











Author Scott Wallace and a team of photographers journey into the heart of the Amazon, where big oil is threatening one of the last wild frontiers.

THE LEAVES ARE STILL dripping from an overnight downpour when Andrés Link slings on his day pack and heads out into the damp morning chill. It's just after daybreak, and already the forest is alive with hoots and chatter—the deep-throated roar of a howler monkey, the hollow rat-a-tat-tat of a woodpecker, the squeal of squirrel monkeys chasing each other from branch to branch. A strange, ululating chant starts up in the distance, fades out, then builds again.

"Listen!" says Link, grabbing my arm and cocking an ear. "Titi monkeys. Can you hear? There are two of them, singing a duet." He imitates the high-pitched, rhythmic cry of one of the monkeys, then the other. Only then can I distinguish the two separate strains that make up the counterpoint chorus.

This raucous celebration is the daily background music for Link as he heads out on his morning commute through what may be the most biodiverse spot on Earth. Link, a primatologist from Universidad de los Andes, is researching the white-bellied spider monkey,

Scott Wallace is the author of The Unconquered: In Search of the Amazon's Last Uncontacted Tribes. *Photographers were assigned by specialty:* Tim Laman (primates and birds), Ivan Kashinsky and Karla Gachet (culture), David Liittschwager (microfauna), Steve Winter (big cats).



Follow the photographic team into the field with video on our digital editions.



The Waorani were once seminomadic. living in houses thatched with palm leaves, like these in the community of Cononaco Chico. Today most have settled permanently and live in homes made of wood and concrete.

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and he's on his way to a salt lick a half hour's walk a shallow puddle created by animal tracks. away, where a group often congregates.

Giant kapok and ficus trees with sprawling buttress roots soar like Roman columns straight into the canopy, their bifurcating branches draped with orchids and bromeliads that sustain entire communities of insects, amphibians, birds, and mammals. Strangler figs coil around their trunks in a tightening embrace. There is so much life here that tiny killifish are wriggling in

We turn down a slope into a forest studded with bizarre-looking *Socratea* trees, commonly called walking palms, with four-foot-high stilt roots that allow the trees to shift location slightly in a quest for light and nutrients. It's one of the untold millions of evolutionary adaptations unfolding all around the Tiputini Biodiversity Station (TBS), a facility operated by the Universidad San Francisco de Quito on 1,600 acres

(650 hectares) of pristine jungle on the edge of Yasuní National Park, which encompasses nearly 3,800 square miles (9,800 square kilometers) of prime rain forest habitat in eastern Ecuador.

"You could spend your entire life here and be surprised by something every day," Link says. There are ten primate species in the forest around TBS, and a greater variety of birds, bats, and frogs than almost anywhere else in South America. There are as many insect species in a single hectare of the rain forest here as are known in all of the U.S. and Canada combined.

Yasuni's location nurtures this abundance. The park sits at the intersection of the Andes, the Equator, and the Amazon region, an ecological bull's-eye where extremely rich communities of plants, amphibians, birds, and mammals in South America converge. Downpours are a neardaily occurrence throughout the year, and there are few discernible changes of season. Sunlight, warmth, and moisture are constants.

This part of the Amazon is also home to two indigenous nations, the Kichwa and the Waorani, who live in settlements scattered along the roads and rivers. The first peaceable contact between the Waorani and Protestant missionaries took place in the late 1950s. Today most Waorani communities participate in trade and even tourism with the outside world, as do their former tribal enemies, the Kichwa. But two groups of Waorani have turned their backs on such contact, preferring to wander the upland forest in a so-called Zona Intangible—Untouchable Zone—set up to protect them. Unfortunately, this zone, which overlaps the southern sector of Yasuní, does not include the entirety of their traditional range, and the nomadic warriors have attacked settlers and loggers both inside and outside the zone, some as recently as 2009.

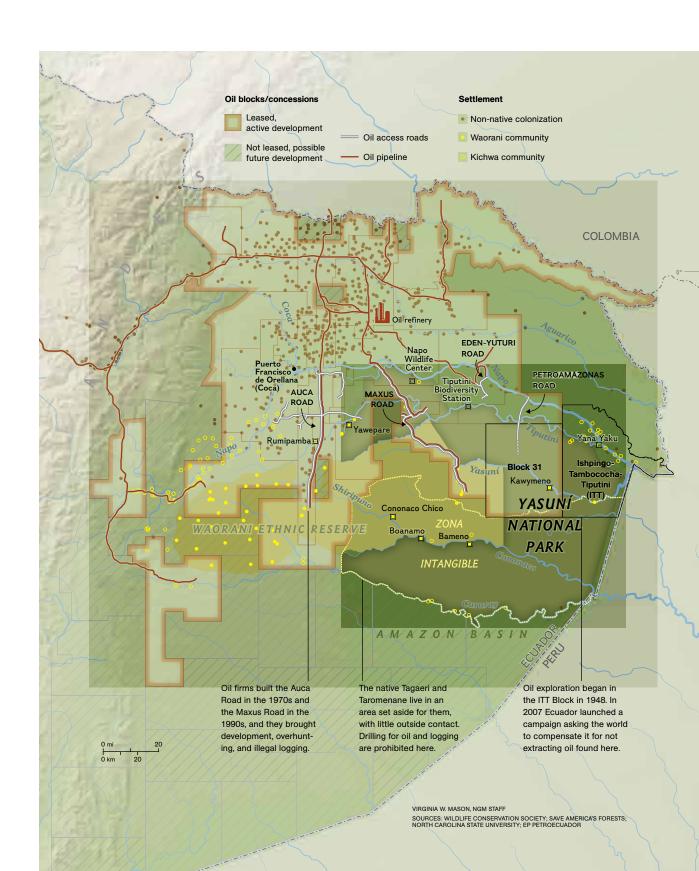
Far beneath the ground, Yasuní harbors yet another treasure that poses an urgent challenge to the precious web of life on the surface: hundreds of millions of barrels of untapped Amazon crude. Over the years, oil concessions have been drawn over the same territory as the park, as economic interests have trumped conservation in the struggle over (Continued on page 108)

The Lure of Oil

In eastern Ecuador the government has created a complicated geography in which parkland, areas for native people, and blocks for oil exploitation overlap. All have conflicting interests. The Ishpingo-Tambococha-Tiputini (ITT) Block is the big prize on the horizon. Covered in mostly unexplored forest and still protected for now, it holds an estimated 850 million barrels of untapped reserves. Oil companies have been prospecting in the region since the 1940s and are now closing in on the ITT.



The warm, wet climate in the region where the Equator crosses the Andes is the perfect environment for an abundance of species.









President Correa has offered to leave untouched an estimated 850 million barrels of oil inside Yasuni's ITT Block IN RETURN FOR \$3.6 BILLION from the rest of the world.

(Continued from page 100) Yasuni's fate. At least five active concessions blanket the park's northern section, and for a poor country like Ecuador the pressure to drill has been almost irresistible. Half of the nation's export earnings already come from oil, nearly all of it from its eastern provinces in the Amazon.

In a proposal first put forward in 2007, President Rafael Correa has offered to leave indefinitely untouched an estimated 850 million barrels of oil inside Yasuni's northeastern corner in a tract known as the ITT Block (named for the three oil fields it contains: Ishpingo, Tambococha, and Tiputini). As payment for preserving the wilderness and preventing an estimated 410 million metric tons of fossil fuel-generated carbon emissions from entering the atmosphere, fight against global warming. He is seeking \$3.6 billion in compensation, roughly half of what Ecuador would have realized in revenues from exploiting the resource at 2007 prices. The money would be used, he says, to finance alternative energy and community development projects.

Hailed by supporters as a milestone in the climate change debate when it was first proposed, the so-called Yasuní-ITT Initiative has been hugely popular in Ecuador. National polls consistently show a growing awareness of Yasuní as an ecological treasure that should be protected. But the international response to the initiative has been tepid. By mid-2012 only about \$200

million had been pledged. In response Correa has issued a succession of angry ultimatums, leading detractors to liken his proposal to blackmail. With the initiative stalled and Correa warning that time is running out, activity on the oil frontier continues to advance through eastern Ecuador, even within Yasunı's limits. Every day, another bit of the wilderness succumbs to the bulldozers and backhoes.

A half hour after setting out from the TBS laboratory, Andrés Link reaches the mouth of a low cave at the bottom of a steep ravine. This is the salt lick he was looking for, but there are no monkeys here this morning. "They are afraid of predators," he says, looking up through the canopy at the milky white sky. "When it's overcast like this, they don't like to come down." The monkeys may be wary of jaguars or harpy eagles. But Link's mind is on a more long-term and potentially definitive threat to the animals: the advancing oil frontier.

"You can see there is great interest in finding the oil," he says. "The fear I have is that you need very little to get something started, and then..." His voice trails off, as if the thought were too painful to articulate.

BACK AT THE TBS LABORATORY that evening, I sit on the deck with founding director Kelly Swing to talk about the changes he's seen as the oil frontier closes in. "We definitely feel the pressure," Swing says, looking out into the darkening Correa has asked the world to ante up in the forest. "It's close enough to make us nervous."

> The nearest production facilities are only eight miles to the northeast in a concession operated by the state oil company, Petroamazonas. The scientists tell him they often hear the hum of generators while out in the forest, and low-flying helicopters scatter their study animals in panic with increasing frequency. The faint light from gas flares tarnishes an otherwise breathtaking view of the nighttime sky from the station's observation tower, perched 120 feet off the ground in the branches of a majestic kapok.

The success or failure of the Yasuní-ITT Initiative will likely have no direct impact on this immediate patch of forest, he says. But Swing fears

the initiative's collapse could deal a body blow to conservation efforts and unleash a tide of oil development that could sweep into the southern half of Yasuní, perhaps even into the Untouchable Zone itself.

"Over time the oil concessions have become like stepping-stones," he says. "As each one is developed, there's mounting pressure to develop the remaining blocks farther east and south."

Ecuadorian officials insist that oil extraction can be done responsibly, even in sensitive habitats. They say current practices mark a vast improvement over the highly polluting methods that prevailed in the 1970s and '80s, when U.S. oil giant Texaco allegedly left behind contaminated sites that have embroiled Chevron. Texaco's parent company, in a multibilliondollar lawsuit with indigenous communities. But development has far greater consequences for species-rich environs like Yasuní, Swing says, starting with countless millions of insects, many undoubtedly unknown to science, scorched each night in undulating gas flares.

In forests impacted by oil development, perhaps 90 percent of the species around denuded sites die, he says. "You have to ask: Is that acceptable? To whom is that acceptable?"

A FEW DAYS LATER I join a team of biologists from the Wildlife Conservation Society (WCS) as we board a boat in a light drizzle to journey eastward down the Tiputini River. White-bark Cecropias line the twisting river, which follows part of the northern boundary of the backward-C-shaped national park. Above us the high branches of massive kapok trees are dripping with oropendola nests.

Except for the blare of our own outboard, the river appears to be entirely free of human presence. Or so it seems, until we round a bend and come upon a long motorized barge pulled up against the riverbank. The place is swarming with workers in hard hats and high boots, the exposed earth red and raw, pocked with the treads of earthmovers. A similar gash on the opposite bank—broad and blood red—creates the impression that the road has jumped the river as if by magic, entering the national park of its own accord. I lift my camera to snap a picture, prompting a pair of soldiers aboard the barge to shout: "Forbidden to take photos!"

Officials in blue coveralls and helmets are tight-lipped when we clamber through the boot-sucking ooze and climb aboard the barge. But a tall man of broad girth offers me a beefy paw and a warm welcome. "I'm one of the bad guys," he says in English with a laugh, before I even get his name. Robin Draper, 56, seems as surprised by our sudden appearance as we are by this entire operation. "We've been here for weeks, and you're the first boat that's come down this river," he says.

Draper, a native of Sacramento, California, and a veteran of the Prudhoe Bay oil fields in Alaska, is the owner-operator of the barge, named Alicia, and is working on contract for Petroamazonas. Operating largely outside the public eye, the state oil company is evidently moving at full throttle into Block 31. Environmentalists celebrated a few years ago when they stopped another oil company, Petrobras, from building the same road. But the concession has since reverted to Petroamazonas, and now the nine-mile road south from the Napo to the Tiputini Rivers is finished, Draper says. What's more, bulldozers have already advanced deep into the forest on the other side of the Tiputini.

It's a move that's bound to stir controversy, because it represents a fresh intrusion into the park. Critics have also contended that Block 31's known reserves of 45 million barrels are too small to justify a massive investment in the concession. The real reason for going into Block 31, they say, would be to lay the infrastructure for an eventual move into the ITT Block next door, making it as much a menace to the credibility of the initiative as it is to the wildlife and to the isolated indigenous groups that wander its upland forests. Recent reports point to the possible presence in the area of such groups, which the government is duty-bound to protect.

Though Draper has no opinion about that, he says the company is doing its best to minimize disturbance in the area, starting with the use of



his barge. "They aren't going to build a bridge across this river," he tells us over a cup of coffee in *Alicia*'s wheelhouse. "There will be a barge here forever." Draper describes a "completely new roadbuilding process" under way on the far side of the river, where workers are laying down a synthetic material over swampland and forest that could eventually be rolled up and removed. His Ecuadorian colleagues refer to the road as a *sendero ecológico*—an ecological path—when

they speak to local natives hired on as manual laborers. "The idea is that someday you can turn the road back to nature."

But Draper isn't convinced. "Their heart's in the right place," he says. "But the way I see it, we shouldn't even be here."

BACK ON THE RIVER, I ask Galo Zapata, one of the WCS biologists on our boat, how this new road is likely to affect the rain forest. "I'm sure Home alone in Bameno, children under the age of 14 fend for themselves while their parents and older siblings attend a party in Kawymeno, two days away by foot. Mostly self-sufficient, they have a grandfather nearby for emergencies.

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the company will do its best to control access to the road," he says. "But they're not going to stop the Kichwa and Waorani from settling on it."

This has all happened before, he explains. When oil companies built the Maxus Road (named after Maxus Energy Corporation, a U.S. oil exploration firm) into Yasuní in the 1990s, measures were taken to block access to outsiders, but natives living within the park moved their villages to the road and began hunting animals to sell on the black market. "With all the people who will move here, there will be a big demand for bush meat. It will be bad for the large birds and animals. The social impacts will be bad. The story will repeat itself."

As we proceed downriver, the landscape levels out until it resembles a vast lowland swamp studded with *açaí* palms. Our GPS indicates we've crossed into the ITT Block, ground zero of the oil controversy. We pull ashore at a low bank, where a hand-painted billboard marks the small Kichwa community of Yana Yaku.

Community leader César Alvarado emerges from under the low thatching of his house and tells us about the time, when was he was a young child, that the oil companies arrived. The first men came in helicopters that buzzed the tall morete palms beyond the village before touching down, he says. Then came barges laden with housing units for the workers and tractors that mowed down the forest and hauled in the big rigs. "There was an entire town of workers," he remembers, sweeping his hand out toward the tangled undergrowth. "They were friendly. They shared their food with me."

Now 49, Alvarado, barefoot and thin in a loose-fitting tracksuit, leads us down a muddy path past Yana Yaku's rough-hewn shacks. He wants to show us what all those workers came here to do so long ago, and the solitary monument they left behind. We enter a shady clearing and behold an astonishing sight. It appears to be some kind of sculpture, an abstract crucifix assembled from pipes, valves, and elbow joints. Standing nearly 15 feet high, it's tarnished and moss covered, like a lost idol from a Steven Spielberg movie. But it's hardly forgotten. This is

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How many oil workers did Kemperi and his comrades kill that day? **HE COUNTS ON HIS FINGERS.** Five, maybe six. "We killed them so they would never come back," he says.

the central axis around which the entire Yasuní-ITT question revolves—a capped exploratory well for the Tiputini oil field. Along with others like this one, it's the reason officials know the ITT Block holds more than 20 percent of Ecuador's petroleum reserves, roughly 850 million barrels of Amazon crude. A more inconspicuous testament to Ecuador's prospective oil wealth could scarcely be imagined.

What happens if the workers come back? I ask. Is Alvarado in favor of them pumping the oil from beneath his village? "We want health and education for the community," he says. "If they take care of the environment, then we'll be for it."

FOR MOST WAORANI, by contrast, such a future does not look nearly as inviting. On a sticky, overcast morning, I set off from the city of Coca with native guides in a truck to journey south down the so-called Auca Road. Built by Texaco in the 1970s to move drill rigs to the oil fields and lay pipeline from them, the road split former Waorani territory straight down the middle. Adding insult to the injury, the company christened the road Auca, the name applied to the Waorani by their enemies, meaning "savage." We're bound for the bridge at the Shiripuno River, the gateway to the Untouchable Zone, where at least two Waorani groups, the Taromenane and Tagaeri, live in voluntary isolation from the rest of the world.

Careering down the winding asphalt, we pass

a landscape of denuded hillsides and ranchos that bear witness to the uncontained rush of land-hungry settlers that followed the road's construction 40 years ago. Several impoverished Kichwa and mestizo communities lie strewn along feeder tracks branching off the Auca.

At a place where the road bends sharply to the right and disappears in a spray of foliage, we jog left and follow tire tracks up a steep hill. I've heard that uncontacted Indians have recently turned up outside the exclusion zone, in an area where oil development is in full swing. Soon we're navigating a labyrinth of back roads serving a growing sprawl of oil wells and pumping stations. We fishtail around a hairpin turn and come face-to-face with a high wall of jungle, where the road abruptly ends. Ahead to the right, a new drill rig rises behind a chain-link fence. A sign on the gate identifies the site as the Nantu E oil well. Off to the left, a knot of thatched shacks sits back in the woods—the Waorani village of Yawepare.

Yapping mongrels surround us as we hop down from the truck. A muscular man in shorts and a tight T-shirt wants to know my business. Satisfied that I am not from the oil company, he suggests we talk in the open-air communal hut nearby. His name is Nenquimo Nihua, he says in fluent Spanish, and he's currently serving a two-year term as the community chief.

"This is a dangerous area," Nihua warns. Tensions have been on the rise since oil workers arrived a few months ago to work on the well next door. Villagers here are worried that the racket created by heavy vehicles and machinery could provoke a violent response from uncontacted groups in the surrounding jungle. The isolated groups feel their land is shrinking. "They're being flushed out of the forest," he says. "We don't want conflict with them. We want them to feel *tranguilos*."

Nihua confides that some of the nomadic tribesmen are actually his relatives. "My mother-in-law has a brother in the isolated group," he says. In fact, two dozen of them stood on this very spot just three weeks ago. Nihua's father saw them with his own eyes. He'd gotten up in the

middle of the night, alarmed by barking dogs, and gone out for a look. Turning a flashlight at the communal hut, he was startled by the sight of the naked warriors—all men, all brandishing spears and blowguns. They'd just entered the hut, and it appeared as though they intended to stay the night. Heart racing, his father retreated back into the house without speaking a word. It was best to leave them alone, he said.

"They came here to rest," Nihua adds. By the next morning the warriors were gone.

Despite their family ties, many civilized Waorani fear attack by the Taromenane and Tagaeri. Yet the nomadic clans are also a source of pride, a potent symbol of tribal resistance, and a reminder of their ancestral traditions. Nihua says he and his family leave axes and machetes in the woods for their relatives to take. They plant gardens to feed them and run armed patrols to guard against intruders who would bring them harm. "We're taking a stand here," Nihua says, his chest swelling. "No more oil development. No more colonizers entering here. No more loggers."

NEAR THE END of the Auca Road we come to a wobbly bridge and off-load our gear into a skiff to continue down the Shiripuno River to the Cononaco River and on into the Untouchable Zone. Since outsiders are permitted to enter the zone only at the invitation of the Waorani, I have arranged to make this part of my journey with Otobo Baihua, a Waorani guide.

Short and robust, with broad shoulders and a quick smile, Otobo, 36, says he once worked for the oil companies, but he quit to seek a more eco-friendly living. "Much contamination," he says in broken Spanish. "I saw many animals die. It made me sick." Now he operates an ecotourism business, taking adventure travelers to visit his people deep inside the exclusion zone.

A spectacular panorama of wildlife unfolds before us: monkeys swinging through the canopy, toucans yelping in the treetops. A large capybara slides lazily into the water. Otobo stops to point out sites where, in bygone times, Waorani warriors ambushed oil workers and where, more recently, the Tagaeri and Taromenane have impaled illegal loggers with spears before retreating into the forest shadows.

Around campfires in riverside settlements, the Waorani share stories over the next few nights of their turbulent history and their abiding distrust of the oil companies. They describe the paradise they lost to big oil and the paradise they still share with their reclusive relatives. Two days later we reach our final destination, the village of Bameno. Concrete-block buildings and wooden huts flank a 1,800-foot-long (560-meter) grass airstrip. There we find Penti Baihua, Otobo's cousin and a community leader, locked in vigorous discussion with a gathering of villagers near the airstrip. He's barefoot and bare-chested, with wavy black hair and an easy smile. He breaks away to welcome us.

"The ITT is only a small part of Yasuní," he says, when I ask him about the initiative. He's especially worried because the Waorani don't have specific, government-recognized ownership rights to the land that lies within the Untouchable Zone. "They will conquer this space, one oil well at a time, if we don't have that document," he says. "We don't know what plans the government has for our territory."

Penti leads us across the soggy runway to a communal hut on the far side of the village. He wants me to meet his uncle, a silver-haired man named Kemperi. One of the very last jaguar shamans of the Waorani, Kemperi is widely revered for his ability to communicate with the forest spirits. Dressed in shorts and a blue T-shirt, he has long gray tresses framing a broad smile of brilliant white teeth. He does not know how old he is, he says, but he was already an adult when he joined a war party that ambushed and killed several Shell oil workers in the 1940s.

Twelve workers in all perished at the hands of indigenous warriors. The company later abandoned operations in eastern Ecuador, and it wasn't until the missionaries subdued the "Auca" that oil exploration resumed here.

How many did Kemperi and his comrades kill that day? He counts on his fingers. Five, maybe six. "We killed them so they would never come back." Despite the violence he describes,





he speaks with the easy laugh of an old combat veteran recounting his younger days in the war. But what about today, what if the men with the hard hats and uniforms return?

I head for the capital city of Quito, high in the Andes. I've been offered the opportunity to speak directly with President Correa about his struggling Yasuní-ITT Initiative. Guards

"If they come back, we will kill them," he says matter-of-factly. "We will do as our parents and grandparents taught us."

AFTER NEARLY THREE WEEKS of traveling by truck, boat, and bush plane through Yasuní,

I head for the capital city of Quito, high in the Andes. I've been offered the opportunity to speak directly with President Correa about his struggling Yasuní-ITT Initiative. Guards snap to attention as I pass the colonnades of the colonial-era Carondelet Palace and enter a lavish room of gold-trimmed furniture and brocade curtains.

Charismatic, articulate, and intelligent, Correa, 49, gets right to the point during our talk.

Nine-year-old Daniela Cupe Ahua daydreams as her sister-in-law tends to babies. In keeping with Waorani custom, this extended family live together. Their house, near the Maxus Road, uses store-bought blankets as walls.

KARLA GACHET

The Yasuní-ITT Initiative, he says, is still on the table. "We've always said that if we didn't receive the necessary support for the initiative within a reasonable period, we would have to exploit the oil," he says, "with the greatest environmental and social responsibility."

The initiative poses a real dilemma, he continues. "Ecuador is a poor country. We still have children without schooling. We need health care, decent housing. We lack many things. What would suit the country most would be to exploit the resource. But we also understand our responsibility in the fight against global warming, the principal cause of which is the burning of fossil fuels. That's the dilemma."

As we wrap up the interview, Correa sounds like a man who's already made up his mind. "I insist that we are going to exploit our natural resources, as all countries in the world do," he states. "We cannot be beggars sitting on a sack of gold." Nonetheless, he finishes by saying that he'd be willing to consider putting what is widely known in Ecuador as Plan B—exploiting the oil in the ITT—to a popular vote.

ON THE STEPS outside the presidential palace, I think about the road I saw under construction in Block 31 and the violation of the wilderness it represented. Regardless of the outcome of the ITT Initiative, significant portions of Yasuní will remain under siege. "If the Yasuní-ITT Initiative fails, we'll figure out how to save part of it," Kelly Swing had told me as we sat on the deck of the research station, as though he too were already looking beyond the decision. "My main concern is that with each compromise with development, we end up with less for nature." A breeze rustled the treetops. Somewhere a macaw shrieked. "Should we use our capacity to tame nature and commandeer all the resources for ourselves and take it right up to the breaking point?" Swing asked. "Will we even know where that breaking point is?" □

We thank the Kichwa community of Añangu and the staffs of the Napo Wildlife Center and the Tiputini Biodiversity Station for their support.