

# Endangered eastern chimpanzees inhabit rapidly shrinking Ugandan forest fragments

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Maureen McCarthy, who is pursuing a Ph.D. in integrative and evolutionary biology at USC Dornsife, found endangered chimpanzees in Uganda are adapting to life in fragmented forest patches. Credit: Jenny via Flickr.

Two years spent collecting and analyzing eastern chimpanzee fecal samples from an unprotected region in Uganda has revealed a far larger population of the primates than previous estimates suggested for the area.

In the shrinking forest fragments between Budongo and Bugoma reserves—a roughly 1,200-square-kilometer area along Lake Albert on

Uganda's western border—researchers found evidence for roughly 250 to 320 chimpanzees. Previous estimates, based on counting nests from the ground, put the [population](#) at around 70.

The clustering of the genotypes suggests that there are at least nine communities of between eight and 33 individual chimpanzees, said graduate student Maureen McCarthy, a USC Dornsife Ph.D. student who conducted the research. McCarthy is pursuing her doctoral degree in Integrative and Evolutionary Biology.

A paper about her discovery was published in the journal *BMC Ecology* on Aug. 25.

"Our results show a surprisingly widespread and large chimpanzee population in this region, especially given the extent of habitat loss there," McCarthy said.

## **Shrinking forest patches**

There are an estimated 76,400 to 119,600 eastern chimpanzees left in the world, of which about 5,000 live in Uganda, according to a 2010 report by the International Union for Conservation of Nature, which classified them as "endangered."

The population that lives in the region McCarthy studied is important because it represents the growing status quo for these chimpanzees—no longer inhabiting wide, unbroken swaths of forest, they instead carve out an existence in shrinking [forest patches](#).

Because the area is unprotected, the chimpanzees are vulnerable to trapping. And the fruit trees that they rely on for food are rapidly being cut down, McCarthy said.

"Hundreds of kilometers of forest are estimated to have been lost in this region in recent years, and we saw plenty of evidence of this while collecting data. Each time we revisited an area, we found fewer trees than the last time we were there," she said.

## **Study demonstrates chimps' resilience**

Next, McCarthy will analyze her data to see whether the chimpanzees are using the fragments as a corridor to move between the two reserves or whether the populations in those reserves are genetically isolated.

"Maureen McCarthy's work is groundbreaking for the study of great ape population genetics and has important implications for wildlife conservation," said Craig Stanford, professor of biological sciences and anthropology and McCarthy's faculty adviser. "Her work shows that as African forests shrink from human disturbance, chimpanzee populations can be surprisingly resilient. She hopes to discover whether forest corridors allow for continued movement by [chimpanzees](#) despite severe [forest](#) fragmentation."

Provided by University of Southern California

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