Scientific Reports in Life Sciences 6 (2): 62-66

DOI: https://doi.org/10.5281/zenodo.15659486

A review of the tiger state - Madhya Pradesh

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Received: 12 November 2024 / Revised: 16 February 2025/ Accepted: 19 February / Published online: 15 June 2025.
How to cite: Quaiyumi, N. (2025). A review of the tiger state - Madhya Pradesh, Scientific Reports in Life Sciences, 6(2), 62-66.
DOI: https://doi.org/10.5281/zenodo.15659486

Abstract

The biodiversity of Madhya Pradesh has rich and diverse fauna and flora. Madhya Pradesh is located on the genetic highway that connects two biodiversity hotspots in India, i.e., the Western Ghats and the North-East regions of India. The Biodiversity of Madhya Pradesh has great biological diversity. The Biodiversity of Madhya Pradesh includes the diversity of ecosystems, including plateaus, ravines, ridges, valleys, and flat plains. Madhya Pradesh has become the Tiger State of the Country with 526 Tigers. The paper presents the results of the Tiger counting survey of Madhya Pradesh. This review aims to understand the protection measures, counting of tigers with respect to the protection of the forest and our ecosystem, with the objective is to strengthening patrolling and surveillance of the endangered tiger.

Keywords: Biodiversity, NTCA (National Tiger Conservation Agency)

Introduction

Tigers are the only feline members to be listed as endangered in the International Union for Conservation of Nature (IUCN) Red Data Book list. India currently harbors almost 75 percent of the world's wild tiger population. With significant changes in the spatial patterns of tiger occurrence and an increase in unique tiger sightings from 2,461 in 2018 to 3,080 in 2022, now more than 3/4th of the tiger population is found within protected areas. A data analysis, done by the Wildlife Institute of India, estimates the upper limit of the tiger population to be 3,925 and the

average number to be around 3,682 tigers, reflecting a positive growth trend. With 785 big cats, Madhya Pradesh retains its spot as the 'tiger state of India'. Madhya Pradesh has a number of national parks and many wildlife sanctuaries. Madhya Pradesh (MP) has the largest forest area in India and is one of the forest-rich states in India, with more than 27% of its geographic area falling under the forests and tree cover, as against 24.1% of the national average (Forest Survey of India, 2021). India is home to 80 percent of tigers in the world. In 2006, India estimated that there were 1,411 tigers, which more than doubled to a population of 3,167 tigers in 2022 (BBC, 2019; The Hindu, 2023). The "Project Tiger" was launched in April, 1973 with the objective "to ensure maintenance of a viable population of Tigers in India for scientific, economic, aesthetic, cultural and ecological values, and to preserve for all times, areas of biological importance as a national heritage for the benefit, education and enjoyment of the people". Project Tiger completed fifty glorious years in India. Padma Shri Kailash Sankhla. who had received the Jawaharlal Nehru Fellowship in 1970, who was the first director of India's Project Tiger in 1973, and whose research during the Nehru Fellowship became the basis of tiger conservation all over the world, including India. The Project Tiger, led by Kailash Sankhla, included relocation of villages from core tiger habitats, creation of buffer zones around protected areas, and development of infrastructure for wildlife conservation as well as tourism. Kailash Sankhala's vision and leadership have been instrumental in the success of Project Tiger and the preservation of India's wildlife heritage. His work will forever inspire conservationists and wildlife enthusiasts in India and around the world. India's Project Tiger is one of the best examples of wildlife conservation success across the globe. It was a pioneering effort to bring tigers back from the brink of extinction. There were only about 1,800 tigers left in India's forests at that time. The project aimed to create a network of protected areas, known as tiger reserves, to protect the species and ecosystems. In the last five decades, there has been a significant increase in the number of tigers in India. The number recently released by Prime Minister Shri Narendra Modi confirms that there are 3167 tigers in India as per the estimates of 2022. While the success of Project Tiger is unprecedented, there remain numerous challenges. Increasing human population and encroachment on tiger habitats, deforestation, mining, and human-wildlife conflict are the biggest problems that hinder the growth of the tiger population and the protection of ecosystems. Poaching is still in an alarming situation that needs to be tackled relentlessly. In addition, recently published research has raised several concerns about the genetic diversity of tiger populations due to inbreeding. It is also worrisome that due to international illegal

trade, about 2359 tiger parts have been seized globally from 2000 to 2018. The completion of 50 years of Project Tiger in India is an opportunity to assess the progress made to date and identify issues that will need to be addressed in the future. Our success in combining conservation and livelihoods over the coming years will determine whether India can continue to lead the world in wildlife conservation and serve as an example for other nations. Tiger is our National animal and Iconic symbol. We need to save them for their scientific, economic, aesthetic, cultural, and ecological values and to preserve for all time areas of biological importance as a national heritage for the benefit, education, and enjoyment of people. India currently boasts of 53 tiger reserves, which are governed by Project Tiger, which is administered by the National Tiger Conservation Authority (NTCA). Madhya Pradesh is on top with 526 tigers. Over 3100+ tigers exist in India as per the latest tiger census data. Before setting the camera traps, teams survey an area for the presence of tigers and other wildlife. This helps them to identify promising locations to set up camera traps.

Method of counting

Counting tiger numbers is not an easy process, and when it all began in 1973, forest staff would use glass and butter paper to track tiger pugmarks. Every tiger has a unique and individual footprint -- like human fingerprints -- that helps in tracking. Camera trapping has evolved from earlier methods of counting tigers by using their footprints—or pugmarks—which provided inaccurate population estimates. Tiger Census in India. Since 2006, the Government of India has been conducting the Tiger Census every four years, led by the National Tiger Conservation Authority (NTCA) and the Wildlife Institute of India (WII) with cooperation from various state forest departments and conservation NGOs. NTCA used the likelihood-based SECR method (Efford, 2011; Borchers & Efford, 2008), implemented in R (R Development Core Team, 2010), to estimate tiger abundance from camera trap data. A habitat mask with a sufficiently realistic buffer (sufficient width around the camera trap array that excludes non-habitat) was used, and density was modeled as a function of covariates. Tiger sign encounter rate, prey encounter or dung densities, and human footprint variables obtained from ground surveys and remotely sensed data are used within SECR as covariates in a likelihood framework to model tiger density.

Efforts by the government of India

The Project Tiger Division under the Ministry of Environment, Forest and Climate Change is dedicated to conservation efforts in a scientific way using advanced technological tools. The

Government of India increased the budget allocation for tiger conservation from INR 185 crore in 2014 to INR 300 crore in 2022. India is committed to securing the livelihoods of its citizens while simultaneously minimizing its impact on its wildlife conservation goals. Unfortunately, there are some habitats where the once-thriving tiger population has now disappeared. As of 2020, it is estimated that nearly 30% of the tiger population in India is present outside the Tiger Reserves. While other tiger range countries with relatively more economic prosperity have failed to protect this endangered species, India has lived up to its global commitment to tiger conservation and achieved the target of doubling its population ahead of the set time frame. Despite all the odds ranging from population stress to the demands of development and livelihoods, India has successfully managed to achieve the fine balance between modernization and conservation, owing to the people's traditional, cultural, and religious tolerance to all forms of life that cohabitate with them. (Courtesy: All India Radio News + Ministry of Environment, Forest & Climate Change, Government of India)

Discussion

The information generated by the past four cycles has resulted in major changes in policy and Section I.1: Introduction, Section I.1 (S-I) 3, the management of tiger populations. It has also provided scientific data to fully implement the provisions of the Wildlife (Protection) Act 1972, as amended in 2006, in letter and spirit. The major outcomes that were a direct or indirect consequence of information generated by the monitoring exercises were: 1) tiger conservation plans at landscape level, 2) designation and notification of inviolate critical core and buffer areas of tiger reserves, 3) identification and declaration of new tiger reserves, 4) recognition of tiger landscapes and importance of the corridors and their physical delineation, 5) integrating tiger conservation with developmental activities using the power of a reliable information system, 6) planning reintroduction and supplementation strategies for tigers and ungulates and 7) prioritizing conservation investments to target unique vulnerable gene pools (Qureshi et al., 2014; Kolipakam et al., 2019; Jhala et al., 2021). All of these provide an opportunity to incorporate conservation objectives supported by sound science-based data on an equal footing with economic, sociological, and other values in policy and decision-making for the benefit of society. Unfortunately, human activities have resulted in significant damage to the forests in this region. Illegal tree felling, encroachment on forestland, unsustainable collection of minor forest produce, excessive grazing, and illegal mining due to the presence of rich mineral resources contribute to forest degradation.

To address these issues and restore forest cover, it is crucial to implement appropriate measures. Restorative activities in degraded forest areas can be an effective strategy to increase forest cover. By restoring ecological balance and enhancing biodiversity, these efforts will contribute to the preservation of the forests in the region. Furthermore, the protection of moderately dense forests is essential for improving the quality and productivity of existing forests. This can be achieved through sustainable forest management practices and robust enforcement of forest protection laws.

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