

Cattle grazing by Maasai not harmful to national park, research argues

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A type of antelope known as topi and cattle graze side by side inside the Maasai Mara National Reserve in Kenya. Credit: Bilal Butt

Bilal Butt knows how it sounds. The associate professor of sustainability and development at the University of Michigan understands that arguing

to let cattle graze in a national park offends the sensibilities.

However, his team's research, published in the journal *Proceedings of the National Academy of Sciences*, and generations of knowledge from the Indigenous Maasai people of Kenya back it up.

The Maasai's pastoral practices had almost no discernible positive or negative effect on the ecological well-being of the Maasai Mara National Reserve.

This is an important context for land that welcomes tourists while excluding Indigenous farmers, sometimes violently, said Butt, who works at U-M's School for Environment and Sustainability, or SEAS. He hopes his team's work will help reshape how people think about who gets to use land, for what, and where the beliefs that we use to answer those questions come from.

"There's this idea that seeing cows in the 'wilderness' is unnatural," Butt said. "But what's more unnatural: the people on safari in their 4-wheel drive Land Cruisers or cows eating grass?"

The Maasai Mara National Reserve was established to protect wildlife, yet it has seen populations shrink among its large, iconic herbivores, including zebras, impalas and elephants, over the last few decades.

Researchers and conservationists identified the Maasai practice of grazing their [cattle](#) on the protected land as a driver of those declines. Butt, however, has questioned the contexts under which these claims are made.

Throughout his education and training, he had seen how prevailing conservation theories and practices omitted the ancestral knowledge of people who had lived on the land long before the reserve was established

in 1961.

"The more I learned, the more I came to reject what I was hearing," Butt said. "The knowledge wasn't coming from the people who lived here. It was coming from the Global North with very little knowledge of how the Maasai raise livestock and interact with the environment."

Butt and his team have been working to help assert this neglected knowledge's place in conservation science and policy. Too much of that has relied on interpreting experiments designed to approximate the real world at the expense of studying what was happening, he said.

"People always say the livestock are bad, but where is this idea coming from? It's coming from research that doesn't accurately understand how Indigenous people and their livestock interact with the landscape," Butt said. "We wanted to do something that was based in their lived reality."

For their latest publication, Butt and Wenjing Xu, who was a postdoctoral researcher at SEAS, focused on measuring and quantifying the impact of the Maasai's cattle grazing practices.

To do that, they surveyed 60 sites on the reserve every month for 19 months, making observations about cattle, wildlife, vegetation and soil. They also used ecological and statistical models to thoroughly quantify the impact of grazing cattle on these ecological features.

The work confirmed that cattle and large wild herbivores shared the same spaces, especially near the reserve's boundary. But the cattle's direct, measurable effect on the park's land and large herbivores was minimal.

Of the 11 species Butt and Xu studied, only buffalo showed evidence of being displaced by cattle and that effect was small enough to be

characterized as "negligible."

Furthermore, although cattle perturbed [soil quality](#) and vegetation quantity, the effects were smaller than those from the natural activity of wild herbivores.

"There's a rush to criticize local people and what they do as necessarily detrimental. But that's not the case," Butt said. "If you think about this holistically—one that looks at the issue ecologically, historically and culturally—it's a very different message than the one we've been hearing. It's not about doom and gloom. It's about sustainability."

More information: Xu, Wenjing et al, Rethinking livestock encroachment at a protected area boundary, *Proceedings of the National Academy of Sciences* (2024). [DOI: 10.1073/pnas.2403655121](https://doi.org/10.1073/pnas.2403655121)

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