



PRIMATE LOUDMOUTH: The black howler monkeys of Belize make their presence known with rasping roars so loud that they can be heard a mile away.

TRADING

THE IDEA
IS TO MOVE
SOME BLACK
HOWLER
MONKEYS,
RELATIVELY
ABUNDANT
IN NORTHERN
BELIZE, TO
AN AREA IN
THE SOUTH
WHERE THE
SPECIES
HAS GONE
EXTINCT

IN 1985 ROBERT HORWICH, AN ETHOLOGIST FROM Wisconsin, had a conservation brainstorm: Horwich proposed the establishment of what would come to be known as the Community Baboon Sanctuary to the people of Bermudian Landing, a small village in north central Belize. The project, he explained, would help save the howler monkeys (called baboons by the local people) that lived in this part of the small Central American country. At the same time, this sanctuary would boost the economy of rural farmers by attracting tourists to the area. The needs of both people and animals would be served.

Since then, the Community Baboon Sanctuary has enjoyed great success, paving the way for biologists to attempt another ambitious new conservation project. This time, they would attempt to reintroduce black howler monkeys to the Cockscomb Basin Wildlife Sanctuary, a 100,000-acre tropical forest preserve located in southern Belize near the jagged peaks of the Maya Mountains' Cockscomb Range. The park, known popularly as the Jaguar Preserve, was once the home of the black howler monkey. But the raspy roar of this vocal primate was silenced in Cockscomb Basin in 1978, when it became locally extinct, a victim of yellow fever, hurricane damage, and overhunting. Recently, in an attempt to heal this ecological injury, 14 black howlers were returned to the Cockscomb Basin as a first group of new colonists.

PLACES

BY FRED KOONTZ



ART WOLFE

Belize Diary

BY ROBERTA ALLEN



Arrival, July 6, 1992

FROM THE JUNGLE COME UNEARTHLY ROARS OF REMARKABLE DEPTH AND volume. That a creature, especially a meek vegetarian, could make such astonishingly loud sounds, seems incomprehensible. I have never heard anything as wild as the cry of the black howler monkey.

Eight years ago, Robert Horwich, an American ethologist, created the Community Baboon Sanctuary in the Central American country of Belize. In only a few years, this community-sponsored wildlife preserve has become a model of grass-roots conservation. Horwich didn't envision tourists at the sanctuary, but the Creole farmers who volunteer part of their lands for the conservation of howlers—they call them baboons—thought that tourism could be profitable. In return for being custodians of the monkeys, they could reap extra dollars by renting rooms and acting as guides on excursions to see howlers.

My friend Peter and I have arrived at the small sanctuary museum and visitors' center, not knowing what to expect. Bermudian Landing, a farming village of about 300 people, where cows graze and zinc-roofed houses shimmer in the heat, seems an unlikely setting for monkeys whose roars can be heard for more than a mile. We are eager to see the howlers and the rainforest, and to get to know the Creole people who live here.

We have been told that there are about 100 subsistence farmers living in eight villages along the Belize River who have voluntarily agreed to carry out measures suggested by scientists to help save the monkey. They preserve the monkeys' food trees and the thick lowland forest along the river, maintaining strips of forest between fields and across clearings so the animals have aerial highways. By taking measures to preserve soil nutrients and to prevent erosion, the farmers also benefit. Robert Horwich believes that rural people will keep the forest intact as long as they can meet the food needs of their families without cutting down the trees.

In Mexico, Guatemala, and elsewhere in Belize, black howlers, one of six howler species and one of the largest monkeys in the Americas, have been hunted for food and their habitats have been destroyed. Here, farmers leave them alone; since the project began, the howler population has increased by some 20 to 30 percent. From the now-estimated 1,200 howlers, 14 monkeys comprising three troops were recently transferred to Cockscomb Basin in the south, where howlers have become locally extinct. (See "Trading Places" by Fred Koontz, beginning on page 52.)

At the farm where we are staying as guests of a Creole family, I ask our host, Drina Young, a tall black woman in her sixties, if the monkeys ever come near the house. "Oh, yes," she replies, "they come to take the fruit from the cashew trees."

July 7

IN EARLY MORNING WE ARE WAKENED BY THE DIN CREATED BY ROOSTERS, howler monkeys, dogs, and Drina's grandchildren. An assortment of relatives, some just visiting, are milling about Drina in the kitchen. She proudly shows us her refrigerator and stove. Electricity is new to Bermudian Landing. Indoor plumbing, however, is not yet a reality. Tourist facilities are still in the early stages of development. Our room is basic, but it affords us an intimate view of Creole village life.

Any discomfort is forgotten as Alvin Young, Drina's husband, guides



GEORGE H.H. HUEY

Horwich, who in addition to conceiving the Community Baboon Sanctuary, also founded a supporting organization, Howlers Forever, suggested in 1991 to the Belize Audubon Society, manager of Belize's national parks, that the expanding howler population at the Community Baboon Sanctuary could provide the basis of a new population in Cockscomb Basin. Translocating monkeys from Bermudian Landing to Cockscomb would improve chances for long-term survival of the rare black howler species by creating a second, protected group in Belize. Cockscomb Basin Park Director Ernesto Saqui and I offered enthusiastically to direct the translocation with Horwich.

Although restoring extinct populations by resettling individual animals has seldom been achieved, many believe that this will be a conservation technique of the future. In our increasingly fragmented world, tomorrow's wildlife managers may have to closely regulate exactly where wild animals live. Scien-



EASY DOES IT: Ken Glander (left), Director of Duke University's Primate Center, and Robert Horwich, founder of the Community Baboon Sanctuary, capture black howler monkeys for translocation to the Cockscomb Basin Wildlife Sanctuary. First darted with a tranquilizer, the monkeys are caught in large cloth nets as they drop from the trees.



tists must develop these translocation tools now, before the situation becomes even more critical. We undertook the black howler translocation with two goals: to develop better methods of moving wild primates, and to improve the conservation outlook for the black

animals to sustain a new population.

Our first priority was to establish the time and place to release the initial 14 monkeys in Cockscomb Basin Sanctuary. Then we devised strategies for capturing, transporting, holding, and following them.

howler monkey species.

The project has unfolded over three major stages: First, the release sites were prepared for the arrival of the new howlers; next, the animals were translocated; and finally, we monitored the animals after their release. Several translocations will be needed to provide enough

Ernesto Saqui found the eastern end of the basin, near park headquarters, to be good primate habitat. This area proved to be accessible by vehicle, protected from poachers by park wardens, and surrounded by a 16-mile visitor trail system that provides easy entry into the dense, tropical forest. After carefully mapping the trails, we chose three release sites (each separated by less than a mile) located in areas with abundant howler food trees. Optimally, animals should be moved during times of high food availability. Throughout 1991, Saqui conducted a botanical study at Cockscomb, and determined that the most fruit is available in May. We decided to move three howler troops from the Community Baboon Sanctuary to the Cockscomb Basin during May 1992,

us into the nearby jungle to see the howlers. Suddenly we are enclosed by cascading vines and bromeliads growing on trees with names like gumbo-limbo, hog plum, and mampola. Bright orange heliconia bloom, and rattan vines wind around trees. Cohune palms rise 50 feet in the air; their plume-like fronds, over 30 feet long, hide pendulous clusters of nuts.

Alvin draws our attention to three black howlers feeding on the leaves of a small tree called white maya. A silky-furred seven-month old infant male, using his prehensile tail like an extra hand to keep from falling out of the tree, walks within a few feet of us as he advances to the tip of a branch. The monkeys ignore our presence until Alvin imitates their roar. A bad imitation, I think. The mother stares down at us with piercing black eyes that look almost human, but the two-year-old male roars back. His roar is at the same time aggressive and mournful, a deafening cry that resembles grating metal chains.

Not to be outdone, an adult male, high in a cohune palm a short distance away, leans forward over the frond he is grasping, hunches his shoulders to look more forbidding, then roars for 15 minutes without stopping. It seems a lot longer. He is very loud. A sudden shower drenches the trees, but the leaves keep us perfectly dry as we watch the roaring howler, his mouth open wide in a fearsome face.

The large swelling under a howler's chin contains an egg-shaped hollow bone that amplifies the call. Howlers start and end the day by roaring; they defend their territories by announcing their locations to other troops, thereby avoiding fights. Often troops roar at each other across a territorial boundary in a ritualized display. They also howl in response to loud, repetitive noises—thunder, cars, airplanes. Small troops of four to eight members eat, sleep, and travel together.

July 8

AT THE EDGE OF BERMUDIAN LANDING, A BABOON BRIDGE ALLOWS howlers to feed in a giant fig tree across the road. When we pass it in the morning, the fig tree is empty. Camille Young, a nephew of Alvin and Drina, leads us along a system of trails that starts near the bridge. Under cathedral-like arches of trees, I can imagine hidden in the bush are some of the ocelots and jaguars that live within the 18-square-mile sanctuary. But the cats, predators of howler monkeys, are nowhere to be seen. Behind an acacia tree with biting ants living among its thorns, sounds the tremulous whistle of a tinamou. We pass what was once a *milpa* (an area cut and burned for farming). It was cleared nine years ago, and the rapid regrowth of trees and plants is an agreeable surprise. Chewed leaves provide evidence that howlers—adaptable to forests of all ages—are already feeding here. Farther on, past trails of leaf-cutter ants and thickets of bamboo, we spot five howlers resting in the uppermost branches of a giant guanacaste tree, more than a hundred feet tall.

"After four years or a bit later," Camille says, "the male baboon may throw the young males out so they will find mates and start new troops. The monkeys may have one or more wives. Males sometimes fight over females." [However, researchers believe that the adult male may displace the young males, and that the fights are more battles over territory and troop dominance, with the females often coming along with the spoils.] I ask Camille why howlers are called baboons, and he answers, "The British called them baboons after the animals they had seen in Africa."

July 9

A LOGWOOD TRADE BEGAN IN BELIZE IN THE MID-SEVENTEENTH CENTURY when this dye-producing tree was floated downriver by small bands of British pirates and shipped to England. A century later, when a few Europeans and their African slaves established permanent camps here, mahogany became the leading export. The Creoles who live in modern



GEORGE H. H. NUYE (2)

planning to observe the monkeys for several days in enclosures located at the release site before turning them loose. This would enable us to be sure that the animals were healthy, and prevent them from panicking on release. Building three troop-size enclosures (eight feet by 12 feet and 10 feet high) proved to be a challenge in the jungle. We worked without power tools and materials had to be brought in by backpack.

As May approached, we assembled our 15-member translocation team. Catching arboreal monkeys requires darting them with a tranquilizer fired from a capture gun. After the drug takes affect, the monkeys begin dropping from the trees; a cloth net prevents their falling on the ground. Ken Glander, Director of Duke University's Primate Center, who has studied howler monkeys in Costa Rica for over 20 years, agreed to lead the capture operation. Wildlife veterinarian Wendy Westrom conducted medical examinations on the monkeys, with a team of 13, including Saqui, Horwich, and me.

We captured the first troop—an



VITAL STATISTICS: A three-month old black howler monkey (above) is comforted during a medical examination. (Below) Robert Horwich, Jevra Brown, and Roxie James (left to right) measure the infant's hand.

adult male, two adult females, and a male infant—on May 9. Examining each monkey, we took body measurements, collected blood and tissue samples for genetic tests, and attached an identification bracelet to the animal's ankle. Adults were fitted with radio tracking transmitters, so that we could

locate the troops after their release. We put the animals in sky kennels (the same plastic crates that commercial airlines use to ship pet dogs and cats) for the five-hour trip by air-conditioned van to Cockscomb Basin. Roads in Belize are notoriously rough. Our journey was interrupted twice by mechanical break-

downs, and we arrived at Cockscomb well after sunset.

The next morning we carried the monkeys in their crates into the jungle, reuniting the troop in one of the large release cages. The enclosure had been well-stocked with mangoes, oranges, papayas, and other fruits and vegetables. Because howlers consume large quantities of leaves each day, we hung fresh, leafy branches about the cage. The monkeys immediately began to eat. We set up a small tent close by, and for the next two days, we sat watching the monkeys.

On May 12, with tracking receivers at the ready, we opened the door to the enclosure. Anticlimactically, the monkeys calmly exited and then ran up a nearby fruit tree. They alternately ate and rested until nightfall. For the next couple of days, we followed the mon-

Belize are the descendants of those Africans and Europeans.

Until the late 1950s, when the first road extended into the area, the Belize River was the villagers' main travel route. As we paddled upstream in a canoe called a dory, Steve Baizar, our boatman, remarks that heavy rain had fallen before we arrived. The fast-flowing river is very high. I ask if there are crocodiles here. He replies that there are crocodiles that live in the creeks, but I am still uneasy.

Foliage on the banks is green and lush. Fronds from cohune palms fan out like giant feathers. Bamboo thickets, protecting the banks, probably conceal peccaries and armadillos. An iridescent blue morpho butterfly, as big as a small bird, is flying close to shore. Bird song fills the air. Almost 200 species of birds live in the sanctuary. Snowy egrets sail out over the water. Swallows, kingfishers, and flycatchers flit through the treetops. On the bank, horses are playing. Children splash and wade, howlers roaring in the distance.

As we paddle toward the sound, the calling monkeys we are seeking seem no closer; but high in a fig tree, a howler moves along a bough in characteristically slow and deliberate steps. It drops, not leaps, to a branch near two other monkeys. Suspended only by his tail, a fourth howler is feeding. Steve says, "The first time I heard fruit falling outside my house, I didn't know what the sound was. Then I saw the monkeys taking ripe mangoes from the trees. They let the unripe fruits fall to the ground."

Edna's two-table bar by the bus stop is the perfect place to relax with the locals after the heat of the forest and the river. The farmers speak the Creole dialect among themselves, but to us, they speak English. Edna, a stout woman in a loose-fitting dress, says she always knows by the way the howlers roar, when it's going to rain.

On the way back to Drina's house, her granddaughter, Rhonda, aged six, chases bulls from the fence so we can see the dead snake hanging there. It's a fer-de-lance, or yellow-jawed tommygoff as it's known locally. As Drina beckons in the distance, Rhonda's sister, Rashan, aged seven, shouts in Creole, "Hurry gal, she wants you com!"

While we were on the river, Drina has baked 12 loaves of tasty Creole bread made with coconut milk. For dinner she cooks us rice and beans, a delicious fish called bay snook, fried plantains, and cake. As usual, two dogs and a puppy wait by our feet for food. Rhonda and Rashan beg us to play cards; this is our last night. As Rashan shuffles, I listen to the howlers. Their roars no longer sound strange to me.



Visiting the Howlers

LAST YEAR 6,000 TOURISTS—INCLUDING BELIZEAN SCHOOL-children—visited the Community Baboon Sanctuary in Belize to see and hear the black howler monkeys.

Bermudian Landing is about an hour's drive from Belize City. Buses also leave Belize City daily, and return the next morning. Directions, bus schedules, and a guidebook are available from the Belize Audubon Society, which can make arrangements for groups interested in touring the area.

Inexpensive accommodations with a local family can be arranged at the visitors' center in Bermudian Landing. Expect dry weather, cooler temperatures, and fewer mosquitoes and biting flies in winter, December to March, the best time to stay overnight. Bring insect repellent, long pants, a hat, walking shoes, and binoculars. For summer visitors, mosquito coils may be purchased in the village, if needed, to use in guest rooms.

For more information, write to the Belize Audubon Society, 29 Regent Street, Belize City, Belize, or call 501-2-77369.

Roberta Allen, author of Amazon Dream, is a writer and artist based in New York.



TONY BATH (2)

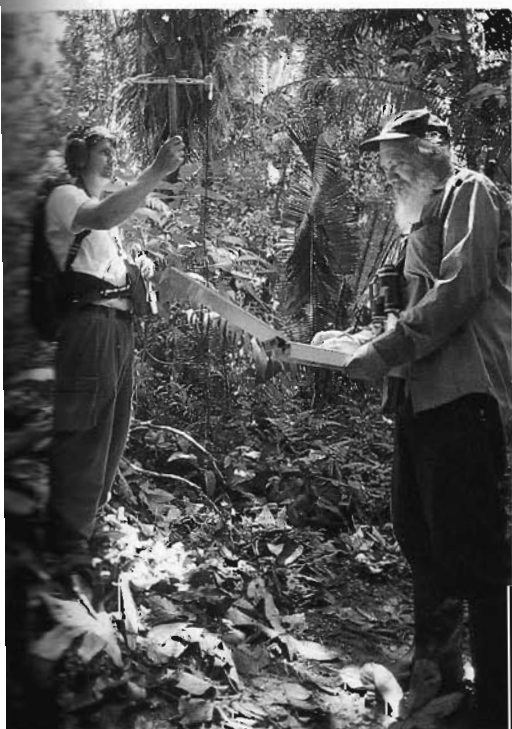
keys as they slowly explored their surroundings. Encouraged by their positive response to their new home, we decided to return to the Baboon Sanctuary to capture more animals.

The second translocation was planned for May 15, in conjunction with the British Armed Forces, who generously donated helicopter transport. We captured two complete troops, a group of seven and a group of three, and, thanks to the airlift, all the monkeys were in their holding enclosures reunited in their respective troops by late afternoon. We confined them in their holding enclosures for two days, before releasing them. The initial reactions of the troops were similar: All the monkeys cautiously explored their new habitat. We were relieved that they did not panic, and easily found food.

For ten months following the releases, we radio tracked the tagged howlers.



NEW COLONISTS: Everybody turns out to see the monkeys arrive on Britain's Royal Air Force helicopter at Maya Center, Belize (above). (Left) Author Fred Koontz, left, and Robert Horwich track howlers at Cockscomb Basin Wildlife Sanctuary.



During that time, none of the animals traveled more than one and a quarter miles from its release site. A seven-month-old female disappeared one night; we suspect she was caught by a small predatory cat, or perhaps she simply fell from the tree. For reasons not yet fully understood, one adult male also disappeared, dispersing west alone. The remaining 12 animals survive in the immediate area. We were happy to discover in late August that two of the females had given birth, and this past January two more females were seen with newborns. The troops live in home ranges of from 50 to 200 acres, and have been seen eating leaves and fruit from at least a dozen species of trees.

We are encouraged by the results.

The high survival rate and minimal dispersal suggest that it should be possible to restore the black howler population to Cockscomb Basin. We plan to move additional troops from the Community Baboon Sanctuary to Cockscomb in May of both 1993 and '94. Once again, the howlers' roar can be heard around park headquarters and visitor trails. By careful management, and with luck, we hope that in a dozen years or so their roars will be heard throughout the entire Cockscomb Basin.

Fred Koontz, curator of mammals at The International Wildlife Conservation Park in Bronx, New York, wrote about satellite tracking in our September/October 1992 issue.