Hunting pushing central African forests toward ecological collapse

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Weapons and bushmeat (most likely chimpanzee limbs). A new study by the Universities of Stirling, Oxford, Queensland, and the Wildlife Conservation Society has found that rampant hunting in the forests of Central Africa could result in ecological collapse. Credit: David Nzouango/WCS.

Scientists from the Universities of Stirling, Oxford, Queensland and the Wildlife Conservation Society warn that current hunting trends in Central African forests could result in complete ecological collapse.

The authors maintain that the current rate of unsustainable hunting of forest elephants, gorillas and other seed-dispersing species threatens the ability of forest ecosystems to regenerate, and that landscape-wide hunting management plans are needed to avoid an environmental

catastrophe.

The study appears in the latest version of *Philosophical Transactions of The Royal Society B*. The authors include: K.A. Abernethy of the African Forest Ecology Group of Stirling University; L. Coad of the University of Queensland and the University of Oxford; G. Taylor of the University of Oxford; M. E. Lee of the Wildlife Conservation Research Unit and University of Oxford; and Fiona Maisels of the Wildlife Conservation Society and the African Forest Ecology Group.

"Humans have lived in the forests of Central Africa for thousands of years, until recently practicing subsistence hunting for the needs of their communities," said Kate Abernethy, lead author of the study. "Over the past few decades, this dynamic has drastically changed. Much of the hunting is now commercially driven, and species that play important ecological functions are being driven to local extinction."

Seed-dispersing species such as the forest elephant are important for the forests of Central Africa, giving these ecosystems the ability to regenerate. Credit: Fiona

Maisels/WCS

The researchers conducted a review of more than 160 papers and reports on the region's wildlife declines, hunting trends, and land-use analyses by humans. The authors found troubling trends that threaten the very fabric of rainforest ecosystems. In particular, mammals such as forest elephants, gorillas, forest antelopes and others play a major role in seed dispersal for most tree species; the removal of these mammals by bushmeat hunters disrupts forest regeneration.

Furthermore, previously untouched swathes of forest are being penetrated by roads, and subsequently degraded by logging and agriculture. In other areas, forests are cleared and replaced by single-species plantations of oil palm, rubber trees, and crops for biofuels. The authors warn that such plantations greatly reduce areas available for seed dispersing wildlife.

"Another emerging problem for Central Africa's forests is the migration of large numbers of people into remote forests, around the new plantations and the mining and logging camps," said WCS Conservationist Fiona Maisels, a co-author on the study. "This population growth creates additional hunting pressures on previously lightly populated areas."

The authors point out that good hunting management practices and planning must be included in any climate change strategy or land use plan in Central Africa. They add that efficiently managed multiple-use landscapes—combining protected areas alongside logging concessions—can maintain the seed-dispersing species while maintaining game species for hunting needs.

A top priority, the researchers assert, should be the protection of megafauna such as forest elephants and apex predators such as leopards in order to maintain intact ecosystems in Central Africa. Otherwise, the loss of wildlife will result in a disastrous spiral of forest degradation that will reduce the storage of carbon and the resilience of rainforests to climate change.

"Current climate models suggest that Central African rainforests may be more ecologically resilient to the short-term impacts of climate change than those of West and East Africa, or the Amazon," said co-author Dr. Lauren Coad. "However, severe ecological changes below the forest canopy, driven by hunting, are already occurring. The removal of seed-dispersing megafauna such as elephants and apes could reduce the ability of forests to sequester carbon."

"The clock is ticking on the future of large mammals in Central Africa's Congo Basin Rainforest, and with them on the future of the forests themselves and all the people who depend on them," said Dr. James Deutsch, Executive Director of WCS's Africa Program. "The people, the forests, and the wildlife need an emergency effort to bring illegal and unsustainable hunting under control."

Provided by Wildlife Conservation Society