

FEATURE

More to Explore

- ▶ DID YOU KNOW?
- ▶ RELATED LINKS
- ▶ BIBLIOGRAPHY
- ▶ NGS RESOURCES

On Assignment



Field Notes From
Author
Virginia Morrell

Hotspot: Brazil

Step into the world of writers and photographers as they tell you about the best, worst, and quirkiest places and adventures they encountered [in the field](#).

ZOOM IN

Get the facts behind the frame in this online-only gallery. Pick an image and see the photographer's technical notes.



Click to ZOOM IN >>



Click to ZOOM IN >>



Click to ZOOM IN >>



The Rain Forest in Rio's Backyard



By **Virginia Morrell** Photographs by **Mark W. Moffett**

[e-mail >>](#) this page to a friend

The once vast Atlantic forest of Brazil survives only as a scattering of green islands in a sea of human sprawl. Now scientists have plans to save its remnants from the rising tide of development.

Get a taste of what awaits you in print from this compelling excerpt.

"It's always like this," says Adriano Chiarello. "You know they're here, but you can't see them." The Brazilian conservation biologist bends his neck backward like a yoga master to peer at a tree's uppermost branches a hundred feet (30 meters) above us. Somewhere in the leafy canopy, a female maned sloth and her eight-month-old infant are hidden from view. A steadily beeping radio signal from the mother's collar has brought Chiarello to the base of the tree, but even technology has its limits. The biologist must now spot the pair the old-fashioned way: with his eyes alone.

"If they don't move, we may never see them," Chiarello sighs. "And you know, they really are sloths. They spend hours sitting, sleeping, never moving. That's what they do 80 to 90 percent of the day:



SIGHTS & SOUNDS MULTIMEDIA SPECIAL

Join photographer [Mark Moffett](#) for an introduction to the rare and unique animals that live in Brazil's Atlantic forest: sloths, porcupines, dancing frogs and the largest New World monkeys.



Click to ZOOM IN >>

Photo captions by Ann Williams



Threadbare Shawl of Green



Click to enlarge >>

nothing."

He wipes his eyes, shakes his head, then returns to his craning yoga pose. "Wait. . . Maybe my insult has worked. Look there—right over your head. She's braced against a branch."

I follow Chiarello's pointed finger and spy the mother's dark brown face among the leaves. She buries her face under her arm and looks instantly like a large, furred coconut or bees' nest.

"Do you see that? How she can vanish?" Chiarello asks. "For their size, they are so well camouflaged. And . . . wow! Now she's moving!"

For Chiarello, such a sloth-on-the-move sighting is a peak experience, the ultimate biological moment that holds the promise of new insights.

The baby sloth, looking like a Teletubby wearing a curly lambskin coat, emerges from its mother's arms. It climbs over her and then playfully—lazily—slaps at its mother's face. The mother does nothing in return. "They never respond to their babies," whispers Chiarello, adding that mother sloths neither play nor get angry with their offspring. Instead, with all the speed of a desert tortoise, the mother reaches an arm out to a nearby branch and nibbles the leaves.

Chiarello's graduate students—at the Catholic University of Minas Gerais, where he's a professor—busily take notes. We all stretch our necks, craning this way and that, to keep the sloths in view as the pair move like sleepwalking high-wire artists along the branches to the freshest leaves. Astonishingly, given the mother's 15-pound (7-kilogram) build, she and her baby hang from the pencil-thin twigs like strange, half-animated fruits.

Chiarello's "main actress," as he fondly refers to the mother sloth, is the star in his study, funded in part by the National Geographic Society, of the endangered mammals of the São Lourenço Municipal Park, a small fragment of Brazil's Atlantic forest, or Mata Atlântica as the Brazilians call it. Like many mammals here, the maned sloth has lost huge tracts of its original habitat since the first Portuguese mariners stepped ashore in April 1500.

Get the whole story in the pages of [National Geographic](#) magazine.

POSTCARDS

[Send a friend](#) an e-greeting showing one of the Atlantic forest's strangest inhabitants, the thin-spined porcupine.

FLASHBACK

[Flashback to 1931](#) when a woman in Brazil posed with an anaconda snakeskin "skirt" 16 feet (five meters) long.

MORE TO EXPLORE

In More to Explore the *National Geographic* magazine team shares some of its best sources and other information. Special thanks to the Research Division.

Did You Know?

Snakes that bring death can also help sustain life. Wielding a venom that immobilizes its victims, the Brazilian lancehead viper *Bothrops jararaca* inflicts 90 percent of all snakebites to humans in the populous southeastern part of Brazil. Studies of the venom's components led to the development of widely prescribed drugs to treat hypertension in humans. Although this snake thrives throughout the Atlantic forest, other species with potentially valuable secrets are vulnerable—and could even die out before scientists identify them.



—Ann Williams

Related Links

Conservation International Biodiversity Hotspots

www.biodiversityhotspots.org

Visit the Earth's 25-richest and most-endangered reservoirs of plant and animal life. Each hotspot has its own website highlighting endemic species, threats to biodiversity, and conservation measures.

Atlantic Coastal Forest Project

www.nybg.org/bsci/res/bahia/Bahia.html

This New York Botanical Garden website includes a checklist of plants as well as a bibliography and links to other Atlantic forest sites.

Golden Lion Tamarin Conservation Project

natzoo.si.edu/ConservationAndScience/EndangeredSpecies/GLTProgram

Learn about the four species of endangered lion tamarins and find out how you can contribute to conservation efforts at this website.

Global Trees Campaign

www.globaltrees.org

This campaign draws attention to threatened trees as flagship species for conservation of ecosystems. The focus in Brazil is the *Caesalpinia echinata*, the brazilwood tree. Source of the country's name, it was originally harvested for timber and dye and is now used to make violin bows.

[Top](#)

Bibliography

Bright, Chris, and Ashley Mattoon. "[The Restoration of a Hotspot Begins.](#)" *World Watch* (November/December 1991).

Dean, Warren. *With Broadax and Firebrand: The Destruction of the Brazilian Atlantic Forest*. University of California Press, 1995.

Galindo-Leal, Carlos, and Ibsen de Gusmão Câmara, eds. *The Atlantic Forest of South America: Biodiversity Status, Threats, and Outlook*. Island Press, 2003.

Hunter, M. L. *Maintaining Biodiversity in Forest Ecosystems*. Cambridge University Press, 1999.

Strier, Karen B. *Faces in the Forest: The Endangered Muriqui Monkeys of Brazil*. Harvard University Press, 1999.

[Top](#)

National Geographic Resources

Thompson, Gare. *Up the Amazon*. National Geographic Books, 2002.

Coelho, Paulo. "Rio de Janeiro." *National Geographic Traveler* (October 1999), 34-36.

White, Mel. "Expedition: Amazon." *National Geographic Traveler* (November/December 1993), 90-107.

Vesilind, Priit J. "Brazil: Moment of Promise and Pain." *National Geographic* (March 1987), 348-85.

[Top](#)

Sights & Sounds **Brazil's Atlantic Forest**




This presentation requires Flash and is best viewed with a high-speed connection. With a 56.6 modem connection it takes approximately 3 minutes before the show starts.

This special presentation runs for **6 minutes.**

**No Plug-In
Detected**

We have detected that you do not have the Flash player.

Please download the free Macromedia Flash plug-in here. 

Sights & Sounds

**Brazil's
Atlantic Forest**
Life on the Brink

Get the whole story in the pages of *National Geographic* magazine.

[<< Go to Feature Page](#)

[e-mail >>](#) this page to a friend

Field Notes From Hotspot: Brazil

[<< Back to Feature Page](#)


>>

View Field Notes From Author Virginia Morrell



View Field Notes From Photographer Mark W. Moffett

In most cases these accounts are edited versions of a spoken interview. They have not been researched and may differ from the printed article.

Photographs by Saadia Iqbal (top) and Claudio E. G. Patto



On Assignment



Hotspot: Brazil

Field Notes From Author Virginia Morrell

Best

Following a troop of female *muriquis*, or woolly spider monkeys, through the forest canopy was especially exhilarating. They had an advantage over us because there were no downed trees in their paths or steep mountains to traverse, so it was something of an effort to keep up with them. Once, we were very lucky, and a troop of females, many with babies, passed right over our heads. A couple mothers had tiny newborns, and you could just make out their pink faces buried in their mothers' fur. One mother stopped to rest right above our heads in a tall tree. There was a hole in the tree where a limb had broken off, and she reached her hand inside and lifted it out with water dripping from her fingertips. She tilted her head back and let the water run into her mouth. That was her aerial drinking fountain—this tree hole—an absolutely delightful thing to see.

Worst

I'd spent a morning with some field biologists watching the golden lion tamarins in the Poço das Antas Biological Reserve. After the tamarins moved on, we walked out of the forest and climbed up a hill in a farmer's pasture. And there, on the horizon, was a fire, burning its way toward the tamarins' forest. Some of that forest had only started to regenerate a few years before; it was part of the area that ecologists hope to restore for the tamarins. And it was now being cut down by the flames. The fire may have started naturally, but the scientists were sure that a person had set it, or perhaps a fire someone was using to burn trash had escaped. Either way, it was hard watching the flames lick their way through the forest, given the amount of destruction the Atlantic rain forest has already experienced. In many places, all that is left are grassy patches and unproductive red dirt. Much of what was rain forest is now a desert in the making.

Quirkiest

In the forest with the *muriquis*, we also spotted a rare bird of the dark understory, the *macuca*. She was the size of a large pheasant and was perched on a low stump, her chocolate wings spread protectively over her nest. When she saw us, she raised her head in alarm and flew a short distance away, revealing two turquoise blue eggs. We all caught our breath at how beautiful the eggs were, lying in the hollow of that black stump. And then, not far behind us, a motorcycle ripped down a road that winds through the forest. It was such a startling sound. For a moment, while we watched the *macuca* on her nest, it seemed as if we had stumbled into a patch of virgin Atlantic rain forest. But in reality, we were only minutes from a highway and towns.

[Top](#)

ZOOM IN

More photos from
Hotspot: Brazil

[<< Back to Feature Page](#)

View exclusive
photographs and get the
facts behind the frame.



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



Code Red

Photograph by Mark W. Moffett

A poisonous toad—unnamed and still not well understood—splashes color beside a stream in the Brazilian state of Paraná. In this one corner of the endangered Atlantic forest, 19 amphibian species have been identified, and others likely await discovery. Once covering Brazil's entire east coast, the Atlantic forest survives in fragments, ravaged by the growth of agriculture, cities, and industries. Environmentalists are now racing to save what's left before its unique collection of plants and animals disappears forever.

PHOTO FAST FACTS

Camera: Canon EOS
Film Type: Fujichrome Provia 100
Lens: 17mm
Speed and F-Stop: 1/4 @ f/16

Weather Conditions: Cloudy
Time of Day: Morning
Lighting Techniques: A little flash on foreground

ZOOM IN

More photos from
Hotspot: Brazil

[<< Back to Feature Page](#)

View exclusive
photographs and get the
facts behind the frame.



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



Beating the Odds

Photograph by Mark W. Moffett

Nearing extinction in the wild only a few decades ago, the golden lion tamarin (*Leontopithecus rosalia*) has become an international symbol of success in conservation. Many of the squirrel-size monkeys had been captured as pets or for zoo exhibits. Those remaining in the treetops—about 200 in 1983—hung on for dear life in increasingly isolated patches of forest. Since then, more than 140 captive-bred tamarins have been released in and around the Poço das Antas Biological Reserve in the state of Rio de Janeiro. They are now mating with the wild population, which has rebounded to about a thousand.

PHOTO FAST FACTS

Camera: Canon EOS
Film Type: Ektachrome 100
Lens: 300mm
Speed and F-Stop: 1/125 @ f/5.6

Weather Conditions: Cloudy
Time of Day: Morning
Lighting Techniques: Fill flash

ZOOM IN

More photos from
Hotspot: Brazil

[<< Back to Feature Page](#)

View exclusive
photographs and get the
facts behind the frame.



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



Out on a Limb

Photograph by Mark W. Moffett

Plucking a spider from its web, a yellow-breasted capuchin monkey (*Cebus xanthosternos*) will chow down and then continue foraging for insects, fruits and seeds, even frogs and lizards. This individual, rescued from poachers, is rediscovering survival skills in a private nature reserve in southern Bahia. Others aren't so lucky and end up as pets—or as sources of meat. Hunting wild animals is prohibited in Brazil, but officials rarely enforce the law. Destruction of the forest by illegal logging and agricultural fires puts additional pressure on this critically endangered primate.

PHOTO FAST FACTS

Camera: Canon EOS
Film Type: Fujichrome Provia 100
Lens: Canon 100-400mm zoom
Speed and F-Stop: 1/125 @ f/5.6

Weather Conditions: Sunny
Time of Day: Morning
Lighting Techniques: Light-fill flash

ZOOM IN

More photos from
Hotspot: Brazil

[<< Back to Feature Page](#)

View exclusive
photographs and get the
facts behind the frame.



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



[Click to ZOOM IN >>](#)



Hanging On

Photograph by Mark W. Moffett

Camouflaged like shaggy bark, a maned sloth (*Bradypus torquatus*) taken from poachers clings to the safety of a tree at a rehabilitation center in Bahia. The most endangered of South America's five sloths, this shy species hides in the treetops and only descends to defecate and urinate—about once a week. It does not adapt well to captivity, breeding only in the wild. "Without forests there will be no maned sloths," says Vera Lúcia de Oliveira, a rescue volunteer. "Human beings need to think about the laws of nature and learn to respect them."

PHOTO FAST FACTS

Camera: Canon EOS
Film Type: Fujichrome Provia 100
Lens: 100-400mm zoom
Speed and F-Stop: 1/500 @ f/5.6

Weather Conditions: Sunny
Time of Day: Unrecorded
Lighting Techniques: Natural light



Threadbare Shawl of Green

Covering less than 7 percent of its original 520,000 square miles (1,347,000 square kilometers), the Atlantic forest lies besieged by human sprawl yet still harbors a staggering variety of life. One study found more than 450 tree species—a larger number than in all of Germany—in just two and a half acres (one hectare).

For a high-resolution version click [Download Printable Map](#). Acrobat Reader is required to view this download. Get the free plug-in [here](#).

© 2004 National Geographic Society. All rights reserved.

