

Conservation After Conflict: How Wildlife is Adapting in Manas National Park

Political Conflicts Reshaping Wildlife

Political conflicts and insurgencies, though primarily involving human groups, have impacts that reach far beyond people, affecting wildlife, ecosystems, and the environment. Armed conflicts make conservation efforts much harder. While some studies suggest that conflicts might occasionally benefit wildlife, such as reducing human pressure on animals when people avoid conflict zones or slowing down harmful industries, the negative effects are more significant. These include direct harm to animals from weapons, chemicals, increased hunting by parties involved and habitat destruction. Recent studies from Africa show that as conflicts increased, populations of large mammals dropped significantly, and many species are struggling to recover. Given these challenges, it's essential to understand how conflict affects wildlife in order to guide conservation efforts and help these species recover.

A Mayhem in Manas: The Impact of Ethno-political Conflict on Wildlife

Manas National Park (MNP) is located in the state of Assam, India, within the eastern Himalayan biodiversity hotspot. It is contiguous with the Royal Manas National Park of Bhutan, creating a vast habitat for wildlife encompassing two countries. The region was severely affected by ethno-political conflict from the late 1980s until 2003, which caused widespread damage to the park's habitats, wildlife, and conservation efforts. This unrest disrupted the protection of the park, destroyed natural habitats, and led to a significant decline in wildlife populations. During this time, the Indian Rhinoceros was poached to the point of extinction in the park, requiring a re-introduction program to bring the species back. Although political stability began in 2003, occasional ethnic conflicts continued in the region almost till 2016, affecting one of the ranges of the park.

Path to Recovery: Long-Term Research and Monitoring for Enhanced Conservation

Wildlife monitoring with camera trapping in MNP began in 2010, covering a few areas. It is a method used to capture images of wildlife in their natural habitat. It involves setting up cameras with motion sensors in areas where animals are likely to pass. When an animal triggers the sensor, the camera takes a photo or video, allowing researchers to observe and monitor animal species without disturbing them.

However, it was only in 2017, due to the current study, that comprehensive camera trap surveys were conducted simultaneously across all three ranges of the park. This study focused on mammals - which are warm-blooded animals with backbones, fur or hair, and the ability to produce milk for their young with an aim to document their diversity as well as to understand how civil conflict affected them.

Key Takeaways from the Study

• Methods followed and results

Survey Duration and Method: A camera trapping survey was conducted from 28 December 2016 to 24 February 2017, across three forest ranges in MNP - Panbari, Bansbari, and Bhuyanpara.

Camera Setup: Cameras were set up on trees and poles, inside steel cages, to prevent damage from wildlife. A total of 118 camera trap locations were used.

Data Collection: Cameras were active 24 hours a day, capturing images of animals. Camera traps were active for 6,173 trap-days (No. of cameras used x Total no. of days). The images were downloaded regularly, and experts identified the species,

capturing 21,926 photographs of 25 mammal species from 13 families.

Comparing Different Areas: The study compared the mammalian prey and predators between two areas (Panbari vs. Bansbari-Bhuyanpara) to understand how wildlife populations differ across the park.

Capture Rate: The study calculated how often different species were captured by the cameras (called the photo-capture rate index or PCRI), helping to understand the abundance of species in different areas. It was found that mammalian prey species had lower capture rates in the Panbari area compared to the Bansbari-Bhuyanpara areas, while large carnivores like Wild Dogs were captured more in Panbari.

Species Mapping: The data was used to map where different species were found in the park, showing spatial differences in wildlife distribution.

Statistical Analysis: A statistical test was used to see if there were significant differences in capture rates between the two areas, considering the possible errors in data. There were significant differences in the capture rates of four species - Barking Deer, Sambar, Gaur, and Wild Dog between the two areas.

• Inferences and Discussions

Wildlife Presence and Monitoring: Despite years of conflict, most mammal species expected in Manas National Park were found during the study, except for a few species like the Sloth Bear and Fishing Cat. This suggests that the number of species in the park has remained mostly intact.

Impact of Conflict on Species: The study found differences in the number of animals detected in different parts of the park. Areas that experienced less conflict (Bansbari and Bhuyanpara) had more herbivores like wild buffalo and gaur, which are also at risk of poaching. Areas with more conflict (Panbari) had higher numbers of large carnivores

like wild dogs, possibly because they avoided human activity in the conflict zone.

Refuge for Carnivores: The nearby Royal Manas National Park in Bhutan may have served as a safe haven for large carnivores like tigers, which then moved into the Panbari range of Manas once security improved. This highlights the importance of connected wildlife areas for supporting animal populations.

Limitation of the study

Camera traps were mostly successful in documenting some species. However, it did not capture some species groups like rodents, arboreal (tree-dwelling), and aerial mammals. However, direct observations confirmed the presence of three primate species: Capped Langur, Golden Langur, and Rhesus Macaque. Additionally, other species were recorded during long-term monitoring, including Black Giant Squirrel, Himalayan Striped Squirrel, and Pygmy Hog. Another limitation comes in the form of lack of comparable data on mammal distribution prior to the conflict, which made it impossible to directly compare the pre- and post-conflict effects on species abundance and distribution.

While the study suggests conflict has impacted wildlife distribution, further research is needed to fully understand how conflict and peace affect species populations over time. This will help improve conservation efforts in the park and beyond.

JoTT article summarized:

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