

## Plans for Wildlife Conservation in India

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### ABSTARCT

Wild animals and plants are those that survive and even thrive in areas far from human habitation and are collectively known as wildlife. It includes a vast variety of different animals and fungi in addition to all those that are not kept as pets. Forests, prairies, meadows, and deserts are just some of the many ecosystems that are home to fauna, and each has its own species of flora and fauna. However, as civilizations progressed, many previously wild animals and plants were domesticated for human use, with widespread consequences for ecosystems. As a result of human influence, many previously wild animals learned to adapt to their new surroundings and live peacefully in human settlements. Animals in this category include dogs, cats, cows, buffaloes, goats, rats, and a few species of birds. As human activities grew and development took place on a huge scale, it was believed that wildlife and ecosystems were being destroyed. It was found that the use of wild animals for entertainment and economic benefit was on the rise.

**Keywords:** wild animals, biodiverse, species, problems, fresh water

## I. INTRODUCTION

Resources provided by wildlife have always attracted the interest of people all over the world because of their importance to the continued existence of the human race. Effective wild animal conservation is crucial now more than ever, when many species of wild flora and fauna are on the edge of extinction and their habitats are under severe pressure. Maintaining plant and animal life is not just a matter of convenience; it is a matter of life and death, given how integral they are to our survival. Biological organisms like plants and animals help maintain a healthy ecosystem, which in turn benefits people.

- A deep understanding of genetics when it comes to genetic resources and how to keep them safe,
- A monetary benefit to human existence.
- Major Factors in Happiness (e.g., recreation)

The fact that India is home to 16 percent of the global population is generally known. There are 411 mammalian species, 456 reptile species, 219 amphibian species, 1,232 bird species, 2,546 fish species, 83,436 insect species, and more than 50,000 plant species native to this subcontinent. The diverse flora and fauna of India are an irreplaceable natural asset. One of the world's most biodiverse regions can be found in India. Animal and plant life in this country is incredibly varied. Animals such as tigers, wolves, lions, rhinoceroses, bears, monkeys, camels, crocodiles, a variety of reptiles, bison, Asian elephants, and deer are all indigenous to the country. Many different kinds of birds can be seen there, including flamingos, pelicans, parakeets, woodpeckers, and peafowl. The Eastern Himalayas, the Western Ghats, and the Indo-Burma region are three of the 34 biodiversity hotspots in the world that may be found in India. The grasslands of western India are home to both predators and prey, as well as grazing herds. Even though lions and leopards are still there, cheetahs have vanished from their original habitat in India.

The majority of the world's food, nearly half of its medicine, a large amount of its clothing, some or all of its fuel and building materials, and some or all of the world's mental and spiritual well-being are all provided by genetic resources.

Since we are charging headlong into the future without giving any thought to the kind of world we hope to leave for the next generation, the outlook does not look good. By 2020, the world's population is expected to have increased by more than 50%, while the amount of land used for agriculture and tropical forests will have shrunk to less than half of its current size. To ensure their survival, genetic resources are guarded as though they were an inexhaustible supply of minerals. Because everything that isn't a person or a domesticated animal is "wildlife," the concept of wildlife management and conservation becomes relevant.

The existence or absence of a certain animal or plant is influenced by ecological and historical factors. Biological organisms serve as living indicators of the characteristics of their environments, with species' ranges pointing to regions

sharing similar or equal climatic conditions. An accurate assessment of a species' distribution requires knowledge of the environmental settings in which it can thrive. Zoogeography is a field of study that takes into account both environmental and historical factors. The planet can thus be broken up into six distinct zoogeographic zones based on these criteria:

1. India is an integral part of the Palearctic-Eurasian continent.
2. South of the Sahara Desert is Ethiopia.
3. Greenland and North America are both in the Nearctic Zone, which is between the Arctic Circle and the Tropic of Cancer.
4. South America, Central America, and the Caribbean are all part of the geotropical areas.
5. Australia and New Zealand are both part of the Australasian region.
6. Synonyms for "Indochinese" and "Indian"

## II. PROTECTING INDIA'S WILDLIFE

India is the seventh largest country in the world and the second largest in Asia, with a total land area of 3,287,263 km<sup>2</sup> and perimeter borders of 15,200 km and a coastline of 75,162 km, respectively. India has more than 1 billion people, or about 16% of the global population, and is administratively organised into 28 states and union territories. There are three distinct ecozones in India.

The Himalayas are made up of peninsular India's forests and deserts, as well as the tropical rain forest region.

These locations, like India's wetlands and coastal regions, boast an abundance of plant and animal life. The number of species and percentage of total species on Earth are two measures of biodiversity (Table 1).

**Table 1:** Shows the number of species found in India and around the world

	Number of Species	Number of Species	SI/SW (%)
	India (SI)	World (SW)	
Reptiles	408	6550	6.2
Birds	1224	9702	12.6
Amphibians	197	4522	4.4
Mammals	350	4629	7.6
Fishes	2546	21,730	11.7

The water-filled Himalayan Mountains once provided the people of the Indian subcontinent with access to a wealth of natural resources, including verdant forests, fertile estuaries, teeming coastal fisheries, winding rivers, and verdant pastures. Plenty of rain fell, making for rich soil. However, years of poor management have led to the destruction of our forests, the contamination of our water supplies, and the erosion of our coastline. The International Union for the Conservation of Nature (IUCN) has determined that 172 animal species in India are currently considered to be in danger on a global scale. A total of 53 mammal species, 23 reptile species, 69 bird species, and 3 amphibian species can be found here.

If an organism survives and evolves, it has been successful; if it dies out, it has been unsuccessful. Indirectly or directly, human population growth and technological advancement, industrialised species exploitation, and anthropogenic environmental change are all to blame for the majority of recent extinctions. The reproductive success and environmental adaptability of threatened species have been affected by these factors. In truth, we care about protecting endangered species.

## III. PROBLEMS AND DANGERS IN WILDLIFE CONSERVATION

Wildlife conservation refers to the practise of preserving native populations of animals and plants. For wildlife conservationists, saving animals is secondary to saving nature and natural ecosystems for both animals and people. There are several governmental and non-governmental groups dedicated to protecting and conserving animals to help in this cause.

The actions humans have taken to ensure their own welfare have had devastating effects on animal populations around the globe. Many animals and plants in the wild have perished as a result, and biodiversity has declined. Studies show that many bird and animal species have vanished from the earth in the previous two millennia. Humans' pursuit of material goods, such as food, clothing, housing, and medicine, is one cause, while alterations to the climate are another. Unless good conservation measures are taken and effective legislation is enacted, it is expected that many more species of wildlife will go extinct in the near future. Therefore, international organisations and nearly all nations around the world have joined forces to pass legislation, enact laws, establish national parks, biosphere reserves, and wildlife sanctuaries, and rigorously enforce these laws and acts in their respective countries and regions to protect wildlife and the environment.

However, safeguarding wildlife has recently emerged as an issue of paramount importance. Animal and plant conservation focuses mostly on halting the extinction of threatened species that are at risk due to a wide range of human activities. The following are some of the many threats to wildlife caused by human invasion and activity, as well as a few natural elements:

**1. Poaching, illegal trade, and other threats to endangered species**

Forest officials haven't been able to manage and use resources well enough to stop illegal hunting and poaching, which has put wildlife in danger.

**2. Damage to or loss of habitat as a result of human activities:**

Tree cutting, river dredging, dam building, wetland filling, mowing fields, land use for agriculture, building houses and roads, and other human activities can all lead to habitat degradation and fragmentation. Some of the many things that cause habitat degradation are more pollution, the introduction of exotic species, and the change to new ecological systems.

**3. Wasteful use of resources:**

Wildlife, especially endangered species, is at risk due to the use and overexploitation of resources for food and other purposes. Wildlife populations are in danger because of what people do, especially when they use too many wild animals and plants for their own needs, like making food, medicine, and clothes.

**4. Pollution:**

Pollution levels continue to rise as a direct result of human actions and industrial processes, contaminating our air, water, and soil with chemicals that are harmful to humans and other life forms. It has had a devastating effect on species, threatening their very survival.

**5. Global warming:**

Rising temperatures and shifting weather patterns have created serious dangers for many animal and plant species. This is partly because of the global climate change that has been brought about by human actions like the burning of fossil fuels.

Because of this, it is crucial to protect wildlife and other endangered species in order to keep the planet's ecosystem in balance and avoid a catastrophic breakdown. There is a global effort to protect and conserve wildlife, with governments passing and strictly enforcing regulations and acts to do so. As a precaution against these threats, the Indian government has established a number of national parks, wildlife sanctuaries, biosphere reserves, and protected zones. Hailey National Park was established in 1936 and later renamed Jim Corbett National Park. It was the first national park. After that point, the number of national parks continued to rise, and by April 2012, there were 104 around the country. 500 wildlife sanctuaries and 18 biosphere reserves have been set up across the country to help with this cause. Project Tiger has recognised 41 of the world's 515 wildlife sanctuaries as tiger reserves. Furthermore, the Indian government has passed several acts and legislation concerning the preservation of India's animal populations.

#### IV. STRUGGLES IMPLEMENTATION OF WILDLIFE PROTECTION

A plethora of laws and regulations have been enacted and are being enforced in nearly every country on earth as a result of the exploitation of wildlife for trade and other human interests. Even India, a country rich in biological diversity, is vulnerable. Animal resource exploitation and illegal commerce persist despite the existence of laws designed to protect and conserve wildlife and their habitats. There has been a decline in biodiversity and an increased risk of extinction in the country as a result of human activities such as hunting, poaching, tree cutting, and the usage of rare plant species for non-food purposes. Illegal hunting and poaching activities and trade continue to flourish, and these endangered species are still exploited despite provisions in India's Wildlife Protection Act, Customs Act, and import-export policies regulating the conservation and trade of wildlife species, particularly endangered species. In addition, the WP Act cannot prevent the illegal harvesting, trade, or use of endangered species located in other countries because it does not apply to them.

Unfortunately, the Act's penalties and restrictions aren't strong enough to put an end to and regulate wildlife exploitation. Because matters in Indian courts are decided far too slowly, offenders can still get away with paying fines, and those fighting charges are indifferent. This explains why there are tens of thousands of pending cases in district courts and other types of courts. In turn, it takes the courts about ten years to reach a verdict in such situations, by which time the offenders have thrived in their activities and the exploitation of animals. Unfortunately, it has also been found that forest departments and forest officers lack the necessary training and resources to properly enforce regulations and facilitate conservation activities. In India, laws have been passed for the conservation and protection of wildlife, yet there appear to be issues with their enforcement. The rules give forest officials the ability to protect forest resources, but they don't give them the capacity to make decisions in reaction to the situation, which makes it harder to seize illegally harvested wood or poached animals. The growth of exploitative practises has also been aided by this. However, the forest department takes part in

exploitative activities because of a desire for personal gain and unscrupulous motives. In spite of the fact that local citizens in the region are capable of helping forest officials avoid further exploitation of wildlife resources, they have never been enlisted to do so.

Recent news reports have brought to the attention of conservationists, environmentalists, and law enforcement officials a new danger to the world's species. The human hobby of flying kites is responsible for the deaths of numerous species listed on Schedule I of the Wildlife Protection Act of 1972. Threads, also called "manja" in the local language, are used for kite flying; the Chinese thread in particular is responsible for the deaths of many birds on the Ivory List. Despite the fact that Section 5 of the Environment (Protection) Act of 1986 expressly prohibits the use of Chinese thread for kite flying, it is still widely used. As a result, many birds, both native to the area and passing through on their way elsewhere, have perished.

#### **4.1 The Present Predicament of Indian Antelopes and Blackbucks**

The lovely blackbuck (*Antelope cervicapra*) is endemic to the Indian subcontinent. With its striking sandy colour and gracefully curled horns, this antelope stands out as the most beautiful of its kind. It can run up to 10 kilometres at 60 kilometres per hour, making it the fastest long-distance runner among mammals. A buck and five do make up a family. When blackbucks have a safe place to live, they have a high reproductive rate.

Unfortunately, human persecution has caused the blackbuck's population to decline to the point where it is now considered endangered. The blackbuck is now critically endangered in its former strongholds. Princely states used trained cheetahs to hunt it on the plains of Punjab, Uttar Pradesh, Haryana, Orissa, Rajasthan, Tamil Nadu, and Gujarat.

The blackbuck is mostly a terrestrial mammal that does best in thorny, dry, deciduous forests with open, flat, or gently undulating terrain. The loss of forest habitat has forced this species to adapt to life in other environments, such as abandoned mines and farm fields. In the decades after the cheetah went extinct in the early 1960s, the blackbuck population exploded, and the animal was abundant in the middle and southern parts of Punjab. Being targeted as a crop thief, it was ruthlessly eradicated, especially during the "grow more food campaign." The beef was a hit with the whole group.

As of 1972, the blackbuck has been on Schedule I of the Wildlife (Protection) Act as the official state animal of both Punjab and Haryana. At the moment, there are about 4,000 blackbucks living in the Abohar area of Punjab, Rajasthan, and Haryana.

Approximately 5% of Punjab is forested, and much of that is in narrow strips along highways, railway lines, and canals where there is very little wildlife. Reserve forests of varying types have been created, but they cover less than 2% of the state's landmass. Also, only 2% of this land has been set aside as a safe place for the many native animal species to live.

There are five wildlife sanctuaries in Punjab. It was the local Bishnoi people who spearheaded the creation of Abohar Wildlife Sanctuary to safeguard the blackbuck. The Bishnoi are a Hindu people who practise agriculture and who forbid cutting down trees or killing any kind of wildlife, including birds. A strict strategy of local cooperation and noninterference with natural fauna has ensured the survival of species such as peafowl, partridges, hares, jungle cats, and nilgai. Although the Bishnois' efforts to protect blackbucks are admirable, the government should also take action.

#### **4.2 Conservation**

The gangetic gharial was brought back from the verge of extinction by restocking efforts that were launched in India in 1975 and Nepal in 1978. The total area of India's nine gharial-managed protected areas is close to 3,000 square kilometers. Captive gharials are raised and prepared for release at six different facilities. It is also common practise to remove eggs from nests in the wild, raise them in captivity, and then release them. After releasing over 3000 young at 12 different sites, researchers found that the natural population increased by almost 1500 individuals. Nonetheless, in certain areas where gharials were reintroduced, the restocking effort has not led to an increase in population. In Nepal, 432 people were released into the wild between 1978 and 1994. Likewise, Pakistan is collaborating with its neighbours to boost the prestige of this odd creature. Although the gangetic gharial is all but extinct in Pakistan, efforts are being made to start restocking with the assistance of Indian organisations.

#### **4.3 A Review of the Freshwater Gangetic Gharial's Precarious**

A species of aquatic crocodile, the gangetic gharial (*Gavialis gangeticus*), prefers the swift currents of deep rivers. It nests on sandbanks and subsists primarily on fish. Once widespread throughout Indochina, the gangetic gharial is now considered critically endangered due to its shrinking habitat. It has been estimated that there are 60 gharials in the wild in Nepal, based on a study of the population. Pakistan's Sind region is home to only a few gharials. The species is practically extinct in Bhutan and Myanmar. The situation in Bangladesh is far more dire. There are no wild Gangetic gharials there anymore because of the severe impacts of overfishing and habitat degradation.

#### 4.4 Dangers to the Survival of the Gangetic Gharial

Unfortunately, the high cost of captive breeding and the lack of available release sites pose a threat to the conservation of gharials. Due to the effects of farming and fishing, as well as more interactions between gharials and the people who live along the riverbanks, gharial populations can only thrive in a small part of the river's length that is protected and out of the way. A major issue hindering population recovery is gharial migration outside of protected zones.

#### 4.5 Gangetic Gharial Conservation Priorities (GGC)

For the gangetic gharial's protection, the following initiatives are top priorities:

- Modeling of populations
- Future conservation strategies will be based on evaluations of population and habitat viability (PHVA).
- A national management plan and GHIAL PHVA recommendations for implementation in India
- Never-ending supplies of gharial
- Analysis of founder stock bottlenecks and the effects on genetic diversity
- Continual monitoring of rescued or reintroduced populations to look into
- The prevalence and spread of gang-related gharial in Pakistan.
- the general populace's newfound consciousness
- The governments of India and Nepal are working together to help protect gharials around the world.
- A larger scope is being given to Nepal's ongoing restoration effort.
- A facility dedicated to captive breeding is set to open in Pakistan.
- Analysis of the current population of gangetic gharials in Myanmar's river systems

## V. WILDLIFE PRESERVATION TECHNIQUES AND METHODS

The preservation and conservation of wildlife necessitates the consideration of legal and nonlegal options for resolving any problems that may arise. Harsher measures are needed to stop the illegal and unsustainable use of India's wildlife resources. Education campaigns for the general public and training courses for wildlife officers are two examples of what can be done.

1. **Recognition by the General Public and Government Officials:** Forest and other government officials stationed in protected areas and reserves need to be made aware of the situation in order to protect and conserve species. These individuals should receive training and research in animal conservation techniques as well as the legal provisions available to protect them. There is also a need to engage local residents who live in the protected areas' surrounding areas by educating them about the value of wildlife conservation and protection, as well as the laws that govern them. All applicable legal options for safeguarding and conserving wildlife and threatened species should be made available to the local population. They should also be made aware of the repercussions of breaking the law and harming wildlife. This will aid in raising awareness among the local population, which will in turn assist in offering support to forest officials and government officials operating in these protected regions.
2. **Conservation In-situ and Ex-of-situ:** Ex-situ and in-situ conservation tactics are two significant strategies for wildlife conservation, particularly for endangered plants and animals. The difference between ex-situ and in-situ conservation is that the latter is performed in the species' natural environment. These conservation measures help with wildlife reintroduction and transfer, preserving threatened species from climate change and human activities. Captive breeding of animals and plants that are threatened by human activities and climate change and are on the verge of extinction is one example of this form of plant and animal conservation. These efforts to preserve biodiversity are carried out in designated wilderness areas, but the success of these conservation strategies depends on how badly our changing climate affects the diversity of the world's species.
3. **NGOs being recognised and included:** Many of the efforts made to preserve and protect animals are spearheaded by NGOs. One such organisation is the Wildlife Preservation Society of India, which works to preserve ecosystems by discouraging the illegal trade in wildlife and the killing of wild animals. Together, these NGOs can help ensure that India's incredible wildlife heritage is preserved for future generations. Other methods for maintaining and conserving species include in-situ and ex-situ breeding, strengthening natural reserve resilience, and building and managing biosphere reserves.
4. **Strengthening the Resilience of Nature Reserves:** This approach seeks to preserve natural reserves, create buffer zones, reduce human activities like construction, transportation, and road building, protect biodiversity "hot spots," preserve genetic diversity, and limit wildlife tourism to stop the extinction of species. Buffer zones around degraded landscapes are essential for making them more resilient. Rehabilitation, with a focus on mitigating particular climate

change impacts, is also necessary in buffer zone-protected areas. Some ecosystems may have sufficient resilience because they have relatively intact landscapes, but this resilience can be lost if the land and water use of the people who live there is not managed. The vegetation management within these reserves also helps to maintain resilience. When the danger to wildlife and endangered species is particularly severe, the government must take action. It is the government's responsibility to regulate wildlife tourism in protected areas like national parks and their surrounding buffer zones. Forest officials and other interested parties need to be held to the rules and regulations outlined in the applicable acts and legislation to prevent wildlife tourism from negatively impacting breeding and feeding patterns and disrupting nesting sites. If rigorously followed, this technique will be extremely advantageous in terms of wildlife protection and conservation, as well as the preservation of species in their natural habitat.

- 5. Biosphere Reserves: Establishment and Management** A biosphere reserve is a micro-territory or a large piece of land that deals with the challenges of plant and animal species protection in a variety of ways depending on the situation. These reserves are sometimes divided into smaller groups based on geographical or human reasons. The biosphere reserve is divided into three zones: the core, buffer, and transition zones. Depending on the needs and aims of the biosphere reserve, each zone is treated differently.

The establishment and administration of a number of biosphere reserves and other protected areas is an essential strategy for wildlife protection and conservation. It entails connecting corridors and habitat matrices, which aid in the connectivity of fragmented areas and landscapes by allowing flora and wildlife to disperse and migrate. There are now 18 biosphere reserves in India. The Indian government established these reserves in order to protect and conserve wildlife. Human activities in and around these protected areas have resulted in a variety of issues and hazards for wild animals and vegetation. As a result, the government must be vigilant and aware of human activity, including study in these areas. The federal government and state governments should work together to manage these biosphere reserves and ensure that the personnel stationed there follow the legal laws and regulations. If rules are broken and wildlife is injured, the government should implement more stringent punishment procedures.

## VI. CONCLUSION

The homes and lives of animals around the globe are in danger. It is estimated that global warming will cause the extinction of 15 to 37 percent of all species by 2050. The extinction of more than 1.25 million species is another factor that must be taken into account. Since biodiversity does not have a second chance in nature, this loss cannot be reversed like other environmental losses.

The unlawful trade and exploitation of animal resources have made protecting and conserving India's wildlife a top priority. All levels of government, local residents of and visitors to protected regions, nonprofit and governmental organisations, law enforcement, and the general public must work together to achieve this objective. India is a biodiversity hotspot thanks to the country's extensive history and abundance of important indigenous natural resources. Therefore, it is everyone's responsibility to cooperate in order to preserve this resource and keep the ecosystem in good shape.

There is an immediate need for efficient strategies and answers for the preservation of India's wildlife. In a time when many animal species are in danger of going extinct, the government must respond to people's wants and needs in the here and now. In order to protect endangered species and other animals from illegal hunting and trading, state and federal governments must work together and enforce all applicable laws and conservation programmes.

India ranks higher than most other Asian countries when we consider the common theories for why so much of the region's wildlife has vanished. Law, socioeconomic concerns, and animal studies all play significant roles in India's extensive network of protected area research organizations. The Central Zoo Authority works with zoos to organise studies related to the preservation and distribution of wild animals. There will be studies on wildlife biology, the nutritional needs of different species, genetic variability, epidemiological surveys, animal behaviour, and the detection of diseases by postmortem examination. The future of the animal kingdom will be determined in part by the way in which animals in captivity interact with their wild counterparts, as well as by efforts to preserve biodiversity and adapt to the inevitable genetic and demographic shifts that will occur over time. Sixty-five percent of Asia's tigers, eighty percent of Asia's rhinos, eighty percent of Asia's elephants, and one hundred percent of Asia's lions are still found in India. Sadly, poaching has put an end to the lives of all of these once-thriving species.

Although the laws of the country have been created and enforced to provide strict legal protection for the cause of wildlife protection and conservation, this does not always correspond with the reality on the ground. Wildlife is still used for commercial gain, and illegal hunting and trade of animals persist. Threats to wildlife and their natural habitats can come from even the non-negligible usage of potentially harmful compounds in manufacturing, daily human activities, road and building construction, recreation, and entertainment. Indian law prohibits the killing of wild animals and the trading in their parts, but these practises persist nonetheless. Consequently, there is a pressing requirement for widespread education on animal

conservation and the strict implementation of relevant laws at the national and local levels. The effectiveness of wildlife conservation and preservation laws at the county and city levels is the responsibility of state governments.

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