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Exploration and Documentation of Flora and Fauna of Sacred Groves of Murshidabad, West Bengal, India

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Abstract

Sacred groves are a common phenomenon in Murshidabad district. Specific areas of vegetation are conserved by the local people because of their religious beliefs. Usually vegetation that surrounds a temple, mosque, church, graveyard are regarded as sacred. It is usually a taboo to destroy flora and fauna in these areas. An extensive field work with the survey/exploration and documentation of flora and fauna within sacred groves of Murshidabad district was carried out over a period of two years. A total of 153 (One hundred and fifty three) sacred groves were recorded in Murshidabad with high floral diversity along with faunal diversity. This paper is the documentation of the flora and fauna within the sacred groves of Murshidabad following the survey work.

Keywords: Sacred groves; Documentation; Biodiversity; Repositories.

Introduction

Murshidabad district of West Bengal is located on the left bank of the mighty Ganga River. The Bhagirathi River flows through this district. This region had a rich history. Ancient mosques, temples, churches, cemeteries, monuments are quite common in Murshidabad district. Areas of lands around these structures are considered to be sacred among the people of different religious beliefs who reside here. It is usually a taboo to destroy flora and fauna in these areas.

Conservation of biodiversity due to religious beliefs helped flora and fauna to thrive within these tracts of vegetation, now popularly known as sacred groves. Often within the sacred groves local deities are found which are worshipped by the tribal communities even in recent times. Some other sacred groves become a religious place example Takib Shah Pirtala, which is about 200+ years old. It was observed by Deb and Malhotra in 1997 that often the sacred grove was used for religious purposes like fairs during the celebration of certain festivals. Some workers felt that the sacred Groves were examples of the love humans have towards animals and plants which is just an expression a of the love and respect of nature (Wilson 1988; Deb and Malhotra 2001).

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Both ancient and recent sacred groves around temples are found in Murshidabad, some examples Pataleswar Shiv Mondir (250+ years), Kiriteswari Temple (from time immemorial), Domdoma Kali Mondir (40+ years), Ramnagarghat Radhagobinda Mondir (20 years). In Murshidabad district there are several cemeteries with lush vegetation around them. They are usually known as 'Koborsthan' in the local language meaning place of burial of the dead. Some sacred groves with cemeteries in Murshidabad are Talbagan Kaborsthan (100+ years), Elahiganj Cemetry (150+ years), Baro Bigha Kaborsthan (100+ years) etc. There are graveyards too example Residency Cemetery of Babulbona (European Cemetery about 200+ years).

A total of 153 (One hundred and fifty three) sacred groves were recorded in Murshidabad with high floral diversity along with faunal diversity. An extensive field work with the survey/exploration and documentation of flora and fauna within sacred groves of Murshidabad district was carried out over a period of two years. This paper is the documentation of the flora and fauna within the sacred groves of Murshidabad following the survey work.

Material and Methods

An extensive field work with the survey/ exploration and documentation of flora and fauna within sacred groves was carried out during 2014 to 2016. The plants within the Sacred groves were identified with the help of local Floras. The animals within the sacred groves were listed. However the insects and invertebrates are not recorded during this investigation. Among the vertebrates Amphibia, Reptilia and Mammalia were listed during this study.

Study area

Location & Geographical Area

Murshidabad district lies between latitude $23^0 43'30''$ & $24^0 50'20'''30''$ North and longitude $87^0 49'17''$ & $88^0 46'00''$ East.

Results

The entire Murshidabad district was surveyed in search of Sacred Groves. It is found that sacred Groves were of two types in this district. In the first type the sacred groves surrounded temples of Hindu deities. In the second type a Muslim graveyard or "Muslim Kabarsthan." Around the Hindu temples there were several plants which considered as religious trees like *Cocos nucifera* (coconut), *Ficus religiosa* (sacred fig), *Aegle marmelos* (wood apple) etc. Around these trees which have a religious importance there are several herbaceous plant associations. Similarly many small patches of vegetation were found in the "Kabarsthan" where many trees were considered as "Sacred Trees". In this investigation only the places having high diversity of vegetation, protected by walls, maintained by a statutory authority and age old were listed as sacred groves in this study. A total of 153 (One hundred and fifty three) sacred groves were recorded with high floral diversity along with faunal diversity. A list of major flora of sacred groves in Murshidabad is given in Table 1. A list of major fauna of sacred groves in Murshidabad is given in Table 2.

Table 1: Major Flora of Sacred Groves of Murshidabad

Type	Name of the plants
Sacred Tree and associated vegetation	*Aegle marmelos, Alocasia fornicata, Annona reticulate, Areca catechu, Bombax ceiba, Cassia fistula, Cocos nucifera, Comellina benghalensis, Costus speciosa, Ecbolium viridae, Ficus hispida, Ficus recemosa, Ficus religiosa, Hemidesmus indicus, Litsea glutinosa, Moringa oleifera, Polyalthea subarosa, Tinospora cordifolia.*
Major plants in Sacred Groves with Temples and Kabarsthan (graveyard)	*Aegle marmelos, Annona reticulate, Azadiracta indica, Bombax ceiba, Calotropis gigantean, Cassia fistula, Cassia sophera, Chrozophora rottleri , Ceratophylum sp. Clerodendrum viscosum, Croton bonplandianus, Cynodon dactylon, Cyperus rotendus, Eichornia crassipes, Ficus religiosa, Glycosmis pentaphylla, Hydrilla verticillata. Lantana camara, Moringa oleifera, Scirpus articulates, Trewia nudiflora, Typha domingensis, Zizipus mauritiana.*
Wall flora in old walls of Ancient monuments	*Murshidabad district is famous for historical places and there are a widespread of monuments, temples, mosques like Katra Mosque, Hazarduari, Khosbagh, Siva-temple of Rani Bhabani, Moti Jhil. Temple of Jagat Seth, Palace of Kashimbazar, Lalkuthi and many others which have recognizable wall floral association of Boerhaavia diffusa, Euphorbia hirta, Euphorbia prostrate, Ficus benghalensis, Ficus religiosa, Lindenbergia indica, Peperomia pellucida, Pilea microphylla, Tridex procumbens, Vernonia cinerea.*
Parasitic plants	*Cuscuta reflexa, Macrosolen cochinensis.*
Common Epiphytes	*Vanda tesselata, Rhyncostylis retusa.*

Table 2: List of Amphibia, Reptilia and Mammalia in the Sacred Groves of Murshidabad.

Type	Names of Animals	Common Name in Bengali
Amphibia	*Haplobatracus tigrina*	Sonabeng
	Duttaphrynus melanostictus	Kunobeng
	Rhacophorus sp	Gechobeng
	Euphlyctis hexadactyla (Lesson)	Sonabeng
	Limnonectes limnocharis	Jhijhibeng
	Pedostibes tuberculosus Gunther	Gechobeng
Reptilia	*Trionyx gangeticus*	Kochop
	Chrysemys picta	Kocchop
	Varanus monitor	Gosap
	Hemidactylus flaviviridis	Tiktiki
	Mabuya mabuya	Sapermasi
	Calotes versicolor	Raktochosa
	Ptyas mucosus	Hele
	Naja naja	Keute
	Vipera russelli	Sakhamuti/chiti
	Gavialis gangeticus	Gharial [only near Jangipur and in Motijheel(reported)]
Mammalia	*Platamista gangetica*	Sushuk
	Funambulus sp	
	Mus musculus	Idur
	Rottus rottus	Dhere idur
	Pteropus sp	Badur
	Rhinolophus sp	Chamchiki
	Talpa Sp	
	Bandicota bengalensis	Dhere idur
	Herpestes javanicus	Beji
	Presbytis entellus	
	Felis domesticus	Biral
	Canis familaris	Sheal
	Canis aureus	Kukur
	Vulpes bengalensis	Sheal

Discussion

Sacred groves are found all over India. It is believed that the sacred groves represent a variety of ecosystems, social and ethnic identities, management regimes, legal tenures, and cultural traditions (Ray *et al.* 2014). Nowadays these sacred groves are a subject of great interest to biologists, social scientists, anthropologists and policy makers. These sacred groves provide are believed to be the strong link between our past and present in terms of biodiversity and ethnic heritage (Khan *et al*, 2008).

Urbanization has been cited as a major cause of biodiversity loss in many countries. In the 2016 publication on an overview on sacred groves it was stressed that the pressures of growing urbanization and industrialization, the need for roads and housing and other infrastructure had eaten into the area of the groves (Amirthalingam, 2016). Sacred groves are those patches of vegetation that escaped the destruction as the place was considered religious by the local people. Ethnic heritage seems to have played a significant role in the conservation of flora within the sacred grove over many years. Many of the sacred groves in Murshidabad are more than 100 years old, a few over 200 years. These sacred groves are samples of the climax vegetation that once covered the area. Within the plant community various faunal groups are still thriving. Had it not been for the sacred groves many of the Reptilia, Amphibia and Mamamlia members would have been killed out of fear by humans.

Conclusion

In the present investigation it has been found that flora and fauna are conserved within the sacred groves of Murshidabad to a great extent till now. Sacred groves are the repositories of the local flora and fauna of Murshidabad. It is of paramount importance to conserve the sacred groves itself for overall biodiversity conservation.

Conflicts of Interest The authors declare that there are no conflicts of interest regarding the publication of this work.

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