

Ecological Study Of Sacred Groves (Jaher) of Karharbil of Dumka Block, District Dumka, Jharkhand.

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ABSTRACT

Sacred groves popularly known as Jaher by Santals serve as major contribution for *in-situ* conservation of nature. A significant change has been noticed regarding its conservation in recent years. In the present paper an attempt has been made for ecological study of sacred groves of Santals of Dumka block. Field observation, secondary data and several interviews have been conducted with the prominent village people (Pradhan, Naik) and other knowledgeable tribals to gather information.

Key words - Sacred groves, Ecology, Dumka, Santals

INTRODUCTION

Sacred groves are group of trees considered sacred for a particular community. It is popularly known as Jaher by Santals. They are the forest patches communally protected by local people due to their religious association with them. A significant change has been noticed regarding its conservation in recent years. Due to modernization, the natives (Santals) are drawn far away from their cultures and taking less active participation for its conservation. The ethnic groups present here are mostly Santals then Hindus, Muslims, Bengalis and paharias are rare. Worship of sacred groves is the traditional practice of various group of the society. There is urgent need to compile the ethnobotanical information presently existing among the diverse community before its values are completely vanished. Thus, there is now urgency for ethnobotanical research amongst aboriginal people (Maheshwari, 1983). There are many studies entitled to further quantify these ethics which leads to biodiversity conservation and sustainable ecosystem (Pal and Mukhopadhyay, 2011).

STUDY AREA AND METHODOLOGY

Dumka district of Jharkhand state comprises 10 blocks namely –Dumka, Gopikander, Jama, Jarmundi, Kathikund, Masaliya, Ramgarh, Ranishwer, Saraiyahat, Shikaripara. Here, the study area taken is Dumka block which comprises around 277 villages. The entire block of Dumka is divided into 25

panchayats. Each panchayat consists of 1 – 26 villages. Here a nearby village has been taken into consideration for the study, i.e., Karharbil, present in the south-east region.

The present study considers the species diversity of particular area and the ecological survey of vegetation inside the sacred grove, Jaher. Regular visits and surveys were made to collect plant specimens both in flowering and fruiting stages. Field observation on habit, habitat, pollination, seed dispersal, medicinal and socio cultural uses have been recorded in the field at the time of collection.

The study is based on analytical characters. Analytical characters are structural characteristics which can be directly observed or measured. They may be quantitative or qualitative.

OBSERVATION

Quantitative structure:

Quantitative structure of plant communities includes-

1. Abundance-It is the number of individuals of any species per sampling unit of occurrence.
Abundance= Total no. of individual of species / No of quadrant per unit in which they occur
2. Density- It is the numerical strength of a species in the community. It gives an idea of degree of competition.

Density = Total no. of individual of the species ÷
No of quadrant per units studied

3. Relative Density, RDE

RDE = (No. of individuals of species ÷ No. of individuals of all species) * 100

4. Frequency- It is the number of sampling units in which the particular species occurs.

Frequency (%) = (No. of units in which species occurred ÷ Total no. of units studied) * 100

5. Relative frequency, RFR

RFR of Species = (No. of occurrences of species ÷ No. of occurrences of all species) * 100

6. Frequency class - Raunkiaer's (1934) grouped five frequency classes

Frequency A= 1- 20% C=41–60%
B= 21- 40% D=61 -80% E=81 -100%

Qualitative Structure:

1. Physiognomy- General Appearances of vegetation expressed by single term growth form of dominant species.
2. Phenology- It is the scientific study of date and time of occurrence of seasonal variation in organism.
3. Stratification- It is the way by which plants of different species arranged in different vertical layers to fully used physical and physiological requirements.
4. Abundance-Plants are not found uniformly distributed in an area. They are found differing in number at each place.

It is divided into 5 types depending upon the number of plants:

- a) Very rare
 - b) Rare
 - c) common
 - d) frequent
 - e) very much frequent.
5. Vitality-It is the capacity of growth and reproduction.



GPS Location of Karharbil Jaher Than

Dominant species is *Shorea robusta* of family Dipterocarpaceae. There is total 26 trees out of which 21 are worshipped and 3 are considered the supreme.

Co-dominant species is that of *Adina cordifolia* of family Rubiaceae. They are situated at the periphery of the boundary of the Jaher. Among the tall trees of *Shorea robusta*, there is one tallest tree of *Adina cordifolia* in the midst of the dominant trees. It is estimated to be 100 years old. Secondary dominance of karma tree is due to this tallest tree which shows that it is the result of successful seed dispersal.

Ground flora includes herbs and creepers. Decomposed plant parts give rise to fungi such as *Russula queletti* and *Calvatia gigantea*.

CONCLUSION

Generally, interference within these sacred groves was prohibited in ancient times because people were keen to protect these sacred groves due to religious belief and traditions. Animals are allowed to graze and even the people can enter these sacred groves, and so some of the rare plants which could grow more within these groves are hindered. However, since the religious belief is still alive, no person is allowed to cut trees or its branches. Even the fallen log of tree is not supposed to be cut and take it home for domestic use. This has maintained these groves from totally being vanished and hence adds to ecological conservation.

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Serial No	Name of Species	No. of individuals in each quadrant										Total no. of individuals of each species(X)	Total no. of quadrant of occurrences (Y)	Total no. of quadrant studied(Z)	Frequency % (Y/Z * 100)	frequency class	Density(X/Z)	Abundance(X/Y)
		1	2	3	4	5	6	7	8	9	10							
	UPPER STOREY																	
	<i>Shorea robusta</i>	5		4	7	5		3		2		26	6	10	60	C	2.6	4.3
	<i>Adina cordifolia</i>	0			0					1		1	1	10	10	B	0.1	1.0
	<i>Madhuca indica</i>	1			1							2	2	10	20	A	0.2	1.0
	<i>Ficus benghalensis</i>	1										1	1	10	10	A	0.1	1.0
	<i>Eucalyptus globulus</i>			1		1						2	2	10	20	A	0.2	1.0
	MIDDLE STOREY																	
	<i>Butea monosperma</i>				1				1			2	2	10	20	A	0.2	1.0
	<i>Phoenix dactylifera</i>				1							1	1	10	10	A	0.1	1.0
	<i>Adina cordifolia</i>			2		3		3		2		10	4	10	40	B	1	2.5
	SHRUB LAYER AND CLIMBERS																	
	<i>Lantana camara</i>				1		2		1			4	3	10	30	B	0.4	1.3
	<i>Acaranthus aspera</i>		1	3		1		2		3		10	5	10	50	C	1	2.0
	<i>Murraya koeniggi</i>			1								1	1	10	10	A	0.1	1.0
	CLIMBERS																	
	<i>Coccinia grandis</i>			1								1	1	10	10	A	0.1	1.0
	GROUND FLORA																	
	<i>Cynodon dactylon</i>			2	1	2	3	4				12	5	10	50	C	1.2	2.4
	<i>Polytrichum juniperinum</i>					3	3		2		2	10	4	10	40	B	1	2.5
	<i>Russula queletti</i>				1							1	1	10	10	A	0.1	1.0
	<i>Leucas aspera</i>			1	2		1					4	3	10	30	B	0.4	1.3
	<i>Calvatia gigantea</i>				1							1	1	10	10	A	0.1	1.0