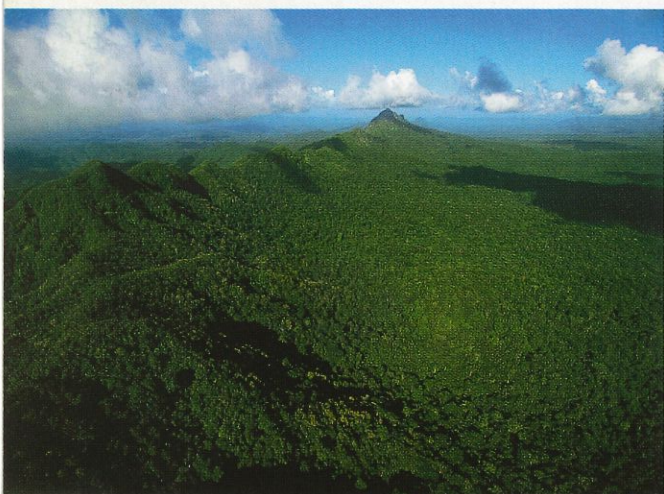


cockscomb

it's about cats

There's always
a chance to
see jaguars in
Belize's Cockscomb
Basin Wildlife
Sanctuary



SCOTT SILVER, STEVE WINTER (ABOVE LEFT AND RIGHT)

"IT MAY BE A TAYRA," Scott whispers, as the six of us strain to identify the weasel-like form moving toward us in the forest shadows. This is our first mammal sighting of the day, which began shortly after dawn when we embarked on our hike to deploy remote wildlife cameras along Victoria Peak Trail. Already a couple of miles into the hike, we are eager to see something—even if it isn't the elusive jaguar.

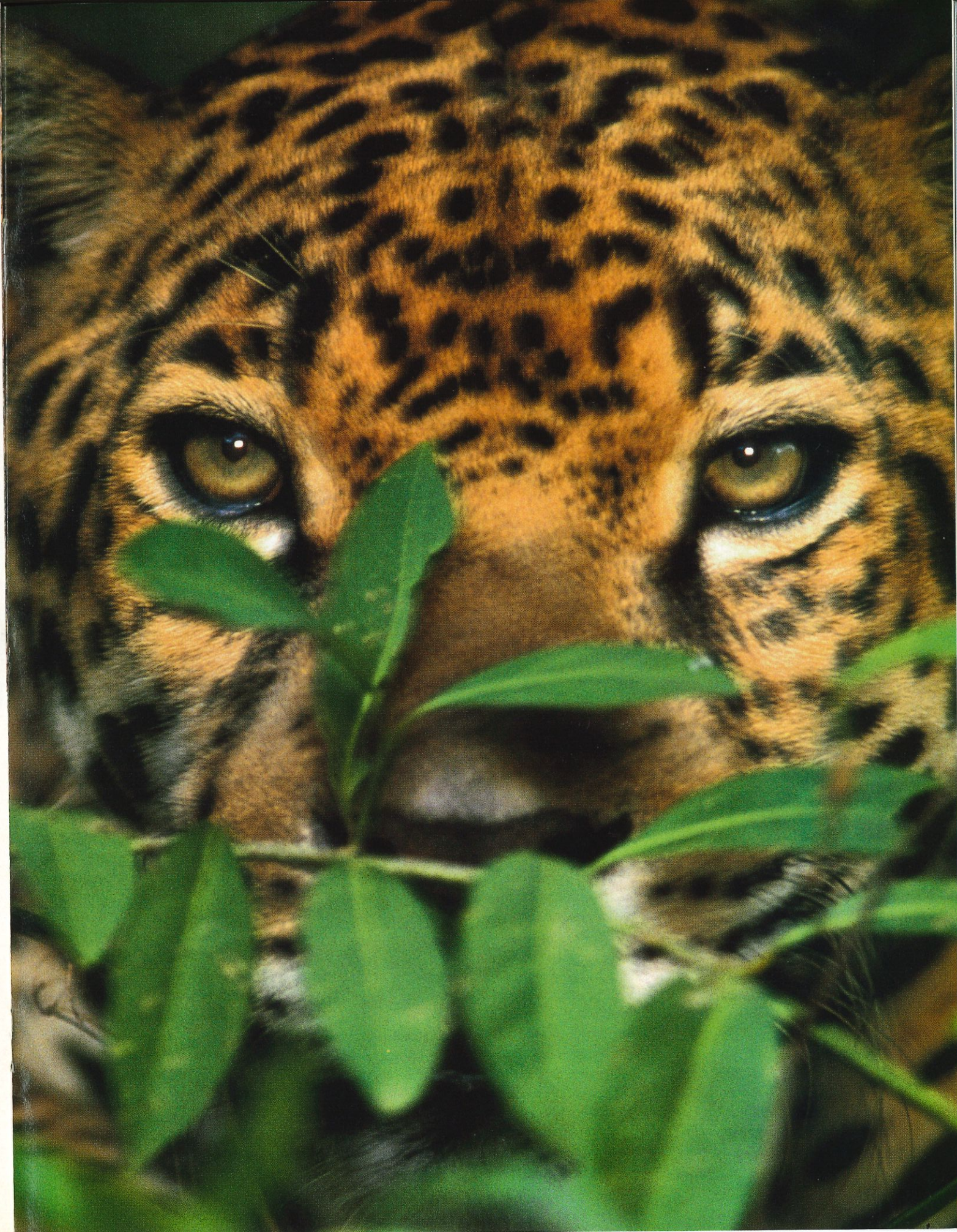
"Wait!" Scott exclaims, binoculars trained on the animal. "It's a jaguarundi!"

Sure enough, the long, slender felid is single-mindedly tracking a scent along the edge of the trail, apparently oblivious to the bunch of biologists gawking at it. Without casting us so much as a glance, the jaguarundi approaches within 50 feet, and then casually follows its nose into the jungle. Our early rise has been justly rewarded. Seeing a tayra would have been an excellent appetizer, but a close-up view of a jaguarundi brings us right to the main course. Cockscomb, after all, is about cats—great and small.

Cockscomb Basin Wildlife Sanctuary is home to one of the healthiest jaguar populations in Central America. An estimated 35 to 50 jaguars occupy Cockscomb's lush tropical forests, which provide about 150 square miles of mostly secure habitat for this globally endangered species. While four other wild cats—jaguarundi, margay, ocelot, and puma—also reside here, it is the plight of the jaguar that catalyzed Cockscomb's establishment as a wildlife sanctuary. Landmark research by Alan Rabinowitz (see "Cockscomb in Context," page 35), whose tireless efforts for the Wildlife Conservation Society (WCS) on behalf of Cockscomb's jaguars are described in his book *Jaguar* (Island Press, 1986), led to the protection of the Cockscomb Basin as a forest reserve in 1984. Full sanctuary status was granted six years later.

Today's Cockscomb is a world apart from the place that greeted Rabinowitz in the early 1980s—a place that was wild at heart but wounded by timber extraction and slash-and-burn agriculture. Cockscomb's

By Paula MacKay





Counting jaguars in Cockscomb Basin Wildlife Sanctuary (page 31) entails navigating rugged forests (page 30, top) to set up camera traps (page 30, bottom, WCS conservationist Scott Silver positions a camera) to snap photos of passing animals (above, a jaguar breaks a camera trap's electronic beam). Opposite, top: Scott and Bart Harmsen examine a jaguar that had been killed by villagers for preying on livestock.

long legacy of logging has since been replaced with eco-tourism, and the timber camp has been transformed into modest tourist facilities. More than 10,000 nature lovers visited the sanctuary in 2003. The jungle itself is once again thriving, as commercially exploited giants such as mahogany, cedar, and banak slowly grow to maturity. Most important, jaguars roam in relative safety through their ancestral landscape.

It was the rare opportunity to study these magnificent cats that inspired my husband, Robert Long, and me—Vermont-based carnivore researchers—to spend a month helping to monitor Cockscomb's jaguar population. We were especially drawn to this project because of its emphasis on non-invasive research. Cockscomb is a proving ground for new techniques to survey jaguars. Graduate student Bart Harmsen, in collaboration with WCS's Scott Silver and Linde Ostro, is employing camera traps—cameras specially fitted with heat and motion detectors—to estimate the density of jaguars in the reserve.

Since jaguars frequently use Cockscomb's trail system, cameras have been set up to photograph the animals as they pass

by. Jaguars lend themselves especially well to this research technique, as each one has a unique spot pattern, thus allowing researchers to identify individuals from photographs. With the Cockscomb camera-trapping project now in its third year, 36 jaguars have been captured on film, not to mention a full complement of terrestrial prey species.

Upon our arrival in Cockscomb, we quickly realize that one need only take a walk in the forest to see signs of jaguars. Fresh tracks in the mud and cat scrapes on tree trunks betray recent travels. Some jaguar scrapes contain feces, but most of them are devoid of anything discernible to the human eye or nose—at least to most human eyes and noses. A notable exception is Mayan field assistant Emiliano Pop. Having spent most of his life in the forest, Emiliano is adept at reading wildlife signs. He guides us through seemingly impenetrable jungle with the sixth sense of a true bushman. Together with Emiliano, Bart, and biologist Rebecca Foster, we count and measure scrapes on the network of trails. Added to the information collected from camera traps, this data provides further insight into how



SCOTT SILVER-LIME HUNTER (ABOVE RIGHT); WCS/GIS (BELOW RIGHT)

jaguars use the forest to find food and mates.

One refreshingly cool morning, Robert and I notice numerous fresh scrapes as we trek toward the Outlier, a dramatically protruding peak whose granite cliffs soar nearly 2,000 feet above Cockscomb Basin. I pick up the scent of cat urine where two game trails meet, and we're all the more hopeful that this will be our day to meet a jaguar. As we walk in attentive silence, a lone collared peccary appears in front of us. After giving us a moment of careful consideration—I imagine a peccary is as intent on avoiding jaguars as we are on seeing one—the wary, coarse-haired creature continues on its way. Our journey is marked by other sightings, including a flock of raucous mealy parrots, but we return to camp without having had a close encounter with a jaguar—or so we presume. A week later, Bart tells us that a camera trap on the Outlier Trail captured a jaguar about an hour before it photographed us.

While Cockscomb's cats typify the success of the sanctuary, there are many indications that other species are benefiting as well. Protection of the maturing forest appears to be fostering the return of the scarlet macaw—an endangered parrot that nests in tree cavities high in the canopy. Indeed, we observe a trio of these beautiful birds only a mile or so from park headquarters—a noteworthy occurrence given that macaw sightings are rare and generally limited to more remote regions of the reserve. Similarly, Morelet's crocodiles,

all but eliminated from the basin by overhunting, have recently been seen basking in the sunshine along South Stann Creek. Now that hunting is prohibited in the park, traditional game species such as peccaries, red brocket deer, crested guan, and great curassows are apparently flourishing. And howler monkeys, decimated by yellow fever and habitat destruction from hurricanes in the late 1950s and early '60s, have made an outstanding recovery since their reintroduction to Cockscomb in 1992. The monkeys' otherworldly roars permeate the rain forest at dusk and daybreak. One evening, as I lay in my bunk with the flu, I was convinced I was hearing the ethereal voices of male opera singers. More commonly, a howler's roar is mistaken for that of a jaguar.

Cockscomb's ecological wealth is complemented by its cultural treasures. Several Preclassic Mayan archaeological sites reveal an extensive and complex settlement history. And Maya Indians continue to play a key role in present-day Cockscomb. The small Mayan community that coexisted with the timber camp has re-established itself in Maya Center, a vibrant gateway village with an economy intimately tied to eco-tourism. Mayan craft shops, guiding services, and other tourist-driven businesses have blossomed, and most of Cockscomb's (all-Mayan) staff lives here as well. Village leader Ernesto Saqui

served as Cockscomb's director from 1987 until earlier this year. Over the past two decades, his passionate commitment to community-based conservation helped maintain the delicate balance between the needs of the Maya and those of wildlife. While Ernesto is cautiously optimistic that Cockscomb could be a role model for the rest of Belize, he strives to strengthen Mayan investment in the park and expand eco-tourism benefits beyond Maya Center to create a wide support network for its preservation. As communities grow and struggle for increasing-



ly limited resources, such local involvement may become critical to the ecological integrity of Cockscomb—and to the future of the jaguar.

Even today, Cockscomb's jaguars are not immune to conflicts with humans, despite their well protected home. Illegal hunting of both jaguars and their prey continues. Neighboring roads also prove fatal; three jaguars were killed in collisions with cars just last year. But the most salient threat to Cockscomb's jaguars is epitomized by a bucket on Bart's porch containing the skull of an animal shot in a local village. This

“problem jaguar,” destroyed for having attacked dogs, had several old bullet wounds in its head, resulting in a disfigured jaw and rotting nubs where its canines had broken off. It's no wonder the cat resorted to dogs as easy prey, even if doing so meant coming into dangerous proximity with people. Rabinowitz and other researchers theorize that this type of behavior may be perpetuated by shotgun injuries that compromise a jaguar's ability to hunt natural prey. Anecdotal evidence suggests that clashes with cattle ranchers are a major cause of such injuries.

Like other large predators, jaguars are known to kill livestock on occasion. While such accounts are notoriously exaggerated, some ranchers reputedly shoot any jaguar that wanders onto their property. As cattle ranches increasingly take over the unprotected land around Cockscomb, the stakes for jaguars are rising precipitously. Fortunately, efforts are under way to start a jaguar-livestock public outreach program in the Cockscomb Basin. As a first step, Rebecca—with support from WCS—is meeting with local ranchers to document the problem. The long-term goal is to reduce the number of cattle and jaguars killed.

Our last day in Cockscomb begins with a final sunrise stroll on the trails near park headquarters. Robert and I have one more chance to see a jaguar before we return to winter in New England. As we proceed quietly through the jungle, I savor every moment of possibility. Just the sheer fact that we could run into a jaguar makes me feel alive. As Scott put it, “People like to walk here because it's a place where jaguars walk.”

Sure enough, within a stone's throw of the campground, we come across fresh, blood-splattered tracks of a jaguar carrying its prey. Our timing is off again. Or is it? It strikes me that there are so few wild places left where you can be a guest without being an intruder—perhaps Cockscomb's greatest gift is the opportunity to be seen by a jaguar rather than to see one.

Paula MacKay is a wildlife researcher and writer living in Vermont. For more information about the WCS Jaguar Conservation Program, please log on to www.savethejaguar.com.

Jaguars remain an important symbol in religious and artistic expressions in the New World (opposite: Alan Rabinowitz, director of WCS's Science and Exploration Program, watches a Mayan woman carve an image of a jaguar on a stone that will be sold to tourists). Protecting jaguars in the Cockscomb reserve alone (left, a cat scrapes a tree trunk) is not enough. Jaguars need connected habitats over their entire range. Rabinowitz and other WCS conservationists are working throughout the Americas to ascertain the jaguar's status and help ensure its survival.





COCKSCOMB IN CONTEXT: An Interview with Alan Rabinowitz

Paula MacKay: What was the most challenging aspect of protecting Cockscomb as the world's first jaguar sanctuary?

Alan Rabinowitz: The greatest challenge was changing people's attitudes about why we needed this place—and that went for both local people and the government. At the time I started working in Belize, the Forestry Department's only job was regulating timber cutting. There was nothing in the government set up for conservation or protected area management. There were no land-based national parks or sanctuaries of any size. And eco-tourism wasn't even a term used back then. Government officials were just thinking about how to bring more development into the country. So when we approached them about protecting Cockscomb, we had to create our own model. Eventually, once visitors really started coming, Cockscomb took off and other areas were protected because of it.

PM: Do you feel optimistic about the future of Cockscomb's jaguars?

AR: I feel very optimistic about Cockscomb. But I'm worried about how much land I see being lost that's not protected, not only around Cockscomb, but throughout Belize. There's a huge population of jaguars out in the coastal areas and unprotected lowlands all the way to the coast. That's the real threat, because there won't be a future for jaguars if Cockscomb is an island—jaguars need connected habitat.

PM: How does Cockscomb fit into the bigger picture of jaguar conservation in Central America?

AR: The broad vision is a jaguar corridor from Mexico to Argentina. Contiguous protected areas in Belize, Mexico, and Guatemala comprise the largest existing chunk of protected forest in Central America. These areas are a very important piece of that larger corridor.

PM: What are the priorities for jaguar conservation today?

AR: We lack coordinated data on jaguars, on their status and where they're known to exist. Everybody says the Amazon has lots of jaguars, lots of jungle. We don't know that. Having forest doesn't mean jaguars are there or doing well. Jaguar habitat has decreased by over 50 percent in the last century. So we're doing priority surveys throughout parts of the cat's range, and trying to act as a network for people going into areas we're not.

PM: With more and more of your conservation work steeped in politics, is it difficult to maintain a focus on research?

AR: I'm doing little research these days. Conservation can never be separate from what's going on in the real world. This means dealing with government officials, agencies, communities. But when it all comes together and you've accomplished something big, like Cockscomb, it's the most incredible feeling in the world.