

Big Cats,

All Across the West, Where Development Pushes Into Wilderness, Mountain
Lions and Men Are in Conflict ~ By Carol McGraw and S.L. Sanger

ON A PLEASANT JUNE AFTERNOON IN 1990, LYNDA Walters, a medical student at the Denver campus of the University of Colorado, took a study break and headed for her favorite trail in Four-Mile Canyon, just west of Boulder. It was near 5 o'clock when she rounded a bend in the trail and came face-to-face with a crouched mountain lion. Walters yelled and slowly backed away from the animal—sound defensive tactics. But the lion began to stalk her, homing in with incredible concentration. She picked up a fist-sized rock and threw hard, hitting the animal on the shoulder. It didn't flinch. Out of the corner of her eye, she saw another lion moving toward her. Walters was shocked by their huge size, their enormous paws. "I'm gonna die," she thought.

She scrambled up the side of the canyon, hurling rocks and branches at the advancing lions. The next thing she knew she was 12 feet off the ground, hunched on a branch of a ponderosa pine. She suddenly felt a searing pain in her leg. One of the animals had come up after her, swatting at her bare leg and cutting two six-inch slashes down the back of her right calf. Looking down, she saw its immense head, and kicked. To her surprise, the lion fell from the tree.

For an hour more, Walters faced down the lions. She broke

off a branch and used it as a spear as the second one started climbing the tree. As the animals paced beneath her, she thought the scene looked like a nightmare National Geographic special. Finally, at sundown, the lions left for a drink at a creek down the hill. Walters dropped to the ground and ran a mile on shaky legs to her parents' house.

"For a while it didn't sink in," Walters, 28, recalls. "If I didn't have the bloody leg, I would have thought I was dreaming. A few months later I read in the paper that a guy had been killed by a lion, just pulled [him] down from behind and crushed his neck. I think it wasn't until then I realized they really were trying to kill me." A lifelong outdoorswoman, she no longer goes into the mountains alone. For a while, she carried a handgun even when hiking with friends. She still has nightmares.

All across the West, as civilization pushes into some of the country's last wilderness, the wilderness has been fighting back. Stories similar to Walters' are becoming more and more common. The killing she read about after her own encounter occurred last winter—a lion jumped an 18-year-old jogger from behind on a trail near his high school in Idaho Springs,

Colo. Last summer, Orange County lost a lawsuit and was forced to pay \$2 million to the family of an El Toro girl who received severe head, leg and eye injuries during a lion attack in Ronald W. Caspers Wilderness Park—in February, the park was closed to minors. And last July in British Columbia, two children and a woman were clawed by a young lion.

Reports of less serious contacts are also increasing—from livestock slaughters and pets snatched off patios to families battling lions in back yards. With each clash, even animal lovers' tolerance slips. Bitter debates rage over what should be done about the culprit cats. Some argue that they are a deadly threat that should be eliminated, others propose relocating them to unpopulated areas, still others believe that people living near lion habitat must accept the

Big Trouble

lions' right to exist and modify their behavior accordingly.

It is a historic conflict come full circle. The mountain lion—also called cougar, panther, puma, catamount—once had the widest distribution of any mammal besides man in the Western Hemisphere, ranging from Canada to the tip of South America, and in this country from coast to coast. Ranchers and farmers have always regarded the cat as a varmint. Eventually, bounties and unlimited sport hunting along with human invasion of lion habitat all but eliminated the species in the eastern and central parts of the United States. The few in Florida have endangered-species status. But in the sparsely populated West, the animal persevered.

The crisis that has emerged is, simply put, "Biology 101," says Todd Malmsbury of the Colorado Division of Wildlife, which last spring hosted a symposium on handling lion encounters. Left alone in remote areas, made harder and more numerous by increases in its main food source—deer—and finally, in the '60s, protected by limited hunting seasons, the lion is once again populating the West in growing numbers. In November, a lion was killed in the Nebraska Panhandle, where no lions had been sighted in 20 years. Most biologists are reluctant to estimate numbers, but ballpark figures place the Western lion population at 16,000, including about 5,100 in California. More and more face-offs between lions and humans seem inevitable. Now, two



rious cats for his doctorate in zoology and ecology. Most wildlife experts believed such studies were not feasible; the lions were extremely elusive, and almost nothing was known about their habits, life span, diet, territory, social structure. At that time, Idaho's wildlife director was looking for a biologist to find out once and for all the effect of lion predation on game, so Hornocker took the job.

Before plunging into a long-term study, he spent the winter of 1963 finding out lions could be safely captured with the help of hounds and dart guns. To safely examine and tag the lions, he had to drug them. First he tried immobilizing drugs, but that could cause the lions to fall from trees, so he settled on a tranquilizer that calmed them. But even that was not without its drawbacks. Once, after a long day of tracking through deep Montana snow along Eight-Mile Creek, the dogs found a cat 80 feet up a half-dead yellow pine. Hornocker camped at the tree base and in a bitterly cold dawn, saw that the lion had descended to within 20 feet of the ground. He reached for the dart gun and shot into the animal's flank.

After following the animal almost 100 feet up the tree, he heard a snarl and looked up into glaring yellow eyes—the drug wasn't working yet. The lion took a swipe at his ine and tag the lions, he had to drug them. First he tried immobilizing drugs, but that could cause the lions to fall from trees, so he settled on a tranquilizer that calmed them. But even that was not without its drawbacks. Once, after a long day of tracking through deep Montana snow along Eight-Mile Creek, the dogs found a cat 80 feet up a half-dead yellow pine. Hornocker camped at the tree base and in a bitterly cold dawn, saw that the lion had descended to within 20 feet of the ground. He reached for the dart gun and shot into the animal's flank.

That winter he marked 13 lions in western Montana, but by spring, nine had been killed by hunters. The research was feasible, but it would have to be done where lions were more isolated. He chose some of the wildest country in North America—the Idaho Primitive Area, now known as the River of No Return Wilderness.

Hornocker had to follow literally in the lions' footsteps. They are easier to track snow, so for five winters, he and a colleague and their dogs trekked more than 5,000 miles in pursuit of the ghostlike cats and their secrets. Unlike many animals in the wild, mountain lions can't be studied by simple observation because they are too elusive to find without hounds. And once hounds find them, the lions are certainly not going to go about their daily business—they simply run. In those days, there were no telemetry tracking systems using radio collars to map the animals' natural movements, so Hornocker marked them with ear tattoos and identification collars. He methodically

caught and re-caught them, mapping their movements, taking measurements, heart and respiration rates, blood samples and checking for parasites to determine where they traveled and how they lived. By the end, they made 300 captures of 67 lions. "One old male, we caught 27 times," he says. "It was like seeing an old friend."

As the winters passed, the clues began to fall in place. F

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elusive; for years almost nothing was known about their habits or territory

years after her ordeal, Lynda Walters speaks carefully when summarizing the hard edges of the controversy:

"I have really mixed feelings," she says. "I respect the fact that the lions were here first, and that they own the wilderness as much as we do. But I also feel it is a primal sort of thing—I either walk away alive or I don't. I used to be pretty much of a bleeding-heart wildlife lover. I feel like at this point if I had to shoot a lion, I would."

MAURICE HORNOCKER DOESN'T THINK IT HAS TO BE AN EITHER/OR proposition. At his Running Creek Ranch, a gas lamp bathes the log cabin's porch in a warm glow as he barbecues steaks and cooks home-grown corn. Hornocker, 61, has been one of the country's top wildlife researchers for more than three decades, and the work that he and a handful of other scientists are doing may hold the key to living in harmony with mountain lions.

Running Creek Ranch is wilderness headquarters for the Hornocker Wildlife Research Institute. Since 1985, when Hornocker retired as head of the University of Idaho's Cooperative Wildlife Research Unit, the nonprofit institute has been the center of his continuing studies.

Nestled deep in the Selway-Bitterroot Wilderness of eastern Idaho, the ranch's only modern conveniences are a shortwave radio transmitter and a grass runway. In the dusk, with the whispering Selway River as backdrop, Hornocker recalls what led to his encounter with *Felis concolor*—"cat of one color."

Inspired by a story about forest rangers in the Saturday Evening Post, Hornocker moved his wife and kids in with his parents in Iowa in 1955 and set out for the University of Montana to pursue a wildlife-management degree. By 1959, he was collaborating on John Craighead's Yellowstone bear studies, which would set the standard for modern wildlife research. "If I hadn't met John I probably would have become a Forest Service bureaucrat," Hornocker says. "I owe my whole career to him."

The mountain lion controversies of that time centered on the animals as livestock and game predator. Ranchers accused them of ravaging sheep and cattle, hunters charged them with deer slaughter, and most states still paid bounties for them. After Hornocker got his master's degree, Craighead encouraged him to study the still-myste-

found that lion predation on deer and elk had little influence on big game numbers in the backcountry—thus shooting down hunters' strongest argument for the renewal of Idaho bounties. Instead of decimating herds, lions strengthened them by culling the weak and old. Lions kill and eat game about once every two weeks, sometimes gorge themselves on more than 20 pounds of meat at once. And although deer and elk are staples, lions will eat almost anything—porcupines, bobcats, grasshoppers and, on rare occasions, each other.

"They are the most efficient of killers," says Hornocker. "It's an incredible feat for an animal the size of a mountain lion to kill an elk six or seven times heavier. He grabs the back of the elk's neck with his canines, pulls the head back with massive force and The elk bolts, and its neck snaps."

Mountain lions are built perfectly for hunting—lean and long, with incredibly strong legs and jaws, canine teeth up to 1½ inches long and rough-textured tongues that can scrape meat off bones. Their weight varies from less than 90 pounds to 200 pounds and up. They have binocular vision, and they rely on surprise for kills; when they are impressive sprinters, they lack the lung capacity for long chases. They can live to age 20, but 12 is average. The most common cause of death is hunting by humans.

Lions hunt with their mothers until they are 12 to 18 months old. Then they become solitary hunters. Those newly on their own are called "transients" until they establish a home range, which can cover up to 200 square miles for males and 50 for females. Territory is marked by "scrapes," a lion version of "No Trespassing" signs—the resident lion will scrape together piles of leaves or debris, and sometimes urinate on the pile to warn off others.

What Hornocker discovered about lion-population control may help explain the recent increase in attacks. Lions are not sociable animals, and they limit their numbers in a specific area by a system of territorialism. Hornocker likens it to a fill apartment house. "There simply is no more room for anyone else. The apartments are all filled no matter how much food may be available."

Studies suggest the transient lions are the ones getting in trouble with humans. With the backcountry taken by other lions, they have had to set up house in suburban areas. Currently, Hornocker is studying the efficacy of moving these problem lions out of populated areas. But he believes that the threat to humans is overblown. "Hell, herdsman are gored to death each year by bulls, but you don't see them making a movie, 'The Night of the Cow.'"

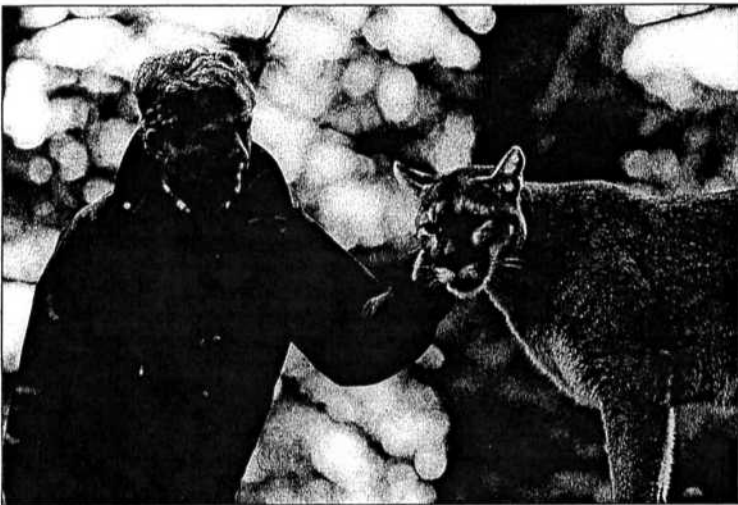
Carol McGraw is a former Times reporter who recently moved to mountain lion country in Colorado. S. L. Sanger is a former newspaper reporter and author of "Hansford and the Bomb."

Hornocker is convinced that more research is crucial to helping humans and lions coexist in the West. The better the science, the easier it will be to use the lion's own traits, rather than follow the dictates of emotion, in managing the animal. Hornocker hopes that such studies will lead to a strong commitment to preservation.

"From the cultural standpoint, you can make the strongest case—all those qualities which we admire in ourselves, we see in the lion. Grace, beauty, power, independence, speed. But the lion also plays a tremendous role in wilderness ecosystems. It sits at the absolute apex of the food chain. It is an indicator of the health of the ecosystem and helps maintain the stability of the system."

IN THE CITIES AND SUBURBS OF ORANGE COUNTY AND IN OUTLYING REGIONS, about 35 hardy cougars are fighting for survival with human help. From dawn to dusk and sometimes through the night, Paul Beier, a 40-year-old wildlife ecologist from UC Berkeley, is tracking the animals by foot and air across the Cleveland National Forest in the Santa Ana Mountains and Chino Hills.

In 1988 the California Department of Fish and Game asked Beier to study the animal in an urban setting—in order to better understand the survival, mortality and reproduction of a small, isolated population amid the dangers of civilization. "We want



lions, he adds. Obtaining a grant under the California Wildlife Protection Act to buy up corridor areas might be an eventual solution.

The act, approved in 1990 and popularly known as the "mountain lion initiative," prohibits mountain-lion sport hunting in California (a controversial issue among hunters and some naturalists who believe that regulated hunting would not necessarily be detrimental to maintaining the species) and mandates \$30 million a year for 30 years to protect habitat for all kinds of wildlife. Of that, one-third is to be set aside to create habitat for lion and deer. Last fiscal year, 57,761 acres were purchased and set aside, but of that, only 3,015 acres was earmarked for lion and deer, says Mark Palmer, chief executive officer of the Sacramento-based Mountain Lion Foundation.

The foundation, a nonprofit group devoted to increasing understanding and protection of mountain lions, is hoping to band together preservation groups to purchase approximately 10 acres in Coal Canyon—part of the wildlife corridor—at the estimated cost of \$10 million. "It is very high priced," says Palmer, "but I think we could find the money if the developer would say yes to negotiations. Failing that," he adds, "we are also looking at a lawsuit to prevent development."

"If land is not set aside," Beier says, "their fate will be sealed."

ALTHOUGH BEIER IS FIGHTING TO KEEP THE MOUNTAIN LIONS ALIVE and numerous, he was the first to document the increase in attacks across the country. In 1986, Laura Small, a 4-year-old El Toro girl, was picnicking with her family in Caspers Wilderness Park near San Juan Capistrano when a lion jumped from brush and mauled her. The lion was later shot. Last summer, a jury awarded Small's family \$2 million, finding Orange County, which manages the park, liable. In February the Orange County Board of Supervisors, fearful of more mauplings and lawsuits, banned children from the park.

Beier testified at the trial that the risk of another such attack was low. His data on lion attacks between 1890 and 1990 shows 11 fatalities and 49 reported injuries to humans in America and Canada. These numbers do not put lions in the big leagues of dangerous behavior. Statistically, lion attacks, says Beier, are "trivial things, like pianos falling out of the sky." For comparison, Beier notes that there are 5,000 bites and 12 deaths a year from rattlesnakes, and 40 deaths from bee stings. He doesn't believe that restricting the park is an effective solution. "It's like anything else—cliffs, poison oak—we have to learn to live with the lions."

Maurice Hornocker believes that

with a little bit of help, the lion, 'prince of predators,' has a bright future

to learn how to limit urban encroachment and how we can enable cougars to survive in an area with this encroachment," he says. Although his study is not specifically about improving safety, its findings may help wildlife agencies deal with human-lion interaction more effectively.

"Unless we get smart and stop building condos, there won't be enough habitat left to support a lion population in 20 years," he says ruefully. "The most likely scenario is that we will keep chopping the habitat into little bits, so we'll have wonderful cougar habitat full of prey, but broken into bits that no animal can get to, and so small that cougars will be extinct in every one of them."

He has radio-collared 17 of the estimated 35 lions that populate 800 square miles in the Santa Ana Mountains from Camp Pendleton north to the Chino Hills, and east to Interstate 15. The population includes an estimated 15 young lions still with their mothers. These young animals must cope with the tightening noose of urban sprawl when they go out on their own. So far, young lions have been trying to stay "out of sight and out of the way," establishing long, skinny home ranges on the margins of suburbia, says Beier. For instance, one roams near Santiago Creek and Peters Canyon Reservoir in the Orange and Anaheim area. "Right up against the edge," he says.

Preliminary findings underscore the need to keep existing pathways, or "corridors," open between these islands of habitat, says Beier. Beier found one lion corridor linking the Santa Anas with 60 square miles of habitat in the Chino Hills. The connecting pathway is part of Coal Canyon, the last stretch of habitat on both sides of California 91, where a closed underpass allows lions to make the link.

He has found another critical corridor—along Pecharanga Creek and the upper Santa Margarita River south and east of Temecula—that could connect the Santa Anas with other potential habitat. It is the only passage that would allow a lion to slip through urban areas to get in or out of the mountains. "We don't know for sure if it is being used now by lions, but it is the last possible link to us. Our population would be completely isolated," Beier says.

Such a corridor decreases the risk of extinction. Even two or three animals coming or going could decrease pressure on the habitat and strengthen the resident lions with new breeding stock. But Anaheim wants to build 1,500 houses nearby, which would mean the end of the underpass as a pathway.

"If that land is developed it would guarantee no cougars in the Chino Hills forever," Beier predicts. Land-use decisions made in the next 20 years could make or break the

But he admits that there have been more fatal attacks and encounters over the last 20 years than the previous 80. The reason is simple, researchers say. Lions and people are moving into each other's habitat, and it isn't always a good fit. Shrinking wildlife habitat combined with increasing animal populations are forcing lions and their prey closer to ever-expanding human territory. And that breeds familiarity, at least on the lion's part. Scientists are seeing behavioral changes—increased aggressiveness, less fear to explore the human world.

Nowhere in the country do sightings and encounters with lions take place more frequently than in and around Boulder, Colo. Since 1986, there have been more than 400 lion sightings and encounters in the area, according to a study by Michael Sanders and his colleagues at the University of Colorado's Institute of Arctic and Alpine Research. The lions are seemingly everywhere, not only on the city's outskirts, but in yards, schoolyards and even downtown. So far, except for Lynda Walters' harrowing experience, no one has been hurt. Pets, however, don't fare as well. "A lion may wonder, 'Why stalk a deer all day long when you can take Fifi the poodle and have a meal right on the spot?'" says Sanders, a resource specialist with Boulder County Parks. In 37 cases of lion-dog "interaction," lions are ahead 15 dead dogs to nothing.

With an estimated population of 45 to 65 lions in Boulder County, the high number of sightings indicates that these lions have modified their antisocial nature. "They completely ignore lawn mowers, cars and hollering kids," says Sanders.

His data traces changes in lion habits. In past years, sightings almost always occurred during the winter months, when deer were grazing in the lowlands, but since 1987 more and more lions are being seen during the summer. Although lions are nocturnal hunters, they are now frequently seen during daylight. More lions have been spotted traveling together, possibly because they must now share territory. And lions are spending more time at much lower elevations, in human habitat. They follow deer which flourish because of urban hunting bans. "With anywhere from 1,000 to 1,700 deer inside the city limits, there is destined to be a lion problem," Sanders says.

Rather than get rid of the lions, it seems more sensible to cut down on the deer population, he concludes. There is talk of relocating deer or allowing limited hunts in the currently no-hunting areas, taking away the salt licks from people's yards and discouraging tasty gardens and lush bluegrass lawns that draw the deer into neighborhoods.

But not all changes in lion behavior can be traced to increasing deer population

Don Justman, a sinewy, 47-year-old Colorado hunting guide, has tracked the big cats for more than 20 years. He, too, is finding that their habits are changing. "Used to be the lion would avoid open areas when I was following them. Now he'd think nothing of going right down the middle of roads," Justman observes. "He changes to cope and survive. If the mountain lion takes someone's cocker spaniel off the front porch, well, he's made it through another day."

Justman, a plain-talking, practical man, sees nothing extraordinary in the conflict between man and beast. "What do people expect, moving their homes higher into lion territory? The lion loses respect. People and their animals become fair game." He suggests easing hunting regulations as a way to keep numbers down. Nevertheless, he admires the lions' beauty and says many of the people he takes tracking would rather shoot them with cameras than guns.

In British Columbia, the number of lion-human interactions has always been higher than in the United States—lions have killed at least four people and mauled 27 during the last 100 years. It is an ideal habitat for lions, with abundant cover, deer and water, but experts wonder why animals living in such conditions so often violate their natural code of shyness and stealth. Hornocker suggests that the hunting has actually created a more aggressive lion, capable of surviving by killing hunting dogs and attacking humans.

Dennis W. Pemble, a wildlife-control officer for the B.C. Ministry of Environment, believes the solution is a combination of education and simple survival skills—which includes killing the lions in some instances. He has killed 40 lions while dealing with interaction problems in British Columbia, often drawing the protests of preservationists. "Some don't even want us to tranquilize them," Pemble says. "I don't know what they want us to do. We can't leave cougars wandering the streets." Pemble considers mountain lions "the most impressive animal in British Columbia," and would much rather relocate than shoot them. "But I'll trap them or shoot them, whatever I have to do. When they are walking through a subdivision," he says, "you know they are looking for something to kill."

Pemble preaches prevention—humans must be taught how to avoid attacks now that their habitat overlaps that of lions. He tells residents, "The worst thing you can do is run. You must face the cat. You must keep eye contact. If they know you are retreating, it is to their advantage to go after you. With bears you can play dead. But if you do that with a cougar, you are going to be dead because he is not attacking because he is mad. He is attacking because he wants to eat you."

Many Western communities are finding educational programs with similar messages to be a tool for living with lions. In Orange County, parks now post prominent signs warning of lion dangers. In Boulder, agencies distribute safety pamphlets and sponsor "lion awareness" workshops. They send questionnaires to those who have survived encounters to determine what defensive tactics work best.

"Until we educate people on how to live in lion territory, we will continue to have these conflicts over and over," says Michael Sanders in Boulder. "There is no simple solution. I don't think it will ever be solved. Not in our lifetime."

YOWLING IMPATIENTLY, THE BIG FEMALE PACES IN THE knapweed, her butterscotch body tense with excitement. Suddenly, she springs, her massive jaws catching a thrown turkey leg. Savage sounds fill the air—primordial exclamations and the snapping of bones as flashing teeth make quick work of three pounds of meat.

Purring loudly, the lion stares toward the river that runs near her two-acre, steel-fenced home at Running Creek Ranch, ignoring a photographer's calls to turn her head for a better pose.

"She has her own agenda, you don't tell a mountain lion what to do," says Hornocker.

The lion is part of a five-year study to begin soon in which Hornocker will mate captive-born mountain lions with a zoo cougar. The researcher will use two or more sets of the newborns to examine which behaviors lions are born with and which they learn. Hornocker theorizes that lion populations vary genetically in important ways. He notes that while they are born with basic tools, such as the ability to stalk and attack, their choice of which animals to kill, including humans, is learned.

He will raise the cats under varying conditions—some trained by the mother and others by humans. They will be the subjects of a variety of experiments. In one, silhouettes of rabbits, deer and even humans will be presented, and the kittens' reactions observed. The aim is to determine why some lions kill livestock and why some are less fearful of people than others.

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"Is it reinforced habituation?" Hornocker wonders aloud. "Do they gradually become less frightened of people because nothing negative happens to them? Can man condition their behavior, say with a shock collar, to make them stay away?"

Hornocker is overseeing two other lion studies, one in Yellowstone National Park in Wyoming and another in New Mexico. For years, there were no lions in Yellowstone, but his institute has found that a population of about 20 has returned. The project focuses on where the lion fits in ecologically, and what will happen when wolves are reintroduced to the park. How will wolves and lions interact? How will their prey be affected? Will both species decline because of competition?

Hornocker believes that the mountain lion, which he refers to as the "prince of predators," has a bright future, "even super-bright when compared to other big carnivores in the world such as tigers, African lions, all the bears, certainly wolves. Mountain lions are so adaptable, and have shown with just a little bit of help from us, not much, they can come back. They have survived two centuries of persecution in this country because of their lifestyle."

In New Mexico, Hornocker has designed the most intensive study of any animal population ever attempted—a 10-year look at lions in an isolated desert environment at the U.S. Army's White Sands Missile Range.

Ranchers in the area were agitating to take the lion off the protected-species list and hunt it year-round. Wain Evans, assistant director of the New Mexico Department of Game and Fish, hired Hornocker to determine how much livestock the cats were killing. During the first five years, biologists found that lions were killing deer, but were not a serious threat to livestock. Now the researchers are moving half the lion population, 13 animals, to northern New Mexico. They hope to observe how the home deer and lion populations rebuild and how the relocated lions cope. The knowledge will be valuable to game agencies, which plan to be more aggressive in relocating problem lions.

The study results have gone a long way toward cooling down "lion phobia" in New Mexico, Evans says. "In fact, it has turned it around." When they were getting ready to move the lions north, they needed release sites on private land. Hornocker gathered the ranchers together.

"At first it was tense," Evans recalls. "But by the time Hornocker finished telling the ranchers about the mountain lions, all of them wanted one." ■