TIGER CONSERVATION

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Tiger

Scientific name: *Panthera tigris*

TIGER CONSERVATION

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)

Role of NGOs in Conservation of wildlife

Wildlife conservation is the practice of protecting wild plant and animal species and their habitat. Wildlife plays an important role in balancing the environment and provides stability to different natural process of nature. The goal of wildlife conservation is to ensure that nature will be around for future generations to enjoy and also to recognize the importance of wildlife and wilderness for humans and other species alike. Many nations have government agencies and NGOs dedicated to wildlife conservation, which help to implement policies designed to protect wildlife. Numerous independent non-profit organizations also promote various wildlife conservation causes. Wildlife conservation has become an increasingly important practice due to the negative effects of human activity on wildlife. An endangered species is defined as a population of a living species that is in the danger of becoming extinct because the species has a very low or falling

population, or because they are threatened by the varying environmental or prepositional parameters.

Non-Government Involvement: -

As major development agencies became discouraged with the public sector of environmental conservation in the late 1980s, these agencies began to lean their support towards the "private sector" or non-government organizations (NGOs). In a World Bank Discussion Paper, it is made apparent that "the explosive emergence of nongovernmental organizations" was widely known to government policy markers. Seeing this rise in NGO support, the U. S. Congress made amendments to the Foreign Assistance Act in 1979 and 1986 "earmarking U. S. Agency for International Development (USAID) funds for biodiversity". Form 1990 moving through recent years environmental conversation in the NGO sector has become increasingly more focused on the political and economic impact of USAID given towards the "Environmental and Natural Resources". After the terror attacks on the World Trade Centers on September 11,2001 and the start of former President Bush 's War on Terror, maintaining and improving the quality of the environment and natural resources became a "Priority" to "Prevent International tensions" according to the Legislation on Foreign Relations Through 2002 and section 117 of the 1961 Foreign Assistance Act. Furthermore, in 2002 U. S. Congress modified the section on endangered species of the previously amended Foreign Assistance Act.

Active non-government organizations: -

World Wide Fund for Nature (WWF) is an international non-governmental organization working on the issues regarding the conservation, research and restoration of the environment, formerly named the World Wildlife Fund, which remains its official name in Canada and United States. It is the world's largest independent conservation organization with over 5 million supporters worldwide, working in more than 90 countries, supporting around 1300 conservation and environmental projects around the world. It is a charity, with approximately 60% of its funding coming from voluntary donations by private individuals. 45% of the fund's income comes from the Netherlands, the United Kingdom and the United States.

NGOs IN India: - A number of NGOs have come forward to put an end to the nasty business of poaching and wildlife trafficking in India. With the help of their seminars

and symposia they have been successful to a large extent in drawing the administration's attention towards this problem. Legal activism on their part has led to certain worthwhile legislation in this regard. The ban on ivory and snake skin trade and the listing of the whale shark in the WPA schedule are some of the legal initiatives taken by the state.

Some of the NGOs that have played an active role in the conservation and preservation of wildlife in India are: -

1.TRAFFIC India fights wildlife trafficking in India.: -

TRAFFIC, the wildlife trade monitoring network, is the leading non-governmental organization working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.

TRAFFIC's mission is to ensure that trade in wild plants and animals is not a threat to the conservation of nature.

TRAFFIC's vision is of a word where wildlife trade is: managed in a way that maintains healthy wildlife populations and ecosystems; contributions to meeting human needs; supports local and national economies; and helps motivate commitments to conserve wild species and habitats.

TRAFIC was established in 1976 in what remains a unique role as a global specialist, leading and supporting efforts to identify conservation challenges and support solutions linked to trade in wild animals and plants.

TRAFOC's 2020 goal is to help reduce the pressure of illegal and unsustainable wildlife trade on biodiversity, and enhance the benefits to wildlife conservation and human well-being that derive from trade at sustainable levels.

2.Wildlife Trust of India have been very vocal about the Red Jungle fowl and Golden-Haired Langur.

3.Wildlife First works for the conservation of wildlife in Karnataka.

4.Wildlife Protection Society of India (WPSI) Collaborate with state governments to monitor illegal wildlife trade.

5.Greenpeace.

India's Tiger Poaching Crisis

Evaluation of the tiger's conservation status revealed shattering news in the early 1990s with the discovery of large-scale poaching and trafficking for the illegal international trade in tiger parts. The huge demand for tiger bones, destined for use in Oriental traditional medicine outside of India and as a macho supplement, is an added threat to India's tiger population. Practically every part of the tiger, from its whiskers to its tail, is used in traditional Chinese medicine. According to an estimate by the U.S.-based World Watch Institute, people in China and elsewhere in the Far East pay high prices for tiger bones and other tiger parts, with a single tiger's produce fetching up to U.S.$5 million. Poaching is done by mafia gangs and is a part of the thriving trade, which is thought to fund, to a great extent, insurgency in north India. In 1993–94, 36 tiger skins and 667 kg (1470 lbs) of tiger bones were seized in north India. Poachers use one of three methods to kill wild tigers: poison, steel traps, or firearms. The estimated cost for the poachers for each tiger killed is $1 for poisoning, $9 for trapping, and $15 for shooting, distributed among four poachers. If charged and proven guilty, the maximum punishment is three years in jail and/or Rs.25,000 (U.S.$600) in fines. There is no minimum sentence. The Wildlife Protection Society of India has made a concerted effort to gather accurate information and document cases of tiger poaching and unnatural deaths of tigers throughout India. Government sources state that 596 tigers are known to have been killed from 1994 to 2002; however, a nongovernment organization puts that number much higher (Table 3). Although international trade in tiger products has been banned under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), only 8 out of the 14 countries within the tiger's range comply with it.

Table. Number of tigers poached in India, 1994–2002.

Year	No. Of tigers poached
1994	95
1995	121
1996	52
1997	88

1998	44
1999	81
2000	53
2001	72
2002	43
Total	649

Reasons for tiger decline

The reasons for tiger decline in areas outside tigerreserves / protected areas are as below:

(i) Degradation of forest status outside Protected Areas / Tiger Reserves owing to:

(a) human pressure

(b) livestock pressure

(c) ecologically unsustainable land uses

(ii) Fragmentation leading to loss of gene flow from source populations

(iii) Loss of forest quality in terms of prey biomass

(iv) Tiger deaths due to man-animal conflict

(vi) Tiger deaths due to poaching

(vi) Loss of reproduction owing to disturbance on account of heavily used infrastructure like

highways, etc.

(vii)Lack of adequate protection outside protected area

(viii)Insurgency / law and order problems

The Global Tiger Forum and Achievements of Project Tiger

The International Conference on Tigers was held at New Delhi in March 1990, and was attended by countries within the tiger's range. A majority of the participant countries joined to establish a new organization—The Global Tiger Forum. The

main aim of the forum is to protect the tiger from extinction at the global level. Anywhere that tigers live today is high quality wildlife habitat. The success of Project Tiger has shown that no species, however important, can be conserved in isolation. Active involvement of the local people in the management of parks has made conservation measures more effective, and resource sharing ensures reciprocity of commitment. Project Tiger has completed more than 40 eventful years as the largest and most successful conservation project of its kind in the world. The project's achievements are as follows:

• Better management of the reserves has improved the status of flora and fauna, and the endangered species have shown signs of recovery. There has also been an improvement in the carrying capacity of the habitat.

• Biogeographically representative areas of the tiger reserves have shown better signs of ecological security and preservation.

• The project has played a major role in providing education to, and recreation facilities for, the people.

• Enhancement programs include the management of buffer areas and tourism facilities in tiger reserves. The landscape will continue to change, directly and indirectly, at the hands of humans, and as emphasized earlier, survival of humankind depends on maintaining the ecological balance among the living systems of the earth. New management and research initiatives have started a new era in tiger conservation.

'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.km. The conducting of tiger censuses in India began in 2006, with the task assigned to the Wildlife Institute of India, a government body funded by the Ministry of Environment. According to the census conducted in 2006, it emerged that India was home to only 1,411 tigers. The numbers were certainly discouraging and cause for alarm for tiger conservationists and wildlife officials. This number increased to 1,706 in 2010, followed by 2,226 in 2014. This impressive increase in the number of Royal Bengal Tigers in 2014 can be attributed to improved conservation measures, use of enhanced technology, significantly better cooperation between wildlife forest officials and new estimation methods. It should be noted that India, at present, is home to a large number of the 3,500 tigers that are scattered across various countries like Nepal, Malaysia, Laos PDR, Myanmar, Bhutan, Cambodia, China, Indonesia, Vietnam, Thailand and Russian Federation.

INCREASING TIGER NUMBER

2006	1411
2010	1706
2014	2226
2018	2967

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

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 354	147	300	376	376	325	458
4 Uttar Pradesh 284	262	487	698	735	465	475
5 Andhra Pradesh 192	35	148	164	235	197	171
6 Madhya Pradesh 710	457	529	786	985	912	927
Total 3511	1638	2732	3543	4026	3432	3508

Introduction to Project Tiger:

Tiger (Panthera tigris) has been the integral part to the life and legend of mankind. The tiger has been feared and revered, hunted and worshiped; it has found its way into folklore and lullabies, books of worship, popular fiction and innumerable stories of hero ism, bravery and adventure. At present the tiger is an endangered species and has found its way in the Red Data Book. The tiger population has been reduced from 40,000 to 1,827 by 1972, mainly due to hunting, habitat loss due to deforestation and taming the rivers for human needs. Considering the fast decline of the tiger population, a special task force was set up in 1970 by the Indian Board for Wildlife to prepare an action plan to conserve the population of tiger in the country. As a result, in 1st April, 1973, Project Tiger was launched.

Objectives of Project Tiger:

1. To ensure maintenance of a viable population of tigers in India for scientific, economic, aesthetic, cultural and ecological values.

2. To preserve, for all times, areas of biological importance as a national heritage for the benefit, education and enjoyment of the people. Principles of Tiger

Reserves: In 1973-74 nine tiger reserves were established — located in 9 different states and covering a total area of 13,017 sq. kms.

It was based on the following principles:

1. Elimination of all forms of human exploitation and disturbance from the core and rationalization of such activities in the buffer.

2. Limitation of habitat management to repair damage done by man with the aim of restoring the ecosystem as close to its natural functioning as possible.

3. Researching facts about habitat and wild animals and carefully monitoring changes in flora and fauna.

Conservation Process in Project Tiger requires:

1. The natural habitat of tiger and its food habit.

2. About the breeding habit and breding season of tigers.

3. Its relation with other animals.

4. The number of animals present at any given time; reasons for their diminishing or increasing.

5. Places of drinking water and its arrangement.

6. Places of cover and shelter for tigers.

7. Enactment of the laws for their protection.

Levels of Conservation: Conservation of tiger is done at the following levels:

Level I:

The population of the tigers in any reserve is to be determined from time to time. The reasons for either their increase or decrease are to be noted. In case of decrease, the reasons are to be located and appropriate measures are to be undertaken. If they encounter severe diseases then it should be diagnosed and immediate treatments are to be made. If the decrease in number is due to poaching then constant vigilance is to be maintained to keep poachers away.

Level II: The food of tiger comprises of deer, sambar, wild boar etc. as it is a carnivore. Care should be taken to keep the food animals in sufficient numbers, so that the tiger need not come out of the forest for food and get killed by the hunters.

Level III: It is essential to have know ledge about the breeding season of the tigers and the number of litters born. The litters should be protected from all sorts of danger including diseases. The diseased litters or tigers should be imprisoned and treated and later released into their natural habitat.

Tiger conservation initiatives and success:

The first official estimation of the Indian tiger population was done in 1972. About 1,827 tigers were recorded in the wild. This led to the setting up of a task force

i.53 : Tiger census report of 1976 and the initial nine sites under Project Tiger

Name of Tiger Reserve	Tigers
Sunderban (W.B.)	200
Manas (Assam)	41
Bandipur (Karnataka)	19
Kanha (M.P.)	51
Melghat (Maharashtra)	32
Ranthambhore (Rajasthan)	20
Palamou (Bihar)	20
Simlipal (Orissa)	15
Corbett National Park (U.P.)	35

under IBWL which ultimately led to the launching of 'Project Tiger' in 1973, beginning with nine sites in nine different states**:**

The 1989 census showed that the number of tigers had increased to 4,334, both in the tiger reserves and other areas of wildlife (Table 4.54). The highest (269) number of tigers was reported from Sundarbans, followed by Kanha (97), Nagarjunsagar (97), Simlipal (93) and Manas (92). However, some alarming decline of tiger population was noted from some tiger reserves like Kanha, Manas. Sariska National Park etc. and in the two north-eastern states of Meghalaya and Arunachal Pradesh (which are outside the tiger reserves). By 1993 the number of Tiger Reserves had increased to 19 with the census reading (Table 4.54) estimating a total of 3,750 tigers out of which the Tiger Reserve population was 1,266 tigers. M.P. recorded

the highest population of 912 tigers, which incidentally was the highest density of tigers anywhere in the world. In 1993 the second phase of Project Tiger was launched to refocus, restructure and reformulate strategies, so as to save not only the tiger and its habitat but also to conserve the entire biodiversity.

The guidelines intro duced were:

1. To establish guidelines for tourism in the tiger reserves.

2. To provide management of buffer areas so as to ensure availability of adequate firewood and fodder for the people living on the outskirts of the reserves.

3. To integrate local population through ecological development programmes.

4. To establish Nature Interpretation Centres. Since the inception of Project Tiger in the early seventies, the Government of India has invested considerably in the protection and conservation of tiger. The Tiger Task Force appointed by the Prime Minister has reviewed the work done over the years and has advocated the following

urgent recommendations: -

(i) Reinvigorating the constitution of governance.

(ii) Strengthening efforts towards protection of tiger, checking poaching, convicting wildlife criminals and breaking the international trade network in wildlife body parts and derivatives.

(iii) Expanding the undisturbed areas for tiger by reducing human pressure.

(iv) Repair the relationship with local people who share the tiger's habitat by fielding strategies for coexistence.

(v) Regenerate the forest habitats in the fringes of the tiger's protective enclaves by investing in forest, water and grassland economies of the people.

Present approach to tiger conservation by Tiger task Force: -

Owing to habitat fragmentation on account of ecologically unsustainable land uses, biotic pressure and poaching, the following approach is imperative:

A) Consolidating / strengthening the source population of tiger and its prey in tiger reserves, protected areas and tiger bearing forests This involves the following active managerial interventions:

(i) Protection / anti-poaching operations / intelligence networking

(ii) Strengthening of infrastructure within tiger reserves

(iii) Creation of inviolate space through relocation

(iv) Capacity building of frontline staff / local people and officers (including strengthening of training centres and training in related fields, viz. enforcement, intelligence networking, tourism activities, etc).

B) Managing the "source-sink dynamics" by restoring habitat connectivity This involves the following managerial interventions:

(I) Actively providing incentives to local people for the eco-system services / corridor values provided by them by not degrading the forest (payment for eco-system services)

(ii) Incentives to local people for taking up plantations and protecting natural root stocks besides preventing free grazing

(iii) Encouraging stall feeding of cattle and fostering marketing of dairy products

(iv) Providing subsidized gas connection to local people for reducing their dependency on forest towards fuel wood collection

C) **Mainstreaming tiger / wildlife** concerns in the landscape through smart practices with other sectors to prevent / address man-tiger conflicts (sectors: forestry, agriculture, welfare activities through the district Collector sector, tourism, fisheries, tea-coffee estates, road/rail transport, industry, mining, thermal power plants, irrigation projects, temple tourism and communication projects operating in the landscape).

D) For the future

The issues in tiger conservation, are as below:

• Poaching and depletion / isolation of source population.

• Existing or potential disturbance from activities, such as construction of infrastructure, presence of settlements, and extraction of minerals or produce.

• Disruptions in traditional livelihoods of the local people, curtailment of their pre-existing entitlements due to conservation.

• Providing resource for management, including protection, of tiger reserves, protected areas and other tiger bearing forests.

Human – Tiger conflict: Cause, Consequence and Mitigation

Wherever wild tiger populations survive and come into contact with landscapes dominated by humans, they pose a threat by preying on livestock, and, less commonly, on people. In most parts of India, people are remarkably tolerant of wildlife damage compared with elsewhere in the world, but sometimes, in conflict situations, local antagonism against tigers often erupts into a serious problem. The present distribution of tigers in India consists of some **Isolated meta-populations, embedded within larger landscapes** that are made up of protected reserves, multiple-use forests, and agricultural and urban areas. The protected reserves are essentially 'sources' for dispersing tigers that may survive for brief periods in the surrounding areas, before perishing from poaching or prey depletion. Conflict with humans is largely restricted to the edges of protected reserves, and some multiple-use forests or plantations.

What causes conflict?

1. Killing of livestock Tigers readily kill domestic ungulates. Most such predation takes place inside government-owned forests or common pasturelands, where large numbers of livestock graze. Usually, livestock kills are not fully consumed by tigers, because herders intervene. In most multiple-use forests, densities of wild prey are low because of hunting and competition with livestock. In such situation's tigers may take as much as 12 % of the livestock herds annually.

2. Accidental killing of humans

In most places, tigers are wary of human beings and avoid encounters. Accidental mauling or killing of humans by tigers is rare, and usually occurs when angry mobs surround tigers that enter human settlements to take livestock. Very rarely, tigers

may maul or kill humans they unexpectedly encounter, and the tiger may sometimes eat a part of the corpse. However, such encounters do not lead to persistent attacks on humans—many incidents may require no further management intervention than compensating the victim's relatives.

3. Man-eating behaviour

Although extremely rare, it has been historically documented in parts of India that individual tigers begin to view human beings as a 'prey species' and persistently stalk them. The ecological and social factors that lead to man-eating are not scientifically proven, but appear to be influenced by distinct factors. Man-eating behaviour is exhibited in an unusually persistent form among the tigers of the Sundarban delta.

Legal issues

Wildlife management in India is carried out under the Wildlife Protection Act of 1972, which is strongly preservationist in its thrust. The Act makes it virtually illegal to kill or capture wild animals even when problem animals are involved in severe conflict situations. Only government officials or agents authorized by the Chief Wildlife Warden can authorize such killings or captures.

Lethal control

Killing of 'problem' tigers – through shooting, poisoning of livestock kills and, less commonly, using techniques such as electrocution, snaring and trapping – has been widely accepted and practised by local people in India. In situations involving tigers cornered by uncontrollable mobs (with the imminent prospect of human deaths), or with injured tigers, lethal control is the only practical option. However, urban advocacy groups often oppose such tiger killings.

Capture and removal of 'problem tigers'

Sometimes managers attempt to capture a 'problem tiger' and move it away from the spot of the conflict because this approach has wider social acceptability. However, such translocations are rarely practical, and may not have satisfactory conservation outcomes:

1.In a free-ranging tiger population it is rarely possible to identify the individual problem animal for removal, unless it enters human settlements or is injured.

2.Furthermore, safe chemical capture (or driving away) of tigers is usually rendered difficult because of crowd-control problems, injuries to the animal, lack of technical skills, scarcity of resources and other logistical problems.

3.Even after safe capture, the problem tiger has to be permanently housed in captivity or relocated into the source population from which it came or into a new habitat.

3.Wild tigers do not adapt well to life in captivity, and the capacity of Indian zoos to hold tigers is already saturated. Most zoos simply cannot afford to house an ever-increasing number of problem tigers.

4.Most problem tigers that undergo capture and handling are injured in the process, particularly by losing their canine teeth in steel transport cages that are commonly used. Many are either old or weak animals evicted from their ranges by more vigorous rivals. Such tigers are unfit for relocation into the wild. There are several ecological arguments against translocation of even healthy problem tigers into new habitats.

First, most such relocations simply result in transfer of the problem to a new location leading to a new situation of conflict, because high-quality tiger habitats devoid of conflict potential is scarce.

Second, even after translocation into a large reserve with an adequate prey base, the introduced animal will compete for space and prey with other individuals in the local tiger population. Because tigers are territorial animals, competition is likely to lead to elimination of either the introduced tiger or of another individual from the local population.

Guarding, barriers and aversive conditioning

A reasonably effective traditional approach involves employing human herders to guard livestock grazing in tiger habitats, wherever such labour is available and inexpensive. Since most tiger attacks on livestock and humans occur under free-ranging conditions, mechanical barriers like stockades have limited utility. In the Sundarban, some measures have been implemented—barriers made of wooden poles, wire mesh and nylon netting are being used to prevent tigers from entering villages; and aversive conditioning of tigers using electrified ‘human dummies have been tried out. Success has been claimed for these interesting innovations

developed by local wildlife managers, however, there has been no experiment to test their efficacy. Advanced – and expensive – non-lethal aversive conditioning techniques occasionally used for deterring carnivore attacks in developed countries do not appear to be very relevant to the technology and resource-scarce social context in which most human–tiger conflict occurs in India.

Compensatory payments

In cases of human predation by tigers, financial aid can never fully compensate the loss suffered by the victim's families. However, prompt delivery of such assistance may help mitigate local hostility towards tigers to some extent. Given the relative rarity of tiger attacks on humans (except in the Sundarban) and the public pressures that such attacks generate, government schemes for compensating for human lives lost to tigers seem to be working reasonably well.

Relocation of human settlements

Relocation of human settlements is a proactive strategy that tries to alter the ecological setting, and thus prevent conflict. This strategy has been implemented under the Indian government's wildlife conservation schemes since the early 1970s. For most tiger populations in India survival prospects are bleak in the face of escalating habitat fragmentation and resulting conflict with human interests. As a tool for promoting long-term human–tiger coexistence at the landscape level beyond reserve boundaries, the relocation strategy has several important advantages.

1. It arrests ongoing conflicts and prevents their escalation.

2. It has been a critical tool in reducing habitat fragmentation and in driving the recovery of many wild tiger populations from the brink of extirpation in several Indian reserves.

3.When long-term social and economic costs of dealing with perennial human–tiger conflict is considered; relocation appears to be an attractive preventive option. However, despite their ecological desirability and cost-effectiveness, resettlement projects face many practical hurdles. If the relocation process is not transparent, incentive-driven and fair, it can lead to hardship and resentments.

The future of co-existence

Wildlife managers are severely handicapped by stringent legal requirements, lack of financial resources and technical skills, as well as by social pressures generated locally in conflict situations. A clear policy framework would enable them to avoid ad hoc responses and deal with conflict situations much more logically and effectively. Such a policy framework should: Prioritize the need to keep tigers separate from incompatible human land uses at the scale of protected reserves Aim to mitigate conflicts by prioritizing human needs at larger landscape scales the option favored by social advocacy groups in India – of 'sustainable' human use of all tiger habitats – or, the 'don't kill a single tiger' approach favored by some votaries of animal rights, do not seem viable alternatives.