Hornocker Wildlife Institute Newsletter

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Mountain Lion – Human Interactions: Research in Progress

Predators are charismatic animals that spark the interest of many people. Watching wolves cross a meadow in northern Yellowstone National Park, or grizzly bears preying on migratory salmon in Alaska are just two examples of encounters with large predators that many people are thrilled to experience. Although much more difficult to view, mountain lions (*Puma concolor)* are also often sought after by wildlife enthusiasts. Their inconspicuous habits and solitary behavior can inspire mystery and myth in the human heart and mind.

The mountain lion has the broadest geographic range of any native terrestrial mammal in the western hemisphere. This large predator was once found coast to coast from the Canadian Yukon to South America's Straits of Magellan. Mountain lions, like many large predators, were hunted with intense effort throughout the 19th and much of the 20th centuries, often to the point of eradication. Today, the mountain lion's North American range consists of the 12 western states, the western Canadian provinces and southern Florida. In California, the mountain lion has not been hunted since 1972, and received Specially Protected Mammal status in 1990. In 1996, an attempt to overturn protection (Prop. 197) of the California mountain lion was rejected by the public.

In the past few decades, mountain lion populations have been increasing across the western states. At the same time, human populations have been increasing and expanding in the same regions, and there has also been an increase in human use of wilderness areas and National Parks. Nationwide, the National Park Service (NPS) system has experienced a near doubling of annual visitation from 1971 to present. This increase in human use of natural areas, combined with increased mountain lion populations has allowed for more encounters.

During the last five years, reports of mountain lion sightings and unusual mountain lion behavior have increased. In Yosemite National Park, a mountain lion killed a coyote and carried it through a crowded parking lot in broad daylight. In Redwood National Park, hikers confronted a mountain lion that was unwilling to move off of the trail. An increase in mountain lion attacks on humans in western National Parks has also occurred. In July, 1997, a young boy was fatally wounded while hiking on a trail with his parents in Rocky Mountain National Park. A mother of three fought off a mountain lion as it tried to attack her children at Big Bend National Park in May, 1998.

Scientific information on mountain lion-human interactions is limited, but several general hypotheses exist to explain the recent increase in human encounters with mountain lions. It is possible that mountain lions are attracted to developed areas, because these areas may contain an available source of prey, such as pets in housing developments, or an artificial abundance of prey, such as raccoons in park settings. Because hunting has been banned, some think that mountain lions may have lost fear of humans and habituation has occurred. Current mountain lion management responds to human-mountain lion conflict with two methods: one is to kill the offending mountain lion, the other is to close the trail or management area a mountain lion is frequenting.

Our research project in Redwood National and State Park (RNSP) is designed to quantify and otherwise characterize mountain lion use of developed areas, and explore the issues of mountain lion habituation, attraction, and avoidance of humans. RNSP was established in 1968, and encompasses over 105,000 acres of coastal redwood forest coastline, and oak woodland ecosystems in Del Norte and Humboldt counties of northwestern California. Over 500,000 visitors use the park every year.

Hornocker Wildlife Institute biologists, in cooperation with Humboldt State University in California, are investigating mountain lion movement, activity, and behavior around developed areas in the park. The research project is designed to test the hypothesis that interactions between humans and mountain lions are more likely to occur in the frontcountry, where there is a higher probability of encounters due to the greater number of visitors using these areas. Also, mountain lion activity and movement patterns are hypothesized to be different in the frontcountry versus the backcountry.

Jennifer Ellingson, Field Coordinator for the project, and her assistants have been working since Fall 1998, radio-collaring and monitoring mountain lions in the park and on adjacent private lands. Mountain lion movements, behavior, activity patterns, and habitat use have all been documented, especially as it relates to areas of high human use in the park. Since the initiation of the project, four male and three female mountain lions have been radio-collared and monitored.

Jennifer Ellingson spent most of 1999 in the field on the project, and will return to the research site soon (see "Featured Scientist" article, page 3). She shares some of the excitement of the field work through an excerpt from her field journal:

continued inside...

Jaguar Conservation in the New Millenium

Introduction

Jaguars are one of the top predators of the western hemisphere, and play an extremely important role in maintaining sustainable ecological systems. Jaguars are found today in forested habitat from Mexico throughout Central America and northern South America, to southern Brazil and Uruguay.

Jaguars are considered an "umbrella species," because they need such large tracts of habitat to sustain themselves successfully. Within these large tracts, other animal (and plant!) species co-exist. Thus, any protection of habitat for the benefit of jaguars, will also benefit all the other species that co-exist under the "umbrella" of the jaguar.

Despite legal protection in the countries where it is found, jaguars are still hunted opportunistically and for sport throughout their range. Many are killed in retaliation for livestock depredation. Other threats include the conversion of its habitat for human development and the hunting of its prey.

WCS Conservation Program

Based on the priorities and results that emerged from a 1999 workshop, the Wildlife Conservation Society (WCS) developed a comprehensive conservation program for jaguars. Hornocker Wildlife Institute President Howard Quigley is a key member of the Jaguar Advisory Group (JAG), which convened last year to plan the conservation program. JAG members bring valuable field expertise to bear on program priorities and research design. Other members of this team include: Alan Rabinowitz, Director of the WCS Global Carnivore Program; Peter Crawshaw, Jr., Director of the National Center for Research and Conservation of Carnivores in Brazil; Rafael Hoogesteijn, veterinarian and General Manager of four extensive cattle ranches in Venezuala; and Marcelo Aranda, a research associate at the Instituto de Ecologia, A.C., Mexico.

The Institute will participate in the many projects implemented in the next few years as part of this new jaguar conservation program. The program consists of the following components:

- Exploration, population status, and distribution surveys
- Long-term jaguar research and monitoring program
- Jaguar-livestock conflicts and rancher outreach program
- Genetics and health program
- Education/policy program

Finding out if jaguars are still present in areas of potential habitat throughout their range is a high priority. There are many large areas identified by the JAG experts that need to be surveyed for jaguars, including an area of 1.3 million square kilometers in the Amazon Basin.

Despite research that has already been accomplished, we know relatively little about how jaguars live in different habitats, particularly within human dominated landscapes. Over the next five years, the WCS Jaguar Conservation Program will establish several major jaguar research sites. To be successful, conservation planning must be based on the best possible information about the animals we seek to protect and sustain; this information comes from the knowledge that research brings to light.

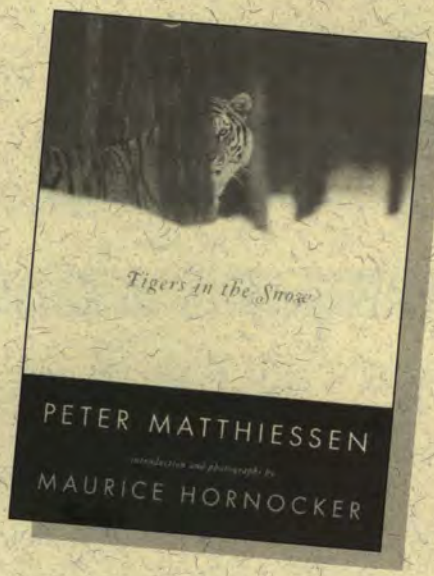
Jaguars are often seen as the villain by ranchers throughout Central and South America. Studies have documented, though, that more cattle die from natural causes, such as disease and as a result of poor management, than they do from jaguar attacks. The WCS Conservation Program has already begun work on a booklet for use in workshops with local ranchers. Plans include development of demonstration programs that would test and evaluate cost-effective changes in husbandry practices, and other innovative techniques for protecting calves from jaguars.

With a goal of reaching a stage where jaguars and people can co-exist in areas outside of protected parks and preserves, efforts to educate the people of the region will be key. Primary audiences will be Latin American educators and teachers, but the program will also target ranchers, policy makers, and park managers. Each group has unique influence on the future of the jaguar, and can reach different groups of people who will eventually need to find new ways to co-exist with this magnificent carnivore.

The Hornocker Wildlife Institute and Howard Quigley will supply valuable experience and help make the jaguar conservation program effective. Each part of the conservation program is important, and everyone has a part to play; scientists, educators, and interested supporters throughout this country, and around the world. We can all work together to achieve the goal of sustaining jaguars.

Mountain Lion *...from cover*

July 18, 1999. *I went out to the east side and heard Male 15's (M15) signal down in the creek drainage above the gravel pit. By the time I got around to Johnson road, he had gone up and was trying to find Female 18 (F18). F18 was in a similar spot to where she had been yesterday. She was north of the road about 1.6 mi west of road J180. Her signal put her pretty close to the road and I found her tracks on the road. Her tracks were down below on the gravel pit road too. Hind foot width = 40mm. By the time I got around on the road, M15 had nearly caught up to her. I fixed their locations right next to each other, but F18 quickly moved out of the area, presumably when she figured out M15 was moving in on her. I could hear her signal moving off, and his still in the area. She moved across the road at about 1745 hr. I hung around listening to M15's signal thinking that he was going to come up to the road. I heard him yell for her twice. It sounded like a mountain lion hollering, not a woman screaming, and it was definitely catlike. He sounded like an enormous tom cat. He moved up to the road at the east end of the prairie where the fence hits the road. His tracks were "smokin" on the road. The dust was deep and I was able to measure several of his tracks. Hind width =54mm. I followed his tracks to where he crossed over the road, and I could hear his signal catching up to F18's. She was moving west on the north side of the road. She was moving away from him and he was following right after her. I want to find M17 tonight, and so it's time to let them go - until tomorrow.*



Tigers in the Snow

A new book by acclaimed author Peter Matthiessen compellingly tells the story of the Siberian tiger, and the decade-long research of the Hornocker Wildlife Institute's Siberian Tiger Project. *Tigers in the Snow* relates Matthiessen's journey to the Russian Far East to witness for himself the species' present condition and to understand it's possible fate. Institute Director Maurice Hornocker wrote the book's introduction, and provided the stunning photographs that liberally illustrate the volume. The new book, published by North Point Press, is available for sale on our website (www.hwi.org) or from your favorite bookseller.

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Featured Scientist

Jennifer Ellingson is the Field Coordinator for the Redwood Mountain Lion Project for the Hornocker Wildlife Institute. She is also working on her Master of Science degree in the Department of Fish and Wildlife Resources at the University of Idaho.

Jennifer began her field work on the mountain lion project in Redwood National and State Parks (RNSP), on the northern coast of California, late in 1998. She has also spent some of her time in the past two years at the university taking courses toward her degree. This May, Jennifer will go back to RNSP and work in the field until late Fall.

While working on her Bachelor's degree at Oregon State University, Jennifer worked as a field biologist on various projects. After graduation, she worked on a California amphibian monitoring project for the National Park Service, and later worked as a technician on a mountain lion research project in Yosemite National Park. She gained valuable experience and understanding on this project, including knowledge about the natural history of mountain lions, capture and handling techniques, and radio telemetry. The experience she gained at Yosemite helped prepare her for the Redwood project.

Mountain lions are a high-profile topic in California and throughout the West. Jennifer finds that the Redwood mountain lion project generates a lot of interest and support from the local public in northern California, as well as from the government agencies cooperating on the project. People, especially those in the local communities around the study area, are very interested in what is happening on the project, and what is happening with the individual study animals.

While most aspects of the research project are going well, there have been some setbacks. One great disappointment was the death of one of the male mountain lions being monitored in the study. He was a young male that was providing key information to the project because he routinely used areas of high human use. Unfortunately, he was killed illegally by hunters last fall. Jennifer said,

Jennifer Ellingson takes a short break from her field work, next to the Trinity River in northern California.

"It was discouraging to lose this cat because he was contributing to our knowledge of how mountain lions are using the landscape."

Jennifer has been fascinated with the natural world since she was very young. She attended "natural history" science camps and spent as much time in the outdoors as possible. Jennifer always knew that she wanted to work as a field biologist, because of her fascination with the natural world. Many young people share her interest in wildlife and in predator ecology. Her advice to students who want to pursue a career as a wildlife biologist is to achieve a broad-based, but practical, scientific education, including the study of natural history. Most importantly, Jennifer advises that students get as much experience in the field as possible through paid positions or internships. Developing field skills related to carnivore research early in an education will open the doors to opportunities in the future.

When she completes her current research, Jennifer plans to continue to work as a field biologist. Her long-term goals include settling into a community where she can make a contribution on a local and personal level. Professionally, she will strive to make contributions to the sustainability of our natural world through sound, scientific research.

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Mission Statement

The mission of the Institute is to conduct intensive, long term research with special emphasis on threatened and endangered species and their wild environments; to train and develop superior scientists; to make new knowledge available to the scientific community, to the agencies charged with managing wilderness and lands, and to the public. Research focuses on scholarly, creative efforts designed to make lasting contribution to our knowledge of the natural world.

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