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Researchers map Africa’s snaring crisis, calling for sustainable solutions

The thunder of a rifle echoes across the savannah. Antelope scatter as birds of all feathers take to the air. A dull thud signals that the marksman’s shot was true. The horn from the felled rhino will command more money on the black market than the hunter could otherwise make in a year.

This vignette may epitomize the decline of African wildlife for many people: a poacher picking off a rhino to sell its parts on the black market. But big game poaching isn't the only kind of hunting occurring in Africa. What’s more, guns aren’t the only tools used, and rare animal parts aren’t the sole items sought after by hunters. Snaring — a method that uses wire, rope or cable loops set along animal paths to trap and immobilize wildlife — is often employed to obtain food or income. It is widespread across Africa and is contributing to wildlife declines across the continent.

A team of researchers led by Sean Denny, at UC Santa Barbara, synthesized data on snare hunting across Africa, revealing just how ubiquitous the practice is. The paper, published in the journal BioScience, examines the drivers, causes and possible solutions to unsustainable snaring. It also draws attention to its scale and consequences, including how wasteful the practice can be. The authors estimate that tens of millions of snares are set across the continent annually, and that at least

tens of millions of kilograms — possibly more than 100 million kilograms — of wild meat go to waste every year due to snaring. Denny coordinated the project with Dan Ingram at the University of Kent, in collaboration with researchers from the Center for International Forestry Research and the Royal Society for the Protection of Birds.

While they think top-down approaches alone won't be sufficient to manage the issue, the researchers propose a few strategies, such as incentivizing sustainable practices among hunters themselves and improving the effectiveness of enforcement and snare removal in areas where hunting is illegal.

"Previous research has focused on snaring in Africa, but often at local scales or for specific species or groups of species. We brought this research together to show that snaring has become a prominent threat to wildlife and sustainability in Africa at a continental scale," said Denny, a doctoral student under Professor Bruce Kendall at the Bren School of Environmental Science & Management.

"We also wanted to draw particular attention to the issue of wastage in snaring, and talk about ways to address it," he continued. "Not to make hunting illegal, but to talk about ways to reduce wastage."

The perfect trap

Snaring is a form of trap hunting that uses a hidden loop of rope or wire that cinches around an animal's extremities. Humans have likely been using snares for thousands of years.

Snares are an incredibly practical hunting tool. Wire is both legal and cheap, so snares are easy to produce quickly in large numbers. Hunters can set many snares at once, which also frees up time for other work. Many of these characteristics also make enforcement hard. Snares are difficult to detect and easy to replace. And since they operate without the hunter present, there's a low risk of being caught by authorities.

Many of the aspects that make snare hunting attractive are what quickly make it a problem for wildlife management. Cheap materials and a simple design enable extensive deployment. Modern materials used to make snares, such as wire and nylon rope, are also much stronger than traditional materials, like plant material and

animal skins, meaning modern snares can catch and hold large animals, making escape less likely. But most importantly, snares target wildlife indiscriminately. Whatever fits in the noose is game.

“Without some major changes snaring is likely to remain a major threat to wildlife populations in many parts of Africa,” Denny said.

Understanding the scale of the issue

Denny and his co-authors combed through databases and publications to quantify the scope of snare hunting in Africa. They first focused on Central Africa, where most data on hunting in Africa comes from. The team drew on the rates at which hunters use snares (compared to other hunting methods), the average sizes of animals caught and estimates of the amount of wild meat hunted annually in the region. They then back-calculated the number of snares needed to produce this amount of meat. The result was a minimum of 40 million snares, but potentially hundreds of millions, set annually in this region alone. Despite the large number, the authors suspect snaring in the region is rising.

Image

Photo Credit
Paul Hilton via Wikimedia
Anti-poaching patrols in Uganda confiscated over 12 tons of leg-hold traps and wire snares in Murchison Falls National Park in 2022 alone — at least 10 times the amount featured in Photojournalist Paul Hilton's "Snare Mountain" image.

To further explore scale, the authors collated data available on catch rates to estimate that hunters in Central Africa discard around 8-10% of ensnared animals, on average. Wastage can occur for a number of reasons, especially when hunters check traps infrequently. Left for too long, a trapped animal can die and rot or be scavenged before a hunter comes to collect it. Hunters also may discard a trapped animal if it's not a species they think they can make use of. Combining total catch with discard estimates and data on hunting elsewhere in Africa, the researchers calculate that upward of 100 million kg of wild meat could be wasted in Africa every year because of snaring.

All of this takes a toll on Africa's wildlife. The study points to numerous instances where snaring has been linked to wildlife declines, a connection that served as an important motivation of the paper.

Recognizing the causes

Food and income are the ultimate drivers of snare hunting. “Hunting is a big part of food systems in many parts of Africa, with wild meat playing important roles in both nutrition and culture,” Denny said. “For many people living in rural areas, hunting is also a cheap and accessible way to make money, especially during lulls in the agricultural calendar.” Unfortunately, hunting in its current form has become unsustainable in many locations.

High-intensity, large-scale hunting is, in part, a historical legacy. When Europeans came to Africa, they confiscated the land and wildlife for themselves. They then replaced existing customary governance with their own legal frameworks that didn’t recognize wild meat as a valued food source, or that otherwise excluded local people from hunting wildlife. Some African nations have tried to remedy this, but efforts often involve layering new laws on top of old ones, muddying the lines between legal and illegal hunting. “A consequence of this is that, in many countries, laws regulating hunting are [either] unclear — which complicates law enforcement — or simply ineffective, ” Denny explained. The situation is exacerbated by corruption and underdeveloped institutional structures. As a result, wildlife has become a de facto common-pool resource in many regions, where it has fallen victim to the tragedy of the commons.

Looking toward remedies

But there are ways to manage wildlife as a resource for hunting. Consider fishing. Fishing is a form of hunting: Fishermen are hunters and nets are their traps.

Although fishing is a well accepted part of the western food system, it faces many of the same challenges as snaring. Discards and bycatch are major issues in fisheries around the world, contributing to the decline of marine life, including many endangered species. Meanwhile, lost nets are like abandoned snares: They can continue to catch wildlife indiscriminately for years. Yet many governments and NGOs have demonstrated practices for effectively managing fish populations to allow for sustainable catch.

One possible solution is to devolve property rights to lower levels of governance, to give individuals and communities more ownership over natural resources. “Many hunting communities have norms against the unnecessary waste of food and other resources,” Denny said. “But currently they do not have legal recourse to exclude interlopers from accessing hunting territories, which means there isn’t a lot of incentive to manage wildlife for the future.” The authors therefore think solutions will require reorganizing governance and realigning incentives.

Moreover, there are some fairly straightforward ways to reduce wastage in snaring. The authors show that checking snares at least every two days could reduce wastage to 5% or less. Setting traps closer to villages would facilitate this, as well as setting fewer traps far from villages during planting and harvesting seasons and times of good fishing, when hunters often prioritize these other activities over checking traps.

Reducing the drivers of unsustainable hunting, like the demand for bushmeat, is also an important component of making hunting sustainable. Denny and his colleagues are currently studying the demand for wild meat in urban areas, which can be high even though wild meat is often not a dietary necessity.

“Snare hunting is an important conservation and sustainability issue across Africa,” Denny said. “Our hope is that, by illustrating its extent, impacts and regulatory challenges, it can further motivate policy-makers and practitioners to make changes that reduce the negative impacts of snaring and move hunting systems closer to sustainability.”

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