# TOPIC: WILDLIFE CONSERVATION STRATEGIES AND MANAGEMENT IN INDIA-PROJECT TIGER

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## Introduction

Wildlife resources constitute a vital link in the survival of the human species and have been a subject of much fascination, interest, and research all over the world. Today, when wildlife habitats are under severe pressure and a large number of species of wild fauna have become endangered, the effective conservation of wild animals is of great significance. Because every one of us depends on plants and animals for all vital components of our welfare, it is more than a matter of convenience that they continue to exist; it is a matter of life and death. Being living units of the ecosystem, plants and animals contribute to human welfare by providing:

- material benefit to human life;
- knowledge about genetic resources and their preservation; and

- significant contributions to the enjoyment of life (e.g., recreation).

Human society depends on genetic resources for virtually all of its food; nearly half of its medicines; much of its clothing; in some regions, all of its fuel and building materials; and part of its mental and spiritual welfare.

Considering the way we are galloping ahead, oblivious of what legacy we plan to leave for future generations, the future does not seem too bright. Statisticians have projected that by 2020, the human population will have increased by more than half, and the arable fertile land and tropical forests will be less than half of what they are today. Genetic resources are treated as inexhaustible mineral resources, but we need to care about them. It is here that the concept of management and conservation of wildlife comes into play, because anything that is not human or undomesticated is ‘wildlife’.

Presence or absence of an animal or plant in a region is determined by ecological and historical factors. Animals and plants are living indicators of the characteristics of their environment; their ranges mark the places where environmental conditions are the same or similar. To interpret the range of a species properly, it is necessary to know, in detail, the conditions required for the species to live and thrive. The science of zoogeography has both

ecological and historical aspects. On this basis, the world can be divided into six zoogeographical regions:

| | |
|---|---|
| Nearctic | North America and Greenland |
| Palaearctic | Eurasia, without India |
| Ethiopian | Africa, south of the Sahara |
| Oriental | India and Indochina |
| Australian | Australia and New Zealand |
| Neotropical | South and Central America, and the Antilles |

## Wildlife Conservation in India

India is the seventh largest country in the world and Asia's second largest nation with an area of 3,287,263 $km^2$, a national border of 15,200 km, and a coastline of 7516 km. For administrative purposes, India is divided into 28 states and union territories and is home to more than 1 billion people, which is approximately 16% of the world's population. Ecologically, India can be divided into three main regions:

- the Himalayan Mountain system;
- the peninsular India subregion (woodlands and desert); and
- the tropical rain forest region.

A great wealth of biological diversity exists in these regions and in India's wetlands and marine areas. This richness is shown in absolute numbers of species and the proportion of the world's total they represent (Table 1).

**Table 1. Number of species in India and the world**.

| *Group* | *Number of species in India (SI)* | *Number of species in the world (SW)* | *SI/SW (%)* |
|---|---|---|---|
| Mammals | 350 | 4629 | 7.6 |
| Birds | 1224 | 9702 | 12.6 |
| Reptiles | 408 | 6550 | 6.2 |
| Amphibians | 197 | 4522 | 4.4 |
| Fishes | 2546 | 21,730 | 11.7 |

The people of the Indian subcontinent were once blessed with some of the most profuse natural gifts: verdant forests, water-stocked Himalayan ranges, rich coastal fish resources, productive estuaries, grassy pastures, and bountiful river systems. Abundant rain and fertile soils added to this plentitude. Years of mismanagement, however, have

degraded our forests, wounded our coastline, and poisoned our aquifers with devastating results. Today, India contains 172 species (2.9% of the world's total number) of animals that are considered to be globally threatened by the IUCN. These include 53 species of mammals, 69 species of birds, 23 species of reptiles, and 3 species of amphibians.

Extinction is somehow classified as 'biological reality' because no species has, as yet, existed for more than a few million years without evolving into something different or dying out completely. Extinction is threatening all species, but most of the time smaller animals, like bats and rodents, face this threat more than other animals. We, however, tend to focus on the charismatic flagship species, which we like to see and which fascinate us.

Success in evolution is measured in terms of survival: failure, by extinction. Most recent extinctions can be attributed, either directly or indirectly, to human demographic and technological expansion, commercialized exploitation of species, and human-caused environmental change. These factors, in turn, have affected the reproductive rate of endangered species and their adaptability to changing environmental conditions. Concern for wildlife is, in fact, a concern for ourselves.

In this paper, I would like to address the threat of extinction with respect to four species: the royal Bengal tiger

and blackbuck (mammals), the great Indian bustard (bird), and the gangetic gharial (reptile).

## ‘Project Tiger’ and Conservation Practices

Tigers once inhabited a vast area from Turkey to the east coast of Russia and China, north to Siberia and south to the Indonesian island of Bali. The royal Bengal tiger, *Panthera tigris tigris*, has always been an integral part of the life and legend of India. At the beginning of the 1900s, the Indian tiger population was estimated at 40,000 animals. The first official estimate, done in 1972, recorded only about 1800 tigers. This led to the establishment of a task force under the Indian Board of Wildlife, and based on their recommendations, ‘Project Tiger’ was launched on 1 April 1973 with the following objectives:

- to maintain a viable population of tigers in India for scientific, economic, aesthetic, cultural, and ecological values; and
- to preserve, for all times, areas of biological importance as a national heritage for the benefit, education, and enjoyment of the people.

At the beginning of the project, 9 tiger reserves were created. Currently, there are 27 tiger reserves in over 17 states. These reserves cover a total area of 37,761 $km^2$.

## Current Status of Royal Bengal Tigers in India

India has over half the world's tiger population. Every two to four years, a comprehensive tiger census is conducted throughout India (Table 2). The first census was conducted in 1972, and 1827 tigers were recorded. Establishment of Project Tiger in 1973 led to an increase in the tiger population; the 1989 census recorded 4344 tigers, which led to self congratulations within Project Tiger. But the next census in 1993 recorded only 3750 tigers, a decline from four years earlier. Of these tigers, 1266 (36%) were within the boundaries of the 19 Project Tiger reserves, but to conservationists, this came as a final warning.

**Table 2. Population numbers of royal Bengal tigers in India reported by states, 1972–2002.**

| *Serial numbers of enumerated states* | *State* | *1972* | *1979* | *1984* | *1989* | *1993* | *1997* | *2001/02* |
|---|---|---|---|---|---|---|---|---|
| 1 | West Bengal | 33 | 65 | 97 | 95 | 97 | 62 | 60 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2 | Karnataka | 102 | 156 | 202 | 257 | 305 | 350 | 401 |
| 3 | Assam | 147 | 300 | 376 | 376 | 325 | 458 | 354 |
| 4 | Uttar Pradesh | 262 | 487 | 698 | 735 | 465 | 475 | 284 |
| 5 | Andhra Pradesh | 35 | 148 | 164 | 235 | 197 | 171 | 192 |
| 6 | Madhya Pradesh | 457 | 529 | 786 | 985 | 912 | 927 | 710 |
| | Total | 1638 | 2732 | 3543 | 4026 | 3432 | 3508 | 3511 |

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***Royal Bengal Tigers and the Sundarbans***

The Sundarbans is an area of 10,000 $km^2$ of mangrove forest on the southern edge of the Ganges-Brahmaputra-Meghna Delta in India and Bangladesh. It is considered to be the largest prograding delta in the world, and is an open, dynamic, heterogeneous ecological system that is resilient to disturbance from within the forest and waterways, but is sensitive to disturbance from the outside, particularly to changes in the flow of freshwater. The Sundarbans is a high quality wildlife conservation area of regional and international importance, but a series of incremental acts designed to bring more food, fiber, and material into production has damaged the Sundarbans ecosystem.

The Indian part of the Sundarbans covers 9630 $km^2$ and has been declared a Biosphere Reserve. Project Tiger covers

2550 $km^2$ of this area, of which 1692 $km^2$ is the core area (National Park) and has been declared a World Heritage Site. This unique mangrove forest area has the largest population of tigers in the wild. Improved management has helped restore a wide variety of flora and fauna. In this area, wildlife management occurred essentially by monitoring the investments made and evaluating its effects.

The last census in December 2001 recorded 271 tigers in the Sundarbans. The Sundarbans is one single ecosystem, however, and tigers do not know political borders; hence, there is a need for cross-border censuses to ensure more accurate estimates of tiger numbers are obtained. India and Bangladesh proposed conducting a joint tiger census in the swampy Sundarbans delta, and on 14 January 2004, the two countries jointly began the world's largest tiger census. The composition and dynamics of the tiger population are quite encouraging, and the last census showed the presence of about 360 animals in the wild. Tranquilization and translocation of aberrant tigers has been perfected in the state of West Bengal where the Sundarbans is located. Stray tigers are captured in trap cages or tranquilized and released back into the wild after veterinary care and examination. This is one way that an aberrant tiger gets a second chance at freedom.

The people of the Sundarbans now perceive that tiger protection efforts serve their own interest. Irrespective of

caste, creed, religion, or social standing, people take pride in their very own royal Bengal tiger.

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