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US funding shortfall halts Nepal's rhino census, sparks debate over methods

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Nepal canceled its 2025 rhino census citing a funding shortfall following the Trump Administration's pullout of USAID funding.

- *The traditional census method, which uses elephant-mounted teams to sweep dense forests, is labor-intensive, costly, dangerous and outdated, wildlife experts say.*
- *Field researchers recount encounters with wild elephants and tigers during past censuses, calling for safer, non-invasive methods like genetic analysis and camera traps.*
- *While some officials defend the value of the elaborate census, others argue Nepal must modernize its approach to better protect its rhinos and the personnel involved in the census.*

KATHMANDU — In March 2021, dozens of elephants marched through the grasslands and sal *(Shorea robusta*) forests of Chitwan National Park, their riders armed with GPS devices and notebooks, searching for one of Asia's most iconic megafauna: the greater one-horned rhinoceros (*Rhinoceros unicornis*).

The labor-intensive census mobilized more than 300 people and spanned three protected areas and 21 habitat blocks. It ended with a population estimate of 752 rhinos — a 16% increase from the last census in 2015, raising hope for the species classified as 'vulnerable' by IUCN, the global conservation authority.

Now, for the first time in decades, Nepal has canceled its national rhino count, citing a lack of funds. "We've decided to carry out the census next year," said Bed Kumar Dhakal, spokesperson for the country's Department of National Parks and Wildlife Conservation (DNPWC).

The quinquennial rhino census, which takes nearly a month, costs an estimated $115,000-155,000 (around 15-20 million Nepali rupees).

Early this year, the Trump Administration in the U.S. launched a policy to reduce overseas spending, shutting down the activities of its main aid agency USAID. Nepal had anticipated support from USAID's Jal Jungle project, with longtime conservation partners including WWF, Zoological Society of London and National Trust for Nature Conservation (NTNC) also expected to share the rest of the expenses. After the USAID pullout, the government decided to cancel the census plans.

Some conservationists, however, argue that this pause presents an opportunity to rethink how Nepal monitors its flagship species.

Naresh Subedi, member secretary at NTNC who has worked on rhino conservation for more than two decades, said the lack of donor funding shouldn't have stopped the census. "What's harmful for the country is that if you don't have the willpower, blaming lack of funds for not working is just an excuse. Because if you have willpower, you can do it," Subedi told Mongabay.

Conservation carnival or counting exercise?

Beyond the cost, criticism is also directed at the elaborate nature of the census. The event typically begins with a ministerial inauguration, drawing high-level officials and donors to the park. A senior DNPWC ecologist leads the operation, with a multi-agency team overseeing efforts on the ground.

Mobilizing elephants and paying field staff make up a major portion of the costs. Protected area is divided into blocks and, under the sweeping method, elephants are used to systematically cover each section for counting.

Other expenses include equipment such as GPS trackers, cameras, binoculars, fuel and gear. Some conservationists advocate more modern and cost-effective methods. "It's good not to turn it into a spectacle. Let scientists do their work in the field," Subedi said. "If an inauguration is absolutely needed, a small event can be organized at the ministry or department in Kathmandu."

Dhakal, from DNPWC, said that, while he has questioned whether the ministerial visits were required, he has come to see its benefits. "At the same time, it provides

an opportunity for the minister to directly engage with the country's conservation efforts."

Others such as Sharad Adhikari, secretary at the nonprofit Conservation Alliance Nepal, said they see value in visibility. "It's important to continue the tradition because it will have a huge impact. The event generates national and international news, helping draw attention to wildlife conservation. But we shouldn't overspend on it," said Adhikari, who previously served as the member secretary of the NTNC.

Critics also point out the risks of using elephants for the census. In 2021, a senior wildlife technician, Binod Shrestha, suffered a spinal injury when a wild elephant charged at him. Several others were also injured in the attack.

Subedi attributed the attack to rogue wild elephants. But such incidents have raised fears among the frontline workers.

"It's high time we reevaluated the method we use to count rhinos," said Rabin Bahadur K.C., a wildlife researcher with NTNC. "Traditionally, we've relied heavily on domestic elephants, but this approach is increasingly problematic. In places such as Bardia, domestic elephants frequently come into conflict with wild elephants, and the risks are further compounded by the presence of wild tigers."

During the 2021 census in Bardia, Polish Ram Tharu, a mahout, was killed by a tiger after heading out to collect fodder for his elephant. "This was the third attack by the same tiger in that area. We later identified it as a problematic animal and relocated it to the zoo in Kathmandu," said K.C., who is based in Bardia.

From choppers to elephants

The rhino census in Nepal has evolved over the decades, with conservationists developing a homegrown methodology.

The country's first census in 1968 was carried out using aerial surveys. In June 1968, Hemanta Mishra, a pioneering biologist who helped set up Chitwan National Park, accompanied New Zealand wildlife expert Graeme Caughley in the country's first study, with their survey estimating the number of rhinos between 81 and 108. They hired a Bell helicopter from an American company, one of the two choppers available at the time in Nepal, as Mishra has written in his book *Soul of Rhino*.

First introduced in 1994 and refined over decades, the current census method was developed to suit the country's unique terrain. Unlike the open savannas of Africa, where aerial surveys are possible, Nepal's rhinos live in dense riverine forests and grasslands with tall grasses near river valleys such as the Rapti in Chitwan or the Babai in Bardia district. "We can't use helicopters like they do in Africa," said Subedi. "It doesn't work here because our rhinos hide in dense vegetation."

Using trained elephants, teams move in a transect formation across habitat blocks, spaced 100-150 meters (328-492 feet) apart. Rhinos are identified based on horn structure, skin folds and scars. The count takes three to four weeks and involves up to 300 people, including mahouts, wildlife technicians and support staff.

K.C., who took part in the 2021 census, wrote about his experience for *Dialogue Earth* expressing his concerns about the elephant-back counting method.

"Riding atop an elephant, you must carry equipment like cameras, binoculars and compasses," K.C. said. "The ride is unstable. If you lose your grip on the rope, there's a serious risk of falling. This method is not only physically demanding but also dangerous."

Tirtha Lama, a wildlife technician in Sauraha, Chitwan, who has taken part in most rhino censuses since 2005, shared similar concerns. "I've seen elephants panic during storms and throw their riders [off]," Lama said. Once, in the Narayani River area, heavy rain and hailstorm struck while Lama and his team were working. Trees fell, elephants fled, and he was thrown off. "Luckily, I suffered only minor injuries," he recalled. Rhinos, Lama explained, tend to be frightened by elephants. Overworked elephants, in turn, may become aggressive and lash out.

Modernizing the count

Instead of relying solely on elephant-back counts, Subedi advocates using dung DNA analysis, which also reveals sex ratios and genetic health.

"The process is relatively simple: Collect fresh dung from across habitat grids, extract DNA in a lab, and use that to determine how many unique individuals are present," he said. This technology can reduce costs by up to 70%, according to him.

Another alternative is the mark-recapture method using photographs. Teams go into the field for several weeks, document individual rhinos, then return later to see how many of those individuals are re-sighted. This approach is already being used in Bardia National Park, where rhino populations are small.

"Where you have only 17 rhinos, losing two or three could be catastrophic," Subedi said. "That's why we do monthly monitoring there, not wait five years."

Dhakal agreed rhino monitoring must evolve, but pointed out the lack of a dedicated lab and legal guidelines. "While we have protocols in place for tiger census, there are no specific guidelines for rhinos," he said.

horned rhinos at a rescue center in Chitwan. Image by Abhaya Raj Joshi.

Drone-based counting isn't viable either, as the rhino habitat is thick with tall grass and large trees, according to Dhakal. Thermal imaging, which detects heat signals from animals to create images for counting, is also under discussion. "But adapting such technology to our context will take time," Dhakal said. "If research institutions want to pilot new methods, we're ready to facilitate them."

Some still value the traditional method for its accuracy over remote tools. Lama said he believes seeing rhinos firsthand offers better accuracy than remote tools like camera traps. "Camera images often fail to capture the whole animal, especially in dense terrain," he said. "Direct sightings allow us to take comparative photographs and identify individuals based on skin folds, horn structure and scars."

Why the census matters

Dhakal said that, despite the challenges, he sees the five-year census as vital to tracking conservation progress. "It's a chance to assess whether surveillance and anti-poaching efforts are working. If we don't do it, we won't know if rhinos have died from poaching or disease."

Indeed, the 2021 census showed a troubling slowdown. Between 2011 and 2018, the rhino population grew by 5-6% annually. Between 2018 and 2021, the growth rate fell to 3%. "That flattening may indicate ecological stress," Subedi said. "There are fewer young rhinos and interbirth intervals have increased from the ideal three years to around 45 months."

Subedi said he supports population data but criticizes reliance on costly, outdated methods. "I don't oppose counting rhinos. I oppose routines that prioritize tradition over impact," he said.

K.C. agreed. "Our current approach depends on elephants and human labor. We must now seek safer, less invasive and more sustainable alternatives."