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Large Carnivore Conservation: Integrating Science and Policy in the North American West

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State-Level Management of a Common Charismatic Predator

Mountain Lions in the West

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[–] Abstract and Keywords

Mountain lions in the western United States are managed primarily as depredators of livestock and competitors for opportunities to sport hunt elk, deer, and bighorn sheep. This utilitarian approach arises from the privileged status of hunters and livestock producers under current configurations of power and finances in state-level wildlife management. However, these traditional arrangements are being increasingly challenged by financial stresses and the growing demands of mostly urban stakeholders who hold non-consumptive worldviews and espouse the intrinsic values of mountain lions. The current paradigms of bureaucratic, scientific, and business governance that have been institutionalized in state wildlife management do a poor job of fostering common ground and civility in the face of increasingly polarizing dynamics. A shift to more equitable, representative, and pragmatic governance is needed to reduce conflict and promote common interest outcomes in mountain lion management. This chapter reviews the history of mountain lion management, explains problematic dynamics, and draws lessons that can be used to improve decision- and policy-making processes.

Keywords: civility, governance, mountain lions, scientific management, worldviews, conflict management

Introduction

This chapter on mountain lion (*Puma concolor*) management in the western United States focuses on a central theme of this book: the capacity of participants and institutions to foster respectful, dignified, and civil decisionmaking processes focused on common interest outcomes. Unlike other case studies in this volume that feature on-the-ground innovations, mountain lion

management highlights the extent to which the models of governance employed by participants affect civility. This case also brings into sharp relief the symbolic rather than material stakes of most of the people involved. Finally, mountain lion management is yet another example where rapid change and diversification in society's demands have outstripped adaptive responses in traditional management institutions, leading to high levels of anxiety and conflict.

I draw on trends and conditions associated with mountain lion management in the West, featuring Arizona, to explain the conflict, especially between animal welfare advocates and hunters. I focus on the roles played by current power and wealth arrangements and on the governance models consciously or otherwise adopted by traditional management agencies. State-level wildlife agencies are among the remaining bastions of bureaucratic, customer-oriented, scientific management (Mattson and Clark 2010b). To some, this may seem like a good thing. However, I examine here how this model of management works together with current agency cultures against the cultivation of common ground among people (p.30) with diverse conflicted interests (see chapters 8, 9, and 10). In particular, I examine how current modes of governance have impeded otherwise laudable efforts to engage previously marginalized stakeholders in building durable policies for managing mountain lions. In the first half of this chapter I review the history of mountain lion management, and in the second half I attempt to explain problematic dynamics and draw lessons that could be used to improve decision-making and policy-making processes.

The method for my analysis was framed by concepts of the policy sciences (Lasswell 1971) and informed by other sociological and psychological theories, personal experience, and a review of all materials that I could obtain germane to the management of mountain lions in the West. My analysis presupposes that the aspiration of virtually all humans is a life of dignity (Mattson and Clark 2011) and that within Western cultures such as the United States the best means of fostering widespread dignity is through the sustenance of civil and equitable governance (Shils 1997; Dahl 2006). These are the goal and the core standards by which I judged outcomes and effects of mountain lion management. The basic structure of my analysis is problem orientation, which entails an examination of trends, current conditions, and projections in the realms of biophysical, social, and decision-making phenomena, leading to the formulation of alternatives (Clark 2002, 87). I also mapped social and decision processes, with explicit reference to standards of decision process (Clark 2002, 60). Social process encompasses participants, their perspectives, their strategies, and the arenas and situations within which they characteristically operate (Clark 2002, 33). My view of participant perspectives was heavily influenced by a schematic of nature-views by Stephen Kellert (1996) and by precepts of existential psychology (Yalom 1980). The supporting analysis for this chapter was reported earlier by Mattson and Clark (2010b).

My perspective has been shaped by my life experience as well as theory and research germane to human psychological and social dynamics. I was formally trained as an ecologist, and my research has focused primarily on large carnivores—grizzly bears (*Ursus arctos horribilis*) in the Rocky Mountains and mountain lions on the Colorado Plateau. But this experience led me to the interface of science and policy and confronted me with troubling conflict and the politicization of science (Mattson and Craighead 1994; Wilkinson 1998, 65). My efforts to understand people led me to new domains of inquiry and thought. Here I offer a provisional understanding of human-

centered dynamics in mountain lion management, acknowledging that there are numerous views of this business and that I, like everyone else, am captive to my subjectivity.

(p.31) Context and Problem Definition

I start by briefly recapitulating trends in mountain lion range and populations, interactions of lions with people, and key features of historical mountain lion management. This sets the stage for an overview of changes in social process and management that occurred during the 1990s to 2000s, featuring events in Arizona. Taken together, this information provides a context for understanding the problems of governance that typify mountain lion management in the American West.

Brief History of Management

Mountain lions are one of the most widely distributed mammals in the world, once ranging through nearly all of South America and North America south of the boreal forests (Hornocker and Negri 2010, vii). With the exception of southern Florida, North American mountain lions were extirpated from the eastern half of their range by the 1950s as a result of concerted eradication efforts. Mountain lions killed livestock, but perhaps more importantly, they symbolized untamed, savage, and threatening nature, thus provoking eradication as much out of principle as pragmatism (Gill 2010). Given the diligence with which lions were persecuted, it is amazing that they survived in as many places as they did, at the same time that grizzly bears and wolves (*Canis lupus*) were virtually eradicated from the United States (Laliberte and Ripple 2004). In Arizona and neighboring states, mountain lions probably occupy much the same range as they did prior to the arrival of Europeans. This resilience to persecution is a predictable consequence of the secretive nature of mountain lions, which tend to be active at night and favor rugged brushy or forested terrain (Murphy and Ruth 2010). Mountain lions are also somewhat unique among large predators in having made what appears to be a comeback in recent decades. Within core western range, circumstantial evidence, based largely on sightings, harvest, and depredation records, suggests that their populations increased between the 1970s and 1990s (Anderson et al. 2010). More dramatically, there are numerous records of mountain lions in the eastern United States, some reliable and some not, in places where they have not been seen for decades or even centuries, which suggests a wave of recolonization since the 1980s (Anderson et al. 2010; Beier 2010). Mountain lion range has also expanded northward from British Columbia, even into the southern Yukon Territory. Much of this comeback can be attributed to the classification and management of mountain lions in most states as game animals rather than varmints, together with the termination of intensive eradication efforts (Anderson et al. 2010; Gill 2010).

(p.32) These apparent increases in populations and ranges have been accompanied by increases in problematic encounters between lions and people, especially since the 1970s, including some human fatalities. Attacks on people increased from an average of 0.5 per year during the 1960s to around 4.0 to 7.0 per year during the 1990s and 2000s (Mattson, Sweanor, and Logan 2011). Even though no more than twenty-nine people have been killed in all of Canada and the United States since the 1890s, the recent increase in attacks has gotten the attention of wildlife management agencies and the general public (e.g., Baron 2004). Mountain lion attacks are often sensational and well covered by the news media. At the same time, the public has increasingly litigated any harm attributable to wildlife, and because the courts have

established that states own most wildlife, the state wildlife management agencies have typically been the target of litigation (Mangus 1991; Parker 1995). Given the twin threats of litigation and media coverage to the resources and legitimacy of wildlife management agencies, the easiest way for agencies to deal with lion threats to human safety has been to kill threatening animals (Perry and DeVos 2005; Gill 2010). From an agency perspective, delaying action clearly entailed greater potential costs compared to acting proactively.

The tendency to resolve human-lion conflicts by killing lions was consistent with a marked ambivalence about mountain lions among most wildlife management agencies in the West (Mattson and Clark 2010b). At the same time that many mountain lion populations apparently increased and spread, mule deer (*Odocoileus hemionus*) populations throughout most of the West were declining (Gill 1999; Mackie et al. 2003). Deer, the preferred prey of mountain lions (Murphy and Ruth 2010), are, through the sale of hunting licenses, a major source of revenue for most wildlife management agencies. There is a certain straightforward logic to multiplying the number of deer killed per year by the estimated number of mountain lions and, from that, deducing the number of deer that are thus not available for hunter harvest. Even though the best synopses of relevant research suggest that mountain lions only rarely limit mule deer populations, especially compared to weather and habitat (Ruth and Murphy 2010), simple math seems to have convinced many deer hunters and wildlife management agency commissioners that killing lions would lead to more harvestable deer (Brown 1984; Shaw 1994).

The plight of bighorn sheep (*Ovis canadensis*) has likely compounded managers' ambivalence about mountain lions. Bighorn sheep are typically another money maker for wildlife management agencies¹ and symbolically potent for many hunters (Mattson and Chambers 2009). Several vulnerable bighorn sheep populations in the desert Southwest went extinct at the same **(p.33)** time that mountain lion populations apparently increased (Berger 1990). Agencies were also trying with varied success to restore sheep to areas where they had previously been extirpated (Rominger et al. 2004; McKinney et al. 2006). Mountain lions entered into this picture as known sheep killers and as the implicated agents of decline for several sheep populations in or near the Mohave Desert (Hayes et al. 2000; Holl, Bleich, and Torres 2004). Concerns about bighorn sheep plausibly further diminished sympathy for lions among managers, who strongly identified with the rewards (both material and symbolic) of producing large numbers of harvestable deer and bighorn sheep (Brown 1984; Shaw 1994; Baron 2004; Gill 2010).

Given this context, the historic approaches to managing mountain lions are relatively easy to understand and explain. Because the lion harvest in most states has amounted to no more than a few hundred animals (Hornocker and Negri 2010, 252), management agencies typically have had little monetary stake in the harvest and little incentive to invest the substantial sums needed to obtain reliable estimates of population sizes and trends, given the difficulties of monitoring this cryptic, low-density species (Anderson et al. 2010). For the purposes of agencies that are very likely more concerned about harvestable surpluses of deer, the plight of bighorn sheep populations, and threats of litigation, imprecise indices of population trend and size have apparently sufficed for managing mountain lions. Similarly, there was likely little or no incentive to tolerate lions perceived to pose a threat of any kind, whether to livestock or people. Quick resolution of conflict situations by killing lions has been the evident norm of lion management during much of the twentieth century in places like Arizona (Gill 2010).

Change During the 1990s and 2000s

Beginning in the 1980s and accelerating during the 1990s, the context of mountain lion management changed in the West (Mattson and Clark 2010b). Previously unrecognized perspectives were voiced and empowered, particularly those of the animal welfare and environmental movements. This sea change was dramatically signaled by a successful referendum in California banning sport hunting of mountain lions, succeeded by other ballot initiatives banning the use of hounds (e.g., in Washington State, Negri and Quigley 2010). Banning hounds can reduce overall lion harvests because hounds are often important to successfully tracking these otherwise elusive animals (Zornes, Barber, and Wakeling 2006). Increased public activism took place in the context of an overall greater scrutiny of wildlife management policy by the public, accompanied by greater reliance of special interest groups on **(p.34)** instruments such as ballot initiatives to intervene in wildlife-related policy processes. The success of many ballot initiatives created anxiety among wildlife management professionals, who self-evidently experienced diminished control and prestige and probably feared more of the same (Beck 1998; DeVos, Shroufe, and Supplee 1998). Hunters, the traditional clients of wildlife management, evinced similar angst about the increased power of groups with other interests (Mattson and Clark 2010b).

In Arizona several incidents substantially perturbed the mountain lion management arena. During the mid-1990s animal rights groups such as the Fund for Animals and the Animal Defense League began critiquing mountain lion management policies set by the Arizona Game and Fish Department (AGFD; Schubert 2002). Until 2004 Arizona had some of the most liberal regulations for “taking” lions, second only to Texas, which still managed lions as varmints. Lion hunting in Arizona was allowed year round, with no limits on age, gender, or reproductive status of the lion, with each licensed hunter annually allowed one lion kill, and with no area-specific limits on kills (e.g., AGFD 2002). In some game management units hunters were given incentives to kill additional lions (e.g., AGFD 2006). The lengthy written critiques submitted to AGFD by the Fund for Animals were well informed by both the scientific literature and AGFD's own data (Schubert 2004), which would have made these documents hard to discount. Although these animal welfare organizations “opposed sport hunting of any kind,” they were also more pragmatically advocating, among other measures, establishment of a limited hunting season, physical inspection of lion kills by AGFD personnel (rather than by hunters), prohibition of hounds as a hunting aid, and increased public involvement in setting policies (Schubert 2002).

Between 2001 and 2004 issues related to mountain lion management in Arizona came to a head, catalyzed by responses of AGFD to several incidents. During 2000 and 2001 on Mt. Elden (near Flagstaff) and during 2004 in Sabino Canyon (near Tucson), mountain lions were seen exhibiting what was considered to be threatening behavior toward hikers in popular recreation areas. In both instances AGFD (the responsible wildlife management agency), in coordination with the US Forest Service (the responsible land management agency), set out to track down and remove the threatening animals (Perry and DeVos 2005). To the apparent surprise of both agencies, these actions unleashed a maelstrom of media coverage and heated public exchanges between those who opposed killing or removing the lions and those who supported the agencies' measures. A review of newspaper articles from the Flagstaff *Daily Sun* and the Tucson *Daily Star* showed a huge spike in references **(p.35)** to mountain lions during these episodes (Mattson and Clark 2012). Perhaps more importantly for policy, the topical focus of the articles shifted during these

spikes from a normal preoccupation with biology and routine reporting of more mundane encounters to a pointed critique of AGFD policies and advocacy of nonlethal approaches to resolving human-mountain lion conflicts (Mattson and Clark 2012). Among the more important voices in this discourse was Governor Janet Napolitano, who publicly expressed dissatisfaction with the performance of AGFD and even went so far as to publicly entertain the idea of eliminating the commission system in order to make the agency more responsive to elected officials and the public (Perry and DeVos 2005). Although AGFD had its defenders, the agency was squarely in the bull's-eye of public discontent, articulated as dissatisfaction with current policies as well as questioning of agency competence and bias.

The AGFD Response and Other Outcomes

Mt. Elden and Sabino Canyon, along with other less publicized incidents, placed AGFD in a crucible. Historical norms were apparently not working well as far as agency interests were concerned. The agency's professionalism had been called into question in highly publicized ways. The scientific basis for its management had been roundly criticized, and its policies were shown to be outside the norms of other western states. Moreover, its policies allowed for hunting practices (i.e., killing kittens and dams with kittens) that overtly offended the sensibilities of many Arizona citizens. Several interest groups, most notably animal welfare activists, increasingly expressed their frustration about being marginalized in the decision-making process and about the deference given to the special interests of hunters. Perhaps most attention getting was the dissatisfaction of the governor and some state legislators. There were good reasons for AGFD to look at options to restore the agency's credibility with key stakeholders and pacify its critics.

AGFD undertook several tasks to ameliorate this crisis. First and perhaps most important, the agency held three public workshops to generate input for a protocol to respond to situations where mountain lions were thought to pose a threat to human safety (Perry and DeVos 2005). These workshops were independently facilitated and entailed substantive input from a spectrum of interests. The outcomes were two reports (AGFD 2004a, 2004b) and an action plan (AGFD 2005) that responded explicitly to verbal and written input by the public. The intent was to design a protocol that stabilized expectations and garnered public support. Second, the agency revised its policies for hunting mountain lions. Kittens and dams with kittens were protected, **(p.36)** the general season was limited to September 1-May 31, "bag" limits were set for some game management units, and more stringent reporting requirements were established (e.g., AGFD 2010). However, in units where AGFD was either trying to establish or reverse declines in bighorn sheep populations the season was still year round, the harvest objectives were to reduce lion numbers substantially, and bag limits were one lion per hunter per day until annual harvest objectives were reached (e.g., AGFD 2000, 2006). AGFD also contracted with a public relations firm to educate the public about safety around mountain lions in targeted high-risk areas (AGFD 2005). These changes served to bring Arizona's policies within the norms of other states (AGFD 2010), which was also important to AGFD interests.

Using the standards of sustainable and ameliorative decision processes, there were several aspects of the agency's response that were problematic, despite a positive overall direction. Each of the measures taken built on accepted norms of state-level wildlife management agency culture and practice. The move to educate fit a well-developed tradition of informing the public

about wildlife and the rationale for current management practices (e.g., Shroufe 1988; Perry and DeVos 2005; AGFD 2005). The onetime public engagement to solicit input for a protocol to deal with threatening lions was consistent with a tradition of soliciting feedback about prospective policies and hunting regulations through annual public meetings and open houses. The tightening of lion hunting regulations also was comparatively natural given that legitimacy is often reckoned in terms of broader management norms. However, it could be argued that these measures, which did not stray far from traditional norms, did not go far enough.

Still lacking was an ongoing means of substantively engaging the full spectrum of interests in the development of policy. Observers of natural resource management have remarked that important differences exist between superficial engagement with stakeholders through education, onetime workshops, and formal meetings and comment periods, and more in-depth engagement through ongoing consultation and collaboration (Pimbert and Pretty 1995; Decker et al. 1996; Decker and Chase 1997). The report on the protocol workshop held in Tucson (AGFD 2004b) contained some anomalies that pointed to a deeper-rooted and persistent problem, primarily in understandings of governance. For example, the comment that “many participants stressed that AGFD needed to expand its constituency from a primary focus on hunters and anglers to the larger population that has an interest in wildlife and the outdoors” was placed in a section pertaining to public education. Similarly, a paragraph about the legitimacy of the commission system, including **(p.37)** the comment that “the non-consumptive community feels like they have no voice on the Commission” was placed in a section devoted primarily to the need for legislation to provide the agency with immunity from litigation, protect wildlife habitat, and prohibit the feeding of wildlife. There was no section on governance or decision process as such, which would have been a logical place for these comments. Lack of such recognition signaled that AGFD may not have considered the very nature of decision making to be a vital topic of discussion.

Turning to revision of mountain lion hunting regulations, the engagement with non-hunter interests had the appearance of being more symbolic than substantive. One can array the demands of environmentalists and animal welfare activists on the basis of which ones are most likely to affect total lion harvest to those least likely to have an impact: (1) stop all lion hunting, (2) stop hunting females, (3) stop using hounds, (4) limit the hunting season, (5) promptly close game management units after reaching a kill quota, (6) revise and justify estimates of lion densities, (7) require agency inspection of hunter kills, and (8) prepare and implement a comprehensive management plan. Demands (1) through (3) are the only ones likely to effect a substantial reduction in harvest, especially if a limited hunting season were to encompass times of year when most kills are made. As it turned out, AGFD only adopted measures that would have little or no impact on current harvest levels, including a general season that encompassed the period when 93 percent of lion kills were made during 1995 to 1999 (Schubert 2004). By conforming to broader norms, systematizing its harvest, and maintaining an ability to kill as many lions as in the past, AGFD did what appeared to be a good job of maintaining its interests, bolstering its image, reducing vulnerability to obvious criticisms, and preserving cultural priorities. However, this begs the question of how well the agency addressed common interests of the general public and how well it cultivated its capacity to find common ground among those with conflicting interests.

The importance of fostering common ground and focusing on common rather than special interests is highlighted by the current stridency of the discourse on managing mountain lions in the West (Mattson and Clark 2010b). Hunters have publicly called environmentalists and animal rights activists “nuts” who threaten “scientific management,” who “only want to push their beliefs on others,” who have “no vision of conservation,” who are “hysterical,” and who inflame issues only to raise money, and more (Howard 1991; Einwohner 1999; AGFD 2004b). Conversely, hunters are represented by animal welfare advocates as callow and uncaring exploiters who are “killing (p.38) the Earth.” Although the wildlife management agencies are generally praised by hunters, the agencies are also subject to criticisms from across the spectrum of interests. Perhaps most pointed from an agency perspective are charges that call professional skill and ethics into question, for example, from a hunter who charged that “with the aid and protection of educated wildlife management experts—cougars are wiping out our western deer herds” (Zumbo 2002, 24), and from an environmentalist that “AGFD has inexplicably and, perhaps, purposefully altered...estimates of lion habitat...thereby manufacturing ‘paper lions’” (Schubert 2002, 1-2). Some even suggest, for example, “a conspiracy to shut down local guides and to capitalize on the mountain lion” (Lermayer 2006, 8). This kind of uncivil discourse is corrosive to liberal democracy (Shils 1997).

Mountain Lion Management Decision Process

Here I provide an explanation for the history and dynamics described earlier. I start by describing different worldviews at play and how they engender diverse and often conflicted demands regarding the outcomes of mountain lion management. I then describe some key exacerbating dynamics organized around the rubric of in- and out-groups, emphasizing allocations of power and wealth. This leads to an appraisal of the governance models employed by AGFD in terms of fostering common ground. I conclude with lessons that are germane to changing the dynamics of mountain lion management and policy making in order to increase civility and dignity and focus on common rather than special interests.

Worldviews and Social Capital

A number of schemes have been developed to represent how people view wildlife and nature. Typically these are bipolar, including anthropocentric to bio- or ecocentric, utilitarian to protectionist, and extrinsic to intrinsic valuation (Dietz, Fitzgerald, and Shwom 2005). Stephen Kellert (1996) developed a classification for describing worldviews that had eight to ten categories, but that can be consolidated into five: fearful (negativistic), aspiring to domination and emphasizing utility (utilitarian/dominionistic), valuing ecological connection or wholeness and the opportunity to learn (ecologicistic/scientistic), valuing beauty and naturalness (aesthetic/naturalistic), and viewing animals as human-like and experiencing moral obligation for their well-being (humanistic/moralistic). These various worldviews can engender quite different and potentially conflicting demands regarding the state of the world and related outcomes of wildlife management (Mattson and Clark (p.39) 2010b; Mattson and Ruther 2012). They are also typically intimately intertwined with people's identities and self-stories (Kellert 1996).

Most state wildlife management agencies and their related structures for funding and governance were established during the late 1800s and early 1900s at a time when the utilitarian/dominionistic worldview was pervasive (Reiger 2001). Although hunters and the agencies that were constituted to serve their interests are the undisputed harbingers of wildlife

conservation (Reiger 2001), they were also deeply imbued with the utilitarian worldview, including notions that hunting was virtuous and that “wildlife” consisted of huntable species (Shaw 1994; Reiger 2001; Dizard 2003). During the next hundred-plus years Western culture changed dramatically, including how people viewed wildlife and nature (Kellert 1996). The comparatively novel ecologicistic/scientistic worldview emerged. For example, a survey of the Arizona public found that the primary reason people thought protection of mountain lions was important was because “if top predators are lost, the entire ecosystem and balance of nature are put at risk” (Decision Research 2004, 4). This notion is quite new. The humanistic/moralistic and aesthetic/ naturalistic worldviews also became prevalent, politically empowered, and identified with the animal welfare and environmentalist movements (Kellert 1996). Overall, the utilitarian/ dominionistic worldview declined with increased urbanization and social mobility and with the advent of postmaterialist values (Kellert 1996). Perhaps most relevant to this discussion is the fact that views of wildlife and nature have considerably diversified during the last forty years, and along with this diversification has come greater diversity of potentially incompatible public demands on wildlife management agencies (Mattson and Clark 2012; Mattson and Ruther 2012).

Compounding this increase in conflicting demands has been a decrease in social capital, trust, and civility throughout the United States. Robert Putnam (2000) has documented this decline and mapped its geographic extent by state. Civility is the means and social capital the reservoir available for citizens in a liberal democracy to reach peaceful resolution of their differences (Shils 1997; Putnam 2000). Without civility and social capital, violence or the threat of violence—overt or tacit—is a likely consequence. With the future of civil society at stake, such a potential outcome ought to be a nontrivial consideration for those involved in arenas, such as wildlife management, that are increasingly prone to conflict. Although Arizona and the Intermountain West are not at the bottom in terms of social capital, they are not as well endowed as the Northeast and upper Midwest (Putnam 2000). With intrinsically limited and probably declining capacity for civil settlement **(p.40)** of differences, the stakeholders in mountain lion management clearly need ameliorative decision processes that are exceptionally good at fostering common ground (Clark and Munno 2005; Mattson and Clark 2010b).

One could argue that the greatest challenge facing wildlife management is helping participants find common ground on which to craft durable common interest policies (Decker et al. 1996; Nie 2004a; Clark and Rutherford 2005; Jacobson and Decker 2006). Yet this is clearly not how most participants, including wildlife managers and policy makers, see it. Most have remained focused on pursuit of their special interests, including those of their agency, organization, or group (Mattson and Clark 2010b). The quality of governance has not been a focus of attention. Instead, struggles over symbolic stakes and physical outcomes have dominated (Mattson and Clark 2010b). To understand this state of affairs, it is helpful to examine participant identities and demands, the ways in which participants interact and affect each other, how they define problems, and the models of governance they employ. As a useful starting point, one can define the in-group as those who have primary access to power over decision making under current arrangements, and the out-group as those who don't (Clark and Rutherford 2005). The in-group of mountain lion management is organized around what I call the utilitarian/ dominionistic subsystem of social process.

The Power In-Group

The in-group consists primarily of hunters and agency personnel and, to a lesser extent, those involved in agriculture (Mattson and Chambers 2009; Mattson and Clark 2010b; Mattson and Clark 2012). There is a strong tendency for members of this in-group to hold a utilitarian worldview and to be invested in domination and power (Mattson and Clark 2010a). Hunting is seen as a virtuous and threatened activity, and wildlife is valued primarily for its material qualities. This is not to say that members of the in-group hold these perspectives exclusively, but rather that these perspectives constitute strong modalities. Virtually all wildlife commissioners in the West, historically including Arizona, are self-identified hunters and self-identified with groups that promote hunting and other instrumental valuations of wildlife (Hagood 1997; Mattson and Clark 2010b). Employees of wildlife management agencies tend to have a similar profile (Mattson and Clark 2010a). As a consequence, hunters, agency managers, and agency commissioners naturally find common ground in shared worldviews and shared pursuits. These commonalities predictably engender receptiveness to persuasion among those who belong to the in-group, based on shared assumptions, especially about **(p.41)** the priority of hunting and the hunting experience (Mattson and Ruther 2012; Mattson and Clark 2012). Most funding for wildlife management agencies comes directly or indirectly from hunters and gun owners (from license fees or federal grants derived from taxes on arms and ammunition), which reinforces a focus on hunting (Hagood 1997; Mattson and Clark 2010b). In Arizona these sources have accounted for roughly 80 percent of all funding during the last decade (http://www.azgfd.gov/inside_azgfd/annual_report.shtml). Most of the remainder came from funds generated by a state lottery. Virtually none of AGFD's funding comes from the general fund or is directly controlled by the legislature. Moreover, the commissioners, who set wildlife management policy, are appointed by the governor for five-year terms and are not subject to direct oversight by elected officials (http://www.azgfd.gov/inside_azgfd/commission.shtml).

These arrangements have several important consequences. First and foremost, wealth and legitimacy are generated almost entirely internal to the utilitarian/dominionistic subsystem, identified with the power in-group. There are few apparent rewards for responding to interests external to this subsystem and ample rewards for focusing almost entirely on those who are part of the in-group. This bounding of attention, especially within agencies, is predictably reinforced by traditional culture and the related emphasis on hunting as an activity and management tool. As a result, there is a strong tendency within wildlife management agencies to serve the perceived interests of hunters directly or indirectly (Decker et al. 1996; Gill 1996; Rutberg 2001; Nie 2004a, 2004b; Clark and Munno 2005; Jacobson and Decker 2006). Although nongame management has been increasingly legitimized in recent decades, in almost all cases it receives relatively little funding (http://www.azgfd.gov/inside_azgfd/annual_report.shtml). As an interesting derivative of this emphasis on hunting, AGFD has been at odds not only with animal welfare advocates, but also with environmental groups. For example, AGFD advocates maintaining or even expanding existing wildland road networks in order to allow hunter access and to maintain structures for artificially provisioning wildlife with water (Mattson and Chambers 2009). This puts the agency in opposition to environmentalists who are fighting for wilderness, legally designated or otherwise. As a bottom line, this configuration of wealth, authority, and worldviews predictably generates an intrinsic bias toward the special interests of the agency and hunters. As I discuss later, servicing special interests is often justified by

scientific narratives built around notions such as “the good of the resource” (Clark and Rutherford 2005; Mattson and Chambers 2009; chapter 8, this volume).

(p.42) The utilitarian/dominionistic subsystem has come under considerable apparent stress in recent years. The agency's neglect of increasingly powerful interest groups, such as animal welfare advocates and environmentalists, has taken a predictable toll. Overall, the demands and expectations of the external world have dramatically changed, especially with the skyrocketing urbanization of Arizona (Albrecht 2008), making the internal world of the utilitarian/dominionistic subsystem increasingly out of sync. Hunters declined as a fraction of the population in Arizona between 1996 and 2006 from 15 to 9 percent of residents more than fifteen years old (US Fish and Wildlife Service and US Census Bureau 1996, 2006). This decline threatened not only revenues, but also the political clout of AGFD. It is not surprising that AGFD and other wildlife management agencies have been preoccupied with understanding and reversing declines in hunting participation (e.g., Enck, Decker, and Brown 2000; AGFD 2001), to the point, for example, of having made recruitment of more hunters a priority in AGFD's 2001–2006 Strategic Plan (AGFD 2001, 16). Tensions have also plausibly arisen because younger cohorts and the inclusion of nongame management have brought a less homogeneous outlook to agencies, in the process creating sometimes conflicting subcultures (Organ and Fritzell 2000). Perhaps out of pragmatism, there were numerous statements in the preamble to Arizona's 2001–2006 strategic wildlife management plan that affirmed the value of collaboration, cooperation, and nonconsumption (e.g., AGFD 2001, 2, 7). But when management objectives for species such as mountain lions are examined, they were, and continue to be, indisputably about providing a “quality” hunt along with as many hunting opportunities as possible (AGFD 2001, 37).

There is good reason to expect that structural tensions, including perceptions that traditional values and identities are under assault, lead to heightened anxiety among members of the in-group. This probably explains the harshness of some statements emanating in both public and private from hunters and even agency employees, especially regarding animal welfare advocates (which I address in more detail later). There is often a tendency to morally exclude those who disagree with one's positions, especially if they are not part of one's in-group (Opotow and Weiss 2000; Skogan and Krange 2003). But the hostility of some statements is disturbing to anyone who cares about civility. A large body of psychological research suggests that anger is often indicative of an existential crisis being resolved by demonizing those who pose a threat (Cooper 2003; Alon and Omer 2006). Such personal turmoil and resulting venting are evidence of why amelioration and conciliation are needed, not only for management of mountain lions (Mattson and Clark **(p.43)** 2010b), but also for management of wildlife in general (Clark and Rutherford 2005).

The Power Out-Group

Animal welfare advocates and non-hunting environmentalists constitute what could be considered the power out-group of wildlife management in Arizona and elsewhere in the West. This is not to say that the remaining large majority of Arizonans has any greater access to the decision-making process, but rather that animal welfare advocates and, to a lesser extent, environmentalists are the most consistently engaged with wildlife issues, especially those related to mountain lions (Mattson and Clark 2010a). They are largely unempowered because they have virtually no access to agency budgets (for example, through fees or the legislature) or

to commissions or managers (through shared worldviews or values). Animal welfare activists hold different worldviews, largely humanistic/moralistic, often expressed as intrinsic valuation of wildlife and demands for protection, as in the case of mountain lions (Mattson and Clark 2010a).

I focus here on animal welfare activists because they are the most consistently engaged with mountain lion issues, presumably because of the charismatic and symbolic nature of lions (Mattson and Clark 2010a). In fact, one of the problems facing animal welfare activists is that of engaging other participants. It is difficult enough to engage environmentalists, who tend to be focused on land management issues, much less the general public. For the most part, the general public in the West, including Arizona, is unaware of and largely ambivalent about wildlife management (Mattson and Clark 2010a). This is evidenced by the fact that in recent years the majority of Arizona residents could not even name the state agency responsible for wildlife management (Responsive Management 2004). Confounding this for the purposes of animal welfare activists is the fact that most Americans also support hunting, especially for meat and by Native Americans (Heberlein and Willebrand 1998).

Opportunities for animal welfare activists to access wildlife management decision processes have occurred after incidents that highlighted increasingly unacceptable management practices or by the strategic disclosure of practices that were patently offensive to most of the public. In this regard, the Mt. Elden and Sabino Canyon incidents were especially important because they mobilized a broad and temporarily vocal constituency for change, organized around both humanistic/moralistic and ecologicistic/scientistic worldviews (Perry and DeVos 2005; Mattson and Clark 2012). This broader **(p.44)** constituency for nonlethal solutions was then able to engage the governor, who had sympathetic tendencies. Similarly, the hunting of kittens and dams with kittens created opportunities, primarily because this hunting practice was offensive to many people, not for reasons related to conservation of lion populations but rather for reasons largely symbolic and emotive (Mattson and Clark 2010a). Even though surveys show that the general public supports hunting, there is little support if it is to obtain trophies or is somehow considered to be unethical (Loker and Decker 1995; Heberlein and Willebrand 1998). The sometimes inflammatory strategies employed by animal welfare activists can be problematic for a democratic society. However, these strategies are a predictable outgrowth of decision processes that are closed, serve special interests, and neglect the common good—which tends to be the case with state-level mountain lion management (Clark and Munno 2005; Mattson and Clark 2010b).

Animal welfare activists and hunters have characteristic identities that, not surprisingly, inflame the latent potential for conflict (Mattson and Clark 2010b). For one, these two groups and their allies have strikingly different modal demographic profiles (Mattson and Clark 2010a). Animal welfare activists and others who espouse the humanistic/moralistic worldview tend to be disproportionately urban-dwelling, highly educated, professional women. The proportion with postgraduate and advanced professional training is remarkable. By contrast, hunters and those who hold a utilitarian/dominionistic worldview are disproportionately male and rural. They also tend to be less well educated and not as affluent. Perhaps most significant, hunters tend to be interested in the expression of power and domination in their lives, in part through hunting (Mattson and Clark 2010a). Some researchers have observed a problematic tendency for this primarily male-expressed interest in domination to blur with gender relations in the physical act

of hunting (Einwohner 1999; Kalof, Fitzgerald, and Baralt 2004). There is good reason to suspect that well educated and self-affirmed females, especially those who espouse a different worldview, constitute an existential threat to the average hunter, and vice versa. Compounding this is the fact that animal welfare activists tend to pursue their interests with what has been described as religious fervor (Galvin and Herzog 1992; Shaw 1994; Jamison, Wenk, and Parker 2000). Edward Shils (1997) has noted the corrosive effect of such ideological vehemence on civility. Put together, these aspects of identity are a veritable recipe for harsh conflict. With such strongly differentiated worldviews organized around such distinct demographic communities, the sharp delineation of in-group boundaries is perhaps inescapable.

(p.45) Unhelpful Models of Governance

The identities of key participants coupled with configurations of power create the conditions for conflict within the community of stakeholders pursuing their interests in mountain lion management. To overcome this built-in tendency for negative interactions, it is crucial to institutionalize means of engagement that are ameliorative rather than inflammatory (Brunner 2002; Brunner and Steelman 2005). Liberal democracy depends on the existence of cultural and institutional mechanisms that curb unbridled conflict and elevate and empower the common good in spite of citizens pursuing their special interests (Dahl 1982; Lasswell and McDougal 1992; Shils 1997). As I pointed out earlier, reservoirs of social capital and trust that facilitate a focus on common rather than special interests have diminished in the United States (Putnam 2000). The burden of fostering civility has fallen increasingly on institutionalized processes for developing and implementing public policy. The models of governance employed by public agencies such as AGFD largely determine whether or not policy processes degenerate into unalloyed and divisive pursuit of special interests. The focus here is legitimately on wildlife management agencies, which are trustees of the public or common interest and, through their authority, largely determine the nature of decision making.

Most wildlife management agencies, including AGFD, tacitly or otherwise use a mix of three models of governance: bureaucratic, business, and scientific (Nie 2004a, 2004b; Clark and Rutherford 2005; chapter 8, this volume). The typical bureaucratic model holds that agencies are entrusted with authority and control for managing wildlife and are therefore wholly responsible and accountable. In the case of agencies governed by a commission, policies are not only implemented, but also formulated, prescribed, and evaluated by the agency. Accountability is not directly democratic, but rather is indirectly enforced through commission appointments, “customer” agitation, litigation, and ballot initiatives. The business model prioritizes service to customers and has been embraced under the rubric of Total Quality Management, or TQM (Hunt 1993). This approach originated in the business sector, but has subsequently been picked up by a number of government agencies. The scientific model, which has a legacy dating back to Gifford Pinchot in the early 1900s, prioritizes the rational management of resources by experts in accordance with scientific principles and information (chapter 8, this volume). These three models amalgamate as an approach that prioritizes providing customers with high-quality service and products, efficiently developed or produced by experts according to scientific principles, but with **(p.46)** ultimate authority and control residing with the agency and its commission. In most cases the customer is implicitly or explicitly hunters, although there is frequent verbal and written reference to serving the broader public (e.g., AGFD 2001).

At this point it is probably worth highlighting again the central business and challenge of a liberal democracy: that of the individual discerning and pursuing his or her interests, but in a civil and sustainable way (Dahl 1982, 2006; Lasswell and McDougal 1992; Shils 1997). My own perspective on the policy process encompasses the full spectrum of activities associated with individuals and groups in a society developing, implementing, appraising, and terminating policies that are ideally, in a liberal democratic society, an embodiment of long-term common interests. Competition is natural and integral, but so is respect for and accommodation of the interests of others, especially when codified in processes that facilitate peaceful resolution of competition. There is increasing appreciation of the fact that all facets of policy making play out in the bureaucratic arena of government agencies, every bit as much as in legislative and other executive arenas (Peters 2001). It is also increasingly evident that any claim to an impartial and mechanistic implementation of policy by government agencies is at best illusory and at worst deceptive (Wilson 1989; Box 2004). A responsibility for reconciling and otherwise arbitrating diverse societal interests in the form of common interest policies inescapably rests with agencies such as those charged with state wildlife management, especially given the insular commission structure.

The hybrid approach to governance employed by AGFD and most other wildlife management agencies is highly problematic if the goal is a civil liberal democracy. The bureaucratic impulse often engenders unwillingness to share or otherwise delegate power in the development and implementation of policy (Wilson 1989; Peters 2001). This is expressed in the form of statements such as “we cannot turn over decision-making to stakeholders because we have been given the authority for management, and bear financial liability for our decisions” (i.e., accountability through litigation), or “if our decisions led to some kid being killed by a mountain lion, we would have to live with the responsibility, regardless of whether or not the process was based on consultation with the public” (J. DeVos, R. Miller, AGFD, personal communication).

These kinds of comments invoke an implicit contract with society, the agency's financial liability, and personal guilt. However, these justifications do not hold up to critical scrutiny. Guilt rooted in personal sensibilities is typically not a good basis for public policy (e.g., Kaplan 1958; Jonsen and Butler 1975; Willbern 1984; Etheridge 2005). Agency financial liability is on its face a special (or agency) rather than a common societal interest. The societal contract has more merit, but on closer examination may not be warranted in the case of wildlife management. A key part of the societal contract with government bureaucracies is that agencies will be fair, impartial, and devoted to the public interest (Box 2004). As I have suggested earlier, configurations of agency power, wealth, and culture lead to considerable partiality for a relatively narrow set of special interests—those of hunters and fishermen. Accountability is also not directly democratic. As a bottom line, the bureaucratic model employed by most wildlife management agencies does not recognize, in practice, that responsibility and accountability extend to the entire public and to providing venues that are fair, balanced, and otherwise impartial (Decker et al. 1996; Gill 1996, 2001; Nie 2004a, 2004b; Clark and Rutherford 2005; Jacobson and Decker 2006). This last proviso is especially germane given that wildlife management policy is set, not by the elected legislature or executive, but by the appointed commission in consultation with agency experts.

Numerous public policy experts have described the axiomatic differences between missions of for-profit businesses and government bureaucracies. Unlike businesses, government agencies are tasked with securing the common or public interest (Steelman and DuMond 2009), and the primary criteria for performance are not financial profit (Lasswell 1971; Box 2004). For most businesses, the customer is closely linked to the product, which is almost wholly a private matter of the company. For public agencies the legitimate customer is the entire public (Terry 2003; Box 2004), which, as I have shown, holds widely divergent notions of what the product of wildlife management is or should be (Mattson and Clark 2010b). In this public policy context, the notion of customer has little relevance and in fact can potentially divert attention from the task of amelioration. In practice, the notions of TQM and “customers” seem to combine with the cultural biases of wildlife management agencies to legitimize the special standing of hunters and huntable game in contrast to all other interest groups and wildlife management products. In short, although the business model of government potentially fosters responsiveness to customer input, this model does not provide any explicit help in identifying who the customer or related product is or should be (Mattson and Clark 2010b). For that reason, the TQM movement potentially distracts from a focus on all that is needed to create common interest policies for managing animals such as mountain lions, while providing a rationale for continued service of special interests.

(p.48) As used by state wildlife agencies, scientistic management provides an integral rationale for the bureaucratic and business models of governance (Clark and Rutherford 2005; Mattson and Chambers 2009; chapter 8, this volume). I use “scientistic” rather than “scientific” here to emphasize a paradigm or even philosophy rather than scientific practice or the use of scientific information. Of greatest relevance to this discussion, scientistic wildlife management is based on the premise that problems are objective and biophysical in nature and therefore solvable by experts (wildlife managers and biologists) applying their biophysical knowledge (about wildlife and habitats, chapter 8, this volume). In this model, managers determine what the problems of wildlife management are and how to solve them, using principles such as “the good of the resource,” “carrying capacity,” or “sustainable harvest.” This paradigm is a key bastion of the bureaucratic approach in that it places sole authority and control over policy in the hands of wildlife management agencies because these agencies are central repositories of expertise.² Scientistic management is also consistent with the business model of governance, although the match is not as good. Wildlife managers apply their expert knowledge to provide a better product for the customer, with huntable wildlife typically the primary product. A mismatch occurs insofar as the customer, rather than solely the expert, provides substantive input on the nature of the problem, typically defined in terms of amounts of game habitat or harvestable wildlife.

There are numerous critiques of scientistic (i.e., “scientific”) management as applied to natural resources (e.g., Clark 1993; Brunner 2002; Sarewitz 2004; Pielke 2007; Ascher, Steelman, and Healy 2010). Its biggest shortcomings are in failing to recognize that problem definition is at the heart of any policy process (Weiss 1989; Dery 2000) and in giving unwarranted deference to experts. A problem can be understood as any discrepancy between the way the world is and the way we desire it (Dery 1984; Clark 2002, 100). Given the many worldviews engaged with mountain lion management, there are numerous different ways that those involved want the

world to be (Mattson and Clark 2010a). For some there would be more lions to hunt, for some there would be fewer lions preying on deer or bighorn sheep, for some there would be enough lions to fulfill an ecological role, for some there would be no lion hunting, for some there would be ample opportunities simply to see lions in the wild, and for some there would be no lions at all to pose a threat to their safety. Each of these demands engenders a different understanding of “the problem” of mountain lion management. In short, there is no one objective problem of mountain lion management rooted in biological **(p.49)** conditions, to be divined by an expert. There are multiple problems held by multiple interest groups in need of reconciliation. To presume otherwise is tacitly to impose the typically hidden values of agency experts on all others involved and implicitly to contravene the social contract between public and agency. Scientistic management, combined with bureaucratic and business models of governance, predictably complicates the cultivation of common ground and the clarification of common interests among conflicted stakeholders (Brunner 2002; Brunner and Steelman 2005; Ascher, Steelman, and Healy 2010; chapter 8, this volume).

The conflict and acrimony surrounding mountain lion management are not difficult to understand, given the identities of those who are most passionately engaged, the configuration of power and wealth, and the models of governance at play. It is not surprising that public input pertaining to governance had no logical place in the AGFD report on the public mountain lion management workshop held in Tucson. Simply put, the scientistic, bureaucratic, and business models do not provide a means of framing issues in terms of governance, common interests, and civility. Overall, the configuration of models, identities, and resources also explains why AGFD did not undertake sustained and meaningful consultation or collaboration with the full spectrum of stakeholders who were substantively engaged with mountain lion management and instead opted for a onetime process coupled with traditional formal public meetings geared toward hunting regulations. It is also clear why AGFD implemented changes in lion hunting regulations that seemed to be designed more to advance the strategic interests of the agency and hunters rather than seriously address the concerns of animal welfare activists and others holding the humanistic/moralistic worldview. When it comes to mountain lion management in Arizona and elsewhere in the West, the need for amelioration is great and the currently employed tools insufficient to the task.

Moving Forward: Lessons and Recommendations

Mountain lion management will continue to serve a narrow set of special interests organized around hunting as long as revenues are primarily hunting-related, commissioners are deeply imbued with the ethos of hunting, and management agencies are dominated by a hunting culture (see chapter 9, this volume; appendix for this chapter). This is not to say that hunting is intrinsically bad, but rather that any policy process that patently serves narrow special interests while marginalizing all others is fundamentally incompatible with a liberal democracy grounded in civil discourse (Dahl 1982, 2006; **(p.50)** Lasswell and McDougal 1992; Shils 1997; Brunner 2002; Clark 2002; see chapter 8, this volume). Clearly, the stakeholders in mountain lion management value lions in a wide variety of ways, more than simply as game. Additionally, wildlife management is also more than just a means of providing hunting opportunities, and the tools of management clearly consist of more than hunters with firearms. Moving beyond the current paradigm will likely require diversifying revenues so that no one interest group has a lock on agency financial well-being, diversifying commission membership to represent the full

spectrum of ways that people value animals such as mountain lions, and diversifying the cultures of management agencies and the academic institutions that train prospective employees (Decker et al. 1996; Gill 1996; Hagood 1997; Beck 1998; Pacelle 1998; Rutberg 2001; Nie 2004b; Jacobson and Decker 2006). These trends are already afoot, driven by broad societal forces. Change of this nature will likely continue to happen. The question is the extent to which those with power over the institutions of wildlife management will be willing participants.

Aside from addressing these broader conditioning factors, the question remains whether other means exist for changing current mountain lion management. Perhaps the best prospect is to create respectful venues where people who represent the full spectrum of interests can engage face to face over pragmatic rather than symbolic issues (Gill 2001; Nie 2002, 2004b; Durant, Fiorino, and O'Leary 2004; Clark and Munno 2005; McLaughlin, Primm, and Rutherford 2005; Mattson et al. 2006). Considerable research and on-the-ground experience demonstrate that when people are given the opportunity to interact with others about substantive matters rather than symbolic constructs and do so according to ground rules that enforce a measure of civility, a surprising capacity for empathy often emerges (Koger and Winter 2010; Wondolleck and Yaffee 2000). This process is typically facilitated when an otherwise conflicted group is given a specific pragmatic task, such as developing a plan to increase human safety in a popular recreation area used by lions, and diverted from issues that are symbolically loaded, such as whether all lion hunting in the state of Arizona should be banned or not (McLaughlin, Primm, and Rutherford 2005).

However, such groups will not emerge unless there are substantive rewards for stakeholders to participate, for example, by being able to contribute authoritatively to setting management policies (Durant, Fiorino, and O'Leary 2004; Sabatier et al. 2005; Armitage, Berkes, and Doubleday 2007). These conditions largely depend on divestiture of some power by wildlife **(p. 51)** management agencies. Here we come back full circle, because few agencies or their governing commissions are apparently inclined to divest power, probably for various psychological reasons, but more certainly because of the management models and related notions of governance that they embrace (Nie 2004b; Brunner and Steelman 2005; Clark 2008). Under such circumstances, the opportunities for constituting alternative structures (organized around civil interactions among stakeholders) often reside in the outcome **(p.52)** of crises that make status quo arrangements temporarily untenable for the management agencies. In this regard, crises such as those of Mt. Elden and Sabino Canyon, although often uncivil and uncomfortable for participants, also constituted crucibles of potentially constructive change.

Box 2.1 Lessons for Managers from the Case of Mountain Lions in the West

- Large carnivore management has become much more complicated in recent decades because of the proliferation of different views regarding proper relations between people and wildlife, rooted in phenomena such as urbanization and higher education. This

diversification of views has led to increasingly conflicted expectations and demands regarding the outcomes of large carnivore management.

- Current institutions of state-level wildlife management are intrinsically corrosive to civil society. Current structures lead to tendencies to serve the special interests of hunters, anglers, and agricultural producers and to disregard the interests of all others. Reforms are needed in terms of funding, culture, and representation if state wildlife management is to serve the common interest.
- Scientized and business models are intrinsically problematic for large carnivore management. Scientized management presupposes that problems are objective phenomena to be discerned and solved by technical experts, who therefore logically hold power. Business models of management presuppose that government agents serve customers with products, without defining who the customers are or what the products should be. Neither model fosters attention to quality of governance or civil negotiation among those with different interests.
- Symbolic projections by participants, whether of their identities or worldviews, often have a strong inflammatory effect on conflict in management of large carnivores. Gains in the common interest are likely to be made by refocusing participants on solving practical problems that are of limited scope and scale.

Conclusion

Mountain lion management in the western United States exemplifies natural resource cases where the policy process and related discourse are organized largely around symbolic rather than material stakes. Few individuals make a living off mountain lion hunting (Mattson and Clark 2010a). Wildlife management agencies, AGFD in particular, typically make little money from selling permits to hunt lions (in 2010, \$14.50 per tag). Comparatively few agricultural producers are substantively affected by lion predation on livestock (Mattson and Clark 2010a). Fewer people yet actually see these elusive, largely nocturnal predators. People engaged in mountain lion management seem to be primarily motivated by the idea of mountain lions, whether for good or bad, depending on the individual's view of the proper relations between people and wildlife (Mattson and Clark 2010b). Participants are also seemingly caught up in the symbolic identities of those who threaten them and their core beliefs (Charon 2007). In this respect, these symbolic dynamics predictably touch on deep existential issues (Yalom 1980; Cooper 2003). Under such symbolically and existentially potent circumstances, people typically have little access to rationality and as often as not end up driven by anxieties translated into fear and anger. Moreover, these emotions are often organized around group identities and the demonization of threatening others who are outside the group (Alon and Omer 2006). Simply appealing to logic or rationality has little prospect of moving participants toward greater civility (Koger and Winter 2010). Hope for change resides primarily in changing incentive structures and providing venues that both deflate the symbolic issues and foster intrinsic capacities for empathy (Wondolleck and Yaffee 2000; Armitage, Berkes, and Doubleday 2007; Mattson and Clark 2010b).

As a larger issue, mountain lion management highlights some problematic aspects of American culture that drive these dynamics perhaps every bit as much as does the nature of the wildlife management institutions. The success of a liberal democracy hangs in the balance of people ardently pursuing their own interests, yet honoring and respecting the interests of others, especially as expressed in decision processes that are designed to arrive at common interest policies (McDougal, Lasswell, and Chen 1980; Dahl 1982).

(p.53) This notion of honoring and respecting is encapsulated in the notion of civility (Shils 1997). Civility is especially vulnerable to not only hedonistic and narcissistic impulses, but also to paranoia and strident ideology. In the case of mountain lion management, ideology and fear appear to characterize both the identities and interactions of many participants. The United States has long had social and cultural institutions that foster civility, already well developed at the time of Alexis de Tocqueville's writings (Tocqueville 1839). However, these founts of civility and social capital are in decline (Putnam 2000). Mountain lion management is perhaps a microcosm of our diminished capacity for respectful engagement on common ground to seek common interest solutions, regardless of the institutional context. Reform of mountain lion management is contingent on stakeholders' democratic character, but ideally lion management itself would contribute, in turn, to building civility and trust.

Appendix Decision Activities, Standards, and Effectiveness in Mountain Lion Conservation in the West

Intelligence

Recognizing the problem and gathering information.

Dependable

Comprehensive

Selective

Creative

Open

Intelligence in this case has been moderately comprehensive but nonetheless strongly biased toward ecological factors. Since 2000 three different books have synopsized the state of knowledge regarding mountain lion ecology and management in terms understandable by the educated public. Even so, routine management of lions is based on indices of ecological and human factors that are of limited reliability. The intelligence function in mountain lion management has often been highly politicized, very likely because the arena has lacked open fact-finding approaches that jointly involve stakeholders and help build shared and accepted understandings of how the world might work as a basis for creating mutual gains policies and solving concrete problems.

(p.54) Promotion

Open debate, in which various groups advocate for their interests or preferred policy.

Rational

Integrative

Comprehensive

Promotional activities in mountain lion management have often been polarizing and divisive and, in authoritative venues, typically structured to serve the interests of those who are part of the power in-group. Nonconsumptive stakeholders have at times resorted to inflammatory rhetoric and opportunities provided by news media to promote their preferred policies, primarily because routine access to authoritative decision making has been lacking. Promotion also often takes place under auspices of ballot initiatives designed to intervene authoritatively in routine decision making by agency personnel and commissioners. Politicization of promotion has often precluded rational, integrative, and comprehensive debate.

Prescription

Setting the policy, rules, or guidelines.

Effective (stable expectations)

Rational

Comprehensive

Authoritative prescriptions have typically served the interests of hunters, under the premise that hunting is both necessary and virtuous and the often tacit assumption that mountain lions are competitors for deer, elk, and bighorn sheep. Avoidance of litigation has also often been a driver of sport-hunting prescriptions putatively designed to protect human safety. Many prescriptions end up not being particularly rational or effective because there is little or no science supporting the notion that sport hunting of mountain lions yields more deer or makes the world safer for people. Prescriptions have also often been bounded in scope because participation by nonconsumptive stakeholders has been institutionally limited.

Invocation

Implementation.

Timely

Dependable

(p.55) Rational

Nonprovocative

Policy prescription and invocation often go hand-in-hand in management of mountain lion sport hunting. The circumstances under which prescriptions are to be implemented are often clearly specified during policy development. Under these circumstances, invocation is typically timely, rational, and dependable. However, invocation of policies designed to protect human safety or limit depredation of livestock or bighorn sheep have sometimes been highly provocative, largely because of the de facto exclusion of certain stakeholders from earlier authoritative promotion and prescription activities. Invocation then becomes a time when those who have been marginalized have the opportunity to revisit promotion and prescription either through highly politicized public discourses or through litigation.

Application

Dispute resolution and enforcement of the prescription.

Rational and realistic

Uniform

Resolution of disputes in mountain lion management has typically been uncivil, divisive, and inflammatory. Resolution has often been the outcome of litigation, ballot initiatives, and media-framed incidents, none of which are intrinsically ameliorative. In this regard, application has not often been realistic, at least relative to the goal of sustaining civil society and serving the public trust. Nor has resolution often been particularly rational within or consistent across cases, largely because of the often politicized way in which information has been handled by everyone involved, as well as the inflamed emotions evident during this phase of the policy process. Perhaps the most rational and consistent policy applications, at least framed in terms of policy fulfillment, have occurred as an outcome of deliberations entrained by litigation, primarily because legal deliberations explicitly mandate some measure of rationality.

Appraisal

Review and evaluation of the activities so far.

Dependable

Rational

Comprehensive

(p.56) Selective

Continuing

Independent

Appraisal has been consistently weak to nonexistent in mountain lion management, especially related to performance of decision-making processes. Even in assessing ecological factors such as effects of sport hunting regimes on lion populations, appraisal has often appeared to be more a defense of past policies than a dependable and rational assessment. Authoritative appraisals have virtually never been independent. Even appraisals by nonconsumptive stakeholders have not been truly independent and seem designed more to promote a partisan cause than reliably evaluate management practices. Most appraisals of decision making in mountain lion management have been done by academics, who have probably come closest to reaching the standards of a good evaluation, but with little prospect of influencing those in power.

Termination/Succession

Ending or moving on.

Timely

Comprehensive

Dependable

Balanced

Ameliorative

The ending of policies has been perhaps one of the most conflicted and politicized aspects of the mountain lion policy process. Much conflict has been organized around nonconsumptive stakeholders attempting to end policies centered on killing lions, whether for sport, human safety, depredation control, or conservation of deer, bighorn sheep, and elk. Conflict and debate have often dragged on for years and have involved highly partisan uses of information. The result has been termination processes that are untimely, unbalanced, undependable, highly selective, and certainly not ameliorative.

Overall Standards

Honest

Economical

Technically efficient

Loyal and skilled personnel

(p.57) Complementary and effective impacts

Differentiated structures

Flexible and realistic in adjusting to change

Deliberate

Responsible

Overall, mountain lion management in the West has been corrosive to civil society. Authoritative policy processes have been organized around serving the special interests of hunters and agricultural producers, largely to the exclusion of all others. As a result, marginalized stakeholders have resorted to inflammatory methods to gain access to authoritative decision making. Those in power have responded largely by defense of the status quo. Throughout, use of information, scientific or otherwise, has been highly politicized. These dynamics have led to chronic disservice of the public interest, inefficiencies in use of all resources, institutional rigidity, and lack of adaptive responses to changes in culture and other external circumstances. Virtually everyone involved has apparently felt disrespected and demoralized to some extent.

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Notes:

(1) . I accessed information on tag fees charged during 2010 for big game species in eleven western US states (Washington, Idaho, Montana, Wyoming, Oregon, California, Nevada, Utah, Colorado, New Mexico, and Arizona) using online access provided by each state's wildlife management agency. Fees charged for bighorn sheep tags averaged 7.8 times more than fees charged for cougars for state residents (\$222 versus \$28), and 6.5 times more for nonresidents (\$1,438 versus \$222). Similarly, fees for bighorn sheep tags were 7.1 and 5.2 times greater than fees for deer tags for residents and nonresidents, respectively.

(2) . The document edited by Nobile and Duda (2008) constitutes an authoritative statement of the philosophic underpinnings of current state-level wildlife management, called the North American Model of Wildlife Conservation. The paramount role of scientists and technical experts is described. Mahoney et al. (2008) articulate the seven core principles of the North American Model and then identify problems, challenges, and opportunities for each. Even though explicit reference is made to the principles of public trust, democratic rule of law, opportunity for all, and legitimate use, which bespeak equitable goals, the content makes clear that the primary beneficiaries of wildlife management are hunters and that the defining management tool is hunter harvest. The restriction of equity principles through partial incorporation in symbolic rather than substantive form is remarkable ("restriction through partial incorporation," Brunner and Steelman 2005).

