How a Monkey Saved the Jungle

By Michael Lipske • Photographs by George H.H. Huey

Two men with a large net stand under a tree in the Belize jungle, waiting for a drugged monkey to fall to earth. Injected with an anesthetic fired from a CO_2 rifle, the unhappy animal does not go gently into dreamland. High above the ground, the coal-colored creature has wedged its body in the crotch of a branch and wrapped its tail around a smaller limb. The men shake the tree until their quarry finally pops loose and tumbles safely into the net.

The reluctant acrobat is a black howler—or "baboon," as the black Creoles of this Central American nation call the monkey. In recent years, the species has become the centerpiece of a unique experiment in human-wildlife relations. Now, instead of stripping all their land, subsistence farmers along a stretch of the Belize River leave parts of the forest standing. That's obviously good for the monkeys. And because it preserves soil nutrients, the practice also benefits the local farmers.

For scientist Robert Horwich, who has orchestrated the capture, spreading the word about this new style of conservation has become a crusade in partnership with residents in the flat bush country of north-central Belize. He is acting on his belief that the world's rural farmers hold a vital key to preserving tropical forests and the wildlife they contain.

Local farmers, in turn, have bought into the notion that what's good for monkeys is also good for them. For one thing, preserving the forest lets them harvest dollars from tourists who come to Belize to gaze at wild monkeys in the treetops. Result: The project—called the Community Baboon Sanctuary—has emerged as an example of grass-roots conservation at its best, a tool for tackling the problems of rural people and wildlife, and a model for developing countries around the world.

Horwich, a stout, affable man with a gray bird's nest of a beard, is studying black howlers to learn more about how the animals make a living in the rain forest along the Belize River. Not long ago, a half-dozen biologists joined him in the village of Bermudian Landing for a whirlwind monkey hunt that left dozens of howlers documented and tagged, readied as research subjects for years to come.

Belize farmer Vallen Pope (above) hoists a squash grown in his *milpa*, or forest clearcut. Behind him are trees he left standing as part of a howler monkey sanctuary. In return, the howler (right) attracts tourists and their eco-dollars.

A soft-spoken, 50-year-old ethologist who lives most of the year in Gays Mills, Wisconsin, "Dr. Rob" (as some villagers call Horwich) has studied the behavior of mockingbirds, gray squirrels, Nilgiri langurs and sandhill cranes. A decade ago, he turned his attention to black howlers. A survey he conducted revealed that the monkeys (one of six howler species in Latin America) were declining in Guatemala and Mexico as their jungle habitat was cleared. He found, however, that howlers were doing better in heavily forested Belize, particularly along the Belize River.

Living in small troops headed by a dominant male, the primates travel from treetop to treetop, feeding on fruits, flowers and leaves. Seldom coming to the ground, the slow-moving monkeys usually walk on branches (rather than swinging on them), using their prehensile tail as a fifth hand.

The animals sleep at night and rest more than 70 percent of the day. Still, they make their presence known. In Bermudian Landing, the voice of the howler comes crashing out of the jungle every morning and afternoon. The roar rolls out past houses built on stilts, mixing with the din of barking dogs, clucking chickens, screaming kids and scolding parents.

The monkey's bellicose cry begins as a raspy roar and ends in an agonized wheezing moan. Audible up to a mile away, the howl is generated by special throat structures that funnel sound into a hollow, resonating bone. The volume is astonishing, all the more so for coming from a bunch of 9- to 20-pound vegetarians. Like the roar of traffic in Mexico City or lawn mowers in suburbia, monkey song helps define life along the Belize River.

It was in Bermudian Landing, a village of about 300 that straddles the dirt highway slicing through the forest, that Robert Horwich broached the idea of establishing a sanctuary to benefit people and monkeys. Having spent time studying howler roaring rhythms and breeding behavior on the outskirts of the village, he says, "I felt like I wanted to do some conservation. You're really just taking if you only do research."

Horwich outlined the concept at a village meeting in 1985. From the start, his goal was to stake out a compromise position between the requirements of forest-dwelling monkeys and the needs of people.

Farmers in the region practice slash-and-burn agriculture, cutting down forest

In the Central American country of Belize, the future of a rain forest may lie with a loudmouthed primate

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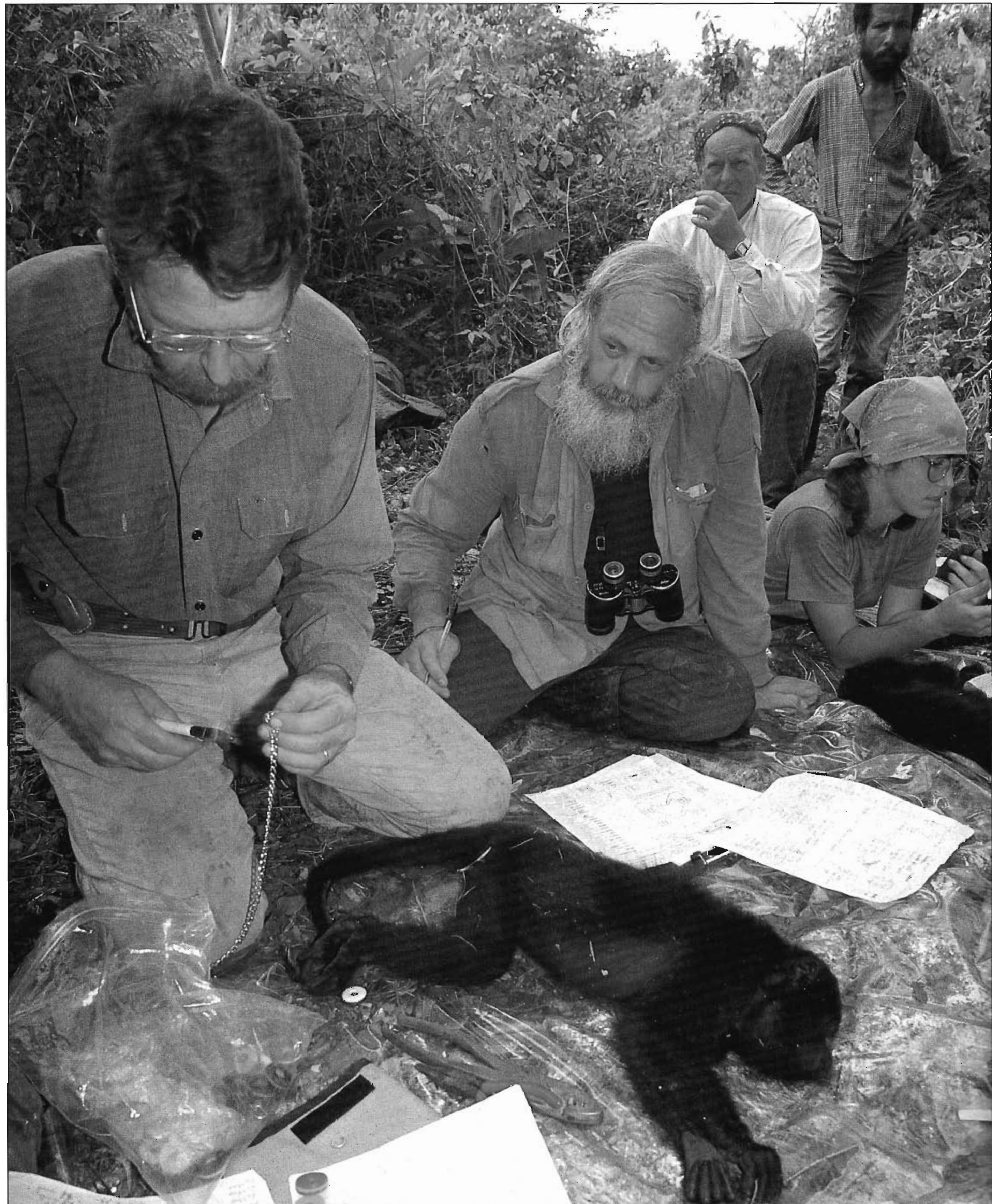

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and burning it to create a *milpa*, or small cleared area, for planting. They grow rice, beans or yucca on this patch for one to two years, then switch to banana or coconut trees. After five years, they abandon that milpa and clear another. As the old field lies idle, soil nutrients build up, and in 15 years or so the young forest that has sprouted on the abandoned land can be cut and farmed again.

But trees in that regenerating jungle can serve as a howler food source as soon as six years after the land goes fallow. "The monkeys will use regenerating forest if they can get to it," says Horwich. Hence, he proposed, if farmers could retain skeletal strips of forest along field edges, these strips could act as elevated "freeways." Howlers could then travel through the sanctuary's patchwork of active milpas and young and mature jungle. Leaving strips of forest, especially along the river, he argued, would also reduce soil erosion, cutting siltation and yielding richer fish stocks.

Natural Creole tolerance helped Horwich sell the idea. "I think people in the different communities had strong respect for the monkeys even before Dr. Horwich came around," explains Fallet Young, manager of the sanctuary. Elsewhere in Belize howlers are hunted for food; but farmers along the Belize River leave them alone. And other than raiding cashew trees for the fruits that villagers prize for making wine and jelly, the monkeys "don't actually eat anything the farmers plant," says Young.

In the beginning, Horwich and Jonathan Lyon, a plant ecologist doing graduate work at Pennsylvania State University, took a count of howler monkeys around Bermudian Landing. They mapped out a 3-square-mile area to determine vegetation types and property-ownership lines. For each participating landowner they prepared a tailored land-management plan. Farmers signed pledges saying they would follow practices beneficial to monkeys. Once people understood that participation would be voluntary, Horwich says, they were enthusiastic about helping.

Now, more than 100 landowners voluntarily leave monkey food trees standing and maintain corridors of trees to serve as howler highways around fields and pastures. "We work on the premise," says Horwich, "that, if it doesn't take too much from their land, people will follow practices that are decent for wildlife."

As a result, the 18-square-mile Community Baboon Sanctuary is home to an estimated 1,100 howler monkeys. The success of the operation, which has spread from one village in 1985 to eight today, owes everything to the willingness of farmers to manage their land for the sake of the environment. "If anyone in Belize has really done a major sacrifice for conservation where it hurts—in the pocketbook—it is these people," says Victor Gonzalez, former president of the Belize Audubon Society.

With their net bulging, Ken Glander and gray-bearded Robert Horwich land a tranquilized howler (above). Later they affix an anklet tag (left) before an audience that includes Fallet Young, standing, the local sanctuary manager.

In fact, it was the villagers who suggested that tourism figure into the equation. At first, Horwich admits, the notion struck him as "kind of a joke." Plenty of tourists came to Belize's tropical coast to snorkel or scuba dive on the world's second-longest coral reef. But few outsiders had cause to visit the isolated villages in the bush. Now, thanks to the sanctuary and its celebrity monkeys, tourism is fast becoming a vital industry.

If Robert Horwich brought the seed for a sanctuary to Bermudian Landing, it is Fallet Young who has nurtured it. The 37-year-old father of five traces his roots in the village back to the 1890s. Bamboo thin, he is the flexible diplomat who fosters a happy meshing of interests among farmers, scientists and tourists. One of Young's jobs is to coordinate the comings and goings of the growing number of sanctuary visitors. Last year, 6,000 people came from as far away as Denmark to visit the sanctuary and catch glimpses of its loudmouthed monkeys.

"The things they desire, they are all here," Young says of the tourists, and he works to keep it so. He persuaded one tour organizer to stop having visitors bring box lunches packed by a Belize City hotel. Instead, Young has the tourists dining on meals cooked by the women of Bermudian Landing, thus ensuring that visitors "give a little benefit" to the local economy.

Lucky tourists get their first look at monkeys within minutes of arriving in Bermudian Landing. Walking tours led by villagers start at the edge of town, where a giant fig tree often holds feeding howlers. "Here's a little narrow way," Young says over his shoulder one day, leading a covey of eco-tourists into the dark forest. The nine visitors follow along the muddy path. A few have come to observe some of the sanctuary's nearly 200 species of birds, others to see an ocelot or one of the big, endangered Morelet's crocodiles patrolling the river.

Young leads his charges through a green dreamscape of hanging vines and clinging orchids. Cigar-shaped hummingbirds flit through steamy shafts of sunlight, while white-collared manakins, all but invisible in the tangled undergrowth, make finger-snapping sounds with their wing feathers.

Dreamers are regularly pinched awake as jungle mud sucks at shoes, spiny bamboo grabs at clothing and mosquitoes double park on foreheads and backs of hands. But no one complains when Young steers the group beneath a treetop full of howlers deep in the sanctuary.

"Oh, beautiful! Oh, have a look!" cries an ecstatic visitor, handing over her binoculars. Tripods are positioned in the path, spotting scopes and cameras aimed upward, while four monkeys—indifferent as

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film stars—placidly munch white flowers in the canopy.

"Tourism is beginning slowly," says Young, sitting on the gnarled trunk of a cashew tree after a van has carried the tourists back to Belize City. "We have a saying in Creole: 'You have to creep before you can walk.' " Already, a half-dozen villagers lodge tourists overnight in their spare rooms, charging from $2.50 to $5 a head. Bring in jobs, he says, and "a lot of stress would be taken off the forest."

Tourist facilities in Bermudian Landing should improve dramatically, thanks to a recent $10,000 grant from the Inter-American Foundation, based in Washington, D.C. Administered by the Belize Audubon Society, the money is being paid out as revolving loans to villagers building guest rooms or starting businesses.

The sanctuary got another big boost one recent spring, when a team of biologists descended on Bermudian Landing for the great baboon hunt of 1990—where all the bullets were tranquilizer darts and every victim was tucked safely into its treetop by nightfall.

Scientists and villagers beat the bush around Bermudian Landing for more than a week, downing 47 monkeys in all. While darted animals plummeted into nets or outstretched arms, other "hunters" set off to catch and record data on whole troops of howlers at a time.

Spread out on plastic drop cloths in jungle clearings or village backyards, the snoring monkeys were prodded, probed and pricked with needles. "I feel if we're going to knock 'em down we should learn as much as we can from them," said Horwich as kneeling researchers collected blood and tissue samples, pulled back lips to examine teeth, took temperatures, measured limbs, recorded weights and dusted paws with inky black powder to make howler footprints.

With the released monkeys now sporting color-keyed ankle tags, Horwich and other scientists hope to follow the animals, learning if the local population is stable, how far individuals move within the sanctuary and how troops form and break up. They also want to find out more about how monkeys make use of the sanctuary's changing forest as farmers cut down patches then allow them to regrow.

"What we're discovering is that it doesn't take much forest to support the primates," says Kenneth Glander, a Duke University primatologist who participated in the hunt. In 20 years of studying plant-primate interactions in Costa Rica, Glander has learned that vegetarian monkeys must be careful to avoid overdosing on toxic compounds naturally present in many plants. Fortunately, he says, young forests such as the generating patches around Bermudian Landing tend to contain fewer toxic compounds.

Like many families in Bermudian Landing, John and Ann Baizar (above, with granddaughters) offer meals to tourists. One visitor baby-sits a young howler (right) as scientists examine its mother. Such contact is extremely rare.

Like many scientists, Glander has seen less-successful conservation projects err by focusing only on trees and wildlife while ignoring the needs and rights of forest-using people. As he points out, "If people are already there, you can't go in and say, 'You're out of here.' "

Perhaps one reason for the apparent success of the Community Baboon Sanctuary is its founder's low-key, grass-roots approach. "Too many scientists come to a community and pontificate. They might as well come in and speak Chinese or Russian," says Mick Craig, a former director of the Belize Audubon Society. Robert Horwich, by contrast, would "drink rum with them, go to church with them. He didn't try to indoctrinate."

These days, Horwich is working on ensuring the sanctuary's financial security. He has established a foundation—Howlers Forever—to build a permanent endowment that will pay operating expenses for sanctuary staff and programs. He believes that too many well-meaning conservationists, while sincere in their wish to slow destruction of the tropical forest, overlook the socio-economic cause of deforestation. "It is the rural farmer," he has written, "that will decide the fate of the forests as he or she weighs the needs of a hungry family against the external pressures to leave forests standing."

Only time will tell whether this peculiar blend of wildlife management, eco-tourism and sustainable agriculture will hold together. "It's a concept that's kind of ethereal," says Horwich. "I want ten years to look back and see if it's working. Will the village change so much I'll be disgusted? Will tourism get so big it destroys the monkeys?"

Still, he has no doubts about the validity of "the model" or the need for new approaches that respond directly to the plight of the people who use the forest. Now Horwich, looking the part of the prophet in his long beard, intends to spend more time preaching the gospel of this new kind of conservation to fellow scientists around the world. "Spreading the community sanctuary idea—that's my main goal," he says.

One hopes that any converts he makes will hold fast to his first principle of practical conservation: involving local people. "I want to help," says the scientist. "But I'm a guest here, and I have to *ask* if I can help." It all boils down to those two little words: "You ask." ▣

Michael Lipske, a former senior editor of this magazine, spent five days in Belize visiting the Community Baboon Sanctuary and its howlers. George H.H. Huey, a photographer based in central Arizona, accompanied him on the assignment.