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Bats along the Amazon

BCI members explore the wonders of Brazil

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It is nearly dusk and the village is settling down for the night. A girl wearing a Tweety Bird T-shirt and bright-red cotton shorts herds chickens into a tiny wooden coop with a peaked roof. We hear them clucking softly inside. A woman fries fish on an open fire. Children prepare to climb into hammocks swathed in mosquito netting. A man watches us curiously from the steps of his one-room home, which sits atop stilts that raise it above rainy-season floods. We are preparing to move to the fringe of the surrounding forest – for the bats come out at twilight.

We came to this village, some 500 miles (800 kilometers) up the Amazon River from Manaus, Brazil, because we hoped to catch – along with a great diversity of tropical bats – a vampire. And *Desmodus rotundus* is often found near people who provide the chickens, pigs and other livestock on which it feeds.

As we explored the area around the village earlier, Merlin Tuttle, the leader of our Bat Conservation International Founder's Circle trip, pointed out a burned-out tree trunk on the riverbank. "Look at this," he said, a tinge of outrage in his voice. "This has been deliberately burned by people who think all bats are vampires, though the bats (that roosted in the tree) were almost certainly beneficial."

The villagers, he said, burn virtually any bat roosts they come across out of fear the bats are vampires that will attack them or their livestock. What they don't know is that most bats are harmless and highly beneficial mammals that feed on insects, fruit or nectar. They have no idea how much worse insect pests could be without bats or that banana, breadfruit, papaya, guava, mango and cashew trees rely on bats for pollination and seed dispersal in the wild.

Now, at the edge of the forest, Tuttle hands me what looks like a fist-sized bundle of black, human hair. As I help unfurl it, I am amazed to see it transformed into an expanse of gossamer mist net, 40 feet (12 meters) long and 7 feet (2.1 meters) high. We stretch the net between backyard trees and the adjacent jungle, anchoring each end to an aluminum pole that's tied to a tree. Pulled tight, the net is all but invisible in the dusky light.

"Stay quiet and keep your lights out," Tuttle says, as we are joined by villagers curious to see what will happen next. "When a bat hits the net, you'll feel it like a fish on a line." Then he tramps off to check on our other two teams of bat netters. Never having caught a fish, I deduced that I would feel some kind of tugging motion when a flying bat hit the net. I wait silently, sweating from the humid heat, a strand of netting grasped gently between thumb and index finger.

"We got one!" I yell, flashing my headlamp at the net and targeting a struggling object. Seconds later, Tuttle arrives. "You've got to get him out from the same side he went in," he says.

When a bat plunges into a mist net, the filaments make a kind of pocket around its body.

Merlin pushes back the net, opens the pocket and grips the back of the bat's body with one hand. With the other, he untangles the netting from the bat's wings and feet. A moment later, I place our first bat in a cloth bag where it will remain until we catch enough bats to show everyone.

In the next hour, we captured more than 30 bats of 10 species. Several were fruit- or nectar-eaters, including a tent-making bat (*Artibeus cinereus*). Some were insect-eating myotis and free-tailed bats. One was a giant spear-nosed bat (*Phyllostomus hastatus*) with a 27-inch wingspan. But not one of them was a vampire. The most abundant species was the silky short-tailed bat (*Carollia brevicauda*), a fruit-eater that is especially valuable in restoring forests cleared by the slash-and-burn agriculture of the area.

Wilson Uieda, the trip's Brazilian bat expert, showed villagers the bats we had caught, explaining their many benefits in controlling insect pests and sustaining their agricultural system. They were clearly impressed, and we saw firsthand how powerful even a little knowledge can be.

Soon we climbed back into our motorized canoes, gliding out onto the moonless river and back to the boat that was our home on the Amazon. As Tuttle and Uieda began our first major bat show, everyone wanted to see and photograph the giant spear-nosed bat, which we had been warned to leave strictly alone. As Tuttle explained, it wouldn't do much for our love of bats for someone to get bitten by a bat with quarter-inch (6.3-millimeter) teeth and jaws like vice grips. But even this giant became docile after a drink of water and gentle handling.

Then Jim Kennedy, BCI's cave specialist, brought out a silky short-tailed bat, a winsome little creature that seemed bent on escape. Kennedy handed my husband, Sky, a banana and Tuttle handed him the struggling bat, leaving Sky a bit apprehensive, despite his pre-cruise vaccinations, that the bat might bite his finger instead of the banana. The bat chose the banana, however, and promptly began feeding contentedly.

Next up was a tiny nectar-eater, Thomas' long-tongued bat (*Lonchophylla thomasi*). In my hand, it felt as soft and weightless as a ball of cotton. Offered sugar water in a teaspoon, it rolled out a tongue almost as long as its body and emptied the spoon in seconds. Its tiny round belly became visibly distended, and our newfound friend hesitated before flying off for home.

One of the small fruit bats illustrated its value in seed dispersal by defecating in Tuttle's hand, revealing a collection of tiny seeds. He said just one short-tailed fruit bat can scatter up to 60,000 seeds in a single night. And these bats feed on the fruits of especially fast-growing plants, which botanists call "pioneer plants" because their seeds survive the hotter, drier conditions on cleared land and are among the first plants to emerge in clearings. It was especially sad to hear so many villagers report killing all bats out of fear of vampires (which, despite our best efforts, we could never find).

Each night, we ventured deeper into the jungle. And while vampire bats kept their distance, we found an amazing array of incredible species. One evening, I found myself in total darkness crouching on the ground beneath a Brazil nut tree. My husband Sky was 50 feet (15 meters) away watching another net. The distance felt more like 50 miles when I heard a rustling in the bushes. Thoughts of jaguars crossed my mind as I remained still and silent, my fingers attuned to the nets like a harpist. I was relieved when a bat hit the net and I could turn on my headlamp. This one had huge ears, adapted, we learned, for

eavesdropping on katydid songs – to the male katydid's dismay.

Along riverbanks, we caught fishing bats (*Noctilio leporinus*) with huge hind feet, flattened toes and razor-sharp claws for snagging minnows from streams. Other species ranged from too strange to describe to just plain cute. The greater sac-winged bat (*Sac-copteryx bilineata*) sported a pair of white racing stripes on a jet-black coat of angora-like fur. This sweet little fellow is outfitted with scent-producing wing sacs that singing males use to court females.

Several times, we explored thickets of *Heliconia* plants, whose long, broad leaves re-semble those of banana trees and make cozy homes for bats. The tent-makers were the most easily found, since their cut leaves are so conspicuous. These bats cut down each side of a leaf's central rib with their teeth, causing it to droop downward like a protective tent. They are a photographer's dream: colorful mothers and their cute pups hanging appealingly in a background of green. Squatting beneath one such leaf, I saw a tiny cluster of furry faces peering curiously back at me.

The real challenge was to find a colony of disk-winged bats (*Thyroptera tricolor*), tiny insect-eaters whose name refers to the suction cups on their wrists and feet. With these, they easily cling to slick leaf surfaces, scrambling in and out of the unfurling leaves in which they live. These unique bats avoid the hard work of having to cut new tents but must continuously find new homes, since each leaf opens in just a few days.

Some of the most frequently encountered bats were among the most difficult to see. Tiny proboscis bats (*Rhynchonycteris naso*) roost on large tree trunks that lean over the river. But their camouflage is so effective that the first time one of our sharp-eyed guides pointed to a group of seven, we found them very hard to spot and then argued that there were only three. When our canoe came within a few feet, however, we saw the faint outlines of four more bats, which sat in plain sight but looked almost exactly like rough spots on the tree trunk. Tuttle explained that these are the only bats with special tufts of fur on their forearms to improve their disguise.

Wherever we went, we discovered amazing creatures: monkeys, macaws, boa constrictors, iridescent-blue morpho butterflies and iguanas that sometimes fell out of trees right into our boat. But nothing compared to the bats. We saw 27 species, most of them up close. By shining powerful lights on the river surface, we lured fishing bats to fish only a few feet in front of our canoes. By aiming the lights into the night sky, we attracted free-tailed bats and listened to their unique echolocation calls as they swooped to catch moths.

And during our 10 days on the Amazon, we repeatedly witnessed the great value of education. Even where vampire bats are a real problem, people clearly began to understand the stunning diversity of the bats with whom they share their rain forest and to appreciate the great benefits they receive from most of them.

BOBBI CHANEY, a BCI member for 14 years, has been fascinated by bats since reading a New Yorker article that profiled Merlin Tuttle. A native Californian, she retired last June as a Marriage and Family Therapist.

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