



In the Amazonian forests of southeastern Peru, an array of animals regularly visits bare-earth depressions for the express purpose of eating dirt. Monkeys, hoofed animals, rodents and birds frequent these sites, called “clay licks” or “*collpas*.” And each night, reports Louisiana State University graduate student Adriana Bravo, hundreds of fruit bats of nearly two dozen species congregate at collpas to drink the mineral-rich water that collects there.

With support from a Bat Conservation International Student Research Scholarship, Bravo studied the characteristics and diversity of fruit-eating bats that used the collpas, comparing them to bats found in the surrounding forests. She found that the collpas seem to be a key resource for Peruvian fruit bats and should be high-priority targets for conservation, since fruit bats are essential to tropical rain forests. As primary seed-dispersers for many plants, the bats are essential for maintaining the diversity that is key to the whole forest ecosystem.

Consuming soil, a practice known as “geophagy,” is widespread among mammals that primarily eat fruit, but it is not fully understood. The animals are believed to use earth as a source of important minerals that are largely missing from their fruit diet.

Bravo studied three major collpas at Peru’s Los Amigos Conservation Concession, a privately operated reserve that protects 525 square mile of pristine Amazonian forest. With several helpers, she captured bats once a week with mist nets at the three collpas and three forest sites. She netted roughly 10 times as many bats at the collpas as in nearby forests during the same periods.

A total of 25 bat species were identified at the collpas, and 23 of them were fruit bats, the most common of which was Heller’s broad-nosed bat. Only one individual represented each of the other two species. Of the 18 species netted in the forest, 11 were fruit eaters. Bravo said fruit bats clearly visit collpas far more than nectar- and insect-eating bats. Determining why is a subject for additional research.

Seven out of every ten bats captured at the collpas was female, while in the forests, four females were captured for every five males. In addition, 80 percent of females from the collpas were either pregnant or lactating. Other researchers have shown that nursing female fruit bats face nutritional constraints because their diets are limited to fruits. Water at the collpas may contain nutrients that help the bats overcome that limitation. Calcium has been proposed as an especially important missing nutrient for lactating bats, and researchers in Colorado report concentrations of insect-eating bat females visiting calcium-rich water holes. Further investigation is needed to confirm this hypothesis.

Bravo’s data strongly suggest that the collpas are critical resources for these fruit bats, although much more work is required to determine just how and why they are so important. Her research strongly suggests, however, that conservation and management decisions in the region must include protection for the collpas. The long-term health of the rain forest ecosystem depends on the bats that visit the collpas.

BCI’s Student Research Scholarship Program supports talented young scientists such as Adriana Bravo and their important scientific investigations around the world. You can help. Contact BCI’s Department of Development at development@batcon.org.

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