



Hornocker Wildlife Institute Newsletter

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Wildlife Management Research: Cougar Translocation in New Mexico



Intentionally moving wild animals from one locale to another is a technique that is used in wildlife management to establish animal populations in a new, or previously occupied area. Also, sometimes a "problem" animal is moved away from the site of the trouble, rather than taking the animal into captivity, or killing it. Moving wildlife is called "translocation."

In the past, large carnivores that were killing livestock or harassing people and their pets were simply eliminated. In fact, as the western frontier was occupied by Euro-Americans, bounties on wolves, coyotes, cougars and bears encouraged the local, or in some cases, range-wide demise of these species.

Translocation of carnivores, and cougars in particular, may become increasingly important as a management tool and conservation technique as attitudes change toward predators. Very little research had been done to evaluate translocation on cougars before Hornocker Wildlife Institute scientists Toni Ruth, Ken Logan, and Linda Sweanor conducted a study on this technique in New Mexico in the early 1990s. Our scientists worked with New Mexico Department of Game and Fish biologists, including Larry Temple.

The goals of the study were to evaluate translocation as a management tool that might be used to: 1) re-establish cougar populations in historically occupied territories, 2) improve

the genetic pool of a small population by introducing cougars from outside, or 3) manage problem individuals. Cougars were captured from a study



Toni Ruth keeps watch over a sedated cougar

area in southern New Mexico, and translocated to a second study area in the northern part of the state.

A common misunderstanding about moving wildlife from one locale to another is that to be successful, we just have to match the animal with the appropriate habitat. But, animals live in a complex social matrix with others of their own kind. Many animals need their own territory, or home range, where each individual has a defined area. If the social space doesn't exist for a new animal, it won't matter what habitat is available; they won't be able to find a new home. Since hunting and natural attrition (deaths) were both at work in the northern release site, the

translocated cougars, we surmised, could find vacancies, and occupy them anew.

Fourteen cougars were captured and translocated during the study. They were moved 300 miles from their former range to areas in the northern study area. Radio collars were placed on these cougars, and they were monitored after they were released in the new area. Two cougars were only monitored for a month or less, but most were monitored for 9 months to 2 years.

The most desirable outcome for translocation would be to have the cougar remain in the area where it was released, and to settle down quickly and establish a new home range. The worst outcome would be for the cougar to start wandering after translocation, on an extended journey, trying to find its way back to the original home range. This kind of behavior can expose the animal to many dangers, and the ultimate outcome is often death.

Eight of the monitored cougars in the Institute study eventually moved 50 miles or more from their release sites, and their movements were generally southerly. They were probably tending to move back toward their original homes. Two male cougars that were translocated actually did make it all the way back to their original home ranges.

The results of the study showed that the outcome of cougar translocation seems to be influenced by the age of the cougar. Translocation worked best for cougars that were 12-27 months old. These cougars quickly established new home ranges after translocation, and 50% survived to the

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*New management tools are needed as
attitudes change toward predators.*

change

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end of the study. Mature, breeding cougars (2-6 years old) in the study had the strongest tendency to try and return to their original home ranges. The oldest cougars (older than 8 years) had the poorest survival in the study; both older cougars in the study were killed by other cougars after they were released in the new area.

By the end of the study, nine of the 14 cougars had died. This was an abnormally high mortality rate, higher than that for cougars in the southern study area. Also, the majority of the deaths occurred in the second year after translocation. Our Institute scientists think that chronic stress may be a factor for these translocated cougars, especially for the mature and older cougars. The causes of death were similar to those for cougars in other parts of the country, though.

Translocation can be a useful technique when trying to resolve conflicts in wildlife management, or for long-term population management. Options available when there is a conflict with a wild animal include capture, euthanasia, or translocation. Institute scientists do not recommend translocation when the problem with a cougar involves attacks on people. Cougars like these are too unpredictable, and capture or euthanasia is necessary. It may be possible to translocate a "problem" cougar preying on livestock or pets, if the new area for the cougar does not have livestock or human residences.

In all situations, wildlife authorities will deal with each problem cougar on a case-by-case basis. Our study results show that the best probability for successful translocation will occur with independent young cougars (12-27 months old). This age group is only a small part of any cougar population, though.

Even with the best outcome, translocation remains a risky and expensive wildlife management option. It's important to try and deal with situations that lead to cougar problems *before* they become problems. We know that the very best approach to cougar conservation is to maintain large expanses of suitable habitat that will allow natural movements of

A Distinguished Past Paves the Way to An Exciting Future

Maurice Hornocker and his students have created a legacy of important research on wildlife around the globe, including many "first-ever" projects. These involved study of animals that no one had ever investigated in-depth, because of the difficulty of capturing and following these elusive and often dangerous species. The following is a list of major contributions to new knowledge made by Maurice and the Hornocker Wildlife Institute. The research approach has always been, and continues to be, a thorough investigation of a species' biology and ecology; how a population operates, how it relates to its total environment, and how the information can best be used to assure the long-term health of these wildlife species.

- **Cougar Ecology.** First thorough ecological research ever attempted (1960s). Scientific and popular publications and films were instrumental in bringing about change in public opinion and sound conservation measures for cougars.
- **Leopard Ecology in Africa.** First-ever study of a leopard population, resulting in a book published in 1993 by Theodore Bailey, "The African Leopard, Ecology and Behavior of a Solitary Felid", Columbia University Press.
- **Bobcat Ecology.** First thorough population study. Still the standard by which other research efforts on this species are measured.
- **Wolverine Ecology.** First population study ever conducted utilizing modern radio telemetry technology. Resulted in initiation of a management program in Montana, the only state in the lower 48 with a sound population.
- **River Otter Ecology.** First thorough analysis of a population. Developed new capture techniques and new radio-instrumentation technique of surgical implants.
- **Badger Ecology.** First population analysis. Established "norms" for badger population.
- **Whooping Crane Ecology.** Intensively monitored nesting behavior and pioneered the use of sandhill cranes as surrogate parents for endangered whooping cranes.
- **Golden Eagle Ecology.** Conducted some of the original research that led to the discovery of the highest density of raptors in North America, in the Snake River canyon of southern Idaho, and the establishment of a protected area for these birds.

cougars. But in our developing West, it will also become increasingly important for us to look on the other side of the equation, for innovative ways to decrease the potential for cougars to become problems.

This information was based on a recent article by Hornocker Wildlife Institute scientists published in the *Journal of Wildlife Management*. To read more about this research, you can find this article in major libraries, or through the Interlibrary Loan Service at your local public library. The article is cited as; Ruth, Toni K., Kenneth A. Logan, Linda L. Sweanor, Maurice G. Hornocker, and Larry J. Temple. 1998. Evaluating cougar translocation in New Mexico. *Journal of Wildlife Management* 62(4):1264-1275.

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Featured Scientist

Maurice Hornocker – A Life in Wildlife Research

In 1985, Maurice Hornocker already had a long career as a government scientist and a university professor behind him when he created the Hornocker Wildlife Institute. He had a vision of a place where the “difficult” wildlife conservation projects could be pursued without the restraints of bureaucratic budget cuts and the common hands-off attitude inside government agencies that can generate political safety, but often at the expense of credibility and progress. He started his work at the Hornocker Wildlife Institute to insure there was a place that would support long-term, in-depth research on the species that often needed the most attention, but were the most politically sensitive: the large carnivores.

Maurice had a distinguished track record of successful research and conservation work on cougars, bears, and many other species, and he knew how to do the science. Now with the Hornocker Wildlife Institute, he could reach out to many partners throughout the country, both private groups and individuals, who would join him in supporting the goals of the Institute. In this privately-funded organization, project objectives and plans could be made based on scientific processes and needs, and research could go on as long as was necessary to create the credible, reliable databases and conservation plans that led to real success.

Maurice Hornocker started his wildlife research career in 1960, with Dr. John Craighead in Montana. Maurice and John were pioneers in the application of new technology to wildlife science. They helped develop the radio-telemetry method of tracking and monitoring wild animals, using this new technique for the first time ever on a large wild carnivore, the grizzly bear.

Maurice then turned his attention to the elusive cougar. Many fellow wildlife biologists told him that his plans to collect detailed, long-term information about a population of cougars was impossible, because these cats live secretive, solitary lives, far from

the eyes of humans. But, Maurice Hornocker went on to apply his new-found knowledge and experience with radio telemetry to the cougars of central Idaho, and the end result was the first long-term investigation of cougar ecology.

The study was rich in detail because of the use of the new telemetry techniques. By tracking the radio transmitters in the collars the animals wore, Maurice could find the same cougars in the wilderness forest, day after day. He was able to investigate how they behaved, what habitats they used, what prey they killed and how often they fed, and many other important parameters.

After the 10-year cougar study ended, Maurice went on to investigate other wildlife species in Idaho, and around the world. He and his graduate students researched African leopards, bobcats, wolverines, whooping cranes, golden eagles, and many other species (see accompanying article, left). In almost every case, Maurice moved wildlife science forward through his innovative new techniques to capture and monitor these animals in the wild. He made sure that the research efforts produced the most complete information that could be gathered, through the use of new methods of humane capture and restraint, and of monitoring wildlife through radio telemetry. For these technical innovations, and especially for his work on research methods for cougars and bears, Maurice Hornocker was awarded the American Motors Conservation Award in 1980.

Today, the cougar is one of the most abundant large predators left in most wild ecosystems in the lower 48 states. In the 1960's, however, the future of this large cat was question-



Maurice Hornocker, Director,
Hornocker Wildlife Institute

“Wildlife acts as a barometer of environmental health. We at the Hornocker Institute pledge to continue exploring the interwoven complexity of the natural world, and how this knowledge can aid in the conservation of our precious wildlife, as well we humans.”

—Maurice Hornocker

able. Bounty hunting of cougars had been practiced for decades, and was still continuing when Maurice took on his landmark study in the Idaho wilderness.



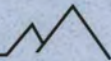
Maurice Hornocker first
studied cougars in Idaho in the
1960's

Cougars were seen as vermin “over-running” the Western ranges, eliminating all the deer and elk. The scientific research conducted by Maurice Hornocker helped dispel these myths about the cougar. His findings that cougar populations were self-regulating, and that they would not over-use deer and elk, led to many states changing their

management of the cougar from programs of eradication to more limited hunting programs. Maurice is widely credited with the recovery of the cougar in North America, as his research provided the basis for cougar conservation throughout the West.

In the years that followed, Maurice Hornocker continued to work tirelessly to insure that sound scientific information was available as a basis for successful wildlife management. This has become ever more critical as so many wildlife species of the American West, and around the world, slip toward extinction. Today, Maurice and the other scientists of the Hornocker Wildlife Institute continue to work to understand the natural world and its complexity, and to make lasting contributions that will be the foundation for successful wildlife conservation.

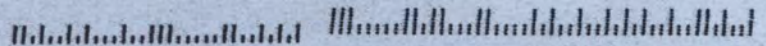
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Mission Statement
The mission of the Institute is to conduct intensive, long term research with special emphasis on threatened and endangered species and their wild environments; to train and develop superior scientists; to make new knowledge available 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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