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Anthropogenic Activities on Grassland Ecosystem in Nilgiri Biosphere Reserve, South India, Tamil Nadu

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ABSTRACT

Grassland represents a widespread vegetation type at the world scale and it support critical habitat, wildlife migration corridors, and important habitat links between riparian areas and mountains. According to a rough estimate, about 282 taxa of grasses occur in the Nilgiri district of which about 130 is reported from the shola-grasslands. 33 of these are endemics of which 8 species are found only in the Nilgiri. Grasslands also have an enormous number of insects. Anthropogenic fires are a common feature of the shola grassland as the indigenous communities, mainly the Tribal peoples burned the grassland to enhance the productivity and augment fodder for their buffalo and cattle herds. Much of the grassland ecosystem has been burned naturally, probably from fires sparked by lightning. The maintenance of these grasslands is essential to safeguard the interests of indigenous communities and well-being of natural biota. This study summarizes the present conservation issues in the grasslands and presents future prospects for the conservation and management of the grasslands in the study area.

KEYWORDS : Grassland, Anthropogenic activity, Nilgiri Biosphere Reserve.

INTRODUCTION

The Nilgiri Bioshpere Reserve is an international Biosphere Reserve in the Western Ghats, Nilgiri Hills of South India. The reserve encompasses 5,520km^2 lying in the states of Tamil Nadu, Karnataka and Kerala. The biosphere lies between 10-50´ and 12°16´ N latitude and 76°00´ to 77°15´ E longitude Shola is a type of high-altitude stunned evergreen forest found in southern India (Southern Montae Wet Temperate Forest).

Future conservation of forest biodiversity is highly depending on how the unprotected forest areas are managed. Human activities may have impacts at the landscape scale influencing habitat characteristics and ecological processes. Hence it is essential to keynote the effects of anthropogenic activities in the biodiversity.

Patches of shoal forest are usually separated from one another by undulating grassland (Southern Montane Wet Grassland). Together the shola and grassland form the shola-grassland complex or shola-grassland mosaic known as Montane-Shola Grassland Ecosystem. The NBR is known for its rich biodiversity. There are 3238 species of angiosperms, 71 species of gymnosperms, 134 species of pteridophytes, 300 species of butterflies and 684 species of vertebrates reported from this area [1]. Of these 285 species of vertebrates endemic to the Western Ghats, 156 occur within the NBR [1].

As far as the Nilgiri Hills are concerned six tribes are considered as PTG (Primitive Trible Group). They are Todas, Kurumbas, Paniyas, Irulas, Kottas and Kattunayakas. Among this the Todas and Kottas occupy the upper area of Nilgiris. Irulas and the Kurumbas occupy the middle elevation, while other two groups in the lower elevation. All these six tribes have there own herbal medicinal system and is acquired form the interaction with plants for decades.

MATERIALS AND METHODS

Study area

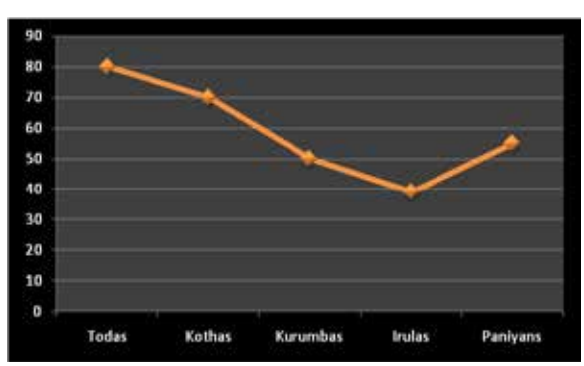
The various trible settlements located in various parts of Nilgiris were studied. The important Trible settlements of Todas, Kottas, Paniyas and Kurumbas were surveyed. The survey was made from elderly people who are all well versed with medicinal plants. Todas settlements were surveyed that is Kandal mund (or) Horse Mund, Naydu mund, Manjakara mund. The Kota village is called a kokkal, Krishnaputhur Sollur, Trichikadi, Kundhakotagiri, Pudhukotagiri. The Paniyans settle called 'Paddis'. Kozhlikolli, Pulliyavayal, Mundankunu (Nandankunnu). The Kurumbas settled in Pambalakombai, Sengalpudhur, Kareyasholai, Kaivayta. These villages were documented for the study. Toads are mainly trade dairy products with their Nilgiri neighbour people.

The questionnaire methods were carried out to know the anthropogenic level around in forest cover areas and grassland areas were documented. Mean while the invade species of grasslands are also documented. The invade species like, Lantana camara, Chromolaena odorata, Eupatorium, *Cytisus scoparius*, Wattle plantation is now fast encroaching the grasslands. Scotch broom appears to be dominating vast areas of the grass- lands in the Nilgiris.

RESULT

Grazing is one of the central and important issues affecting the grasslands, linking their maintenance, productivity, and economic use management for biodiversity. Grasslands depend critically on the activity of grazing animals, and to understand the plant responses to grazing. To explore the impacts of variation in grazing on community structure. Comparing to irulas, panniyas the kurumbas and todas used their cattle for over grazing (Graph 1).

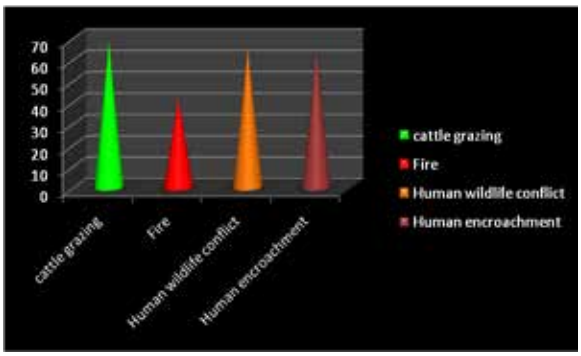
Graph 1: shows the trible peoples disturbance in Grassland



Cattle grazing, Fire, Human-wildlife conflict, Managing wildlife corridors, Human-wildlife conflict, Tourism Habitat management, Human encroachment, Habitat monitoring, Tourism are main activity in grassland. The anthropogenic activity like grazing and human enchroment

shows the decline of grassland in study area (Graph 2).

Graph 2: shows the anthropogenic activities on Grassland



DISCUSSION

The Forest Department has made great efforts to protect the Shola forests but has only recently become aware of the need to protect the grasslands. Historically speaking, for a forester, an administrator or a politician, grassland has appeared as an empty space that could more usefully be employed if it were filled with trees or something more productive than grass. The native/origin place of the exotics is conformed with the publication of [2] and Rao and [3].

Linked often crucially with grazing, but also driven sometimes by extrinsic factors, invasions are often cause for concern in grassland management. The invasions of grass- lands by woody plants threatens grassland habitats while the invasions of pastures by alien weeds reduces pasture productivity [4]. In our survey it shows that the grass species like *Eragrostis rottleri* and *Eriochrysis rangacharii* are endangered in South India. Acacia plants are scattered on the grassland.

According to Liya fan *et al.,* [5] the Grazing effects on seasonal dynamics of spectral reflectance. In the same in our study also over grazing results various issues like landslide. As inappropriate human activities such as overgrazing are one of the most important reasons for land degradation and desertification of grassland [6].

RECOMMENDATION

The recommendations are given to control the anthropogenic activity on grasslands. That is the Cattle entry into the grassland is not encouraged, Cattle owners are encouraged to buy fodder for their cattle into the forests. Prevent the fire in grassland ecosystem. Prevent the cutting of grasses for fodder purpose.

CONCLUSION

The aim of the study is carry out only in tribal settlement areas in Nilgiris to minted these grasslands is essential to safeguard the interests of indigenous communities and well-being of natural biota and for future generation also. This will summarizes the present conservation issues in the grasslands and presents future prospects for the conservation and management of the grasslands in the study area. The *shola*-grasslands of the Nilgiris are a mosiac of tropical evergreen forest, the *sholas* interspersed in grasslands. This ecosystem conserving the endemic flora and fauna in nilgiris conservation is important for the indigenous people who have strong socioeconomic and cultural ties to the grasslands. By isolating these values grasslands will be managed in the future.

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