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Calls for natural solution over man-made one in flood-ravaged rhino refuge

by **Azera Parveen Rahman** on 29 August 2019

- *Kaziranga National Park in India, the global stronghold of the greater one-horned rhinoceros, has 144 artificial highlands built to help animals find refuge during the annual floods that hit the region.*
- *Experts say the artificial highlands are merely temporary solutions and won't be beneficial over the long term.*
- *Some say the artificial highlands will lead to more erosion and siltation in the grasslands than occurs naturally. Moreover, only rhinos seem to be using the artificial highlands, while other animals tend to move toward natural highlands in neighboring hills.*
- *The real solution, some experts say, lies in keeping the migration routes that the animals follow to reach their natural highlands free of human settlements and commercial establishments.*

Last month, an image of a tiger fleeing from the floods that inundated much of Kaziranga National Park in the northeastern state of Assam in India went viral on social media. Other animals weren't so lucky; the floods killed more than 200 animals, including 18 greater one-horned rhinos.

Among the most telling images of the devastation the floods caused was that of a group of rhinos huddled on a patch of dry land in the submerged national park. Presumably exhausted, some of the animals were lying down, while one tried to clamber up from the surrounding water. There have been similar pictures of helpless animals standing atop highlands created inside the national park to offer relief during the annual floods.

Kaziranga has 144 such artificial highlands. Thirty-three of them were sanctioned three years ago in the hope that they would help bring down animal mortalities during the floods that hit Assam every year.

But are these artificial highlands beneficial in the long run, both for the national park's fragile ecosystem and the animals? Are they a long-term solution, given that Assam gets ravaged by floods every year, floods that often come in more than one wave? Environmentalists aren't convinced.



A female tiger fleeing the flooded Kaziranga National Park for the higher grounds of the Karbi Anglong hills took shelter in a store. Image by the International Fund for Animal Welfare (IFAW)/Wildlife Trust of India (WTI).

Pankaj Sharma, the divisional forest officer of Nameri National Park, also in Assam, said building artificial highlands isn't a tenable solution. "Creating 33 artificial highlands, in addition to the existing 111, will lead to more erosion, more siltation in the grasslands," Sharma told Mongabay India. "The grasslands of Kaziranga, its wetlands are a very important part of its ecology, on which multiple animal species are dependent, including the rhino."

Elaborating on his experience in Kaziranga, where he worked previously, Sharma said there was a time when grass grew up to a height of 12 feet, or nearly 4 meters, in the park. "Now that's rare," he said.

At a conclave titled "Climate Change Threats on Wetland Ecosystem of Protected Areas and their Management," organized by the Kaziranga Wildlife Society and the Assam Science Technology and Environment Council (ASTEAC) earlier this year, scientists and other experts said that erosion, siltation and shallowing of wetlands have become the major threats to Kaziranga. Although the erosion in this case is river-related, Sharma said that the artificial highlands further increase this threat. "These artificial highlands may offer temporary relief, but their threat of siltation is more grave to the ecology," he said.

Floods are not the enemy

Kaziranga National Park stretches across 880 square kilometers (340 square miles) and has a core area of 430 square kilometers (166 square miles). The park is bounded by the Brahmaputra River to the north and the hills of Karbi Anglong to the south. In addition to being the world's major stronghold of the greater one-horned rhino (*Rhinoceros unicornis*), Kaziranga is home to several globally threatened species such as the Bengal tiger (*Panthera tigris tigris*), Indian elephant (*Elephas maximus indicus*), wild water buffalo (*Bubalus arnee*), gaur (*Bos gaurus*), sambar deer (*Rusa unicolor*), hog deer (*Axis porcinus*), and western hoolock gibbon (*Hoolock hoolock*). The annual floods put immense pressure on these animals.

A one-horned rhino swims toward the highlands during the floods in Kaziranga National Park in July 2019. Video by Rohini Saikia.

But ecologically, floods aren't the villains. "On the contrary, floods are necessary for Kaziranga," said former park director Satyendra Singh. "The waters wash away invasive weeds, revitalize the wetlands and replenish the grasslands on which animals, including the key species like rhinos, tigers and elephants are dependent on."

Floods are part of an ecological process, and animals possess a natural instinct to respond to this process by moving toward natural highlands, such as to the hills of Karbi Anglong, as the waters rise.

"If you observe, the animals start moving towards the natural highland June onwards," Sharma said. "The hog deer migrates in big numbers and elephants start moving towards the west."

However, hog deer are among the biggest casualties during the annual floods. Their seasonal migration occurs through specific routes, or animal corridors, which are increasingly being encroached upon by human settlements and commercial establishments that block the animals' natural paths.

A sustainable solution, experts say, lies in recovering these animal corridors and giving back to the wildlife full access to their natural highlands.

"As a whole, artificial intervention [artificial highlands] to an ecological process is not useful," Robin Sharma, a research officer at Kaziranga National Park, told Mongabay India. "The main way to help animals and save their lives is to free the natural corridors. Kaziranga and Karbi Anglong were once a part of the same landscape; the hills of Karbi Anglong were the natural highlands when [Kaziranga] was flooded. There were no interruptions in the corridor. There were no

establishments, blocking these corridors. But now, where do these animals go? Ideally, artificial intervention should be as low as possible, but for temporary relief, these artificial highlands are providing relief.”

Natural corridors rather than artificial highlands

According to Robin Sharma, nine identified animal corridors connect Kaziranga National Park to the animals’ natural highlands in the hills. Not only is increasing human encroachment blocking these natural paths, mining activities and stone quarries along the national park’s southern boundary and in the catchment areas in the Karbi Anglong hills have disrupted the animals’ natural refuge.

In April this year, the Supreme Court banned all types of mining and related activities along Kaziranga’s southern boundary as well as in the catchment areas of the rivers that originate in the Karbi Anglong hill ranges and flow into the national park. This is a significant move, said Robin Sharma, considering how mining and quarrying activities were leading to “contamination of the water flowing down to Kaziranga,” which then affected wildlife and their habitat.

Prerna Singh Bindra, a former member of India’s National Board for Wildlife and author of *The Vanishing: India’s Wildlife Crisis*, raised another critical issue affecting Kaziranga’s wildlife: National Highway 37 (NH-37), which cuts through the landscape between Kaziranga and the hills of Karbi Anglong. Every year, as the national park gets flooded and the animals try and escape, they are left with no choice but to take on the speeding traffic on NH-37 while crossing over to the highlands.

This puts additional stress on the animals, and despite speed limits on the highway, there’s always a large number of animal casualties. According to a flood report by the forest department, 17 animals were killed by speeding vehicles along NH-37 in this year’s floods. Wildlife conservationists say they’re now worried about plans to widen NH-37 to accommodate rising traffic.

“The important issue here that needs to be address[ed] on a priority basis is to conserve the corridor connecting Kaziranga to Karbi Anglong, which are the natural highlands,” Bindra said. “Plans to expand the National Highway 37 that cuts through this vital corridor must be shelved. The corridor is also choked by encroachments and expanding infrastructure, such as [tourist] resorts. There is extensive illegal mining [stone quarrying] in Karbi Anglong which must stop and Karbi Anglong must be protected. The passage for wildlife to these natural highlands must be cleared and be made safe.”

Wildlife conservationist and activist Rohit Choudhury filed a plea with the National Green Tribunal against the widening of NH-37, on the grounds that the heavy traffic

endangers the lives of animals. The tribunal, which is tasked with overseeing the speedy disposal of environmental cases, turned down the plea since the matter was already under consideration at the Supreme Court.



Animals swim through floodwaters in an attempt to reach higher ground during the floods in Assam. Image by IFAW/WTI.

So far, it's been mostly the rhinos that seem to have taken advantage of the refuge provided by the artificial highlands inside Kaziranga during the floods, according to a park official. Most other animals, including elephants and hog deer, still prefer to migrate to the natural highlands in Karbi Anglong.

Robin Sharma, however, said that the artificial highlands were a mitigation measure — “however unwilling we may be to the idea” — to deal with the impact of human activity on the animals’ natural passage. About 70 percent of the 111 existing artificial highlands, he said, were in a dilapidated condition. “The 33 new ones are built along the southern boundary of Kaziranga, in the east-west direction, in the direction of the water flow.”

Pankaj Sharma said that “repairing the existing highlands, instead of building new ones” to provide a temporary solution, would have been ideal. Activist Rohit Choudhury agreed, adding that instead of diverting resources to create artificial

refuge spots, the government should emphasize the clearing of animal corridors that connect to their natural refuge.

In Kaziranga, officials say they're working toward maintaining the sanctity of the animal corridors. "In some of the functional parts of these animal corridors, there have been houses and shops built. We would like to regularize the corridors," Robin Sharma said.

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