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The Bats of Cameroon

?Proving the benefits of forgotten fruit bats

Eric Moise Bakwo fils

Editor's Note: The people of southeastern Cameroon really depend on their bats, but hardly anyone in the central African country realized it. Then Eric Bakwo fils went to work, with a little help and a scholarship from BCI and U.S. Forest Service International Programs. Bakwo fils hopes to earn his Ph.D. at Cameroon's Yaoundé University by studying fruit bats and their importance to the nation. He contacted BCI's scholarship program about a problem: He had no one to turn to for advice or guidance. "The subject is not of interest to my teachers or my university because there is no bat specialist in the country," he said in an email.

BCI sought help from Paul Racey, a top bat expert at the University of Exeter in Cornwall, the United Kingdom. Racey, who had conducted research in Africa, offered to review Bakwo fil's research proposal. He was impressed with the project, offered continuing advice and recommended the young biologist highly. BCI provided a BCI/Bats in International Forestry Scholarship in 2008 and another in 2009. The following report documents what Bakwo fils accomplished with that support.

Now Cameroon has its first bat biologist, and a champion for bat conservation.

Remarkably little is known about the bats of Cameroon. They were rarely studied by a handful of visiting European biologists. Worse, there has been no scientific interest in bats at all among universities and conservationists in our west-central African nation. They are not even considered in long-term conservation plans, and most Cameroonians either ignore bats or despise them. The best way to change the status of bats from persecuted to protected in Cameroon is to demonstrate the unappreciated ecological and economic value of these animals.


My two-year study did just that, demonstrating that the fruit bats of southern Cameroon play a key role in dispersing the seeds of many plants that are critical to healthy tropical forests and of considerable economic value to the people of those forests.

As the foundation of my Ph.D. research at the University of Yaoundé, I conducted the first inventory of bat species in the huge Dja Faunal Reserve of southern Cameroon. The reserve, which sprawls across 1.3 million acres (526,000 hectares) of lowland tropical rainforest, is the largest protected area in Cameroon. It has been designated a World Heritage Site and IUCN Biosphere Reserve, although bats are largely ignored among such popular mammal species as gorillas, chimpanzees, elephants and buffalo.

My work was supported by a Bats in International Forestry Scholarship from Bat Conservation International. These BCI scholarships are funded by U.S. Forest Service International Programs.

Several field assistants and I used mist nets to capture bats for at least seven consecutive nights each month at various sites in both old-growth and secondary forests. We used this



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opportunity to train three professional foresters who work in the Dja Reserve in bat-capture techniques and identification. Educating those who manage Cameroon's forests about the nature and importance of bats should greatly enhance their conservation.

While surveying bats around the reserve, we interviewed residents of the region to help us locate bat roosts, to assess attitudes toward bats and to determine the level of bat hunting for food. In a pleasant surprise, we found that, unlike many other areas in Africa and elsewhere, people of the Dja region make relatively little use of bats as "bushmeat."

In two years of mist netting, we captured and identified a total of 491 bats of 29 species. About 80 percent of these (394 captures) were fruit bats of nine species. The rest were low numbers of mostly insect-eating species.

The fruit bats included two Buettikofer's epauletted bats (*Epomops buettikoferi*), a species that previously had not been reported in Cameroon or central Africa. This raises the number of fruit-bat species confirmed in Cameroon to 15.

The most common species among our captures was the African long-tongued fruit bat (*Megaloglossus woermanni*), a nectar-feeding bat that had been described as rare in Cameroon. Our mist nets caught 153 of them. The only other species that numbered at least 100 in our sample was Franquet's epauletted bat (*Epomops franqueti*) at 102.

Each captured bat was identified, measured and weighed, and its sex and reproductive condition were determined. After the data were logged, each bat was placed in a clean, cloth bag for up to two hours to obtain fecal samples. The droppings were collected, labeled and stored.

The droppings were later examined for seeds, which were identified by a plant taxonomist. We also spread plastic sheets on the ground beneath bat roosts to collect feces for similar examination.

Research throughout the Old and New World Tropics “although not in Cameroon” clearly shows the crucial role of fruit bats in dispersing seeds that allow damaged rainforests to regenerate. And this is a region that, like most tropical ecosystems, is losing its forests at an alarming rate. Land is cleared for agriculture, population growth and various development projects.

Fruit-eating bats disperse huge amounts of seeds in their feces. Bats, which often cover great distances nightly, are much more likely than birds to fly across large clearings, and bats usually defecate in flight, so they are especially effective at reseeding cleared spaces. In addition, research suggests that passing through a bat's gut can increase the likelihood that a seed will germinate.

Given their abundance in the region and their seed-scattering abilities, along with the declining numbers of large fruit-eating animals, fruit bats could well be the main agent of plant dispersal. And certainly there is good reason to believe that the loss of fruit bats would have a catastrophic impact on tropical forests.

We have so far identified at least 52 plant species in fruit-bat fecal samples, and that number will no doubt increase, since our seed-identification process continues. We include in this list only plant species representing at least 5 percent of all seeds from each bat species.

These bat-dependent plants include those that produce such economically important products as papaya, guava, mango, fig and banana fruit, iroko and kapok wood, plus a variety of foods and medicines.

The importance of bats for people and forests of southern Cameroon is clear. Now we must convince Cameroonians of that.

During our research, we periodically visited villagers and schoolchildren in and around the Dja Reserve to explain the value of the bats among them and the need to avoid damaging their habitat. Our goal is to demystify bats and teach people that their fears are unwarranted.

To this end, my colleagues and I have created, in partnership with ECOFAC IV Cameroon (which conducts conservation programs in the Dja Reserve), an educational program to teach the importance of bats in our country. We are giving presentations to students, conservationists and local leaders at villages around the area.

The bats of southern Cameroon are invaluable to their human neighbors, and at least some of those humans are discovering that. We hope our research can help, finally, to begin conserving these animals.

ERIC MOISE BAKWO FILS conducted this research while a Ph.D. candidate in the Laboratory of Zoology at the University of Yaoundé in Cameroon. He is now a lecturer at the University of Maroua, also in Cameroon.

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