

Biotic Factors Affecting Biodiversity of Barda Sanctuary

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ARTICLE DETAILS

Article History

Published Online: 15 April 2019

Keywords

Barda sanctuary, Vegetation and Maldharies peoples .

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ABSTRACT

The Barda Sanctuary is spread over Porbandar and Jamnagar districts of Gujarat State in India. A part of Sanctuary, which falls under the Porbandar district, is known as "Rana Barda", for it was ruled by a king of Rana 'Dynasty' while the other part falling under Jamnagar district is known as "Jam Barda" as it is named after their former ruler, the Jamsaheb of Jamnagar. The Barda Sanctuary form a compact block of about 192.31 sq. kms lying between parallels of latitude from 21° 40' to 21° 55' North and meridians of longitude from 69° 40' to 69° 50' East. The Barda Sanctuary is dry deciduous forest. There are very gentle slopes noted in the plains at places but undulating ground is conspicuous by its absence. Maldharies (tribal people) inhabiting this region is mostly from Rabari cast; they live in small settlements and their economy was based mostly upon animal husbandry. Their activities also affect biodiversity of Barda Sanctuary.

1. Introduction

The Barda Sanctuary is spread over Porbandar and Jamnagar districts of Gujarat State in India. A part of Hills, which falls under the Porbandar district, is known as "Rana Barda", while the other part falling under Jamnagar district is known as "Jam Barda". The Barda Sanctuary form a compact block of about 192.31 sq. kms. The Barda Sanctuary is dry deciduous forest. *Biological diversity or Biodiversity*, the result of four billion years of evolution, is a natural wealth of the world that involves millions of plants, animals and micro-organisms (WWF, 1989). Knowledge of biodiversity has increased in the last ten to fifteen years, as has the realisation that something must be done to counteract the loss of species, populations, and ecosystems. There is still much to be learnt about biodiversity and its relationship to the functioning of our world. The Earth's biodiversity and other natural resources provide many economic, social and aesthetic benefits to mankind. It is a widespread practice now to define biodiversity in terms of gene (genetic diversity), species (species diversity) and ecosystems (ecosystem diversity) (Khoshoo, 1986). This study was also important because Barda sanctuary reserved for Lion habitate after Gir National Park, but Maldharies (tribal people) inhabiting this region and their economy was mainly based on animal husbandry. Their activities also affect biodiversity of Barda sanctuary, so it's indirect affecting to Lion second habitate.

2. Materials and methods

The Barda sanctuary form a compact block of about 192.31 sq. kms lying between parallels of latitude from 21° 40' to 21° 55' North and meridians of longitude from 69° 40' to 69° 50' East. Barda sanctuary was declared as Barda Reserve Forest in 1911 and 1916, and, Jam Barda and Rana Barda were declared as Barda Sanctuary in 1979. 116.63 sq. km of the hills in Rana Barda and 75.68 sq. km in Jam Barda

According to a report of the National Research Council – NRC (U.S.), more than half of all species are likely to become extinct by the year 2100. Wilson (1992) estimates that about 27,000 species are been driven to extinction each year.

Expanding human populations, over exploitation of natural resources, habitat loss and pollution are contributing to a greater extent for rapid degradation of environmental quality, with its irreversible loss of species diversity. Instead of coming to the point in future, when we have to choose between saving human life or animal life, it is better to make a global effort to strive at the root cause of environmental degradation. As Ehrlich and Ehrlich (1992) have put it well: "We suspect that the basic problem of conserving biodiversity is not likely to be solved until and unless a much large proportion of the human population comes to share this view".

For this study I was studied and surveyed different local peoples, forest officers and some NGOs for how Maldharies affect biodiversity of Barda sanctuary. Camera is also used as an instrument.

3. Results and discussion

- Maldharies [Tribal peoples (about 8,000)] are dependent on forest for their daily life. They destroy the vegetation for hut construction and their cattle populations
- Heavy grazing affects vegetation cover
- During dry period leaves of *Manilkara hexandra* and *Diospyros melanoxylon* were used as a fodder for cattle, as a result the regeneration rate was reduce and also effect on litter production and decomposition as well as soil nutrition. Birds losses their natural habitat
- They cut stem of Teak (*Tectona grandis*) for the commercial use
- They cut stem of Vas (*Bambusa arundinacea*) for commercial use.
- Country wine (desi dāru) was a common practice in this area.
- The waste of Country wine materials were released in river and pond making it polluted which kills wild animals.

- Some time Maldharies killed wild animals for their economic purpose as well as to protect their cattle from wild animals.
- Temple and other places attract tourist and because of that vehicular traffic causing various types of pollution to the forest and that causes destruction of forest.
- ☛ Other minor forest products were used for commercial purpose. Removal of fruits from the system reduces regeneration of the species and disturbs the food chain of herbivorous.
- Cement and other industries situated nearby, causes the air pollution as well as soil erosion problems.
- Forest fire were also very common in dry period
- The forest has poor regeneration because of the biotic factors and fire. Mostly the fires are due to honey collection, shifting cultivation and ground clearing for commercial uses.
- Due to biotic interference lots of areas were barren lands converted into excessive soil erosion.

As a result of his varied activities, man, as a biotic-factor, has influenced vegetation markedly. Indiscriminate cutting of the trees by the local people for fuel and other purposes affects the vegetation in many ways. Intensity of grazing changes the structure and the vegetation of grasslands which are fast deteriorating. Thus, when plant cover is so thinned, the soil is no longer protected from the erosive influences of wind and water. Secondly, it reduces the water retaining capacity of the soil and as a result, the rain water flow away causing soil erosions at several places. Inkyin Khaine et al (2018) also

similar reported in Myanmar as well as Ashish et al (2015) also same reported in Northern India.

Biotic factors are found to be operated in different ways by introduction of exotic species. The seeds of a number of exotic plants have been introduced. Such plants are naturalized in many parts of the country and they are now the integral members of the indigenous flora. Some of such exotic herbs are congress grass – *Parthenium hysterophorus*, *Acanthospermum hispidum*, *Lantana camara* etc. Thakkar (1910) reported 611 plants in his voluminous work on Barda Hills of 'Kathiawad', while comparing our data we have observed that 89 plant species, which are recorded by Thakkar (1910) are missing in my study. As far as the tribes are concerned, the forest is inseparable from their existence, the tribal and forest policies of state could not be framed on incompatible premises. However, this demand was never honoured by the state (Mullick, 2007). Tribal people suffer from physical displacement mainly because the laws that do not recognize communal customary rights of people to forest lands (Mathur, 2009). And also various abiotic factors are effective on the vegetation and they considerably modify it. Fires, illicit cuttings of trees, overgrazing, encroachments, soil erosion, floods, insects and parasites are the major factors affecting growth and development of the plants.

Acknowledgement

The author thankful to Forest department of Barda Sanctuary allows me permission for this work and thankful to Bhavnagar University for providing laboratory facilities for work.

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