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## A study on impact of ecotourism on wildlife: Scenario of Sariska National Park

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### Abstract

Prior to the advent of COVID-19, ecotourism was one of the fastest expanding economic sectors. It's an entirely different perspective on the world. Ecotourism is defined as a responsible visit to a natural region that protects the environment, promotes the well-being of the local community, and includes interpretation and education for both tourists and personnel.

The Sariska National Park is located in Alwar District of Rajasthan. It is world famous for Royal Bengal Tigers. Other wild animals like Stripped Hyena, Python, Palm civet, Jackal, Slot bear, monkeys and various species of birds also in abundance.

In today's globe, the word "ecotourism" is the most often used. It's an entirely new way of looking at the world. Ecotourism is a responsible visit to a natural region that protects the environment, promotes the well-being of the local community, and includes interpretation and education for both guests and personnel.

On the one hand, ecotourism generated cash that aided conservation efforts while also providing jobs for locals. Ecotourism, on the other hand, is responsible for changes in wild animal behaviour and physiology, habitat destruction, biological invasion, changes in wild animal feeding habits, and, in certain cases, disease transmission. Non-native species such as cats and dogs are frequently introduced by ecotourists and those working in the hospitality industry. They have the potential to be disastrous for natural prey species. Ecotourists have the ability to spread potentially deadly diseases and parasites.

The present paper is about present status of ecotourism in Sariska National Park, its probable impacts on wildlife, some suggestions to make ecotourism beneficial deal for wildlife.

**Keywords:** Ecotourism, sariska national park, wildlife, non-native species

### Introduction

According to TIES (2015) ecotourism means, "accountable travel to natural areas that conserves the environment, sustains the welfare of the local people and comprises interpretation and education" with the specification that education is to guests and staff.

Moreno, (2005) <sup>[21]</sup> revealed that the organized viewing of wildlife is known as nature tourism. Nature visitors pay a substantial sum of amount to see wildlife in their local area and in other part of world that encourage nure watching in order to attract tourist revenue.

Groom *et al.* (1999) after analysis of maintainable use of wildlife in Peru's Manu Biosphere Reserve and Puerto Maldonado National Parks determines the value of ecotourism in educating communities about the requirement of wildlife conservation.

In present decade tourism is one of the fastest growing sectors, particularly international tourism. According to UNWTO (2019) growing middle class in emerging economies, technological advances, affordable travel, new business models and easy visa facilitation, international tourist arrivals grew 5% in 2018 and touched 1.4 billion marks. International tourists' arrival increased from 664 million in 1999 to 1,400 million in 2019. In 2020 due to COVID-19 pandemic, tourism badly affected. People have always had a strong desire to travel the world, to immerse themselves in different cultures, and to know about different ways of living. Ecotourism is defined as "responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education".

### Study Area

Sariska National Park is a tiger reserve in Alwar District of Rajasthan. It stretches over an area of 881 km<sup>2</sup> comprising scrub-thorn arid forests, dry deciduous forests, grasslands, and rocky hills. It was given the status of a tiger reserve in 1978.

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The wildlife sanctuary was declared a national park in 1990, with a total area of about 273.8 km<sup>2</sup>. It is the first reserve in the world with successfully relocated tigers.

### Methodology

The present study is based on the secondary data. All data collected from various sources, in this study use of data and information provided by, Newspapers, Ministry of Forest, Ministry of Tourism, Books, Internet and Magazines etc.

### Fauna of Sariska National Park

Aside from Bengal tigers, the reserve is home to a variety of wildlife, including Indian leopards, jungle cats, striped hyenas, golden jackals, chital, sambar deer, nilgai, wild boar, small Indian civets, Javan mongoose, ruddy mongoose, honey dodgers, Rhesus macaques, Northern plain grey langur, Indian hare Grey partridge, white-throated kingfisher, Indian peafowl, bush quail, sandgrouse, treepie, golden-backed woodpecker, crested serpent eagle, and Indian eagle-owl and among the birds seen. According to Sanker, *et al.* (2010)<sup>[24]</sup> two tigers from Ranthambhore National Park were sent to Sariska Tiger Reserve in July 2008. In February 2009, another female tiger was moved.

Times of India (2018) reported that on October 2018, there were 18 tigers including five cubs. Times of India (2018) reported that on October 2018, there were 18 tigers including five cubs. Khatri (2020)<sup>[31]</sup> reported by 2020, the tiger population in the reserve has risen to 20.

### Zones in Sariska

The Park covers around 800 square kilometer area and has 2 gates with 4 zones together. The most popular gate being Sariska gate, has 3 zones namely zone 1, zone 2, zone 3. Telha gate has accessible to zone 4 and the gate is approximately 80 kilometers from Sariska gate. Based on the sighting data from Wild Trails, better sightings can be seen in zone 1,2 and 3, hence Sariska gate is preferred for a better safari in Sariska.

**Zone 1:** The zone is one of the most visited territories in Sariska. There are options to choose jeep or canter for safari in this zone.

**Zone 2:** The zone is less popular among the core zone, however, there are high chance of sightings in this zone.

**Zone 3:** The zone is as popular as zone 1 in terms of sighting. Many tourists and naturalists recommended this zone for great sightings.

**Zone 4:** The zone is considered least popular since it is far from the other 3 zones and can be accessed through Telha gate.

Sariska National Park Income from Tourists (in lacs)  
According to Annual Reports of Government of Rajasthan Forest Department, Income from tourism is Sariska as follow-

**Table 1:** Show the income of year

S. N.	Year	Income (in lacs)
1.	2013-14	15.43
2.	2014-15	21.15
3.	2015-16	38.42
4.	2016-17	39.01
5.	2017-18	40.56
6.	2018-19	41.82
7.	2019-20	70.00

Source: Annual Reports

### Probable Negative Impact on Wildlife

#### Biological Invasion

The number and species richness of non-native species are much higher in tourist destination compared to control sites. The role of tourism and recreation in the spread of non-native species.

According to Anderson, *et al.* (2015)<sup>[1]</sup> people from all over the world to visit natural sites, creating a large opportunity for non-native species to spread from one environment to another. The number and species richness of non-native species are much higher in tourist destination compared to control sites, and this associations holds true for both terrestrial and aquatic ecosystems.

#### Diseases

Ecotourism can act as vectors for potentially lethal germs and parasites, just as they can be a key pathway for the introduction of non-native species. The demand for close encounters with wild monkeys has spawned a lucrative ecotourism sector, which many believe is critical to obtaining money for conservation efforts and primate protection from poachers. According to Woodford, *et al.* (2002)<sup>[30]</sup> these advantages must be weighted against the increased risk of disease transmission, which might have disastrous

consequences for remnant wild populations. If primates are kept in close contact to humans.

Ecotourists may also inadvertently introduce a deadly pathogen indirectly on boots or clothing. In such cases, bacteria or viruses released into an environment where there is no natural resistance can quickly spread through native populations. In their research Ushman, *et al.* (2008)<sup>[28]</sup> found that heavily used trails in central California had much higher numbers of *Phytophthora ramorum*-a pathogen that causes sudden oak death- in the soil compared with areas that were off the trail, suggesting that the dispersal of the pathogen was driven by human activity. Captive penguins are very susceptible to a variety of illnesses, according to evidence from zoos. As a result, ecotourism, when combined with other stresses such as changing climate and rising pollution, may make penguins even more vulnerable to disease outbreaks.

#### Consequences of Food Provisioning

Various researchers found that wildlife is also threatened by solid waste and chemical pollution in the air and water. Kendall, *et al.* (2010)<sup>[17]</sup> in their research found that wildlife is also threatened by solid waste and chemical pollution in the air and water.

Rodriguez, *et al.* (2014)<sup>[23]</sup> in their research found that some

creatures was repelled by light pollution, lowering the amount of habitat available to them, while others are attracted to it, sometimes fatally, as nocturnal seabirds have shown.

Shannon, *et al.* (2016) <sup>[25]</sup> studied that noise pollution has gotten a lot of attention in the last two and half decades because of its effects on a wide spectrum of land and aquatic wildlife.

### Habitat Degradation

Although main objective of ecotourism is to protect natural habitat, there are a number of environment costs associated with allowing large numbers of people access to natural areas, including the use of limited resources such as water, infrastructure construction, habitat fragmentation, human waste and litter, chemical, light and noise pollution. All these things can degrade habitat quality, causing wildlife to suffer, especially if they are close to tourist infrastructure.

Although one of the goals of ecotourism is to protect natural habitat, there are a number of environmental costs associated with allowing large numbers of people access to natural areas, including the use of limited resources (such as water), infrastructure construction, habitat fragmentation, human waste and litter, and chemical, light, and noise pollution. All of these things can degrade habitat quality, causing wildlife to suffer, especially if they're close to tourist infrastructure.

Anderson, *et al.* (2015) <sup>[1]</sup> in their observations found that habitat loss and degradation have been the most serious threat to biological diversity around the planet.

### Impact of Ecotourism on Behaviour and Physiology of Wild Animals

Ecotourism scaling up of short-term behavioral impacts of ecotourism to longer-term population level effects. Research on cetaceans offers some of the best evidence for the scaling up of short-term behavioural impacts of ecotourism to longer-term population level effects. Bejder, *et al.* (2006) <sup>[2]</sup> in their observation found that Repeated visits to dolphins in Shark Bay, Australia, and Fjord land, New Zealand, have been linked to not only Long-term changes in social structure and a decrease in local abundance. short-term changes in behaviour, but also long-term changes in social structure and a decrease in local abundance.

Steven, *et al.* (2011) <sup>[26]</sup> in their observation seen behavioural avoidance of recreationists, which results in changes in population distribution and abundance.

Braunisch, *et al.* (2011) <sup>[3]</sup> found that as a result of winter recreation activities, black grouse (*Tetrao Tetrix*) in the Swiss Alps saw a 12 per cent loss in accessible wintering habitat and a 36 per cent decline in abundance.

J, Gill, *et al.* (2001) <sup>[7]</sup> found that shorebirds like the black-tailed godwit (*Limosa limosa*), which are supposed to be easily disturbed, human presence does not always have an impact on distribution and abundance.

Ecotourists' disproportionate influence on one species may have an impact on other taxa in the ecological community.

According to Muhly, *et al.* (2011) <sup>[22]</sup> ecotourists' disproportionate influence on one species may have an impact on other taxa in the ecological community. In certain circumstances, disturbance-sensitive predators will simply avoid locations where people are present, producing a predator refuge or human shield for prey species. Ecotourism activities may lead to diminished predator responses, generating increased boldness, lower alertness, and higher

vulnerability to predators over time.

Geffroy, *et al.* (2015) proposes that prey species' habituation to human activities may lead to diminished predator responses, generating increased boldness, lower alertness or watchfulness, and higher vulnerability to predators over time.

Bremnaer, *et al.* (2004) found in their research that bold conduct was found to be a good predictor of mortality after release in the wild in a study of captive-bred swift foxes (*Vulpes velox*). According to Leighton, *et al.* (2010) <sup>[20]</sup>

though the presence of ecotourists can harm disturbance-sensitive predators, these predator shelters can help endangered prey species survive. Tourists on beaches, for example, help hawksbill sea turtles (*Eretmochelys imbricata*) in the Caribbean by limiting the activity of invasive mongooses, which prey on hatchlings.

Laurance, *et al.* (2013) <sup>[19]</sup> in their observation found that Human presence can also benefit some wildlife populations and their habitats. Illegal hunting, as well as logging, have a negative impact on habitat. Turtle, in particular, have benefited from ecotourism, as the presence of individuals intent on seeing and safeguarding turtles has resulted in increased offspring survival. Amsini, F., *et al.* (2012) revealed that ecotourism and human presence have only a secondary role in the successful conservation of threatened great apes, which rely first and foremost on competent law enforcement.

Jones, M. E., (2000) <sup>[15]</sup> found that one of the most prevalent ways that tourists kill animals was by colliding with them in a car. The improvement of a road leading into the Cradle Mountain-Lake St Clair National Park, for example. The creation of a park in Tasmania resulted in a huge increase in the population of eastern quolls (*Dasyurus*). Cars have killed *Sarcophilus viverrinus* and *Sarcophilus harrissii*. The reality was that the following successful attempts to limit automobile crashes, the quoll population became locally extinct and had to be restored

The instances of wildlife killed as a result of ecotourism have been international phenomenon. According to Igginbottom, K., (2000) <sup>[14]</sup> the wild animals killed by vehicles usually happen around hotels and resorts, and they involve the presence deadly animals like venomous snakes or mosquitos.

Kasereka, B., *et al.* (2006) <sup>[16]</sup> through evidence proved that monkeys used for tourist viewing are more vulnerable to poaching than those who are not. So, quite possibility that wildlife of Sariska National Park faces threat of Disease, Physiological and Biological Changes, Habitat Degradation, Consequences of Food Provisioning and biological invasion from ecotourism and supportive activities.

### Probable Positive Impacts on Wildlife in Sariska National Park

The ecotourism helpful in protection efforts and research developments in delicate areas, while also offering travelers a chance to experience those areas firsthand. Ecotourists obtain knowledge of ecosystems, geology and biology of specific natural location, which in turn inform their conservation efforts. Some of the amount that goes into ecotourism also goes to conservation efforts, such as repopulating endangered species and reforestation. Many of the world's most stunning natural sites also happen to exist in least developed countries, such as Ecuador, Madagascar and Nepal. Ecotourism efforts in these countries helpful in providing economic assistance. In nut shell all these positive impacts can helpful in conservation of wildlife in Sariska National Park.

## Suggestions

Ecotourism is unavoidable consequence. He can make it fruitful for wild life through following steps -

- Include sustainable tourism alternatives in trip.
- Go green at your hotel.
- Reduce your carbon footprint.
- Say NO to illegal trade.
- Support sustainable options in island destinations.
- Take care of heritage places.
- Challenge yourself to step outside of your comfort zone.
- Support community-based tourism and initiatives.
- Respect the practices of local people.
- Use reusable bags.
- Consider Sustainable Tourism Alternatives
- Stay outside the city centre
- Reduce carbon footprint
- Say no to illegal trade
- Take care of heritage places
- Eat in local restaurants
- Respect the Practices of Local People
- Use Reusable Bags

## Conclusion

Ecotourism and related activities can have a wide range of ecological effects on wildlife in Sariska National Park. There is substantial evidence that ecotourism is not a benign activity that causes minimal disturbance, but rather that it can have significant consequences for the survival, reproductive success and long-term viability of a number of species populations, particularly those that are rare, sensitive to disturbance and geographically isolated. The indirect effects of human presence on the distribution, abundance, reproductive success, and survival of species that are disturbance sensitive are driving these consequences. Visitors can also have direct consequences, such as causing death, supplying artificial food resources to increase sightings of elusive animals, contributing to habitat fragmentation and destruction, importing non-native species, and serving as vectors for disease. Despite the potential negative significances, tourism is an essential source of cash for conservation and provides valuable experiences for individuals to become wildlife advocates while also educating them about biodiversity problems.

There is no doubt that tourism can be an important tool in effective conservation, but the possible negative effects of human presence must be understood and managed responsibly in conjunction with plethora of other variables that threaten wildlife's long-term survival.

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