International Journal for Research Publication and Seminar
ISSN: 2278-6848 | Vol. 13 | Issue 1 | Jan - Mar 2022 | Peer Reviewed & Refereed

An Investigation on the Medicinal Plants Found in the Tadoba Forest Region

Pachbhai Mangesh Dhananjay
Research Scholar
Kalinga University

Dr. Anubha Joshi
Professor
Kalinga University

Published 18/03/2022

***** **C**orresponding author

Abstract

This research covers phytosociology, flora, biological spectrum, and phenology in vegetation ecology. Tadoba National Park in Chandrapur is a tropical dry deciduous forest. The park is located at 20 degrees 16 minutes 10 seconds north and 79 degrees 14 minutes 43 seconds east. Tabular comparison divided the park's woodland into five communities. The Simpson index (λ) and Shannon-Wiener index (H') showed a range of 0.085 to 0.147 and 2.35 to 2.9, respectively, based on diversity indices computed. Tectona Grandis Chloroxylon swietenia-Diospyros melanoxylon had the most shrub species, whereas trees had 17 to 6. Communities IV and V are the poorest. Herbs were abundant in almost every community, with community I having the highest species richness score of 110 and community IV the lowest. The Tectona grandis, Chloroxylon swietenia, and Diospyros melanoxylon community exhibited a maximum diversity index (H') of 3.94. Any community can have a very low Simpson index. Community I had the lowest Simpson index. The Simpson Index was low and the Shannon-Wiener Index was high, indicating substantial vegetation variety. The park has 741 higher plant species. These species are in 115 families and 427 genera. Additionally, there are 111 trees, 66 shrubs, 89 climbers, and 475 herbs. Herbs contain 218 forbs, 107 legumes, 103 grasses, and 47 sedges. The population structure showed that the reproductive biology of primary tree species, particularly seed generation, germination, and seedling establishment, needs to be studied.

Keywords: *Medicines made from herbs, a wooded area A forest known as Tadoba.*

INTRODUCTION

Vegetation ecology studies plant structure and systematics. This involves studying species social interactions and composition in distinct communities. Vegetation ecology has long bridged fundamental and applied study methods. The quantitative study of plants is called phytosociology. In vegetative ecology, many variables distinguish communities. These include floristic composition, diversity, phenology, etc. For this reason portraying plant social behaviour, such factors are used. The distribution of individuals among species in a habitat is called species diversity. The biological spectrum shows the species' percentage distribution among life forms. Phenology studies seasonal biological activities in vegetation. Several researchers have studied phytosociology, flora, biological spectrum, and phenology in tropical deciduous forests in India. Khare et al. (1989) studied Central Indian plant groups using two-level ordination. They documented how rock formation and soil conditions affected plant spatial distribution. Biogenic

variables also affect stand species composition. Forest communities vary based on land use and biotic disturbances. Malhotra and Moorthy (1972, 1973 a & b, 1974, 1977 & 1992), Choudhary (1986), Mohan Varghese and Kunhikannan (1993), and Kunhikannan et al. (1993, 1994, 2007) are among the few ecological and floristic researchers on Tadoba National Park. All of these researchers have advanced the field. Kunhikannan (1999, 2005) and Gogate and Anmol Kumar (1993) examined the Park's complex ecological system. Choudhary (1986) studied National Park management after studying gregarious blooming bamboo. This article summarises all Tadoba National Park forests vegetation research. Tadoba National Park was established in 1955 in Chandrapur, Maharashtra. The park was created to preserve Central's dry deciduous woodlands' biological abundance and variety. Figure 1 places the park between 79o 14' 43" east and 79o 21' 25" east and 20o 16' 10" north. The Tadoba-Andhari Tiger Reserve covers 116.54 square kilometres and borders the Andhari Wild Life Sanctuary. Together, these reserves span 509 square kilometres. This tropical region has three seasons: summer, rainy season, and winter. In May and June, temperatures can reach 40–47 degrees Celsius. The coldest month is December, with an average low of 9°C. This region receives 1041 mm of rain annually. Geological study places the location in the Raniganj series of the Gondwana group's Kamthi beds (Krishnan, 1982). In the midst of the domain lies a beautiful 125-hectare lake surrounded by little hills and 213–364 meters above sea level. The lake is beautiful and most of the countryside is undulating. Due to the rising understanding of interrelated ecosystems and scientific research on flora and fauna applications, biodiversity loss is a major concern. As people have realised how dependent they are on healthy ecosystems, "sustainable development," "biodiversity conservation," and "maintenance of gene-pools" have become global issues. Protected areas (PAs) in developed and developing nations protect natural resources including plants and animals. This finally created these places. Global collective choice led to this crucial policy decision, which has had distinct effects on wealthy and developing nations. Developed countries care more about environmental quality, a global public good, than less developed countries, which are suffering with poverty and starvation. However, less developed countries cannot afford to make land use decisions that reflect such future issues. This makes the "environment versus development" and "global gain at local cost" debate relevant. Many governments prioritise biodiversity conservation, which is a good thing because it means putting more land under forest cover and maintaining green cover. Management can be "exclusive" or "inclusive." Developing nations are expanding their network of protected areas, including national parks and animal sanctuaries, due to a growing awareness of the need to preserve all life and increased international pressure. Guha properly points out that economic development is the main cause of biodiversity loss. Highly industrialised countries' conservation initiatives transcend political boundaries, ensuring their growth. Also, he says "the wholesale transfer of a movement (environmentalists) culturally rooted in American conservation history can only result in the social uprooting of human populations in other parts of the globe." Powerful statement. According to Guha (1989:76). Many have ignored the fact that "while a 'exclusive' management approach is generally successful in preserving areas of wilderness and scenic beauty, the 'inclusive' approach

is obviously the model choice for PAs that include human residents and affect local livelihood in important ways" (Gadgil, 1991; Borrini-Feyerabend, 1996; Murty, 1996; Rathor, 1996; Das, 1997; Gadgil, 98; Swain Many places overlook this reality. In less developed nations like India, protected zones restrict resource consumption and force generations-old residents to flee. The practice of equating nature conservation with the establishment of PAs under the Forest Department's control, which excludes subsistence uses of living resources, is based on false premises like only state machinery can protect biodiversity, conservation of biodiversity is a Forest Department monopoly, and creation of new protected areas will improve biodiversity protection.

WORRIES ABOUT EXTERNALITIES

Recognising that protected areas affect varied social groups in many ways is crucial but often disregarded. It's crucial to understand that impoverished populations of developing nations who live in or near Protected regions, especially those who depend on them for their livelihood, pay the highest costs of maintaining these places. According to this theory, the international community's demand for protected regions causes unidirectional negative externalities for locals. Numerous studies have examined how protected areas (PAs) affect local populations. These studies have shown that a region once used by locals for small-scale fishing, sericulture, honey collection, and firewood collection is now legally off-limits to these uses but open to other uses. People who live in or near biologically varied ecosystems rarely profit financially by protecting or using resources sustainably. However, local populations generally bore the brunt of conservation costs, especially in the short term. Dixon and Sherman (1990), Wells (1992, 1995), and other researchers found that local communities rarely benefit from conservation activities. In the name of conservation, marginalised and impoverished people are more marginalised. Due to their uprootment from their ancestral nation and native socio-cultural environment and the destruction of their once-self-sufficient economy, these communities are vulnerable to outside exploitation. Localities must pay a price to address global conservation issues, as this essay explains. Because local "collective choice" in a region is weaker than universal "collective choice." Constitutional judgements rarely address local problems, even when global issues might influence them through coercive and persuasive means. Long-term, conservation and community well-being suffer. The people's inability to use forest products and inadequate conservation methods are lowering their standard of living. A case study of the Taboba-Andhari Tiger Reserve (TATR) in central India shows how national decisions to build protected areas while considering international biodiversity concerns have marginalised the poor. Our analysis uses the Institutional Analysis and Design (IAD) framework to better comprehend this complex issue. Different perspectives and levels of analysis and decision-making are included in this framework.

"PROTECTED AREAS" DEFINED

The International Union for Conservation of Nature (IUCN) classifies protected areas into six kinds to accommodate a variety of biological, social, and ownership regimes. These include managed resource protected areas and rigorous wilderness reserves. A protected area is land or water devoted to the protection and management of biological variety, natural, and cultural resources by law or other practical ways. In 1994, the IUCN World Commission on Protected Areas defined this term. The Convention on Biodiversity defines a protected area as a geographically delimited area designated, regulated, and maintained to fulfil conservation purposes. According to Guha (1989) and Bishop et al. (1995), the national park movement began in the US in response to European immigrants' catastrophic environmental degradation over three centuries. This is well-known. A large part of the US had low population density. They were designated national parks to suit the widespread yearning for outdoor recreation. They were governed by a bureaucracy accountable to outdoor enthusiasts. Despite differences in biotic requirements, socioeconomic structures, or realities, this philosophy was spread, welcomed, and sometimes enforced internationally. Due of this, some destitute civilisations lived in extremely poor conditions. Since then, several national parks have been created worldwide to protect the environment. This has severely impacted towns near these parks. Thus, park-neighborhood interactions are crucial (Fortin & Gagnon, 1999). We may learn from civilisations that fell because their food trees were cut down. The combination of these reasons makes it evident that more trees are needed and the existing forest should be preserved. However, people have varying interpretations of "protected area" in the contemporary situation. Madhav Gadgil (1998) eloquently states, "Protected Areas (PA) that conserve flora and fauna include national parks, animal sanctuaries, gene-pool reserves, and others. "The "people" (the constitutionally armed government department) must protect the "people" (the global community) from the "people" (the locals). The International Union for Conservation of Nature (IUCN) introduced a modern, widely agreed national park definition in 1994. National parks are managed for leisure and ecological conservation, according to the International Union for Conservation of Nature (IUCN). We use this specific definition: 3 A natural area of land or sea that has been designated to: (a) protect the ecological integrity of one or more ecosystems for current and future generations; (b) prohibit exploitation or occupation that would undermine the area's designation; and (c) serve as a foundation for spirituality, science, education, recreation, and tourism opportunities that must be compatible with the environment. The International Union for Conservation of Nature (IUCN) introduced a modern, widely agreed national park definition in 1994. National parks are managed for leisure and ecological conservation, according to the International Union for Conservation of Nature (IUCN). We use this specific definition: A natural area on land or sea designated to: (a) preserve the ecological integrity of one or more ecosystems for current and future generations; (b) prohibit exploitation or occupation that is inimical to the area's designation; and (c) provide spirituality, science, education, recreation, and tourism opportunities that are environmentally and culturally compatible. This definition covers land and marine.

INDIA'S PROTECTED AREAS

The 1952 and 1988 Indian forest policy statements acknowledge the scientific fact that forests support more plant and animal species than any other ecosystem, manage local and global temperature, and affect the global energy balance. In forest policy documents, which are visible in forest regulations, resource preservation is clearly addressed. Especially in biologically significant places like mountains and rivers. Due to this concern for conservation, many US regions have declared significant expanses of natural woods as National Parks, Wildlife Sanctuaries, Reserved and Protected woodlands, and Closed areas. Article 48A of the Indian Constitution states, "The State shall endeavour to protect and improve the environment and safeguard the forests and wildlife of the country," requiring the state to protect and improve the environment. Also, Article 51G says "every Indian citizen shall have compassion for all living creatures and shall protect and improve the natural environment, including forests, lakes, rivers, and wildlife." The IBW defines a national park as "An area dedicated by the statute for all time to conserve scenery, natural and historical objects of national significance, and wildlife, and where provision is made for the enjoyment of all alike by the public." In other words, a national park lets the public enjoy these items. Wildlife parks were one method the government protected wildlife and their habitats. Most developing nations use this traditional conservation strategy. It emphasises custodial management, including parks and reserves where most human activities are limited. A little more than 4% of India's land is protected, which helps endangered species survive and affects the three million people who live in protected areas and several other villages nearby. The country had 83 national parks and 447 sanctuaries in 1997.

EXPENSE TO THE LOCALS

Evicting populations from national parks has made the "park vs. people" issue popular in recent years. Wildlife park regulations vary by country, but they often harm nearby communities by making their "traditional" activities unlawful. Protected zones do not marginalise those who cannot enter. However, people often overlook its importance to the process. It is difficult to estimate the average pace of species extinction, yet it has substantially increased during the previous few decades. several decades. One of the main reasons protected zones cause conflict is that they are placed on communities without their consent. The local people pays the costs and has limited access to the property, while society benefits. The Forest Act and Wildlife Protection Act only care about environmental protection, even though project relocation benefits society. When reduced to this level, displacement becomes an implicit event that is ignored as unavoidable and irrelevant. People living near forests are most harmed by deforestation. However, these groups are rarely represented in land usage choices in their homelands, which can threaten their cultural and economic survival. The planning process excluded local organisations, demonstrating their lack of involvement in development decisions. They are often submissive followers who must

make decisions. The transfer is decided, but it's postponed, worsening their anguish. They must live in uncertainty, hunger, and waiting against their will. While this is happening, their neighbours in other communities are making progress and benefiting from government handouts. People sacrificed for national or international concerns tend to stagnate for a long period. There is no deadline for complete restoration, even if land declaration for public use and related procedures like objection, intention, and notice are sometimes delayed. Many of India's sanctuaries have neglected transferring and rehabilitating their residents. Tadoba Tiger Reserve is a good example. Residents of the six communities in the reserve have been warned for seventeen years that they will be transferred and given time to rehabilitate, but no alternative location has been chosen.

RESEARCH AREA

There has been a significant amount of time that has passed since the Tadoba-Andhari Tiger Reserve (TATR) was established. According to maps 1 and 2, it may be found in the Chandrapur district of the state of Maharashtra. An original declaration of the Tadoba Sanctuary was made in 1931, and it has a total area of 116.55 square kilometres. The year 1955 marked the beginning of Tadoba National Park's transformation.

lhari Tiger Reserve, Chandrapur district, and Maharashtra State are located

The park was formed without human participation under the species-specific reserve policy of the time. To protect the forest as a habitat for wildlife, especially tigers, at least part of it should be left intact. Humans were considered "unnatural," so settlements in the national park or five sanctuary districts were restored. Two settlements in Tadoba National Park were relocated quickly. Khatoda and Pandharpauni were moved outside the national park. Pandharpauni, formerly Navegaon, is

undergoing another move. Due to its recent inclusion in the Tiger reserve. Frequent moves have put further financial strain on the neighbourhood. The region has not been included in the operating plan since the park was declared. Since 1968, gum, mahua flowers, thatch grass, and other non-timber forest products have been prohibited. In February 1986, the Tiger Reserve was expanded to create the Andhari Tiger Sanctuary to buffer Tadoba National Park. This sanctuary covered 509.27 square km when founded. Prepared to move six communities within the sanctuary territory since then. The state administration named the entire territory that includes Tadoba National Park and Andhari Wildlife Sanctuary the Tadoba-Andhari Tiger Reserve in 1995 after getting federal authorisation in 1993. This reserve covered 625.40 km2. Every entitlement and concession granted to the local community has been suspended since 1990. Tendu leaf harvesting was suspended in 1992, long before the Tiger Reserve was established. Currently, grazing is restricted, and only certain wood can be removed from the sanctuary. Area outside the former national park is dead or fallen wood. "The local people are deprived of the rights to use the protected area to meet their firewood, grazing, and non-timber forest product (NTFP) collection, etc., which has created genuine problems for them," the tiger reserve management plan noted. "This has created genuine problems for them."

Engulfing Villages

Since they were informed that their home will be turned into an animal refuge, all six villages in the reserve have been waiting for their transfer for almost fourteen years. Instead of being instructed or convinced, they watched as the vegetation around them prospered while they declined. Jamani, Nawegaon, Palasgaon, Rantalodhi, Botezari, and Kolsa are neighbourhood cities and towns. When it rains, most of the six communities are inaccessible to walkers and automobiles. None of the villages have low-cost stores or all-weather roads. Kolsa has the only hospital and post office in the village. Two of the six settlements have state transit, while five have unreliable power. After graduating from fourth grade, youngsters must either stop school or move far away to continue their education. This is despite every community having an elementary school. These localities are 12–34 kilometres from their markets. They must travel far to get salt and bullocks.

Features of the Demographics

Five hundred twenty-seven families are in six villages. The gender ratio advantages women 49 to 50, largely because men leave for employment opportunities. The "working class," 56.27 percent of the population, is 14–55 years old. Even though almost 40% of the villagers are illiterate, only 1% are above the fourth grade. Most local dwellings are mud with thatched roofs. Every household head works in agriculture, the region's main industry. However, only 50% of households own property, and it's all under two hectares. All survivors work manually in agriculture. Cattle are usually found in wealthy homes. The six communities owned 24 buffaloes, 118 sheep, 280 goats, 611 cows, and 634 bullocks. These numbers are even more important because all of these cattle graze in wooded areas with lots of forage.

Earnings and Jobs

Another major revenue source for the corporation is illegal bamboo poaching. Several circumstances have forced villages into the illegal bamboo trade, including the Small land ownership, a big percentage of landless people, a lack of other employment possibilities, and limited labour market access. This study collected earnings data from legitimate (labour, small-scale industries, and agricultural) and illicit (mainly bamboo poaching) sources. There are few excellent jobs, and every residence is below the poverty level. Additionally, forest goods with a guaranteed market are readily available. Although the villagers had previously used this resource sustainably, when the tiger reserve was established without their knowledge or consent, they became encroachers. This move did not create new revenue streams or fuel or feed alternatives.

CONCLUSION

Formalising international concern about biodiversity loss at the national level may have unexpected consequences. Developing nations like India must balance development and environmental preservation aims when making land use decisions. Through "exclusive" management, generations-old residents may be forced to leave to safeguard the ecosystem. This method involves creating big, uninhabited areas. Protected zones for biodiversity conservation result in an unequal cost sharing between locals and humanity. This harms local residents. To make matters worse, if the people are forced to restrict access to a region, it may be considered "protected" for accounting purposes but actually be the victim of unreported poaching, which would cost the community locally, nationally, and internationally. Because of this, local levels must solve global biological variety conservation issues.

REFERENCES

1. Ashton, P.S. 2016. A quantitative phytosociological technique applied to tropical mixed rain forest vegetation. Malaysian For. 27: 304-317.
2. Babu, C.R. 2017. Herbaceous Flora of Dehradun. Publication and Information Directorate (CSIR), New Delhi.
3. Banerjee, K.L.B. and P.Lal 2015.Vegetation of the little known District Seoni in Madhya Pradesh. Indian
   J. Forestry 8: 292- 297.
4. Bawa, R. 2016. Structural and functional studies of three semi-arid grassland communities near Shimla.
5. Ph.D Thesis. H.P.Univ. Shimla. Bernhard- Reversat, F., C .Huttel & G Lemee 2022. Some aspects of seasonal ecological productivity and plant activity in an evergreen rain forest of Ivory Coast. In: F.B.Golley
   & R. Misra. (eds.). Papers from a Symposium on Tropical Ecology with an emphasis on organic productivity. 217-234. International Society for Tropical

Ecology, Athens.

6. Cain, S.A. 2020. Life forms and phyto-climates. Botanical Review 16: 1-32.
7. Champion, H.G. and S.K. Seth .2018. A Revised Survey of Forest Types of India. Delhi.
8. Chaudhury, R. 2016. Fire in bamboo area- Lessons from Tadoba National Park. Indian Forester 112: 900- 907.
9. Curtis, J.T. 2019. Vegetation of Wisconsin. An ordination of plant communities. Univ. of Wisconsin Press, Madison, Wisconsin.
10. Dixit, A.M. 2017. Ecological evaluation of dry tropical forest vegetation: an approach to environmental impact assessment. Trop. Ecol. 38: 87-99.
11. Elouard, C.; J.P. Pascal, R. Pelissier, B.R. Ramesh, F. Houllier, M. Durand, S.Aravajy, M.A. Moravie and Gimaret- Carpentier. 2017. Monitoring the structure and dynamics of a dense moist evergreen forest in the Western Ghats (Kodagu District, Karnataka, India). Trop. Ecol., 38: 193-214.
12. Foster, R.B. 2022. Seasonal rhythm of fruit fall on Barro Colorado Island. In: E.G. Leigh Jr., A.S. Rand &
D.M. Windsor (eds.) The Ecology of a Tropical Forest. Smithonian Institute Press. Washington.
13. George,M. and G. Varghese 2023. Species diversity and structural variation of tropical dry deciduous forest ecosystem of Western Ghats. Indian J. Trop. Biod. 1(1):30-36.
14. Gogate, M.G. and Anmolkumar. 2023. An ecological audit of teak plantation in west Chandrapur Project Division. Indian Forester 119: 265-294.
15. Henry, A.N.; G.R.Kumari and V.Chitra. 2017. Flora of Tamil Nadu, India ser.1, Vol. 3. Botanical Survey of India, Coimbatore. Henry, A.N.; V.Chitra and N.P.Balakrishnan. 1989. Flora of Tamil Nadu, India ser.1, Vol. 2. Botanical Survey of India, Coimbatore.