



## 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)**

