herbs	271	Wild	363
Endemic Plants			22

Table. 3- Five Largest Families with Maximum no. of Species

Family	No. of Species
Poaceae	63
Fabaceae	37
Asteraceae	35
Acanthaceae	16
Euphorbiaceae	15

Table. 4- Five Largest Families with Maximum no. of Genera.

Family	No. of Genera
Asteraceae	29
Poaceae	27
Fabaceae	20
Acanthaceae	12
Euphorbiaceae	08

Table. 5- Five Largest Genera with Maximum no. of Species.

Genus	No. of Species
<i>Ergrostiella</i>	08
<i>Ficus</i>	08
<i>Crotolaria</i>	06
<i>Indigofera</i>	05
<i>Cassia</i>	04

Table. 6-

Threats	Conservation Method
1) Overgrazing	1) In situ Conservation by Protected areas.
2) Construction of road	2) Ex situ Conservation
3) Anthropogenic Project	3) Public Awareness.
4) Tourism Project	4) Gene Bank, seed bank
5) Endangerment of species	5) Germ plasma Conservation,
6) Tourism	6) Habitat restoration
7) Fire	7) Domestication & propagation of rare plants

Figure. 1

Figure. 2

Conclusion:

Floristic analysis:

The floristic analysis of Pateshwar Sacred Grove Reveals, that it comprises 363 species belonging to 245 genera under 76 families. Monocot represents 80 species, 38 genera 09 families, Whereas Dicot represents 283 species, 207 genera 67 families.

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