

Bushmeat hunting drives biodiversity declines in Central Africa

November 7 2016



A mustached monkey, killed by local bushmeat hunters in Gabon, Central Africa. Credit: Mike Riddell

Hunting has dramatically reduced wildlife biodiversity in forests near rural villages in the Central African nation of Gabon, a new Duke

University-led study finds.

By extrapolating their results from Gabon across forest landscapes in neighboring nations, the researchers conservatively estimate that similarly degraded wildlife communities are likely now found across 53 percent of Central Africa.

Large mammals, including monkeys and other primates and ungulates such as red river hogs and duikers - which are prized for their meat - have experienced the sharpest declines near villages.

Populations of rodents and small-bodied birds have increased in response.

"We observed a sharp decline in species diversity and a change in species composition the closer we got to any village," said John R. Poulsen, assistant professor of tropical ecology at Duke's Nicholas School of the Environment, who designed the study. "Conversely, the richness of mammal species increased by roughly 1.5 species for every 10 kilometers we travelled away from the village.

"That's a much steeper gradient of change than we had anticipated," he said. "It presents new evidence that bushmeat-hunting by rural communities is drastically shaping the wildlife community, an effect that could cascade through entire ecosystems and alter forest composition and diversity across the entire region. And this problem is only going to grow worse as the human population in the region increases."



A duiker, killed by local bushmeat hunters in Gabon, Central Africa. Credit: Mike Riddell

Poulsen and his team published their study Nov. 1 in the peer-reviewed *Journal of Applied Ecology*.

To conduct the research, they surveyed wildlife populations along 24 straight sampling lines running between 60 small villages in the Ogooue-Ivindo province of northeastern Gabon. Survey sites were located at distances from 2 kilometers to 30 kilometers outside the nearest village.

At each survey location, the team documented the diversity and abundance of all large vertebrate animal species they observed, along with any evidence of hunting—such as discarded shotgun shells, campfire sites or sightings of hunters themselves.

"Most signs of hunting were concentrated within a radius of 10 kilometers from the nearest village, creating a 'hunting halo' characterized by heavily altered animal communities composed mostly of small-bodied species," said Sally E. Koerner, a postdoctoral associate in integrative biology at the University of South Florida and a former postdoctoral associate at Duke's Nicholas School, who was lead author of the study.

"Distance to the nearest village emerged as a key driver of the relative abundance or decline of five of the six animal groups we examined," Koerner said. Of all major mammals, only forest elephants seemed not to be affected by it.

The concentrated small-scale hunting occurring around the villages likely is also having an impact on plant diversity in the region, Poulsen noted. As the number of seed-dispersing species such as monkeys and apes decreases with proximity to villages and the number of seed-eating rodents rises, "the relative abundance of large fruiting trees, which are food sources for both animal and human populations, could be reduced across the landscape," he said.

More information: Sally E. Koerner et al, Vertebrate community composition and diversity declines along a defaunation gradient radiating from rural villages in Gabon, *Journal of Applied Ecology* (2016). [DOI: 10.1111/1365-2664.12798](https://doi.org/10.1111/1365-2664.12798)

Provided by Duke University

Citation: Bushmeat hunting drives biodiversity declines in Central Africa (2016, November 7) retrieved 11 May 2024 from <https://phys.org/news/2016-11-bushmeat-biodiversity-declines-central-africa.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.