THE CONVERSATION

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Dehorning rhinos tips the balance against poaching – new study

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A dehorned rhino in Kruger National Park, South Africa. Beata Whitehead/Getty Images

Black and white rhino populations in the Greater Kruger (Kruger National Park and surrounding reserves) in South Africa have plummeted from over 10,000 rhinos in 2010 to around 2,600 in 2023. Hundreds of rhinos are killed each year by poachers for their horns. These are sold on the illegal global market.

White rhino being dehorned. Greater Kruger Environmental Protection Foundation

Nature reserve managers, rangers, international funders, and local non-profit organisations have invested millions of dollars in anti-poaching interventions. These include tracking dogs to track poachers, artificial intelligence-enabled detection cameras, helicopters to monitor reserves and, more recently, dehorning (removing rhinos' horns reduces the incentive for poachers).

To see if these were working, the Greater Kruger Environmental Protection Foundation set up a research project involving several reserve managers, rangers, and scientists from the University of Cape Town, Nelson Mandela University, University of Stellenbosch, and the University of Oxford.

The South African National Parks, World Wildlife Fund South Africa, and the Rhino Recovery Fund were also involved.

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Together, managers and scientists gathered seven years of rhino poaching data across 2.4 million hectares in the north-eastern region of South Africa and western Mozambique. During this time, we documented the poaching of 1,985 rhinos across 11 reserves in the Greater Kruger area. This number is about 6.5% of the rhino populations in these reserves annually.

This landscape is a critical global stronghold that conserves around 25% of all Africa's rhinos.

Rhino horns regrow. Courtesy Timothy Kuiper

Our study's headline result was that dehorning rhinos to reduce incentives for poaching achieved a 78% reduction in poaching (average reduction across implementing reserves). This was based on comparison between sites with and without dehorning as well as changes in poaching before and after dehorning. Exactly 2,284 rhinos were dehorned across eight reserves over the seven years of our research – this was most of the rhino in the region.

Our findings show that significant progress can be made against rhino poaching by reducing the reward attached to poaching (removing the horn). This is a strategic shift in focus away from purely focusing on increasing risks to poachers.

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But we are being careful to note that dehorning is not a complete solution. Our research found that 111 rhinos were poached even though they had been dehorned. This is because up to 15cm of horn is left on the rhino when it is dehorned by veterinarians. This is to protect the growth plate at the base of the horn.

Rhinos' horns regrow over time. During our fieldwork, we also noticed that criminal syndicates remain willing to kill rhinos for their stumps, even if they do this at lower rates than before dehorning.

It may be best to think of dehorning as a very effective but short-term solution that buys us time to address the more ultimate drivers of poaching: horn demand, socio-economic inequality, corruption, and organised criminal networks.

A different approach to pinning down the problem

Part of what made our study special was its strong focus on collaboration between managers and scientists. The project was first conceived by reserve managers at the frontline of rhino conservation and led by Sharon Haussmann, chief executive officer of the Greater Kruger Environmental Protection Foundation. They recognised the need to take a look at whether their investments into tracking dogs, artificial intelligence cameras and other anti-poaching interventions were paying off.

Before dehorning. Courtesy Tim Kuiper.

Faced with a poaching crisis despite millions of dollars invested in law enforcement, security and technology, Sharon and the team were bold enough to ask: “Why are we still losing so many rhinos? What could we do differently?” These managers then began working closely with scientists to tackle this problem together through our research.

Tragically, Sharon died unexpectedly on 31 May, less than a week before our research was published. We want to dedicate this research to her legacy.

Detecting and arresting poachers alone is not enough

Dehorned mother rhino and calf. Courtesy Timothy Kuiper

The nature reserves we studied had invested US$74 million (R1 billion) in anti-poaching interventions between 2017 and 2021. Most of the investment focused on reactive law enforcement – rangers, tracking dogs, helicopters, access controls and detection cameras. This helped achieve over 700 poacher arrests. Yet we found no statistical evidence that these interventions significantly reduced poaching.

Why? These interventions are a necessary element of the anti-poaching toolkit. But they were compromised by bigger challenges. For example, stark socio-economic inequality in the region creates the ideal conditions for crime to thrive, and criminal syndicates find it easy to recruit people willing to take the large risk of poaching rhino.

Read more: ***Rhino poaching in South Africa has dipped but corruption hinders progress***

Entrenched corruption among police and reserve staff allowed offenders access to inside information on the locations of dogs, cameras and rhinos. This meant that poaching was not deterred as much as it could have been.

Finally, ineffective criminal justice systems mean that arrested offenders often escape punishment, with evidence from the Greater Kruger of poachers who were multiple repeat offenders.

What can be done differently?

A range of interventions will be needed to complement dehorning, particularly as poaching for stumps would probably continue if there were no risk to poachers. There is also some evidence that dehorning rhino in one area means poachers may move to another area where rhino still have horns and poach there instead. (This has happened in South Africa's second largest rhino stronghold in Hluhluwe-iMfolozi Park where rhino have not been dehorned.)

Read more: ***The fight against poaching must shift to empowering communities***

Our findings challenge the conventional wisdom that detecting and arresting poachers is enough on its own. Instead, we recommend these measures:

1. Give local people a voice and a stake. Many people affected by rhino conservation have no say and don't share in the benefits of the industry.

2. Disrupt transnational criminal networks outside protected areas through intelligence-led investigations (follow the money).

3. Continue supporting dehorning in the short term. This will buy time to solve the biggest drivers of wildlife crime: inequality, horn demand, and corruption.

4. Dehorning needs to be supported by other measures to protect the rhino.

5. Support people first, then interventions. Rangers are key here – their welfare, wages, training and safety are not always given the attention or funding they deserve.

6. Keep loving rhinos and buying your kids pyjamas with them on.