

# Human-Wildlife Conflict in Rajasthan

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Radio-collared rescued tiger makes a leap for freedom

In a remote corner of Rajasthan, we went to explore places and facts forgotten by history. We worked our way down into a deep gorge of the Vindhyan plateau, and on the escarpment saw a prehistoric human shelter, which had a pictograph of a tiger. The blood-red hematite ore rock art panel not only depicted the tiger, but also the context of that period. The tiger was surrounded and attacked by a band of humans with bows and

arrows, who were perhaps trying to protect their livestock or even themselves, for that matter. The scene depicted in this prehistoric cave remains the same in the present era, but now human-wildlife conflict (HWC) is no longer just a battle for survival between humans and wildlife. It is, many a time, man-made, and most of the time, perceived incorrectly. The new defining concern is that we have to save the very same species with

which we have been in conflict. It is better that we quickly realize that these species are essential for our own long-term survival. They are essential to maintain our precious ecosystems, and it is on the services of these ecosystems that our existence is dependent.

Rajasthan is the largest state in India, and covers 10.5% of the total area of the country. Most of its protected areas (PAs), totalling 3.2% of the extent of the state, are located in the hilly areas of the Aravalli and Vindhyan ranges, while just two sites are situated in the desert areas of the state. Rajasthan's economy is primarily reliant on agriculture and the rearing of livestock. About 50% of the state's area comes under cultivation. The state stands second in the rearing of livestock and first in rearing goats. Human-wildlife conflict in Rajasthan has two aspects – one where there is a direct threat to human or animal life, and the other adversely impacting human economy or animal habitats.

Besides Ranthambhore and Sariska Tiger Reserves, Rajasthan has established its 200 sq. km third tiger reserve known as Mukundara Hills Tiger Reserve in 2013.

### Mukundara

The State Government of Rajasthan's decision to create and re-populate the Mukundara Hills Tiger Reserve in the district of Kota is a direct consequence of the exponential population growth of tigers in Ranthambhore; more than 20% of the reserve's tigers roam outside its boundaries, making conflict inevitable. The decision to establish and re-populate Mukundara attempts to address the slow rise of conflict in Ranthambhore; and it was surprisingly welcomed by the local communities in Mukundara.

Mukundara is an experiment in its infancy. There are currently four tigers in the reserve. Three (2 females and a male) of these were relocated there from Ranthambhore by the Forest Department, while a fourth (a male) naturally migrated 150 km south to



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A rescue operation that went wrong. Range Officer, Daulat Singh (indicated with an arrow) was seriously injured when the tiger was cornered by a crowd in a village just outside Ranthambhore Tiger Reserve around noon

Mukundara from Ranthambhore, affirming the presence of a natural corridor between the two habitats. The project has seen both popular support and criticism, especially when it comes to how repopulation could influence the dynamics of human wildlife



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A daring rescue of a tigress from an open village well. Wild animals frequently fall into uncovered wells in the peripheral villages of Ranthambhore Tiger Reserve



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Tranquillised and unconscious, the tigress and her rescuers are precariously lifted out of the well together on a suspended platform



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Being loaded into a vehicle post darting by the rescue squad. Such operations demand diligence and flawless coordination

conflict in Mukundara. Steps have been taken to mitigate potential conflict, such as the fact that repopulation is being carried out in an incremental manner and an 80 sq. km holding enclosure with predator proof fencing has been erected to release tigers in phases. However, far more has to be done to prepare the ground for a viable population

of tigers living in minimal conflict with their human neighbours. This dry habitat has multiple villages that will simply have to be relocated to increase habitat space and also reduce the risk of human-wildlife conflict. Although the frequency has been relatively low, Mukundara does have a history of human-wildlife conflict when it comes to

sloth bears and leopards. The repopulation project is still in its early stages and only time will tell what the projected human-wildlife conflict scenario will look like.

### Crop raiding

Rajasthan is a challenging agronomical landscape for farmers as most of its agriculture (75%) is rain-fed and based on erratic monsoons. Crop-raiding animals only aggravate an already bleak situation. The state has the maximum number of potential crop-raiding species existing outside PAs in the country, comprising antelopes (nilgai, chinkara, and blackbuck), wild pig, primates (langurs), canids (golden jackal, desert fox), and Indian peafowl. Near protected areas, the situation is slightly different, since most PAs are near the Aravalli or Vindhya hill ranges, where groundwater is available for irrigation. In such areas, monsoon crops, such as *jowar* (sorghum) or *bajra* (pearl millet), have become secondary, as the market demand for these crops has decreased, so people grow them mainly as fodder for livestock. The primary crops nowadays are wheat and mustard. When the dry deciduous forests start to dry up after the monsoon, wheat fields entice the ungulates to raid them. This was not the case three decades ago, when both the facilities,

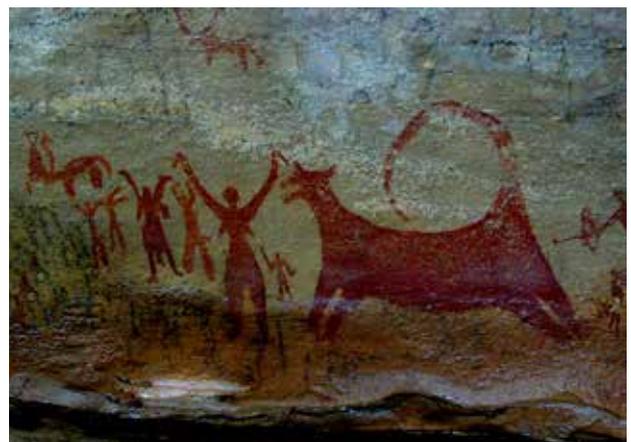
electricity and bore wells, were not easily accessible for farmers.

Recent Forest Department wildlife estimates show that while only 29,200 antelopes occur within protected areas, triple the number exist outside them. Similarly, jackals and langurs also have the same ratio in numbers within and outside PAs. This could be because 74% of the local communities in the state are vegetarian, which is far higher than the average (31% for all communities) in India, besides the fact that killing animals is also a cultural taboo in the state. There are few predators (primarily wolves and leopards) outside PAs in proportion to the high number of herbivores, which only worsens the situation as crop depredation continues. Free-ranging dogs are the only predators in such landscapes, but they do not bring about a natural balance in the population of herbivores.

There is no crop compensation scheme in the state at present, so it is a difficult task to calculate tangible damage from crop-raiding by wildlife. A very big step was taken to prevent crop-raiding through the construction of walls around protected areas, but as wildlife also exists outside these PAs, this initiative did not work. On the peripheries of Rajasthan's PAs, about 500 km stretch of up to 2-metre tall walls was



Coexistence of humans and wildlife is the key to conservation.  
A local community member stands before folk art depicting a tiger



Human-tiger conflict dates back to prehistory. This cave painting from Rajasthan is perhaps one of the earliest human acknowledgments of such conflict

constructed by CAMPA and World Bank funds, and MNREGA schemes. The cost of construction of these barriers might be in the millions, but the result is that while the barriers may have helped address the crop-raiding problem, locals keep breaking the walls to illegally to graze their animals – the same breaches are then also used by wildlife. A study shows that in the 100 km wall around Ranthambhore, goatherds broke the wall at about 250 places to enter the forest for grazing. The wall may not be working as a physical barrier to stop illegal grazing or crop raiding, but it is working as a psychological barrier to stop encroachment on the protected area, so a large group of forest officials are supporting this idea.

Fencing individual fields is quite possibly the only option, and inclination towards fencing is rapidly increasing, but ultimately it will badly harm many species of wildlife outside PAs. Natural fencing with thorny plants such as *Ziziphus*, *Euphorbia*, and *Opuntia* occupies a lot of space and takes time to grow, so people are losing interest in such fences, and so conflict continues.

### Livestock killing

The livelihoods of the local communities of Rajasthan are primarily based on the rearing of livestock. In India, the state stands second in the number of heads of livestock – 577.32 lakhs, while it stands seventh with a human population of 744.88 lakhs. Most sanctuaries in the state face enormous biotic pressure due to livestock grazing.

Livestock killing by big cats is considered to be a major issue relevant to rural livelihoods and conservation, because many carnivore species have been heavily persecuted as a direct result of elevated conflict levels with communities. In most places, the Forest Department provides compensation to the community when a predator kills their livestock; however, there are several problems in the process and its implementation. In 2015, more than 400 livestock kills were compensated by the Ranthambhore Forest Department. Most livestock are killed by leopards.

Tiger Watch Ranthambhore conducted a study in Ranthambhore, which revealed a shocking difference in compensation cases



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Cloth fencing in the bed of the Banas river to protect the cucurbit crop from jackals



A leopard relaxes on the wall of a ruin overlooking a town.  
Leopards frequently find themselves hedged into human dominated landscapes

and actual kills made by predators. Out of 10 different ranges, we collected data on kills from three ranges, which revealed that the majority of livestock killing incidents go unreported in these ranges. Only five out of 119 livestock predation incidents actually received livestock compensation from the Forest Department! There are three major reasons to not report such cases: the livestock was taken into prohibited areas for grazing; the process of reporting is complicated; and the process is time consuming, so that many a time, the villagers feel it is easier to eliminate the predator themselves.

#### **Conflict with tiger, leopard, and sloth bear**

**Leopard:** According to the Forest Department, around 600 leopards exist in the state. There are 25 wildlife sanctuaries and three national parks in the state, and most have populations of leopard, except those in the desert, e.g., Tal Chhapar and Desert National Park.

Efficient rescue teams based out of five cities (Udaipur, Jaipur, Jodhpur, Kota, and Sawai Madhopur) in Rajasthan cover almost the entire state for rescuing various problem animals. These five teams have rescued 200 leopards in the last 10 years (incidentally, 400–500 leopards are being rescued in the neighbouring Gujarat each year). These 200 leopards were rescued from human habitations, agricultural fields, deep open wells into which they fell, or from the clutches of snares or jaw traps laid by poachers. Two interesting patterns have become apparent, the first is that leopards have been dispersing from the Aravallis, and some are moving towards the desert areas, as some were rescued from places as far as Chauhtan in Barmer, Nagaur, Hanumangarh, Churu, and Jodhpur. Historically, the desert areas did not have leopards. Second, most of the rescued animals were males and they were likely exploring new ranges. Jaipur-based veterinarian Dr Arvind Mathur rescued 46 leopards,

out of which 43 were males. There are four districts in which quite a few human beings have been killed by leopards: Pratapgarh, Dungarpur, Rajsamand, and Alwar. In the last 15 years, as many as 30–35 humans were killed by leopards in these four sites.

The Forest Department took a proactive step this year by launching Project Leopard, Rajasthan being the first state in India to launch this project. Project Leopard may sound like it is meant to increase the population of leopards in the state (as was the objective of Project Tiger), but this is more like a project to conserve leopards by improving their prey base, mitigating conflicts with humans, and eliminating poaching.

**Sloth Bear:** Forest Department records state that a total of 900–1,000 sloth bears exist in the state. Around 70% of the wildlife sanctuaries

of Rajasthan have sloth bear populations. There are several forested areas in the state outside of the protected areas where they are also found. Even though they are present in various parts of the state, bear conflict is disproportionately concentrated around Mt Abu. Every year, 6–7 people are badly mauled by bears and most of the victims are among the locals. Mt Abu is a hill station with hundreds of tourism facilities, and thousands of tourists who irresponsibly throw garbage around, which attracts bears to venture near human habitations. Mt Abu earns a large amount of money from tourism, and in order to reduce the conflict with bears, priority should be given to address the problem of garbage dumping in this hill resort.

**Tiger:** Rajasthan has lost 96% of its historical range of tiger distribution, and tigers are now confined to the Ranthambhore



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A farmer chases a leopards off his field in broad daylight on the periphery of Ranthambhore.  
Conflict often results in more injury to animals than to humans



A tigress wanders into the bustling town of Khandar outside of Ranthambhore in broad daylight. Tiger Watch's Village Wildlife Volunteers maintained calm and kept the growing crowd of spectators away from the tigress

and Sariska tiger reserves. Since the declaration of Project Tiger in 1973, 10 humans have been killed by tigers in Ranthambhore. Of these, nine were killed inside the reserve, and one a kilometre away from the periphery. A large and vibrant economy generated through tiger tourism has resulted in strong local community groups actively supporting tiger conservation, and along with timely compensation for livestock kills, public anger towards tigers is reducing.

### A Point to Ponder

Relations between humans and wildlife changed when humans stepped up their trophic level in the food chain due to their intelligence, use of fire, development of lethal tools and weapons, and formulated social bonds for mutual support. They then took over as intelligent super predators and created a landscape of fear for other species. After attaining super status in the food chain, we need to take the responsibility to manage

our ecosystem rationally, and we have to learn to live with animals, as our irresponsible actions on the planet are threatening not just wild animals but our very own existence.



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