

Role of State Wildlife Agencies in Managing Mountain Lions

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Introduction

Mountain lions (*Puma concolor*) are the most widely distributed obligate carnivore in North America. The species' range generally overlaps that of their primary prey, mule and white-tailed deer (*Odocoileus* sp.), yet they also rely on a wide range of large and small mammals as alternate prey. Historically, mountain lions occupied diverse habitats throughout much of the United States. Intensive predator-control programs, intended to protect livestock and to restore big-game populations during 1900 to 1965 significantly reduced populations over much of the range. And, mountain lions were extirpated from large areas of the Midwest and eastern regions of the country. In general, populations now appear to be stable to increasing throughout most of the western United States; although, densities are not uniform. There is evidence of mountain lions recently recolonizing areas in the Midwest and in eastern regions of the country.

The history of mountain lion management in the United States reflects extreme shifts in public policy and in state wildlife agency management programs over the last 100 years. Although reliable estimates of distribution and abundance are not available prior to the 1970s for most states, it is likely that both the distribution and abundance of mountain lions were reduced and suppressed between 1900 and 1965. This trend resulted primarily from intense efforts by state and federal agencies to protect livestock and to aid in the recovery of native ungulates based on their value to hunters. Liberal hunting seasons and methods of take, incentives to hunters in the form of bounties, and employment of government hunters were widely used to reduce mountain lion numbers in much of the western United States until the 1960s.

During the mid-1960s, increased interest by the public and concern among professional wildlife biologists about the status and trends of the species resulted in critical reviews of public policy regarding mountain lions and of state wildlife agency management programs in the western United States. The

practice of employing government lion hunters generally ended in the 1950s, and state-sponsored bounty payments for killing lions, common in the West from 1910 to 1960, ended in the early 1970s. In response to increased public interest in the species and to basic questions regarding the status of mountain lions, a number of western state wildlife agencies initiated field studies and developed plans for long-term research to document the life history and status of mountain lions within their boundaries.

Science-based, mountain lion field studies have evolved dramatically since 1975. The availability of reliable radio telemetry in the late 1970s and its refinement during the last 10 years, including integrating global positioning satellite (GPS) locating capabilities, has greatly enhanced the ability of wildlife scientists to document mountain lion life-history aspects and to intensively monitor the status of mountain lion populations throughout their range. During the last 20 years, a number of state wildlife agencies, in cooperation with research universities and nongovernment organizations, have used Federal Aid to Wildlife Restoration Program funds and other sources to develop and implement science-based, long-term mountain lion research projects.

A number of these projects tested and refined the use of a variety of powerful tools, including genetic techniques, to enhance knowledge of mountain lions and their ecological role in a number of complex, multispecies, predator-prey systems (Ernest et al 2003). This effort to apply new technology has greatly enhanced information upon which the species can be managed within each jurisdiction. However, there are practical limits on the extent to which enhanced scientific tools can be used to address practical questions regarding mountain lion management and conservation. One limitation is the inherently high financial costs of long-term research relying on state-of-the-art technology needed over large geographical areas. Intensive studies typically range in cost from \$400,000 to \$1 million annually and may not be representative of populations and habitats statewide. Another limitation is the fact that mountain lion management and state-agency policy challenges also involve politics and stakeholder values beyond the limits of most wildlife agencies' professional expertise and direct influence.

State Wildlife Agency Authority

Under the North American model of wildlife conservation and management, wildlife collectively belongs to the people, and it is held in trust by

the government. In the case of mountain lions, the states have authority over their management, with the exception of the Florida panther (*Puma concolor coreyi*) which is listed under the Federal Endangered Species Act. As is the case with most native large carnivores, implementing public policy for mountain lions involves a wide range of values and expectations from diverse stakeholder groups within the general public. As proof of this interest and involvement in public policy, since 1990 ballot initiatives have been used to substantially influence state agency authority for mountain lion management in California, Oregon and Washington.

Mountain lions are an important component of the multispecies predator-prey systems in the western states. The species has coexisted and evolved with typical prey species, including mule and white-tailed deer, elk (*Cervus elaphus*) and bighorn sheep (*Ovis canadensis*). Since mountain lions are generally secretive, are often solitary and occur in relatively low densities, they present challenges to scientific study and to practical population monitoring by wildlife managers. In addition, their ecological role as obligate predators focuses public attention on managing them in conjunction with other wildlife, livestock and domestic pets. There are also public concerns related to threats mountain lions may pose to public safety. In California, where there have been 11 verified mountain lion attacks on humans since 1985, 3 of which resulted in death of the victims, the state wildlife agency has been forced to devote considerable staff time and funds to developing and implementing emergency response capabilities (S. Torres, personal communication 2006). The real and perceived threats to public safety cannot be ignored by state wildlife agencies, regardless of relative risk, since they directly influence mountain lion management policy and most agencies have a public safety related mandate.

Legal Status of Mountain Lions in the West

The individual states have responsibility for managing mountain lions on behalf of the people, and the wildlife agencies are generally the custodians for all wildlife within each state. However, the specific legal status of mountain lions is defined in the laws for each state. In addition, commissions or administrative wildlife agencies generally have authority to adopt management plans, policies and regulations to implement, interpret and make specific state laws, including hunting seasons, limits and methods of take. With the exception of California, the current legal status of mountain lions in the western states is either big-game or

trophy-game species. In California, they are designated a specially protected mammal, the result of a 1990 ballot measure which prohibited hunting and placed additional restrictions on management.

Historically, public policy related to mountain lions in the western United States followed a similar pattern in most states; although, the timing varied considerably. In the early 1900s when most state wildlife agencies were being established or given authority to actually manage wildlife, including mountain lions, they were classified as either a predator, with bounties offered for killing them, or as an unprotected species, with little or no restriction on their take. By 1975, western states had terminated bounties and had designated mountain lions as either big-game or trophy-game species. In a number of states over the last 30 years, sociopolitical processes forced wildlife agencies to study the mountain lion populations, to report on findings and to recommend conservation and management methods to policy makers.

In California during 1972 to 1985, the state legislature enacted a series of laws, each in effect for periods of only 3 to 4 years, which prohibited hunting, established guidelines to address livestock damage and required the wildlife agency to survey the status of mountain lions. In 1986, the legislature failed to extend these provisions of law, and mountain lions reverted to the pre-1972 status of game mammal under which they could be hunted pursuant to commission regulations. Hunting seasons were approved by the California commission in 1987 and 1988, but the regulations were successfully challenged in court, based on failure of the wildlife agency to fully comply with the state's Environmental Quality Act requirement to disclose and mitigate, where practical, potential negative impacts of the hunting proposal. In 1990, the ballot measure that prohibited hunting of mountain lions was approved by voters with a margin of 52 to 48 percent.

In addition to the legal status of mountain lion hunting, a number of western state wildlife agencies also have specific statutory guidance regarding damage to livestock and pets as well as public safety. Some states pay for verified mountain lion damage to livestock while others focus on providing the owners of livestock and pets the ability to take lions that are causing or threatening to cause damage to their property. These are some specific issues which continually challenge state wildlife agencies in achieving their missions of science-based management of mountain lions.

Science-based Management to Achieve Goals and Objectives

Most of the wildlife agencies in western states have similar missions which charge them with meeting their public-trust responsibilities by, “protecting, perpetuating and managing wildlife while providing appropriate public uses, including hunting” (Section 1801, California Fish and Game, Code and Section 103, Title 36, ID Statutes). These missions have a clear intent to sustain and, where practical, to enhance wildlife populations for current and future generations of citizens. Some state-agency missions also have specific statutory or policy guidance related to addressing conflicts with humans and the economic costs of wildlife causing damage to private property.

So, what is the appropriate role of the state wildlife agency in managing mountain lions based on science? The answer depends on the combination of laws, policies, management goals and objectives as well as stakeholder values, which exist in the individual state. The role also depends on the status of the lion population and their prey, landscape-level habitat trends, and human influences. All these factors need to be placed in context with the state’s goals and objectives for mountain lions. Most western states have management plans for mountain lions; although, the form and content varies. A number of plans tend to have similar goals and objectives related to populations, yet strategies for implementing the plans—including hunting, protecting livestock and responses to public safety incidents—differ substantially. States as different as California and Idaho have some similar goals related to maintaining healthy populations, to minimizing conflicts with humans and to monitoring populations.

In California, emphasis is placed on protecting important habitat, on responding to public safety incidents and on improving public awareness of mountain lions as the state wildlife agency tries to deal with the pressures caused by a human population of over 35 million. By contrast, in Idaho with a human population of less than 1.5 million, there is more emphasis placed on providing diverse hunting opportunities and on managing mountain lions in conjunction with prey species, including bighorn sheep, deer and elk. In Idaho, specific mountain lion harvest quotas are used to adaptively manage mountain lion hunting within large regions or smaller units of the state. Agency management actions in California are generally limited to reacting to lions causing damage to livestock or pets and to responding to public safety incidents. Another important difference between these management models is the fact that in California the wildlife

agency's plan has not been formally adopted by the legislature or commission while in Idaho the plan was reviewed and approved by the commission through a public process. These examples tend to represent both ends of the spectrum of state-agency mountain lion management programs in the western states.

Public policy goals for mountain lion management can either assist or hinder the state wildlife agency in implementing science-based management of the species. If the policies provide a strong mission statement for the agency, if the agency has a well qualified professional staff and if adequate funding is provided, the environment for science-based adaptive management is enhanced. However, if a state's public-policy goals for mountain lion management are not clear, if it lacks well qualified professional staff or if it lacks adequate funding to implement a balanced program, effective science-based management of mountain lions cannot be expected.

Management in Response to State Holder Values

In general, state wildlife agencies respond to public input and stakeholder values regarding wildlife, including mountain lions. The most effective agencies have formal processes to regularly receive public input and to clearly establish their role as the experts responsible for managing mountain lions within the state on behalf of the public. Assessing stakeholder interests in management and developing clear goals and objectives consistent with that input are important elements of publicly supported agency programs. Stakeholder values are generally reflected in the state's laws and policies regarding mountain lion management, yet they may not represent the full range of current public values as human demographics are changing rapidly in the western states. There may also be lag time in public values translating to laws and policies through the normal legislative and commission processes. This delay can also result from the influence of special-interest stakeholders and political pressure to resist change.

During the 1990s, ballot initiatives were used to change state laws and policies related to hunting of mountain lions in California, Oregon and Washington. It is interesting that experience gained from implementing these public mandates in California and Washington resulted in these mandates subsequently being modified by the state legislatures. In 1999, the California legislature passed a measure requiring a four-fifths vote to authorize mountain lions to be taken if the wildlife agency determines they were a threat to bighorn

sheep. In 2004, the Washington legislature passed a measure which modified the ban on the use of hounds for taking mountain lions to provide a 3-year pilot project in a 5-county area intended to reduce damage to livestock and threats to public safety.

Assessing stakeholder values is a complex and dynamic task. Few state wildlife agencies have the internal capacity and professional human-dimensions expertise to do the job consistently. However, there are well qualified experts available in universities and working as specialized consultants who can assist state wildlife agencies. As the human demographics in western states continue to change at a rapid rate, it is important that the state agencies develop and maintain effective programs for two-way communication with stakeholders regarding their mountain lion management programs.

Summary

The role of state wildlife agencies in managing mountain lions involves a combination of factors unique to each state, including laws, policies, an agency's mission and stakeholder values. Recently, a working group published *Cougar Management Guidelines* (Guidelines; Beck et al. 2005) in an effort to synthesize and organize available information on management of the species. Although the western state wildlife agencies recognize that these Guidelines contain useful information, the process used to develop them and the final product raised concerns related, primarily, to failure of the authors to incorporate agency recommendations for changes to the draft document they were asked to review. The Western Association of Fish and Wildlife Agencies (WAFWA) formally expressed its concerns regarding the Guidelines (Shroufe 2006). In general, they focused on the review process used by the Guidelines' authors, the failure to incorporate agency comments, some management prescriptions promoted in the document and the potential impacts of certain recommendations to ongoing mountain lion management programs. The directors of the member states asked their wildlife chiefs to thoroughly review the Guidelines and to analyze potential problems and conflicts with ongoing programs before taking a position on the document. Their original intent was to offer constructive comments and suggestions in an effort to make the Guidelines more consistent with the real world in which state wildlife agencies must operate and are required to integrate science with stakeholder values and with the legal mandates of the individual states (J. Unsworth, personal communication 2006).

In my opinion, it is not surprising that state-agency directors were concerned since the overall tone of the Guidelines suggests mountain lions are an at-risk species, yet the document lacks science-based support for that conclusion. In addition, the discussion of sustainable hunting fails to acknowledge the recreational value and tradition for a segment of stakeholders. The authors also speculate the agencies may mislead the public regarding justification for proposing hunting as a management tool. With respect to public safety, the Guidelines fail to put in perspective the risk of attacks on humans with the legal mandates and stakeholder expectations to minimize threats and to remove offending animals. These are but a few of the reasons the WAFWA directors elected to not only formally express their concerns regarding the Guidelines, but to establish an *ad hoc* Cougar Workgroup to develop another document by early 2009 that is related to the initial publication. This workgroup will consult with the authors of the 2005 Guidelines to focus more on integrating and applying relevant information to mountain lion management programs across the diverse spectrum of conditions in which western state agencies operate.

At the end of the day, the ultimate responsibility for managing mountain lions rests with the individual state wildlife agencies. The challenge facing each agency is how best to adaptively implement science-based management while maintaining viable populations in conjunction with prey species and responding to stakeholder demands for sustainable hunting opportunities and minimizing conflicts with humans involving livestock damage and public safety.

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