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Cat Fight on the Border



Will homeland security concerns keep jaguars from returning to their native. EMIL MCCAIN BORDERLANDS JAGUAR DETECTION PROJECT

The vehicle Emil McCain is driving sounds like a golf cart, but this is no golf course. The windowless machine's oversized tires churn through the Arizona outback, lurching over melon-sized rocks. On a steep incline, it seems as if the contraption - a modified all-terrain vehicle - might flip backwards onto itself. For McCain, it's just another Sunday drive.

On this relatively cool July day, he's en route to check one of his jaguar traps. He doesn't expect to find a live jaguar. His traps consist of infrared cameras that are sensitive to heat in motion.

McCain is a biologist for the Borderlands Jaguar Detection

Will homeland security concerns keep jaguars from returning to their native U.S. range? Maybe.

BY JEREMY VOAS

Project, which has rigged more than 40 cameras in the rugged terrain north of the U.S.-Mexico border. Much of McCain's time is spent making the rounds, a good deal of them on foot, recovering images from the cameras. In its six years of operation, the project has amassed in excess of 17,000 images of 25 different native species.

Among them are some 75 images of jaguars, an endangered species once thought to have been wiped out inside the United States. That thinking changed in 1996, when mountain lion hunters photographed two male jaguars about 100 miles apart. One was sighted in the Baboquivari Mountains southwest of Tucson; the other in the Peloncillo Mountains, which straddle the Arizona-New Mexico border.

One of those hunters was Jack Childs, a retired land surveyor who described his encounter with a treed male jaguar in broad

daylight as "life-changing." Childs and his wife, Anna Mary, founded the borderlands jaguar project in 2001. McCain signed on in 2004.

With the aid of a couple of volunteers, the Childses and McCain essentially comprise the jaguar detection effort. When they aren't crisscrossing this craggy expanse of the Coronado National Forest, they write research papers, give lectures and craft grant proposals. The quest for funding to keep their project alive is unending.

Nearly all the jaguar images the project's cameras have recorded feature one specimen. He's known as Macho B, a 125- to 150-pound felid that has prowled these parts for more than a decade. He's been photographed 63 times over a range that exceeds 500 square miles, and he's triggered cameras 12 miles apart within a span of hours. In addition to the still images, the project's remote video

cameras have recorded Macho B four times, including once when he was observed marking his territory by spraying his urine. McCain says the scent-marking is significant, because studies of other large felids suggest it signifies residency.

When Macho B began to regularly trip the remote cameras, Childs and McCain noticed a unique spot on his right side. Jaguars' spots are called rosettes, and researchers use them to identify individuals. The rosette in question bore a distinct resemblance to a caricature of Pinocchio. They compared it to photos Childs had snapped of the jaguar his hounds had treed in 1996. The signature Pinocchio rosette confirmed it was the same animal.

The project has images of a second male, Macho A, but he hasn't been photographed in three years. Macho A disappeared shortly after images of both cats turned up four hours apart on the same camera. Macho B, apparently, was right on Macho A's trail. Macho B is believed to be 13 or 14 years old, perhaps twice the age of Macho A. McCain thinks Macho B's territorial instincts led him to either kill his younger rival or chase him out of the study area. But Macho B has more to worry about, nowadays, than an interloping upstart. He has to deal with the Department of Homeland Security. Expanded barriers and fencing - under construction and planned on the international border - threaten to sever jaguar migration routes.



EMIL MCCAIN

McCain parks his ATV and trudges down a trickling watercourse. His eyes are cast perpetually down, scouring the earth for a telltale jaguar sign. He's established himself among the carnivore cognoscenti as a gifted tracker. The crumbling adobe that serves as his field quarters, in fact, contains a clutter of plaster molds and transparencies of predator tracks, and he knows well the subtle differences between the tracks left by a jaguar and those of its much more common cousin, the puma.

His fascination with nature began as he grew up in the small town of Gardner, Colo., where his father, Jim, is a wildlife sculptor. McCain considers his father to be as much a naturalist as an artist and says the tutelage he received informed a childhood of environmental examination, with a focus on fauna.

These days, the soft-spoken, 28-year-old McCain has particular affinities for elk steak grilled over

mesquite, broad-brimmed hats and, especially, predators. He's into falconry (his bird is currently with a friend in Washington state). The Colorado College grad once spent a winter on snowshoes tracking wolves in the Upper Peninsula of Michigan. His study of jaguars has taken him to Costa Rica and Sonora, Mexico. He'd nearly completed his master's degree in wildlife management from Humboldt State University when he met Jack Childs. McCain's become so immersed in the quest to document jaguars that his thesis (on the relationship between pumas and their prey) remains incomplete. He's brought a contemporary ethic to BJDP, an academic yin to the yang of Childs, a drawling autodidact whose grasp of large cats has created a demand for his expertise as far away as Brazil.

Along the stream, the juniper and scrub oak that dominate the exposed slopes are joined by Arizona ash, walnut, sycamore, thickets of wild grape. A plump Montezuma quail flits into view and vanishes into the brush. Intermittent pools of water, vestiges of yesterday's thunderstorm, teem with thousands of freshly laid frog eggs. They look like tiny crystal pearls.

The streambed descends gently into a serpentine canyon, perhaps 75 yards from rim to rim and stretching at least as high. The sheer walls of volcanic rock are crowned with pustules and undulating spires - misplaced stalagmites.

McCain's camera is mounted on a tree trunk under a thick

canopy. It's aimed at a bench of flat ground that spreads away from the watercourse.

"There's a lot of things you look at when you set up a camera," he explains. "Previous signs of jaguars. Other carnivores using the area. Visibility. A lot of it is the landscape, being able to predict how a carnivore is going to travel through. We've gotten quite good at predicting."

This particular camera - a model marketed to help deer hunters scout for trophy bucks - is digital. He opens the camera case, removes the memory card and loads it into a handheld digital camera. He scrolls through the images and names the subjects that tripped the shutter: Coati, whitetail deer, mice, javelina, mountain lion.

"It's unbelievable how much stuff is out here," McCain says. "It's a diverse and healthy ecosystem."

"But no jaguar this time."

Macho B, in fact, hasn't tripped any cameras since July 17. McCain says Macho B's routine changed early this year after the Department of Homeland Security, in a bid to reduce illegal immigration and drug-running, put up a lattice of retired railroad tracks to serve as vehicle barriers. The welded iron crosses were erected precisely where McCain had tracked Macho B crossing the border.

McCain replaces the camera battery and snaps the case closed. He gets down on all fours and crawls into the camera's field. A red light blinks, indicating that

the infrared sensor is working. Satisfied that the trap is properly set, McCain is ready to move on.

First, however, he pauses near a bathtub-sized depression in the canyon wall. The alcove betrays the presence of other inhabitants of this country. Migrants have created a shrine, an ersatz diorama complete with a crucifix, a carved wooden bull, a deer antler and a colorful ceramic automobile. There's also a smooth river rock onto which someone has traced a big cat paw with a Sharpie.

"Obviously left for the crazy jaguar guy," McCain says, chuckling.



Emil McCain works on one of the cameras set up by the Borderlands Jaguar Detection Project. MITCH TOBIN

For centuries, the realm McCain monitors has served as a trade route linking Arizona's natives with the Sea of Cortez to the southwest. The Borderlands Jaguar Detection Project study area is riven with trails frequented by smugglers ferrying humans and contraband into the United States. These are not people who welcome the sight of a gringo. Some are ruthlessly violent. "It's an interesting relationship," McCain says. "There are guys coming through this area, carrying heavy loads. We've run into each other on the trail."

McCain believes the smugglers have come to know who he is and understand that he's looking for evidence of jaguars, not illicit traffic. "We both go to every effort possible to avoid each other," he says. "My attitude is, 'I don't care what you're doing. Don't mind me.'"

When a camera captures the image of a smuggler or illegal, the startled subject frequently destroys the camera. McCain isn't happy about it - each camera set-up costs about \$500 - but he understands the reaction. "When a flash goes off, it's fight or flight. But when I get a picture of someone on one of my cameras, I throw it away or delete it," he says. "They pretty much leave me alone. I have signs (posted in Spanish near his cameras) that explain what I'm doing."

On two occasions, McCain has discovered the remains of illegals who succumbed to the elements. "One was a 38-year-old woman who had died of exposure the night before," McCain says softly. "She was still beautiful, just lying there."

"I remember crying, 'What for? What in the world are we doing?'"

Border Patrol agents who ply this terrain are sensitive to McCain's dilemma. "The Border Patrol knows how vulnerable I am," McCain says. "They don't push me for information."

But the volume of illegal crossers bodes ill for Macho B and his kin in the U.S. The Homeland

Security Department is rushing to construct miles of fencing along the international border, including in areas where jaguars have been detected.

About 90 miles of fencing is slated to go up in Arizona this year, with a total of 370 miles of pedestrian fencing and 200 miles of new vehicle barriers to be built along the entire U.S.-Mexico border within a year, according to Brad Benson, a Washington, D.C., spokesman for U.S. Customs and Border Protection. Benson says a seven-mile stretch of pedestrian fence at Sasabe, near Macho B's range, will cost \$31 million.

"Anything that will keep people out definitely will keep any animals out," McCain says. "That means

we will not have a future with jaguars in the United States."

Although the Sasabe fence was already under construction, the U.S. Fish and Wildlife Service did not get around to releasing a biological opinion on the project until Sept. 7. If all border-crossing corridors used by jaguars are blocked, the document says, the 12- to 18-foot walls may result in the extirpation of the jaguar in the United States.

But it does not recommend stopping or delaying the project. The opinion concludes: "The range of the jaguar within the United States is not enough area to provide for conservation (i.e., recovery) ..." It also contends that the jaguar's U.S. habitat "cannot

be defended as essential to the conservation of the species."

The opinion notes that jaguars that confront the border fence could choose to walk around it. The opinion concedes that a fence would cause "stress" to the jaguars. "So, jaguars may walk around the fence, but illegal aliens won't?" McCain wryly notes.

Even if the Fish and Wildlife Service were to object to the border fencing, Homeland Security could trump any effort to derail construction. The federal Real ID Act of 2006 allows the agency's secretary to waive environmental laws in the name of national security.



Among the creatures tripping one camera in the Coronado National Forest are, from top left, bear, javelina, bobcat, rabbit, cougar, fox, deer and skunk. EMIL MCCAIN
BORDERLANDS JAGUAR
DETECTION PROJECT

Worshipped as a god of power, mystery and stealth by pre-Columbian Aztecs and Mayans, the jaguar is exceeded in size among felids only by tigers and lions and so is the largest wild cat in the Americas. The muscular, low-slung predator possesses a lethally powerful jaw. In the jungles of Central and South America, where prey is plentiful, jaguars can weigh in at 350 pounds. Males in the arid climes of northern Mexico and the U.S., where they prey primarily on javelina, peak at about half that size.

Jaguars (*Panthera onca*) now range from the Southwest U.S. all the way past the Amazon Basin. But their habitat once included a good portion of the Southwest United States. The U.S. Fish and Wildlife Service says the jaguar's historic range stretched from California to Louisiana. Conservationists claim the big cat's turf was much broader - as far north as Canada and as far east as the Carolinas.

In any case, the arrival of European settlers squeezed the cats' habitat and marked them as threats to livestock. Government programs that employed hunters and a lethal array of poisons hastened the demise of the jaguar and other now-endangered species such as the grizzly, three species of wolf and the lynx, says Michael Robinson, a conservation advocate for the Tucson-based Center for Biological Diversity. Although they posed no threats to livestock, black-footed ferrets and California condors were indirectly decimated by poisoning programs, says Robinson, whose 2005 book,

Predatory Bureaucracy: The Extermination of Wolves and the Transformation of the West, definitively plumbs the extent of the government's 92-year-old predator-control effort.

A recent study indicated that jaguars occupy less than half of the range they inhabited in 1900, with an estimated 10,000 jaguars believed to survive. Fish and Wildlife acknowledged in 2006 that five "transient male jaguars" - Macho A and Macho B included - had been documented in the United States in the preceding decade.

McCain says the jaguar's range will no longer include the United States if fences are built at the pace and to the extent he fears. "Any single segment of the border fence, such as the current seven-mile section near Sasabe, should not have devastating effects on the jaguar by themselves," says McCain via e-mail. "However, when combined with the resulting redirected immigrant and law enforcement traffic into the remaining wild corridors, these projects will have huge negative impacts on jaguars."

And, he says, fence construction is unlikely to stop. Once the Department of Homeland Security realizes illegals are simply skirting the new fence, the barriers may be expanded farther into the rugged mountains bisected by the border.

"This pattern could eventually fence the entire border and completely partition the range of the jaguar and prevent gene flow

in an already small population," McCain says. "Since no known breeding has occurred in the U.S. since the early 1900s, and no females have been documented since 1963, this will be the end of naturally occurring jaguars in the United States."

Daniel Patterson is Southwest director and ecologist for Public Employees for Environmental Responsibility, a private group that advocates for professionals who work for government agencies charged with enforcing environmental laws. Patterson calls the Fish and Wildlife opinion "very disturbing. The border walls would be a huge problem. People have largely been celebrating the slow return of the jaguar to Arizona and New Mexico. The political people at the Fish and Wildlife Service seem to be willing to write the jaguar off. The Fish and Wildlife Service once again is not enforcing the Endangered Species Act."

Patterson, a former Bureau of Land Management biologist who lives in Tucson, contends that morale at Fish and Wildlife and other land and wildlife agencies is dismal due to politicization of enforcement and ignorance of the law. But Fish and Wildlife Service spokesman Jeff Humphrey says Homeland Security is concerned about the fate of the jaguar, noting that the opinion lists conservation measures DHS will take to "offset" the fence's impact on jaguars and other species. Among them is the installation of additional cameras and sensors in areas adjacent to the new fencing. The cameras

would monitor any traffic - illegal crossers or jaguars.



Jaguar range in the Coronado National Forest. AMY LEIST

Additional “specific jaguar conservation measures” will be developed over the next four months, says Humphrey, adding that the government and jaguar aficionados alike “stand to learn a lot” from fence construction. “The concern is more than just the direct effect of that fencing, but the flow of foot traffic around the ends of the fences and into pristine habitat,” Humphrey says. “Is the fence funneling people and wildlife into a more confined area where there’s going to be more interaction?”

McCain and Childs say that’s already happening and is certain to worsen. After the temporary vehicle barriers replaced a common four-strand barbed-wire fence along some border stretches, the researchers noticed a surge in human traffic in more remote areas spanning the boundary - areas used by Macho B. Vegetation is trampled and the formerly pristine areas are increasingly littered with trash and human waste. More of the border jaguar project’s cameras have been stolen or destroyed, Childs says.

As for the mood of government

biologists, Humphrey says, “Natural resource managers are always wishing we could do more with less. What the Endangered Species Act and Congress charged us with is to make a determination on whether or not a project jeopardizes a specific species. In this case, we have a species that occurs intermittently in Arizona, but its range extends all the way to Argentina. In our evaluation, the fence project did not exceed the jeopardy threshold for jaguar.”

Brad Benson, a spokesman for U.S. Customs and Border Protection, insists that fears of uninterrupted fencing are unfounded. “The mountain ranges where I think the jaguars are spending most of their time are still going to be available to them” for border crossing, Benson says.

He says the plan is to leave more remote areas unfenced and allow new cameras and ground radars to monitor wilder areas and identify what’s coming across. If it’s people, the gadgetry will allow them to be tracked and intercepted without necessarily sending agents and their vehicles into environmentally sensitive areas. If it’s jaguars or other wild animals, he says, the information will be shared with Fish and Wildlife.

Michael Robinson believes the Fish and Wildlife Service’s biological opinion on jaguars and the border fence is laughable. “It was essentially a whitewash of the magnitude of the impact that the wall is going to have,” says Robinson. “It’s an abdication by Fish and Wildlife. They couldn’t

deny the obvious, that this thing is going to block jaguars. But they failed to analyze it in the context of further extension of the wall, which is clearly where they’re headed. They’ve said recovery is not possible in the U.S., but they’ve done no studies to indicate that that’s true.”

The Center for Biological Diversity has long sparred with the government over Endangered Species Act enforcement. On Aug. 2, it filed a lawsuit alleging the Fish and Wildlife Service has flouted the act by refusing to designate critical habitat for the jaguar and create a recovery plan. Critical habitat designations bar the federal government from authorizing any activities that “adversely affect” an endangered animal or plant.

Fish and Wildlife’s Humphrey declined to comment on the critical habitat issue, citing the litigation. A 2006 agency news release announcing its refusal to designate critical habitat characterized the jaguar’s U.S. range as “marginal” and a minuscule portion of its historic homeland. The release concluded that a critical habitat designation was “not prudent.”

The jaguar was not officially listed as endangered until 1997, after the two males were photographed in Arizona (and after the Fish and Wildlife Service was sued over the issue). That year, the Arizona and New Mexico game and fish departments set up a multi-agency Jaguar Conservation Team. The organization encompasses federal and state wildlife and

land-management agencies as well as a disparate cast of private conservation groups, including the Borderlands Jaguar Detection Project. The Conservation Team's stated goal is to manage the jaguar in the U.S. and encourage habitat protection on both sides of the border.



A jaguar print in the sand. EMIL MCCAIN BORDERLANDS JAGUAR DETECTION PROJECT

The Center for Biological Diversity created a map of potential critical habitat for jaguars in New Mexico and Arizona. The map, which Robinson says is based on the Jaguar Conservation Team's own criteria, identifies tens of millions of acres of suitable ground. Essentially, the shaded map comprises about a third of both states.

"People forgot it was a native species," Robinson says. "Now the Fish and Wildlife Service says it can't recover the jaguar. It's a disingenuous stance for an agency that spent so much time and so many resources extirpating the jaguar in North America."

He cites a memoir on file at the Smithsonian Institution in which

a government predator-control agent writes of "what I believe to be the first jaguar taken by a Government hunter - I believe in December 1918, following his brief detail to the Mt. Baldy region in the Santa Rita Mountains" south of Tucson.

Robinson, whose group has a member on the Jaguar Conservation Team's habitat subcommittee, says the team's 1997 charter specifically pledged to facilitate protection of jaguar habitat. "In the 10 years since, they've coordinated the protection of exactly zero acres of jaguar habitat," says Robinson, who derisively refers to the group as the "Jaguar Conversation Team."

But there are divisions among groups advocating on behalf of jaguars, and critical habitat is an especially sore point for the Borderlands Jaguar Detection Project. McCain says a critical-habitat designation would be counterproductive, imposing limits on land usage, including grazing, and in the process enraging ranchers.

Ranchers on both sides of the border are cooperating to help preserve the jaguar, McCain says, and some have welcomed cameras on their land. Many in Arizona have pledged not to kill a jaguar, even if one takes or threatens their livestock. He notes that an Arizona rancher who lost a calf to a jaguar was fully compensated from a fund set up for that purpose. A critical habitat designation, on the other hand, might encourage cattlemen to kill a jaguar rather

than report its presence and face more rigorous regulation of their land or grazing allotment.

"A critical habitat designation is going to do far more harm than good for jaguar habitat. It makes enemies of the people you need to rely on," says McCain, who concedes that the Center for Biological Diversity does a good job of "keeping government agencies honest." But he complains, "Some of these (conservation) groups have created a lot of animosities with local people. They really want to cooperate with local people, but it's only on their terms."

"The habitat argument is a tool for the center to get rid of grazing in the Southwest."

Robinson says the center abhors current grazing practices on public lands but has no wish to abolish grazing altogether. He does, however, believe that livestock interests have unduly influenced the Jaguar Conservation Team. "Our stance on grazing is that it should not preclude the presence of any native species, that it should not pollute waterways, and it should not cost the public any money," Robinson says. "If the livestock industry is going to step up and meet those standards, it's OK with us."

With its re-emergence in 1996, the exotic jaguar became a cause celebre in the Southwest and beyond. No fewer than five private groups have detection or conservation projects in the United States and northern Mexico.



The fence going in on the border at the Sasabe Port of Entry. CHRIS HINKLE PHOTOS

Defenders of Wildlife reports a population of 70 to 100 jaguars some 120 miles south of the U.S. border in the mountains of Sonora, where wildlife reserves have been established. Activists are attempting to acquire tracts of land to create an even larger jaguar haven. This Sonoran community of cats almost undoubtedly produced Macho A and B - along with any other jaguars that venture into the United States.

Although the Mexican government professes a commitment to protecting jaguars and their habitat, nearly all the concerned conservation groups contend that jaguars are still being hunted and killed in Mexico, primarily by landowners and livestock interests.

As the conflict over critical habitat suggests, the proliferation of conservation groups has created tension.

McCain and Childs say media-savvy organizations such as the Center for Biological Diversity and Defenders of Wildlife, while toiling on noble projects, make it more difficult for the borderlands jaguar project to garner funds needed to maintain its research. They say their work has been appropriated in some cases, their jaguar photos used by other groups to tantalize donors.

"The jaguar gets everyone excited," McCain says. "Everybody wants a piece of the jaguar. The other groups have all got several people working on the issues. They end up getting the available funding, and it's not going for jaguar conservation."

At least, not for the program McCain predictably sees as most vital - his. He wants to expand the Borderlands Jaguar Detection Project's camera program to determine if Macho B has company inside the U.S. The project's study area has monitored portions of three mountain ranges. Based on sightings and habitat modeling, McCain believes 10 ranges in Arizona and New Mexico should be studied.

He'd also like to fit jaguars with radio collars to better grasp their ranges and habits. A radio collar would help identify the most crucial habitat - including the valleys that connect the mountain ranges. He knows Macho B traverses these lowlands, sometimes crossing highways, because he's photographed the cat in separate mountain ranges. "If anyone knows good jaguar

habitat, it's him," McCain says of Macho B.

Other conservation groups, however, have vigorously opposed a capture-and-collar effort, he says.

Border fencing makes acceleration of the borderlands jaguar project's photographic survey more crucial, McCain says. "We've only surveyed 12 percent of the jaguar's suitable habitat in Arizona," McCain says. "This is the time to step that up."

And what's preventing that from happening?

"I need some cash and some help. This is beyond the scope of what Jack and I can do on our own," he says. "It would take a team of six or eight people, rather than one or two."

The borderlands jaguar project subsists on an annual budget of about \$150,000, the lion's share spent on camera equipment. Childs notes that funds arrive in \$10,000 or \$15,000 increments. He and McCain say they'd prefer to spend their time in the field rather than trolling for donations and grants. (Some of the fiscal difficulty may be of the project's own making; it is not yet set up as a nonprofit.)

Robinson of the Center for Biological Diversity bristles at the suggestion that any group is detracting from any other. He notes that his own organization is in a constant scramble for funding, but has donated to others working on jaguar conservation projects. He says he admires what the BJDP

is accomplishing. Like McCain, he wishes its camera-trap program could be expanded. "Their photos have been a tremendous boon to the jaguar," Robinson says.

The urgency of the fencing issue might serve to unite the sometimes-fractional factions in the jaguar detection and protection effort. "I'd like working with all these groups to stop this fence," Childs says. "I'll try my hardest to stay with the science and give real reasons why this fence is going to be so harmful."



Anna Mary and Jack Childs, above, with the photo of the treed jaguar Jack took while hunting for mountain lions in the Baboquivari Mountains near Tucson. CHRIS HINKLE PHOTOS

But even if environmental groups defy extreme odds and successfully oppose expanded border fencing, an inherent dissonance would abide: Should the main effort and funding be directed toward the study and tracking of jaguars, in hopes that more information will lead to effective conservation? Or will a substantive return of the jaguar require a formal reintroduction effort that has the potential to make jaguars as contentious a subject as reintroduced wolves?

Until the Center for Biological

Diversity lawsuit is resolved, the jury considering the question will be - almost literally - out.

In the meantime, the fate of the jaguar in the U.S. would seem to depend on the survival of the population in the mountains of Sonora. This is why myriad conservation groups - among them the Northern Jaguar Project, Sky Island Alliance, Defenders of Wildlife and Mexico's Naturalia - are concentrating on preserving and building that community of cats.

McCain lives in a century-old adobe, once the hub of a working ranch, that appears to be melting into the landscape. To the east looms the rocky rampart of Atascosa Peak, a 6,235-foot butte topped by an old fire lookout. Author and naturalist Edward Abbey kept watch there in the 1970s. A concrete stock tank that serves as McCain's swimming hole has also slaked the thirsts of desperate migrants.

McCain stays here for free; in return, the rancher gets a watchman of sorts for his property, a private parcel within Coronado National Forest. McCain's only steady companion is a yellow Lab-chow mix named Poncho. The dog, which possesses the black tongue and impressive brow of a chow, was discovered wandering in the desert by McCain's nearest neighbor, some 10 miles distant.

"I'm a full-blown hermit," McCain says. "I live a pretty frugal life to do this. I didn't earn enough to pay taxes for the past two years. But I'd like to do this for 30 or 40

years - as long as I can."

Of all the places he's tracked predators, this is his favorite.

"I've never fallen in love with a place like I have here," he says. "The ecology is so specialized. It just blows you away. Everything is alive, and there are more incredible ecological interactions going on here than one can comprehend."

Despite countless hours traversing these canyons, he's never beheld a jaguar in the flesh - at least not in Arizona.

McCain has, however, trapped live jaguars in Sonora, using leg snares. He was working for another organization, attempting to affix radio collars to the cats so their movements could be documented. Unfortunately, he says, he lacked the proper resources - specifically, a dart gun. He was forced to rig a tranquilizer syringe on the end of a branch to administer the knockout shot. One of the jaguars died in the process, he laments. He left the project before he could track the other.

"The mortality was completely avoidable, if we'd been properly prepared. That was not an easy thing to deal with," McCain says.

But his confrontation with the agitated jaguar will not be forgotten.

"Trapping a jaguar is intense," says McCain, who has also caught mountain lions. "A trapped lion just wants to get away. A jaguar goes away from you as far as it can, only so it can get up more

speed to charge you. They're very shy until they have you in their space. Then they put their ears back and let you have it."

I ask if the phantom Macho B is aware of McCain's presence.

"I'm pretty sure he is," McCain replies, who's been near enough to Macho B to study fresh tracks, scat and other signs. "I've been very, very close to Macho B. I know he's seen me. I just haven't seen him."

But there's another reason McCain is certain the jaguar known as Macho B has been watching. "You can sense a predator's presence," the researcher says. "You can't deny it."

The author lives in Phoenix.