

Culling Mountain Lions to Protect Ungulate Populations— Some Lives Are More Sacred Than Others

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Introduction

Long ago, I heard someone note that hardly ever has there been a group of placard-waving, animal-rights protestors present when a lake or reservoir is treated with piscicide, also known as fish toxicant, to remove carp (*Cyprinus carpio*) and other “trash” fish. Compare this to the national, and even international, outcry that results from a state wildlife-management agency’s decision to conduct lethal removal of top carnivores, such as wolves (*Canis lupus*) or mountain lions (*Puma concolor*), despite a body of scientific literature to support such management efforts (Gassaway et al. 1983, Ballard et al. 1987, Sinclair et al. 1998, Ernest et al. 2002, Hayes et al. 2003). To paraphrase George Orwell, indeed, “some lives are more sacred than others,” (Orwell 1945) Reiter et al. (1999) noted that the sociopolitical ramifications of culling top carnivores are substantially greater than those affecting trash fish or even mesocarnivores. How does society and science reconcile this management dilemma?

Societal perspectives on predator control are snapshots. If we were to record the societal perspective on culling top carnivores from the late-19th century until the mid-20th century, they would be very different than a recording made today in the early-21st century. Governmental and societal goals of extirpating top carnivores to protect drastically reduced wild-ungulate populations at the turn of the 20th century were in concert. Society and science subsequently recognized that the consequences of eliminating top carnivores cascaded throughout ecosystem processes. However, it might be argued that, if

global-warming predictions come true and if massive crop failures result in a return to the bushmeat trade in North America, then, the culling of all top carnivores may become the dominant societal paradigm once again. In Africa, bushmeat trade increases in direct proportion with societal chaos, including armed conflict, crop failure and displaced refugees. Societal perspectives on culling top carnivores are inextricably tied to societal economic viabilities.

Bounties and Bounty Hunters

Historically, top carnivore removal was carried out to protect game species and livestock throughout the western states. In fact, most predator species were bountied, with higher bounties paid for culling females in a concerted effort to reduce or eliminate populations. For example, in New Mexico in the 1950s, the New Mexico Department of Game and Fish employed 23 full-time trappers; the federal government employed full-time trappers in New Mexico as well (A. Ford, personal communication 2003). This intensive governmental effort occurred during an era when most private ranchers kept their “steel in the ground,” i. e., leghold traps, year-round in an effort to eliminate top carnivores. It is important to note that these government trappers were highly respected members of their communities and were considered members of an honored profession. However by the early 1970s, all but two western states had converted mountain lions to game-animal status and state-agency trapper positions were essentially eliminated. Despite the best effort of the government trappers and of their private-sector allies, mountain lions were never extirpated in the western United States. The conversion to game-animal status came too late for wolves in the western United States and Mexico and for grizzly bears (*Ursus arctos*) in Mexico and in much of the western United States. These two species went from varmint status to endangered-species status.

California versus Texas

California and Texas, bounding the western and eastern distribution of mountain lions, have equally dichotomous management strategies for mountain lions. Presumably, these divergent management strategies are based on differing societal values in these two states. Texas never elevated mountain lions to game-animal status, and year-round hunting and trapping of mountain lions continues

throughout their range there. The management strategy in Texas contrasts sharply with that in California where a legislative moratorium passed in 1972 ceased sport harvest and public trapping of all mountain lions.

Intensive mountain lion harvest in Texas has not resulted in the extirpation of mountain lions, and mountain lion distribution is considered to be similar today to what it was 35 years ago (C. Brewer, personal communication 2007). Because of this fact, Texas Parks and Wildlife (TPW) was a principal complainant resulting in the Western Association of Fish and Wildlife Agencies (WAFWA) not endorsing, or otherwise sanctioning, the recently drafted *Cougar Management Guidelines—First Edition* (Schroufe 2006). Perceived differences on the needs for harvest quotas and sanctuaries, to maintain mountain lion populations, were central to this complaint.

The consequences of no-sport harvest of mountain lions are less understood in California. High levels of mountain lion predation on small isolated populations of bighorn sheep (Wehausen 1996, Ernest et al. 2002) has resulted in Peninsular bighorn sheep (*Ovis canadensis cremnobates*) and Sierra Nevada bighorn sheep (*O. v. sierre*) populations being listed as federally endangered populations.

Ballot Initiatives

There are important sociological and scientific lessons to be learned from the ballot initiatives regarding mountain lions passed in California, Washington and Oregon. In 1990, California's Proposition 117 made permanent the 1972 legislative moratorium on harvesting mountain lions. Although Proposition 117 barely passed—51 percent to 49 percent, and with the exception of Mono County, only passed in the major urban counties—California Department of Game and Fish lost management authority for this species. Some states prohibit wildlife management issues from becoming ballot initiatives, thereby leaving management authority for wildlife in the hands of professional wildlife managers.

It is interesting that prior to the elimination of sport hunting in California, annual harvest was approximately 150 mountain lions per year. Today, California and U. S. Department of Agriculture, Wildlife Services cull approximately 150 mountain lions per year because of depredation complaints on livestock and on pets and because of concerns for human safety. The historical number of 150 mountain lions per year more accurately reflects the actual number of mountain

lions killed than does current estimates because a bounty was paid during much of the historical period. It has been suggested that frustration with restrictions imposed by Proposition 117 may result in mountain lions being killed illegally, resulting in an underestimate of mountain lion harvest. Total mountain lion harvest in California today, following the complete ban of sport harvest, probably exceeds mountain lion harvest prior to the ban.

The use of hounds to hunt mountain lions was eliminated in Oregon and Washington in the mid-1990s via ballot initiatives promoted by the animal-rights community. Prior to the ban on hound-hunting in Oregon, between 400 and 600 mountain lion licenses were sold, and 140 to 250 mountain lions were harvested statewide. In Washington, approximately 1,500 mountain lion licenses were sold annually and approximately 300 mountain lions were harvested annually. Currently, due to changes in license fees and seasons, Oregon and Washington sell about 35,000 and 50,000 mountain lion hunting licenses, respectively. As a result of the dramatic increase in the number of hunters afield with mountain lion licenses, harvest levels in Oregon have doubled and female harvest in the last 5 years has increased 242% compared to levels prior to the ban (from 1987 to 1994 it equaled 78 females per year versus 189 per year between 2001 and 2005). Harvest levels in Washington remain essentially the same, with an increase in the number of female lions harvested.

Hound-hunting generally allowed for bayed mountain lions to be sexed prior to harvest. Preference for larger males resulted in a male-dominated harvest with hound hunting. Because of the different hunting technique employed in the absence of hounds, the opportunity to identify sex of a mountain lion prior to harvest rarely occurs. The result has been a higher proportion of female mountain lions harvested in both Oregon and Washington than prior to the ballot initiative.

Endangered Ungulates versus Hunted Ungulates

Predator control of mesocarnivores, including raccoons (*Procyon lotor*), red foxes (*Vulpes vulpes*) and striped skunks (*Mephitis mephitis*), has been recommended to protect rare or endangered species (Hecht and Nickerson 1999). The same biological principle would apply to predator management of large carnivores, including mountain lions, wolves and bears (*Ursus spp.*), that prey on endangered ungulates, including Selkirk woodland caribou (*Rangifer*

tarandus caribou) or Peninsular desert bighorn sheep. Four western states have endangered populations of ungulates (Table 1). Except Oregon, these states allow the removal of mountain lions to protect endangered ungulates; although, the action has rarely been employed (Table 1).

Table 1. Status of mountain lion control efforts for endangered ungulates and game ungulates by state. X represents where lion control can occur; O represents where lion control does not occur; n/a represents no endangered ungulates existing in that area.

	Endangered ungulates	Game ungulates
California	X	X
Idaho	X	X
Washington	X	X
New Mexico ^a	X	X
Oregon	O	X
Arizona	n/a	X
Utah	n/a	X
Nevada	n/a	X
Montana	n/a	O
Wyoming	n/a	O
Colorado	n/a	O

^aIn New Mexico, desert bighorn sheep are classified as a state-endangered species.

In part, the reluctance of state agencies to cull mountain lions, even to protect rare or endangered species, stems from fear of litigation from the animal-rights community. However, an interesting anecdote suggests that, if state agencies have adequate data distributed to the public, less litigation might transpire. The anecdote goes something like this. At a public meeting to address concerns about high levels of mountain lion predation on translocated radiocollared woodland caribou in the Selkirk Mountains, the topic of culling mountain lions to protect endangered woodland caribou was broached. A member of the animal rights public asked the biologists, “Let me get this straight. You can kill mountain lions for fun [i. e., for sport harvest], but you can’t kill mountain lions to protect an endangered species?”

In New Mexico, state-endangered desert bighorn sheep declined to fewer than 170 individuals with mountain lion predation determined to be the principal mortality factor (Rominger and Weisenberger 1999, Rominger et al. 2004). New Mexico Department of Game and Fish radiocollars all desert bighorn sheep that are handled; generally more than 25 percent of the statewide population was radiocollared during the monitoring period. Research in Arizona on diets of mountain lions in desert habitat found 43 percent of dietary biomass

was comprised of domestic beef calves (Cunningham et al. 1999). Extensive use of exotic ungulates by mountain lions in the desert results in their being subsidized predators, *sensu* Soule et al. (1988). Mortality data (Rominger et al. 2004), combined with evidence in New Mexico of the subsidized predator prediction, resulted in near unanimity among concerned groups and agencies that culling mountain lions to mitigate the high level of mortality was required to avoid extinction of this state-endangered species. This was a case of an informed society being able to make a better decision than an uninformed, polarized society.

The effects of mountain lion predation on big-game populations are such that most western game agencies cull mountain lions, or have plans to cull mountain lions, to protect big-game populations (Table 1). Hunting and conservation groups and state wildlife agencies have recognized that in some circumstances, culling of top carnivores is beneficial for protection of newly translocated big-game populations, small and isolated big-game populations, or big-game populations held below carrying capacity by predation (Hayes et al. 2003, Rominger et al. 2004, McKinney et al. 2006). In the Yukon, most residents agree that the consumptive interest of people should be balanced with the needs of predators (Yukon Wolf Planning Team 1992).

Between 1985 and 1999, mountain lions were not culled to protect endangered desert bighorn sheep in New Mexico (New Mexico Department of Game and Fish, personal communication 2007). Between 1992 and 1999, approximately 85 percent of the known-cause mortality of radiocollared desert bighorn sheep was attributed to mountain lion predation (Rominger et al. 2004). Concern about the cascading effects of a subsidized mountain lion population on faunal biodiversity in the New Mexico portion of the Chihuahuan desert, particularly state-endangered desert bighorn sheep, resulted in an agency decision to reinstitute culling of mountain lions in five desert bighorn sheep ranges. A combination of translocation and significantly higher survival rates of radiocollared adults has resulted in the desert bighorn sheep population in New Mexico increasing from fewer than 170 in 2001 to more than 400 in 2007 (New Mexico Department of Game and Fish, personal communication 2007).

Conclusions

The geographic range of mountain lions is larger than any big-game mammal in North and South America (Logan and Swenor 1999). It would be

unreasonable to believe in a one-size-fits-all understanding for mountain lion populations. An example of this is the recent mountain lion research conducted in the Chihuahuan desert by Logan and Sweanor (2001) that diverged from findings documented from earlier, more northerly mountain lions studies (Hornocker 1970, Seidensticker et al. 1973). Research conducted early in the Logan and Sweanor (2001) study was contradicted by results derived later during drought conditions in the same study area. A better understanding of the cascading effects of subsidized mountain lion populations and the effects of harvest regimes on mountain lion populations, may change both societal perspectives and perspectives of management agencies responsible for these populations. It is important for society, and for scientists, to recognize that societal perspectives and scientific understanding change with time and with increased knowledge.

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