



Revamping Wildlife Conservation in India

*This editorial is based on “[Elephant in the room](#)” which was published in *The Indian Express* on 04/10/2024. The article brings into picture the disparity in India's wildlife conservation efforts, where species like tigers have seen progress, while elephants face neglect and population decline. It calls for a more transparent, science-based approach to address habitat loss and human-animal conflicts, especially for species like elephants.*

For Prelims: [India's wildlife conservation efforts](#), [Elephant](#), [Mangrove ecosystems](#), [Swadesh Darshan Scheme](#), [Nyishi tribe's traditional hornbill conservation](#), [Nationally Determined Contribution](#), [BIOTECH-KISAN program](#), [Swadesh Darshan Scheme](#), [Green India Mission](#), [CITES](#), [Convention on Biological Diversity](#), [Ranthambore Tiger Reserve](#), [Western Ghats](#).

For Mains: Significance of Wildlife Conservation for India, Factors are Impeding the Effectiveness of India's Wildlife Conservation Efforts.

[India's wildlife conservation efforts](#) have shown mixed results, with some species receiving more attention than others. The [tiger](#), following the crisis of 2005, has seen improved monitoring methods and more accurate population estimates. However, the [elephant](#), another iconic species, has **not received comparable attention**. Recent changes in enumeration methods for elephants have revealed a **substantial decline in population**, but the government has reportedly shelved this crucial report, raising questions about transparency and commitment to conservation.

This disparity in conservation approaches highlights **broader issues in India's wildlife management strategies**. The elephant's habitat has been significantly impacted by human activities, leading to increased human-animal conflicts. Accurate population estimates and distribution data are essential for effective conservation planning and mitigating these conflicts. The current situation underscores the need for a more **comprehensive, science-based approach to wildlife conservation in India**, particularly for species like elephants that share space with humans in rapidly changing landscapes.

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WILDLIFE CONSERVATION INITIATIVES

Constitutional Provisions for Wildlife

42nd Amendment

Act, 1976: Forests & Protection of Wild Animals and Birds (moved from State to Concurrent List)

Article

48 A: State shall endeavor to protect & improve environment and safeguard forests and wildlife of country

Article

51 A (g): Fundamental duty to protect & improve natural environment including forests and Wildlife

Legal Frameworks

Wildlife (Protection) Act, 1972

Biological Diversity Act, 2002

Major Conservation Initiatives

Integrated Development of Wildlife Habitats (IDWH):

- ↳ Financial assistance provided to State/UT Governments for protection and conservation of wildlife
- ↳ A Centrally Sponsored Scheme

National Wildlife Action Plan (2017-2031)

Guidelines for Eco-tourism in Protected Areas

Human-Wildlife Conflict Mitigation

Wildlife Crime Control Bureau: To combat wildlife-related crimes

Wildlife Division (MoEFCC):

- ↳ Policy and law for conservation of biodiversity and Protected Area network
- ↳ Technical and financial support to the State/ UTs under IDHW, Central Zoo Authority and Wildlife Institute of India

Wildlife Crime Control Bureau (WCCB):

Collection, collation of intelligence & its dissemination, establishment of centralized Wild Life crime databank, coordination etc.

Wildlife Crime Control:

- ↳ Operation Save Kurma
- ↳ Operation Thunderbird

Species-Specific Initiatives

- ↳ Protection and conservation of Greater Adjutant in Gangetic riverine tract
- ↳ Dolphin Conservation in Non-Protected Area Segment of Ganga River
- ↳ Conservation Breeding Centre for Wild water buffalo (2020)
- ↳ Recovery programme for Snow leopard (2009)
- ↳ Recovery programme for Vultures (2006)
- ↳ Project Elephant (1992)
- ↳ Project Tiger/National Tiger Conservation Authority (NTCA) (1973)

India's Collaboration with Global Wildlife Conservation Efforts

- ↳ Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- ↳ Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- ↳ Convention on Biological Diversity (CBD)
- ↳ World Heritage Convention
- ↳ Ramsar Convention
- ↳ The Wildlife Trade Monitoring Network (TRAFFIC)
- ↳ United Nations Forum on Forests (UNFF)
- ↳ International Whaling Commission (IWC)
- ↳ International Union for Conservation of Nature (IUCN)
- ↳ Global Tiger Forum (GTF)



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What is the Significance of Wildlife Conservation for India?

- **Biodiversity Preservation and Ecosystem Stability:** India, as one of the world's **17**

megadiverse countries, harbors about 8% of the world's known biodiversity in just 2.4% of the global land area.

- This **rich biodiversity plays a crucial role in maintaining ecosystem stability**, which is vital for human survival.
- For instance, the **mangrove ecosystems along India's coastlines**, home to diverse species, provide natural barriers against cyclones and tsunamis.
 - The 2021 study by the Zoological Survey of India reported that **mangroves in the Sundarbans reduced the impact of Cyclone Amphan in 2020**, protecting millions of people.
 - Moreover, India's forests, covering about 21.71% of the geographical area (Forest Survey of India, 2021), act as **carbon sinks, sequestering about 7,124.6 million tonnes of carbon dioxide equivalent**.
- **Economic Benefits Through Sustainable Tourism:** Wildlife conservation significantly contributes to India's economy through ecotourism.
 - The demand for wildlife tourism in India is anticipated to surge at a 7.40% CAGR through 2034.
 - The monetary value of flow benefits **emanating from selected tiger reserves** range from 8.3 to 17.6 billion annually.
 - For instance, **Madhya Pradesh, known as the 'Tiger State'**, is anticipated to witness a **30-40% growth in inbound tourism**, largely attributed to its wildlife attractions.
 - Furthermore, the government's initiatives like the **Swadesh Darshan Scheme**, have further boosted wildlife tourism, creating local employment and supporting conservation efforts.
- **Traditional Knowledge Preservation and Cultural Heritage:** Wildlife conservation in India is intrinsically linked to preserving traditional ecological knowledge and cultural heritage.
 - Many indigenous communities, like the **Bishnois of Rajasthan or the Nyishi tribe of Arunachal Pradesh**, have long-standing conservation practices embedded in their culture.
 - For example, the **Nyishi tribe's traditional hornbill conservation practices have been instrumental in protecting the species**.
- **Climate Change Mitigation and Adaptation:** Wildlife conservation plays a crucial role in India's efforts to combat climate change.
 - Healthy ecosystems act as natural buffers against extreme weather events and help in carbon sequestration.
 - For instance, India's commitment under **Nationally Determined Contribution** to create an **additional carbon sink of 2.5-3 billion tonnes of CO2 equivalent by 2030** heavily relies on forest and wildlife conservation.
 - The recent initiatives like the **Green India Mission**, which aims to increase forest cover on 5 million hectares of land, demonstrate the government's recognition of this link.
 - Moreover, conserving biodiversity enhances ecosystem resilience to climate change.
 - A 2015 study stated that **areas with higher species diversity were more resilient to climate variations**, underlining the importance of conservation in climate adaptation strategies.
- **Water Security and Watershed Protection:** Wildlife habitats, particularly forests, play a vital role in India's water security by protecting watersheds and regulating water flow.
 - The recent recognition of the **Aravalli Biodiversity Park in Gurugram as India's first "other effective area-based conservation measure" site in 2022** highlights the growing awareness of the link between urban biodiversity conservation and water security, as it helps **recharge groundwater in the water-stressed National Capital Region**.
- **Pharmaceutical and Biotechnological Potential:** India's rich biodiversity holds immense potential for pharmaceutical and biotechnological discoveries.
 - The country's wildlife has been a source of numerous medicinal compounds, with traditional knowledge playing a crucial role.
 - For instance, the development of a **novel anti-inflammatory drug derived from the venom of the Indian monocled cobra**, showcases this potential.
 - Furthermore, the **government's BIOTECH-KISAN program**, aims to link Indian biotechnology to conservation and rural development, emphasizing the economic significance of biodiversity conservation.
- **International Diplomacy:** India's wildlife conservation efforts significantly contribute to its soft

power and international diplomacy.

- The country's leadership in tiger conservation, through initiatives like the **Global Tiger Recovery Program**, has enhanced its global environmental standing.
- The tiger census of 2018 showed a rise in the tiger population. India achieved the target of doubling the tiger population **4 years ahead of schedule** of the **St. Petersburg Declaration on Tiger Conservation**
- Moreover, India's active participation in global conservation treaties like **CITES** and the **Convention on Biological Diversity (CBD)** strengthens its position in international environmental negotiations.
- "**The Elephant Whisperers**," which won the **Oscar for Best Documentary Short in 2023**, further highlights the deep connection between Indian communities and wildlife.

What Factors are Impeding the Effectiveness of India's Wildlife Conservation Efforts?

- **Inadequate Funding and Resource Allocation:** Despite being a **biodiversity hotspot**, India's budget allocation for wildlife conservation remains insufficient.
 - The **Union Budget 2024-25** has allocated **Rs 3330.37 crore** to the Ministry of Environment, Forest and Climate Change.
 - This underfunding affects critical aspects such as **habitat protection, anti-poaching measures, and scientific research.**
 - For instance, a 2021 report stated that **tiger monitoring in Ranthambore Tiger Reserve** has severely declined, with one staff member covering two tigers across 30 sq. km.
 - The lack of resources also hampers the **implementation of advanced technologies for monitoring and protection**, leaving vast forest areas vulnerable to illegal activities.
- **Human-Wildlife Conflict Escalation:** As human populations expand and encroach upon natural habitats, conflicts with wildlife have intensified.
 - **Human-elephant conflicts** led to 2853 human deaths over the past five years, peaking at **628 in 2023.**
 - **7,562 cases** of crop-raiding by wild animals reported between **2017-2020 across Tamil Nadu alone.**
 - The government's response has often been **reactive rather than proactive**, focusing on compensation rather than long-term solutions.
- **Habitat Fragmentation and Degradation:** Rapid urbanization and infrastructure development have led to **severe habitat loss and fragmentation.**
 - India has lost **2.33 million hectares of tree cover** since 2000. Major projects like the expansion of **National Highways** and the **Mumbai-Ahmedabad bullet train project** have further fragmented crucial wildlife habitats.
 - The case of the **Mollem National Park in Goa** exemplifies this issue, where three linear projects threaten the forests in and around **Mollem National Park and Bhagwan Mahaveer Wildlife Sanctuary.**
 - Despite scientific evidence of the detrimental impacts, **environmental clearances for such projects often prioritize development over conservation**, highlighting the need for more balanced decision-making processes.
- **Inadequate Implementation of Wildlife Laws:** While India has robust wildlife protection laws, their implementation often falls short.
 - Between 2014 to 2021, the **Wildlife Crime Control Bureau** conducted **717 joint operations resulting in the arrest of 1488 wildlife criminals, but conviction remains very slow.**
 - The Wildlife Protection Act of 1972, despite amendments, struggles with effective enforcement due to **understaffed forest departments and inadequate training of enforcement personnel.**
 - The **lack of forensic facilities, delays in judicial processes, and insufficient coordination between various enforcement agencies** further weaken the implementation of wildlife laws.
- **Climate Change Impacts:** Climate change poses a significant threat to India's wildlife, yet conservation strategies often fail to adequately address this challenge.
 - **Rising temperatures and changing rainfall patterns** are altering habitats and

migration patterns.

- About **33% of the biodiversity of the [Western Ghats](#)** will be lost by 2050 due to extreme weather.
 - This is irreversible. As part of this change, the **forests will change from evergreen to deciduous and dry deciduous.**
- The sea level has risen by an average of **3 centimeters a year over the past two decades in the Sundarbans**, the vast mangrove delta at the mouth of the Bay of Bengal, leading to **one of the fastest rates of coastal erosion in the world.**
- Despite these alarming predictions, **climate adaptation strategies in wildlife conservation remain underdeveloped and underfunded**, with only a fraction of Protected Areas having climate action plans.
- **Lack of Community Involvement and Sustainable Livelihood Options:** Conservation efforts often overlook the needs of local communities living in and around protected areas.
 - The traditional **top-down approach to conservation** has led to alienation and conflicts.
 - While initiatives like **ecotourism exist**, they often fail to provide substantial benefits to local communities.
 - The **[cheetah reintroduction in Kuno](#) has in a way marginalized local communities**, leaving them **without promised compensation** or sustainable livelihoods, while tourism profits fail to benefit those displaced.
 - This disconnect between conservation goals and community needs undermines long-term conservation success and **leads to reduced local support for wildlife protection efforts.**
- **Inadequate scientific research and monitoring:** Despite being home to unique and diverse ecosystems, **India's investment in wildlife research remains low.**
 - **The Ministry of Environment, Forests and Climate Change** accounted for only **0.8% of the major R&I expenditure** of the Union government.
 - The **recent controversy over elephant population estimates**, where the government reportedly shelved a report showing a decline, highlights the challenges in obtaining and utilizing scientific data.
 - Moreover, many species, especially lesser-known ones, lack long-term population studies. Rediscovered after 140 years, a rare tree species ***Uniyala multi bracteata*** was found in a non-protected area of Western Ghats, highlight the gravity of the issue.
- **Political and Economic Pressures Overriding Conservation Needs:** Economic development often takes precedence over conservation in policy decisions.
 - The ease of doing business initiatives has sometimes led to the dilution of environmental safeguards.
 - For example, the **[Environmental Impact Assessment Notification 2020](#)** aimed to reduce **public consultation periods** and exempting certain projects from scrutiny, potentially impacting wildlife habitats.
 - Similarly, the **push for infrastructure development**, while necessary, has sometimes come at the cost of wildlife.
 - The case of the **[Great Indian Bustard](#)**, where power lines in its habitat have significantly contributed to its population decline illustrates **how even well-intentioned development can negatively impact conservation efforts** when not properly planned.

What Measures can be Adopted to Revamp Wildlife Conservation Efforts in India?

- **Enhance Funding and Resource Allocation:** Significantly increase the budget allocation for wildlife conservation. Implement innovative funding mechanisms like **green bonds and conservation trust funds**, similar to **Bhutan's successful Bhutan For Life fund.**
 - Prioritize the allocation of Corporate Social Responsibility (CSR) funds towards conservation projects.
 - Establish **public-private partnerships for conservation**, following models like the **Satpuda Landscape Tiger Partnership**, which has shown success in central India.
 - Create a dedicated **Wildlife Technology Fund** to support the development and deployment of advanced conservation technologies, such as AI-powered anti-poaching systems and remote sensing for habitat monitoring.

- **Implement Comprehensive Human-wildlife Conflict Mitigation Strategies:** Develop and implement state-specific Human-Wildlife Conflict (HWC) mitigation plans, considering local ecological and socio-economic contexts.
 - Expand the **use of early warning systems**, like the **SMS-based alert system in Valparai, Tamil Nadu**, which reduced human-elephant conflicts.
 - Increase **investment in physical barriers like solar-powered fences and bio-fences**.
 - **KVIC** launched **Project RE-HAB** to mitigate **human-elephant conflicts** by creating bee-fences that **deter elephants using honey bees**.
 - This innovative, cost-effective method prevents harm to both humans and elephants, ensuring sustainable conflict resolution.
- **Prioritize Habitat Connectivity and Corridor Restoration:** Launch a National Wildlife Corridor Program to identify, protect, and restore critical wildlife corridors across the country.
 - Implement the recommendations of the **National Board for Wildlife's 2019 report on linear infrastructure projects**, mandating wildlife passageways in all new projects intersecting animal corridors.
 - Engage with local communities in corridor management through initiatives like the **Community Conserved Areas in Nagaland**.
 - Utilize geospatial technology and wildlife tracking data to continuously monitor and **adapt corridor management strategies**, as demonstrated by the **Wildlife Institute of India's corridor mapping** project in the Central Indian Landscape.
- **Strengthen Wildlife Law Enforcement and Anti-poaching Measures:** Implement mandatory use of **M-STRIPES (Monitoring System for Tigers' Intensive Protection and Ecological Status)** in all tiger reserves and expand its use to other Protected Areas.
 - Invest in capacity building of forest staff through regular training programs and certifications
 - Deploy **advanced anti-poaching technologies like thermal imaging cameras and acoustic traps**, as successfully used in **Kaziranga National Park**, reducing rhino poaching.
 - Strengthen inter-state and international cooperation on wildlife crime through **regular joint operations and information sharing**.
- **Integrate Climate Change Adaptation into Conservation Planning:** Develop **Climate-Integrated Conservation Plans for all major Protected Areas**.
 - Promote **climate-smart agriculture and agroforestry in buffer zones** and wildlife corridors to enhance landscape resilience.
 - Create a national database on climate change impacts on wildlife, leveraging citizen science initiatives like the **Indian Biodiversity Portal**.
- **Enhance Community Participation:** Scale up successful community-based conservation models like the **Van Panchayats of Uttarakhand**.
 - Expand ecotourism initiatives that directly benefit local communities, following the model of **Madhya Pradesh's Pench Tiger Reserve**.
 - Develop skill-building programs for alternative livelihoods in conservation-compatible sectors, such as the **CAMPA-funded skilling initiative** in Odisha.
- **Boost Scientific Research and Monitoring:** Establish a dedicated **Wildlife Research Fund** to support long-term ecological studies and innovative research.
 - Create a network of field research stations in key biodiversity hotspots, following the model of the **Danum Valley Field Centre in Malaysia**.
 - Develop and deploy a **suite of standardized wildlife monitoring protocols** across different taxa and ecosystems, building on the success of the **All India Tiger Estimation exercise**.
- **Streamline Environmental Clearance Processes:** Implement a comprehensive **Strategic Environmental Assessment (SEA) system** for all major development plans and programs.
 - Develop and mandate the use of **species-specific sensitivity maps** for infrastructure planning.
 - Implement a system of **cumulative impact assessment** for projects in ecologically sensitive areas.

Conclusion

India's wildlife conservation efforts require urgent attention and a **shift towards a more equitable,**

transparent, and science-based approach. By addressing funding gaps, enhancing community involvement, and prioritizing habitat preservation, the country can **protect its rich biodiversity and ensure sustainable coexistence between wildlife and human populations.** A concerted effort is essential for effective conservation that safeguards both iconic species like elephants and the delicate ecosystems they inhabit.

Drishti Mains Question:

Discuss the key challenges faced by wildlife conservation initiatives in India. How do these challenges undermine the effectiveness of existing conservation policies?

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Q. If a particular plant species is placed under Schedule VI of the Wildlife Protection Act, 1972, what is the implication? (2020)

- (a) A licence is required to cultivate that plant.
- (b) Such a plant cannot be cultivated under any circumstances.
- (c) It is a Genetically Modified crop plant.
- (d) Such a plant is invasive and harmful to the ecosystem.

Ans: (a)

Q. Which of the following can be threats to the biodiversity of a geographical area? (2012)

1. Global warming
2. Fragmentation of habitat
3. Invasion of alien species
4. Promotion of vegetarianism

Select the correct answer using the codes given below:

- (a) 1, 2 and 3 only
- (b) 2 and 3 only
- (c) 1 and 4 only
- (d) 1, 2, 3 and 4

Ans: (a)

Mains

Q. How does biodiversity vary in India? How is the Biological Diversity Act, 2002 helpful in the conservation of flora and fauna? (2018)

