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Popular Article

## Biodiversity and Wildlife Conservation Efforts in India

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### Abstract

India, renowned for its astounding biodiversity, faces a complex and multifaceted challenge in the form of wildlife conservation. From the lofty Himalayan peaks to the lush tropical rainforests and arid deserts, India boasts diverse biogeographical regions where unique ecosystems and iconic species thrive. The conservation endeavor in India encompasses a myriad of strategies, policies, and on-ground initiatives. Central to this effort is the establishment of protected areas, including national parks, wildlife sanctuaries, and conservation reserves, where wildlife and their habitats are safeguarded. Key projects such as Project Tiger, Project Elephant, and Project Rhino specifically target the conservation of flagship species. Community engagement, research, and international collaborations play pivotal roles. This article highlights the comprehensive framework for wildlife protection that India has developed, acknowledging the persistent threats posed by habitat loss, poaching, climate change, and human-wildlife conflict. It also provides an overview of the various conservation projects initiated by the Indian government, ranging from Project Dolphin to vulture conservation efforts, showcasing the nation's commitment to preserving its natural heritage.

**Keywords:** Biodiversity Acts, Biosphere Reserves, National Parks, Project Tiger, Wildlife organizations

### Introduction

Wildlife conservation in India is a complex and multifaceted endeavor driven by the urgent need to protect and preserve the nation's rich biodiversity. As one of the world's most biologically diverse countries, India is home to a staggering array of flora and fauna, including iconic species like the Bengal tiger, Asian elephant, Indian rhinoceros, and numerous avian and amphibian species. The conservation of this diverse wildlife is not only a matter of ecological significance but also crucial for maintaining the delicate balance of ecosystems, preserving cultural and historical ties to nature, and ensuring the well-being of future generations.

From the icy deserts of Ladakh and Spiti to the hot deserts of Thar, temperate woods in the Himalayas to the lush green tropical rain forests of the lowlands, *India is rich in biogeographical*



**regions.** Large freshwater bodies in India include the Wular and Manasbal lakes in Kashmir, Chilka lake in Orissa, and Kolleru lake in Andhra Pradesh, as well as the Deccan's rough and rich coastline and coral reefs.

### Protected areas:

Ecological/biogeographical zones where wildlife is conserved are known as **Protected Areas**, wherein poaching is avoided, and their habitats and natural resources are preserved and to maintain biological variety, they have been circumscribed.

### Protected areas in India:

According to National Wildlife Database Centre, Wildlife Institute of India, there are 998 protected areas including 106 National Parks, 567 Wildlife Sanctuaries, 105 Conservation Reserves and 220 Community Reserves. In addition, there are 53 Tiger Reserves, 18 Biosphere Reserves and 33 Elephant Reserves.

<b>Table 1: Protected Areas of India (As on December, 2022)</b>			
<b>Protected areas (PA)s</b>	<b>No.</b>	<b>Total Area (km<sup>2</sup>)</b>	<b>Coverage % of Country</b>
<b>National Parks</b>	106	44,402.95	1.35
<b>Wildlife Sanctuaries</b>	567	1,22,564.86	3.73
<b>Conservation Reserves</b>	105	5,206.55	0.16
<b>Community Reserves</b>	220	1,455.16	0.04
<b>Protected Areas (PAs)</b>	<b>998</b>	<b>1,73,629.52</b>	<b>5.28</b>

**National Parks (NP)** are strictly protected zones designed to benefit wildlife. They are set aside for the enhancement of wildlife. Cultivation, grazing, forestry operations, and habitat alteration are all prohibited in these areas. In *Sanctuaries (WLS)*, only the fauna (animals) is protected and wood cutting and private ownership rights, forest product collection, timber harvesting, private property ownership, soil tilling, and other activities are permitted, but interference with the well-being of animals is prohibited. The State Government declares a sanctuary under Section 18(1) of the Wildlife (Protection) Act, 1972, and a national park under Section 35(1) of the Act. The boundaries of a sanctuary are defined at the time of declaration. The boundaries of a national park are well-defined and precise.

**Biosphere Reserves:** The concept of Biosphere Reserves was developed by the UNESCO Man and Biosphere Programme (MAB). Multiple land uses are authorized in the biosphere reserve, which is divided into zones. (i) Human activity is prohibited in the Core Zone. All forestry and harvesting operations are illegal, as is access. It is only permitted to conduct population studies and scientific inquiries. (ii) Human activity is restricted in this Buffer Zone. There is no shooting authorized here, however, professional graziers are not permitted to set up cattle pens. Tourists are permitted to camp. (iii) Manipulation Zone where a wide range of human activities are tolerated, but the ecosystem is not



to be damaged. (iv) A Restoration Zone is a deteriorated area that is being restored to its natural state. In India, 14 places have been designated as Biosphere Reserves. Nilgiri Biosphere Reserve includes parts of Karnataka, Kerala and Tamil Nadu. It was declared in 1986.

**Safari Park** is an enclosed park where wild animals are kept in the open, uncaged, to provide natural environment for public viewing. **Zoo** is a section of the park dedicated to displaying wild creatures maintained in cages and artificial habitats. Animals' freedom is limited in this environment. **Zoological Garden** is a place in or near a city where a huge number of mammals, birds, reptiles, fishes, and other animals are displayed in a limited area in small enclosures or cages. It is utilized for public recreation and education. In **Zoological Park**, animals are relatively free and displayed in their natural habitat, with obstacles and restraints hidden from view. **Sanctum Sanctorum** is a sanctuary within a sanctuary, or the inner area of a natural sanctuary or national park, where no forest management or operation is permitted. Even tourists are not permitted to prevent any form of wildlife disturbance.

### Conservation of Wildlife

All human activities and efforts aimed at saving wild creatures from extinction are referred to as wildlife conservation. It entails both the conservation and scientific management of wild animals and their surroundings. Some species have gone extinct due to natural reasons, but man's activities pose the biggest threat to biodiversity. Wildlife protection is inextricably linked to the health and improvement of forests. Protection, preservation, and perpetuation of rare plant and animal species in their natural habitats are all part of wildlife conservation.

*The conservation of living resources has three distinct goals:*

1. To keep vital ecological processes and life-supporting systems running smoothly.
2. To protect species variety.
3. Use of species and ecosystems in a sustainable manner to support rural communities and major industries.

### Important methods for the conservation of wildlife in India

Protect wildlife, various sorts of wildlife conservation approaches can be used. Some of the major approaches for wildlife conservation in India include Management of habitat, Establishment of protected area, Awareness to people and Removing superstition from society and by enacting Wildlife conservation laws

### Types of Wildlife conservation

Wildlife conservation can be categorized into two interesting phrases namely “in situ conservation” and “ex-situ conservation”. *In situ conservation* protects the imperil animal or plant on site in its natural habitat. Programs like National Parks, Biological Reserves comes under In Situ Conservation and *Ex situ conservation* meaning off-site conservation of wild animals and plants by removing and relocating some part of a population to protected habitat.



**Here are some important steps taken by the Government of India to protect biodiversity in India:**

Indian Government came up with the **Wildlife Protection Act in 1972**, and created several protected Areas like National Parks, Sanctuaries, Conservation Reserves and Community Reserves for protecting wildlife. There's law in place now that punishes those involved in illegal acts such as hunting, poaching.

Table 2. Laws and Acts Passed by Indian Government to Protect Wildlife

Sl. No.	Important Environment and Biodiversity Acts Passed by Indian Government
1	Fisheries Act, 1897
2	Indian Forests Act, 1927
3	Mining And Mineral Development Regulation Act, 1957
4	Prevention of Cruelty to Animals, 1960
5	Wildlife Protection Act, 1972
6	Water (Prevention and Control of Pollution) Act, 1974
7	Forest Conservation Act, 1980
8	Air (Prevention and Control of Pollution) Act, 1981
9	Environment Protection Act, 1986
10	Biological Diversity Act, 2002
11	Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act, 2006

**Wetland (Conservation and Management) Rules 2010** have been drafted to protect wetlands in India. **Wildlife Crime Control Bureau** was established to curb the illegal trade of wildlife and that of endangered species. **Special organizations** like Wildlife Institute of India, Bombay Natural History society and Salim Ali Centre for Ornithology and Natural History were setup to conduct research on conservation of wildlife.

Table 3. Wildlife organizations in India championing the cause of wildlife conservation

Sl. No.	Wildlife organizations
1	Wildlife Protection Society of India (WPSI) - New Delhi
2	Wildlife SOS - New Delhi
3	World Wide Fund for Nature (WWF) – New Delhi
4	Aaranyak And Hargila Army - Guwahati
5	Wildlife Trust of India (WTI) - Noida, Uttar Pradesh
6	Wildlife Conservation Society (WCS) – Bengaluru, Karnataka, India
7	Rhino Conservation of India – Assam
8	Sahyadri Nisarga Mitra - Maharashtra



## Important Conservation Projects in India

**Project Tiger:** This project was launched by the Government of India in 1973, with an initiative for protection and management of the reducing population of the tiger. The Bengal tigers were reducing drastically in their numbers and their habitats too as a result of increasing human activities and advancements. Therefore, in order to protect their habitat and their numbers, project initiative was taken. The project was administered by the National Tiger Conservation Authority.

**Project Elephant:** Project elephant was launched by the Indian government in 1992 to conserve the number of elephants, maintenance of their habitat, reduce human-animal conflicts, as well as reduce hunting and poaching. *Haathi Mere Saathi* scheme was also launched by the Ministry of Environment, Forest and Climate Change in partnership with wildlife trust of India. *Monitoring of Illegal Killing of Elephants (MIKE) Programme:* Mandated by COP resolution of CITES, MIKE program started in South Asia in the year 2003 to control illegal hunting and killing of elephants.

**Crocodile Conservation Project:** This project was launched in 1975, at different state levels. The objective of the project was to prevent the habitat destruction of the crocodiles and thus helping to increase their numbers. The hunting and killing of the crocodiles should be monitored. As a result of this initiative, the numbers have been increased from 100 to 1000 till 2012.

**UNDP Sea Turtle Conservation Project:** It was launched by Ministry of Environment, Forest and Climate Change in collaboration with UNDP in 1999. The Olive Ridley Turtle visits India during Winter. The implementing agency of this project is the Wildlife Institute of India. It is in the Vulnerable in IUCN list.

**Project Dolphin:** Ministry of Environment, Forest and Climate Change has notified Ganges River Dolphin as National Aquatic animal. It was listed in Schedule I of Wildlife Protection Act 1972. Major threat is river water pollution, poaching and siltation.

**Project snow leopard:** The Project Snow Leopard is an Indian initiative for strengthening wildlife conservation. in the Himalayan high altitudes. It aims to promote a knowledge-based and adaptive conservation framework that fully involves the local communities, who share the snow leopard's range, in conservation efforts.

**Project Hangul:** The project for the conservation and protection of Kashmir Stag came to be known as project Hangul and its population increased to 340 by the year 1980. The Rs. 1.677 crore five-year project included artificial breeding of the highly endangered Stag along with other measures for its protection and conservation

**Project One Horned Rhino:** Assam Forest department and Bodo council are implementing Indian rhino vision 2020 for increasing rhino population to 3000 by 2020 and to distribute them over 7 protected areas for conservation. *Indian rhino vision 2020* implemented by the department of



environment and forests, Assam. The programme will be supported by WWF — India, the international rhino foundation (IRF), and a number of local NGOs. Translocations are the backbone of the IRV 2020 program.

**Vulture Conservation in India:** India has nine species of vultures in the world. The population of three species i.e., White-backed Vulture, Slender-billed Vulture and Long-billed Vulture in the wild has declined drastically over the past decade. The decline of Gyps genus in India has been put at 97% by 2005. Due to this evidence, all three vulture species were listed by IUCN, the World Conservation Union, in 2000 as “Critically Endangered”. The workshop to prepare an Asian Vulture Recovery Plan held at Parwanoo in Himachal Pradesh, India in February 2004 recommended the establishment of captive holding and captive breeding facilities for three species of Gyps vultures at six different places in South Asia, besides implementing a ban on veterinary use of Diclofenac. These centres would serve as source for reintroduction of the birds after removal of the cause of mortality from the environment.

**Indo-Russian Cooperation on Migratory Birds:** MoEF has also signed a protocol with Russian counterpart, for conservation of migratory bird species between the two countries. It has been agreed to develop joint projects of mutual interest on migration and nesting behaviour of Siberian Cranes and common cranes and also to exchange scientific and official information on issues relating to wetland management, conservation of avi-fauna etc.

**Other Projects:** After the success of animal projects, the government has now initiated several new projects for conservation of other endangered animals like, The Himalayan Musk Deer Ecology and Conservation Project, Project Lion and endangered Birds / Pheasant Projects

**India Adopts Sawen:** The acronym of SAWEN is *South Asia Wildlife Enforcement Network*. It is an intergovernmental wildlife enforcement support body. It is launched in Paro, Bhutan in 2011. It was established for mutual collaboration for harmonizing as well as enforcing the wildlife protection. The SAWEN constitutes Afghanistan, India, Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka and the Maldives.

**Captive Breeding Program:** Captive breeding can be described as the selection of wild species and bred in the artificial condition under experts. It may represent the last chance to preserve a species in the wild.

## Conclusion

Wildlife conservation in India is a testament to the nation's unwavering dedication to safeguarding its diverse and precious natural heritage. Through a multifaceted approach that includes protected areas, legislative measures, community involvement, and international collaborations, India has made significant progress in mitigating threats to its wildlife. However, the journey is ongoing, and the challenges persist. Continued vigilance, education, and sustainable practices are crucial to ensure the long-term survival of India's remarkable biodiversity, thereby securing a better future for



both its wildlife and generations to come.

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