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## 8 The Killing of Grizzly Bear 209

### Identifying Norms for Grizzly Bear Management

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The U.S. Fish and Wildlife Service listed grizzly bears (*Ursus arctos horribilis*) as "threatened" in the continental United States in 1975 under the U.S. Endangered Species Act (16 U.S.C. §1533; 50 C.F.R. §17.11 at 74). According to the Grizzly Bear Recovery Plan, the goal of grizzly bear recovery has been to establish "viable populations in the areas where the bear existed or [was] thought to exist in 1975 and which are capable of supporting viable populations." However, people now occupy or use many of the areas suitable for grizzly recovery. People and bears on the same land leads to conflict over resources on that land. Although often discussed as "nuisance bear management," which implies a problem with managing bears, the policy problem in dealing with conflicts between humans and bears is really a problem of managing people's expectations about how resources shared by humans and bears are allocated and how conflicts over those resources are resolved.

One of the last remaining populations of grizzly bears lives in the Greater Yellowstone Ecosystem (GYE), approximately 7.6 million hectares of public and private land comprising two national parks, seven national forests, three national wildlife refuges, and three national wilderness areas. A series of incidents began in 1992 between grizzly bears and ranchers—and subsequently government agencies and the

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public—in the community of Jackson Hole, Wyoming, which lies within the GYE. These incidents, which continue today, make it clear that many citizens, government officials, ranchers, and conservationists differ in their expectations about how people can and should handle themselves and bears to prevent, reduce, or deal with conflicts between bears and humans.

One of the most intense reactions to these management incidents involved the killing of Grizzly Bear 209, a nine-year-old male. Officials from the National Park Service, Wyoming Game and Fish (WYGF), and the U.S. Fish and Wildlife Service had agreed that 209 was of "nuisance status" (Bruscino, interview 1997; Cain, interview 1997; Moody, interview 1997). WYGF personnel captured 209 in Grand Teton National Park (GTNP) on August 4, 1996. They took Bear 209 to their office in Lander and lethally injected him (Moody, interview 1997).

The public responded to this decision immediately and intensely in the days and weeks following the incident, and the death of Bear 209 was still being referred to a year later. This reaction, in addition to numerous court cases over grizzly bear recovery, indicates that expectations about whose activities—grizzlies' or humans'—should take precedence in which cases and about who should resolve such conflicts remain unclear.

### Standpoint and Methods

In this paper, I examine events leading to the decision to kill Bear 209 and the reaction that followed to understand better how participants—citizens unaffiliated with other organized interests, government officials, conservationists, ranchers, and researchers—think the decision process in the grizzly bear recovery program should be run. Whose views do they think it should include and under what circumstances, and how do they intend to include and decide among conflicting values or find areas of common ground to secure common interests? Based on this understanding, I recommend ways to improve the process of decision making so that management actions resulting from grizzly bear-human conflict will meet the expectations of those concerned with grizzly bear recovery and will minimize deprivations among participants.

The idea of investigating a particular incident, such as the death of Bear 209, and the reaction to it in order to clarify normative expectations comes from international law and policy. W. Michael Reisman and Andrew R. Willard, scholars at Yale Law School, have devised a method called "incident analysis" (Reisman and Willard 1988). Reisman

man argues that understanding normative expectations is important because "shared notions of what is right influence perception, reaction, and capacity for mobilization. These inferences about what other actors think is acceptable behavior . . . are almost entirely derived from the responses of key actors to a critical event" (Reisman and Willard 1988:5). In analyzing reactions to the killing of Bear 209, I have found that in their reactions to his death, participants have articulated their notions of what is right—of what they expect in a normative sense from grizzly bear recovery policies. Some key questions are: To what extent and how do different actors pay attention to the responses of other actors, and how does ignorance or misunderstanding of others' expectations affect grizzly bear recovery?

To understand the complex issues and interactions that led to the decision to kill Bear 209 and the subsequent reaction, I acted as a collector, spectator, interviewer, and participant observer. I began to understand the perspectives of residents toward grizzly bears by conducting an attitudinal survey in the summers of 1996 and 1997. I began studying the Bear 209 case by surveying books and articles on grizzly bear management written by academics and researchers. These provided me with analysis and a historical context. I then read government documents, such as the environmental assessments of grazing allotments and reports on grizzly bear-human conflicts, confrontations, and management actions, to understand better the written prescriptions. Also helpful in understanding reactions to the killing were newspaper and magazine articles and editorials about Bear 209 and grizzly bears in general, and records of personal communication among citizens, conservationists, and government officials. I then spent June to August 1997 in Wyoming interviewing ranchers, government officials, unaffiliated citizens, conservationists, and researchers. Finally, I attended and participated in several meetings regarding natural resource issues in the GYE.

Throughout the research and writing process, I was driven by differing motivations. As a student pursuing a doctorate in natural resources policy, I am interested in the role of myths, symbols, and institutions in shaping the perspectives of participants in policy processes and how to use the policy sciences analytic framework to improve natural resources policy. I am also dedicated to finding ways of improving public participation in policy processes. Grizzly bear management has provided an interesting case study in attempting to apply the policy sciences framework and to understand the ways in which myths shape our behavior, how we identify ourselves, the symbols we encounter on a daily basis, the institutions within which we operate, and our role in

making policy decisions or in influencing those decisions. In my recommendations, I discuss my ideas on creating decision-making processes, which include a range of participants and their perspectives in gathering and disseminating information; finding creative and effective ways of working through recurring conflicts; prescribing, invoking, and applying these alternatives; assessing existing policies; and finding ways to change policies that no longer work.

In these recommendations, it will become clear that I am biased in the sense that I believe more inclusive processes will lead to better decisions, meaning that they will address the concerns of more participants and reflect democratic ideals. I also recognize that I have two salient predispositions that have influenced my interpretations of my research results: (1) I was drawn into the field of natural resources because of my concern for the environment (therefore, for keeping species like grizzly bears alive), and (2) I am interested in people; I was drawn into policy because of my concern for including people in studies of the environment not as obstacles to overcome, but as part of working, living, functioning, viable ecosystems. I hope stating explicitly my motivations and biases will allow readers to draw their own conclusions about my analysis and data.

### The Killing of Bear 209

On August 4, 1996, the Wyoming Department of Game and Fish captured Bear 209, a 9-year-old, 550-pound male grizzly bear, on the Elk Ranch East (ERE) in GTNP. He was trapped in a leg snare in the park and lethally injected. The capture and subsequent destruction of the bear came in response to the bear depredating on eleven calves over a three-week period in July 1996 (Gunther and Brusolino 1997). The bear's long history of cattle depredation and earlier attempts at translocation influenced the decision to destroy the bear.

Bear 209 had preyed on cattle previously and was captured by the WYGF on July 14, 1993, on the Blackrock/Spread Creek (BRSC) grazing allotment in the Bridger-Teton National Forest and on September 8, 1995, on the ERE allotment in GTNP in an area bordering the western side of the BRSC allotment (Table 8.1). Both times, Bear 209 was moved to the northern end of Yellowstone National Park, and both times he returned to the BRSC grazing allotment. He had also been captured on the BRSC grazing allotment earlier, in 1994, but was released on site to prevent jeopardizing a study of cattle-grizzly interactions being conducted on the BRSC and ERE allotments. Bear 209 was responsible for a total of sixteen cattle depredations.

Table 8.1. History of Management Actions Involving Grizzly Bear 209

	July 14, 1993	Aug. 5, 1993	June 18, 1994	Sept. 8, 1995	Aug. 3, 1996
Activity	1st management capture	Lost radio collar	Research capture	2nd management capture	3rd management capture
Location	Baldy Mt., BTNF, Situation 2		Spread Creek Allotment Situation 2	ERE Allotment, GTNP Situation 2	ERE Allotment, GTNP Situation 2
Management action	Move to Yellowstone National Park		Released on site	Move to Yellowstone National Park	Euthanized

Note: This information is maintained by and was obtained from the Interagency Grizzly Bear Committee. Management actions involving grizzly bears are guided by a management situation (MS) zoning system. In MS 2 habitat, grizzly bear and human activities hold equal priority, and it is legal to remove bears from these zones. A more thorough consideration of this system is given in the text. BTNF = Bridger-Teton National Forest; ERE = Elk Ranch East; GTNP = Grand Teton National Park.

Widespread public reaction followed the death of Bear 209. Newspapers printed numerous articles, editorials, and letters to the editor;<sup>1</sup> correspondence and personal communication occurred between the superintendent of GTNP, conservation groups, and unaffiliated citizens (e.g., Lichtman 1997b; Neckels 1996; Taylor, interview 1997); letters were written to Secretary of the Interior Bruce Babbitt and to the head of the National Park System (Stratton 1996a); in 1996 a citizen organized a petition protesting the killing and collected 831 signatures from residents and tourists; conservation groups mentioned Bear 209 in their newsletters; and an epitaph for Bear 209 appeared on the World Wide Web (Landreth 1996; Stevens 1996). The office of public relations at GTNP responded to public outcry over the bear's death with a management summary of the death justifying the decision (National Park Service 1996). The death of Bear 209 is even being invoked in current policy debates over whether to allow grazing to continue in GTNP on leases that have expired under the original authorizing legislation but which have been extended by the park superintendent and a congressional bill (S. 308). Bear 209 is also being referred to in editorials about conservation biology and the need to improve conservation policy (Camenzind 1997a; Camenzind and Taylor 1996; Taylor 1997; Turner 1997).

### Social Context

The widespread public reaction to the death of Bear 209 occurred in the context of an ongoing and heated debate about grizzly bear recovery. Although members of the WYGF were responsible for trapping and killing Bear 209, a number of other participants—operating under different perspectives, in different situations, with different base values, using various strategies, seeking often opposing outcomes—were involved in the decisions and events leading up to and following the death. These participants include the bears themselves, researchers, government officials, ranchers, conservationists, and unaffiliated citizens. Each individual differs in his or her perspectives; yet, the discussion that follows concerning the perspectives of these participants necessitates some generalization of participants in each category.

It is difficult to determine the perspectives and base values of the bears, other than in biological and well-being terms. Bears require large tracts of continuous habitat and large amounts of food to survive. Their situation is bleak in terms of these requirements—they have been reduced to 2% of their former range and depend on a decreasingly available natural food supply. Although bears are omnivorous, which means they eat foods as diverse as moths, ants, whitebark pine, biscuit root, and carcasses, bad natural food years tend to lead to increased mortality because as bears search for alternate sources of food, they often come into conflict with humans (Craighead et al. 1995). They also occasionally kill calves, be they elk or domestic cattle, and seem unable to distinguish between domesticated and wild calves (Bruscino, interview 1997; Moody, interview 1997). Grizzlies seem to avoid people—use of prime habitat decreases with increasing human recreational use, for example (Gunther 1996). This may be advantageous, because increased contact with humans leads to higher mortality rates. Bear biologist David Mattson says that grizzly mortality in the GYE—which is almost solely human-caused—is based on two factors: (1) frequency of contact with humans and (2) lethality of contact for the grizzly (Mattson, personal communication 1997; Mattson et al. 1995). Grizzlies also have slow reproductive rates, so the death of one or two bears could potentially affect the genetic and population viability of bears, although the impact of each death on the population given its current size is currently being debated.

The debate over the viability of the existing population of bears takes us to the next category of participants—researchers. This category overlaps with government agencies because much of the research used to inform and justify decisions comes from the Interagency Grizzly Bear

Study Team (IGBST), an effort to coordinate information gathering and processing among agencies involved in grizzly bear management. Although researchers, whether working for the government or not, typically have similar perspectives and base values, government researchers operate in different situations and experience different outcomes from researchers not affiliated with the government. For example, scientists on or working with the IGBST have more authority and control in the decision-making process than do those outside the IGBST.

Government researchers continue to conduct research using positivistic methods and to inform, make, or justify decisions in accordance with the data gathered and their interpretation of prescriptions. IGBST data focuses on biology, and ecology, and the effects of human activity on bear behavior and populations, with few if any studies on the influence of human values on decision making. The public has criticized many of these decisions, and senior government officials have often ignored the advice of lower-level officials. Not surprisingly, some researchers and lower-level officials have experienced feelings of disrespect (Bruscino, interview 1997; Moody, interview 1997).

The practices of researchers—governmental or not—seem to be shaped by a faith that research is value-neutral and that scientists can form nonsubjective views based on facts. Many of the researchers consider themselves objective and demand access to information, the ability to study bears in the parks, and the authority to influence decisions with the data they gather and analyze. They use enlightenment and skill in their attempt to attain a certain amount of power and respect. This strategy has often failed, as indicated by those outside the IGBST who express frustration over not having their data considered in management decisions. For example, according to Craig Pease, a University of Texas zoologist who presented data challenging population estimates of the IGBST, “one side of the argument . . . has been cut out of affecting management policy” (Neal 1995). John Craighead, a grizzly bear researcher whose work with Yellowstone National Park ended in conflict, reports that “despite being allowed some latitude in its research, the IGBST was constrained by park administration from full interagency cooperation and from using the data from, or even citing, the many publications documenting our study” (Craighead et al. 1995).

Government officials include not only those conducting research but also those making decisions. Government agencies involved include Grand Teton National Park (National Park Service), the WYGF, the U.S. Fish and Wildlife Service, and the Bridger-Teton National Forest (U.S. Forest Service). All agencies hold a certain amount of authority, but the WYGF apparently maintains control over situations involving

bear management actions in GTRP and the surrounding area. The focus of attention, zone of activity, and level on which government officials in each agency operate seem to influence their base values, situations, strategies, and outcomes. Officials who have continual contact with certain members of the public seem to be driven by affection as much as enlightenment and skill. Continual contact with those affected by bear activity seems to lead to a sense of loyalty by officials toward those people with whom they work and from whom they hear complaints on a regular basis. Although these officials recognize, through such contact, the emotional and political side of bear management, they think of themselves as objective experts.

I was unable to speak with any of the highest officials in any government agency—either my calls went unreturned or I was rerouted to public relations specialists—so my analysis comes secondhand from those who have dealt with such officials. Many top officials seem to be most interested in power and respect and tend to focus their attention and energy on those who can enhance their power. Citizens have complained that top officials express annoyance when the public makes demands that oppose their decisions. Many of their strategies seem coercive, and although they have maintained power and gained respect from other powerful community members, they have lost the respect and loyalty of many conservationists, unaffiliated citizens, researchers, and even lower-level members in their own organizations.

I found a range of perspectives in the ranching community. Overall, they have expressed a sense of insecurity about the future of ranching. In magazines such as *Range* (e.g., McInnis 1997) and in my discussions with ranchers, many spoke of the “good old days,” the services ranchers provide for the country, the role of ranching in maintaining open spaces, and the public’s lack of appreciation for ranching. The identity as a rancher who is loyal to other ranchers or as a cowboy loyal to the cowboy culture seems strong even among many who no longer ranch as their main occupation or source of income. Ranchers are concerned about what the public outside their community thinks about allowing grazing in the park and on public land, and they have a great deal of respect for the government officials who make decisions that affect their ranches. For example, one member of the Elk Ranch East claimed he would have preferred that Bear 209 remain alive because he knew a public outcry would result, but that he respected WYGF officials’ need to enforce their own policies as they see fit (Mead, interview 1997).

Independent citizens involved in responding to the killing of Bear

209 and conservation interest groups seem similar in their perspectives. Members in these groups include people as diverse as photographers, lawyers, outfitters, and advocates. Many seem driven by rectitude and feel compelled to act, to do something to change what they dislike about the policy process they observe and in which they participate. For example, the citizen who organized the petition claimed she wants to maintain good relations with both GTRP and Yellowstone National Park (YNP), but she feels strongly enough about preserving bears and wolves to question activities such as killing grizzly bears for eating cattle in GTRP (Stratton, interview 1997). These participants maintain expectations about the goals of national parks and the actions of officials in those parks. For example, a member of the Jackson Hole Alliance for Responsible Planning remarked that the alliance “mentioned this [in 1995]—they’re moving bears in a national park in response to grazing. They continue to extend this grazing and make decisions based on that. This begs for a review” (Thuermer 1996a). The situations in which these groups operate include channels of personal communication, letters to the editor, and the courts. Thus, they use persuasive, assembling, and processing strategies. They often win court cases but may not feel any sense of power or respect in the long run.

Overall, participants expect that people and wildlife can get along. However, the formulas for doing so are subject to debate, with some people favoring more control of human activity and some favoring more control of wildlife activity. The same phenomena—the bears themselves, the incidents in which they become involved, the decisions made, the numbers generated by scientists—are used to support the differing perspectives. The debate, then, is shaped significantly by myths.<sup>2</sup> Expectations concerning how bears should be managed—the prescriptions and their invocation and application—emerge from the myths people hold, how they identify themselves in the context of those myths, and where they place their loyalties. When myths clash, the outcome is that some people feel indulged in seeking certain values, but most people feel deprived in some way. Trust seems eroded in the decision-making process. Those seeking respect feel disrespected; those seeking power feel powerless; those seeking affection feel rejected or torn between competing loyalties; those seeking rectitude feel slighted; those operating under enlightenment and skill feel unable to fulfill the quest for more knowledge or perceive their pursuit as futile. Although the clash of myths often manifests itself in debates over data and specific decisions, at a deeper level it is about these human values.

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### The Conditioning Decision Processes

Countless decision processes intersected in the decision to kill Bear 209. It is beyond the scope of this paper to discuss (and beyond my ability to identify) all the decisions made in grizzly bear recovery that led to the death and the reaction to it. However, those decisions about grizzly bear recovery that seem most influential in the Bear 209 case are discussed below. Such decisions include determinations to move other bears because of their depredation of cattle and determinations about grizzly bear research, grazing in GTNP, delisting the bear, and the allocation of authority and control in decision making about grizzly bears in general.

#### *Trends and Conditions*

Grizzly bears have lived in North America for at least 50,000 years (Servheen 1993). The downward trend of grizzly bear numbers and the increasing predominance of human activity over bear activity began almost two centuries ago. Grizzly populations rapidly decreased as European settlers moved westward and killed large numbers of bears (Botkin 1995). By the 1920s grizzlies inhabited only 5% of their former range, and between 1800 and 1975 the population dropped from estimates of over 50,000 to fewer than 1,000 (Mattson and Craighead 1994; Servheen 1993).

Bears first received protection in 1886 when the superintendent of Yellowstone National Park prohibited the killing of animals in the park, although hunting regulations for bears outside of YNP did not begin until the 1930s (Craighead et al. 1995; Primm 1993; Schullery 1986). When a new administration took over Yellowstone in 1916, it instituted a policy of predator control. Bears, however, were not targeted because they had become a tourist attraction; tourists came to observe bears congregating at dumps to feed on human refuse (Craighead et al. 1995).

Despite a certain level of protection from hunting and predator control actions, statements as early as 1894 report shipping bears to zoos. Superintendent James B. Erwin in 1899 felt that "it might be necessary to 'kill some [bears] to prevent [property] destruction,'" and by 1907 bears were being killed in control measures (Craighead et al. 1995:32-36). Since the establishment of this control policy in 1907 in Yellowstone, there have been fluctuations in the numbers of bears killed in control actions. Overall, from 1907 to 1965 at least 159 grizzlies were killed or shipped to zoos. Craighead and colleagues point out, however, the difficulty of interpreting such statistics; throughout

the early history of management control actions, management control and reports of that control were sporadic: "No guidelines were established defining what constituted a personal injury or damage to property. District Rangers made independent judgments about what should be recorded. . . . [The number of incidents recorded] reflect the judgment of the times" (Craighead et al. 1995:38).

Ecological and biological research that dealt with human-grizzly bear conflicts was also fairly nonexistent. The first field research project on the bears of Yellowstone with management implications was conducted by Olaus Murie, who determined bears could survive without dumps, on natural foods (Schullery 1986).

The issue of dumps was to arise again with the researchers Dr. John Craighead and Dr. Frank Craighead, Jr., in 1970 (Mattson and Craighead 1994). The Craigheads began the first long-term study of bears in Yellowstone in 1959 (Weaver 1996). Throughout the Craighead study, bears continued to congregate at open-pit dumps containing human food waste. By 1967 the park instituted a "natural regulation" policy that called for an immediate closure of park dumps. The Craigheads claim they were prevented from continuing their research in YNP after they openly opposed the park's plan to close the dumps immediately, recommending instead that the park slowly phase out the dumps (Mattson et al. 1995). Their research with the park terminated in 1970.

Following the closure of the dumps, grizzlies began to wander into human developments in search of human garbage, the food to which they had become accustomed at the dumps. They were killed in record numbers during hunting season and in management actions. Thus, scientists, the public, and managers became concerned about the future of the Yellowstone grizzly bear population. However, three years lapsed before, in 1973, the Interagency Grizzly Bear Study Team was created to study the "new" bear population, which had no access to dumps as a food source (Schullery 1986).

The IGBST originally consisted of three members, one from the National Park Service, one from the U.S. Forest Service, and one from the U.S. Fish and Wildlife Service (Mattson and Craighead 1994; Schullery 1986). There are mixed perspectives about the IGBST, its research, and the information generated by its members that is meant to inform grizzly bear recovery policy.<sup>3</sup> According to YNP historian Paul Schullery, "the entire conservation community was waiting to see what the team would find, and was probably also waiting for the slightest opportunity to criticize those findings" (Schullery 1986:143). The Committee on the Yellowstone Grizzlies, a National Academy of Sciences (NAS) committee, convened to review research needs in 1974 and rec-

ommended that most research on grizzlies be conducted by nonagency scientists. Although the IGBST informally includes research conducted by the Wyoming Game and Fish Department and Idaho Cooperative Park Studies unit, bear researchers David Mattson and John Craighead claim the IGBST "does not reflect the original recommendations of the NAS committee that reviewed research needs in 1974 . . . that most research be conducted by non-agency scientists" (Mattson and Craighead 1994:105). They also point out that despite any original professed intentions to engage in interagency cooperation, the only two formal members of the IGBST are two National Park Service personnel. The result, Mattson and Craighead claim, is effective control over research by a single agency (the National Park Service) and in effect, less dependable, reliable, and comprehensive research.

Government agencies became the main actors on research for grizzly bears through the IGBST about the time grizzly bears were listed as "threatened" under the U.S. Endangered Species Act (ESA) in 1975. The ESA preempts any state law inconsistent with its mandates, places authority for grizzly bear management at the federal level, and prohibits federal agencies from executing or supporting projects that could harm a threatened species or its habitat (Miller 1992). A "Grizzly Bear Recovery Plan," required under the ESA (16 U.S.C. §1533 (f)), serves as the key document in recovery and was authored solely by the U.S. Fish and Wildlife Service (USFWS recovery coordinator) (Mattson and Craighead 1994).

The USFWS has authority over the recovery programs of species listed under the ESA, yet the first governing body with control over grizzly bear recovery was the Interagency Steering Committee, established in 1975. The committee was composed of researchers and mid-level managers from agencies with jurisdiction over land considered suitable for grizzly bear habitat and recovery. In addition to fulfilling other responsibilities, it "provided general review and direction for the IGBST research program" (Mattson and Craighead 1994:105). By 1982, the population of bears seemed to be declining and the committee terminated itself, recommending the formation of a committee of higher-level managers with more decision-making power (Mattson and Craighead 1994). Subsequently, an interagency memorandum of agreement led to the formation of the Interagency Grizzly Bear Committee (IGBC) (Gunther and Bruscinio 1995).<sup>4</sup>

The mission of the IGBC is to "guide implementation of the Grizzly Bear Recovery Plan by promoting interagency coordination of policy, management, planning, information and education, and research" (IGBC 1996:2). The IGBC is composed of officials from the USFWS; the U.S. Na-

tional Forest Service (USFS); the National Park Service (NPS); the Bureau of Land Management (BLM); state fish and game agencies of Montana, Wyoming, Idaho, and Washington; and management authorities from British Columbia and Alberta. Using the "Grizzly Bear Recovery Plan," written by the grizzly bear recovery coordinator for the USFWS, the IGBC created guidelines that serve as the main prescription in decisions concerning "nuisance bears" (Moody, interview 1997). A nuisance bear is defined as "any bear involved in a bear-human conflict situation," and episodes involving nuisance bears are defined as "incidents in which bears injured people, damaged property, killed livestock, damaged beehives, obtained anthropogenic foods, or obtained garden and orchard fruits and vegetables" (Gunther and Bruscinio 1997:3, 5).

It is written into the revised 1993 version of the "Grizzly Bear Recovery Plan" that agencies should follow the "Interagency Grizzly Bear Guidelines" and its Management Situation (MS) zoning system in managing nuisance bears, and that "since the inception of the Guidelines, all agencies have worked to implement the policies stated in the Guidelines within and surrounding grizzly bear recovery zones" (Servheen 1993:10). The revised recovery plan states later that "all areas within the recovery zone will be managed as either MS I, II, or III under the Interagency Grizzly Bear Guidelines" (Servheen 1993:17). The recovery plan also states that "bears residing within the recovery zone are crucial to recovery goals and hence to delisting" (Servheen 1993:18), and that "the Guidelines detail protocol for nuisance bear management and also detail grizzly bear habitat management policies" (Servheen 1993:10).

The guidelines give specifications for the agencies which manage land containing grizzly bear habitat, including mandates for national parks that state: "The Park Service will identify, within Park boundaries, grizzly habitat requirement. . . . Active management programs, where necessary, will be carried out to perpetuate the national distribution and abundance of grizzlies and the ecosystems on which they depend, in accordance with the Fish and Wildlife Service" (Mealy 1986). As these mandates for parks indicate, the guidelines require each agency to classify habitat under its jurisdiction according to management situation zones to guide decisions when human and grizzly activities conflict (Mealy 1986).

MS 1 zones contain habitat considered critical for the recovery and long-term survival of grizzly bears, so resolution of grizzly bear-human conflicts in MS 1 zones requires alteration of human activity before bear activity. MS 2 zones contain areas "unnecessary for survival and



recovery of the species, or the need has not yet been determined but habitat resources may be necessary" (IGBC 1986:3). In this ambiguous zone, bear and human activities are given equal priority, and if management decisions must be made in favor of bears, the area should be reclassified. In MS 3, grizzlies may inhabit the area but their presence is infrequent because of the presence of campgrounds, resorts, or other human use facilities. Grizzly bear presence is discouraged in these areas, and any bears found in these areas are controlled. MS 4 zones contain suitable habitat, but grizzlies do not currently live in such areas and grizzly bear-human conflict is not a management consideration. In MS 5, grizzlies are not present or are present only rarely and any bear in the area will be controlled (Mealy 1986).

Although both guidelines for managing bear activity in different MS zones and consultations with the USFWS under ESA Section 7 in theory address trans-jurisdictional boundaries, a congressional committee that appraised natural resources policies in the GYE recommended in 1986 that managers "scrap the Management Situation concept" because "the Situation Management concept currently used by the agencies is not a useful management tool for preventing deaths of grizzly bears" and does not reflect grizzly bear density or habitat quality (Congressional Research Service 1986:15, 144). Law professor Robert B. Keiter makes it clear that "despite clear language in the ESA authorizing the FWS to designate critical habitat for the grizzly bear (16 U.S.C. §1533(a), (b)), the government has refused to extend this additional level of protection to the bear, choosing instead to rely upon an administratively-constructed habitat zoning scheme that does not carry nearly as much legal weight" (Keiter 1991:251). The ESA requires that recovery zones—areas in which members of an endangered population are protected—be declared for endangered species. Keiter believes that MS zoning offers less protection than the ESA prescribes, pointing out that management zones were created without complete data on habitat, do not correspond to grizzly bear use of habitat, and "reflect a series of administrative compromises" (Keiter 1991:251).

Another problem with the MS zoning system is that, in practice, habitat quality and grizzly bear density often have not been given the prominence one would expect from reading the recovery plan or the guidelines in determinations of which parcels of land are designated as which MS zones. An area may be designated as MS 2, 3, 4, or 5 because it is near a road or a recreation area, but it may contain prime grizzly food or habitat conditions. For example, the tourist area known as Fishing Bridge in Yellowstone National Park is designated MS 2 because it is developed with stores, campgrounds, and other services.

However, it is also prime grizzly habitat. Of all injuries related to interaction between grizzlies and humans between 1968 and 1983, 62.5% occurred at Fishing Bridge, resulting in the death of nine female grizzlies (Schullery 1986). Despite park plans in 1974 to close this area because of grizzly habitat quality, commercial interests have taken precedence and Fishing Bridge remains in operation (Primm 1993).

The congressional committee that appraised natural resources policies in the GYE pointed out the discrepancies in maps of bear densities and the zoning of land under the MS zoning system. For example, much of the area in the Gallatin National Forest with the highest density of bears is zoned MS 2, which does not fit the criterion set by the IGBC for MS 2 that "grizzly presence is possible but infrequent" (Congressional Research Service 1986:54-55). In addition, many areas identified as "mortality black holes," in which high numbers of grizzly mortalities occur, lie in MS 1 and 2 habitats (Congressional Research Service 1986:55-56). Therefore, controversy often results over MS zoning designation because an agency may classify areas more on the basis of current human uses than on the basis of habitat quality. This is one more example of the pervasive perspective that bears should be managed, not people.

An additional jurisdictional factor that shaped the reaction to the killing of Bear 209 is the location of the depredation and capture within a national park. The National Park Service Organic Act of 1916 states that parks must "provide for the enjoyment of [the scenery and the natural and historic objects and the wildlife] in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations" (Shanks 1984). This is usually interpreted to mean that extractive uses of park resources—including such activities as hunting, cattle grazing, and mining—are prohibited. However, when Grand Teton National Park expanded in 1950, park officials allowed cattle ranchers with existing leases—on land to be acquired by the park—to continue grazing their cattle in the park until the death of the leaseholder's children (PL 81-787). As I discuss below, the Bear 209 case clarified the differing expectations participants have regarding how decisions should be made when grazing mandates conflict with mandates to leave the park's resources unimpaired and mandates to protect endangered species.

Another complicating factor is that under the original park expansion legislation (PL 81-787), the two ranchers on the ERE, from where Bear 209 was removed, are grazing cattle on expired leases. Park superintendent Jack Neckels extended these leases, justifying the extension by claiming that ranching helps maintain open space in

Jackson Hole (Thuermer 1996a). A bill (S. 308) introduced to Congress by Wyoming senator Craig Thomas to study the relationship between ranches and open space in the West, approved by Congress in 1997, extended the leases for another three and a half years. However, I discuss below the conflicting claims regarding the legality of these extensions.

*Precipitating Events that Influenced the Decision to Kill Bear 209 and the Reaction to the Death*

Delisting

Just nine months before WYGF decided to move Bear 209 from Grand Teton National Park in 1995, the IGBC voted in December 1994 to support a motion brought by the Wyoming Game and Fish director to delist the grizzly bear in the Greater Yellowstone Ecosystem. This attempt to delist the grizzly by the WYGF was blocked subsequently, in part by the outcome of a court case over the recovery plan in 1995. The court case had been initiated by nearly forty conservation organizations in 1993 because they felt the plan failed to measure adequately habitat degradation, threats from disease and livestock, or population size (Carlton 1995; Collins 1995; Shelton 1995a; Thuermer 1995b). In addition, a group of National Academy of Sciences researchers stated that the "Grizzly Bear Recovery Plan" was "deficient because it is not based on scientifically credible data or analysis" (Shaffer 1994). The plaintiffs won the court case, and the judge ordered the U.S. Fish and Wildlife Service to revise the recovery plan. This outcome had the effect of blunting the efforts to delist the grizzly.

The court case is over and conservation groups won that battle, yet debate about bear population numbers still rages. Criteria for delisting include reaching a minimum number of female grizzlies with cubs and not exceeding a maximum number of allowable deaths, a percentage based on current grizzly bear population estimates (consequently, the larger the population, the more allowable grizzly bear deaths). A large part of the deliberation over delisting thus centers on the difficulty of determining the size of the bear population and the number of females with cubs. Data generated by nongovernmental researchers continues to conflict with numbers generated by the IGBST. For example, Craig Pease, a University of Texas zoologist who studies bear populations, says that the IGBST overestimated the numbers of grizzlies and that data generated by the IGBST "are not obtained through rigorous scientific method" (Wilkinson 1995). Such a discrepancy over numbers,

because of delisting criteria, affects delisting debates and management decisions regarding "nuisance bears"; each individual bear is more important to a population close to extinction than it is to a population close to or reaching recovered status.

In addition to debates about numbers, proper research methods to arrive at those numbers, habitat protection, and delisting criteria, there is suspicion about the motivations of various participants for promoting or attempting to prevent delisting. According to one news report, "the Wyoming Game and Fish Department has advocated delisting the grizzly because it wants greater flexibility to manage bears in Wyoming outside the boundaries of Yellowstone and Teton national parks" (Collins 1995). Some conservationists claim that government officials want to delist the bear because they need an endangered species success story. On the other hand, ranchers and government officials have accused members of the conservation community of opposing delisting because they are organized around grizzly bear conservation. Rancher Paul Walton commented in a meeting of the IGBC that "I've never been in a room with so many people that made their living off bears. . . . I'm trying to make a living despite them" (Thuermer 1995a).

Despite the grizzly's current status as "threatened," it seemed that talk of delisting, or at least of classifying the population as growing (although there continues to be debate about this claim), had preconditioned public officials to feel justified in first moving Bear 209 from Grand Teton National Park in 1995 and then killing him in 1996. One official at the forest service believes that it is time to turn attention away from individual bears and turn toward the population (Puchlerz 1997). Additionally, the WYGF bear management officer, referring to the fact that Bear 209 was a nine-year-old male, stated that "totally biologically speaking, the removal of an adult male bear does nothing to affect long-term growth" and that "an important point here is that the population seems to have recovered sufficiently to switch from preservation of all individuals to conservation of the population" (Adams 1996d). Grand Teton National Park superintendent Jack Neckels agreed with WYGF officials, saying in response to citizen concerns over the death of Bear 209, "I believe that the future of grizzly bears in the greater Yellowstone area is secure" (Neckels 1996). Ranchers also seem to agree that the bear can be managed with more discretion. Cliff Hansen, the rancher who leases land on the ERE allotment, said in reference to a proposal to move cattle from the BRSC allotment, "I am persuaded from what I hear from Game and Fish that the grizzly bear has successfully recovered and I think that Mr. Walton ought not to be required to move his cattle from that range" (Adams 1996b).

Thus, the classification of grizzlies as "threatened" remains the same as when grizzlies were first listed under the ESA in 1975, but the application of procedures to manage a threatened species seems to be changing as many decision makers are beginning to regard the grizzly as a species close to, if not already, recovered. Bear 209, according to the claims of many decision makers, was one adult male bear contributing little to the recovery of the species.

#### Controversy over Bear 203 and Moving Bear 209 in 1995

Cattle depredation has been a relatively recent public problem, but one that has received much attention (Moody, interview 1997). While it is difficult to determine the exact "beginning" of the conflict between bears, cattle, and people (see Botkin 1995; Schullery 1986), and the "beginning" of the current formulation of factors that led to the decision to kill Bear 209, it can be shown that the debate over bears and cattle in Jackson Hole began to become public and receive sustained attention around 1992.

About that time, ranchers on the Blackrock/Spread Creek (BRSC) allotment—the allotment adjacent to Elk Ranch East—in the Bridger-Teton National Forest began experiencing high cattle losses caused by grizzly bear depredation. Depredation on this allotment had been recorded and studied in 1948 (Murie 1948), but there seemed to be few interactions between cattle and bears in the intervening years (Claar et al. 1984). The important point is that interactions began to receive wider attention among current participants in 1992.

In response to the increase in depredations from 1992 to 1993 (from six in 1992 to twenty-five in 1993), the Wyoming Game and Fish Department began a study in 1994 in cooperation with a number of agencies to "identify grizzly bear-cattle interactions on [BRSC] and the adjacent Elk Ranch East cattle allotment (ERE) by monitoring bear activity relative to cattle distribution and documenting cattle depredation caused by grizzly bears" (Anderson and Moody 1997:13). It is not difficult to understand how events on one allotment affect the reaction to events on the adjacent allotment. They both occupy prime grizzly habitat and prime grazing land. The original study design allowed depredations to continue for two years to identify habitual depredators, then to remove those individuals the third year to assess the effectiveness of selective removal (Anderson and Moody 1997).

In 1995, the second year of the study, ranchers on the BRSC allotment began to experience high levels of depredation. The frustrated range manager for the allotment said that the state let the depreda-

tions get out of control. He was "tired of dealing with . . . the Game and Fish biologist in charge of the study" who refused to move the depredating bears and "went over [the biologist's] head and called the Game and Fish department director for relief" (Shelton 1995b). WYGF state biologists, who normally make decisions to move or not move bears, were also in charge of conducting the study. They opposed any such translocation because of its effect on their study design. However, because of the complaints from the range manager, the bear management officer was ordered by the director of the WYGF to move Bear 203, the bear responsible for depredating cattle on the BRSC allotment (Bruscino, interview 1997; Moody, interview 1997; Shelton 1995b).

The trap was set for the capture of Bear 203, but Bear 209, which had been depredating cattle on the ERE allotment on MS 2 habitat adjacent to the BRSC allotment, was captured in Grand Teton National Park. He was moved, according to the official with the authority to make such decisions, because the order to move Bear 203 would already compromise the study design. In the meantime, the Sierra Club Legal Defense Fund and other area conservation groups filed an intent to sue to halt the proposed translocation of Bear 203 because his depredations occurred on habitat designated as MS 1. (MS 1 habitat requires that human activity be altered before bear activity occurs.) The conservation groups invoked the ESA and "formally warned the U.S. Forest Service that it will be in violation of the Endangered Species Act if it allows grizzly bears to be trapped and moved from prime habitat in Wyoming without first considering and implementing alternative actions" (Staff 1995). So Bear 203 was scared away, and his removal was blocked by mandated protection under MS 1 habitat.<sup>5</sup>

According to the final WYGF study report, the intended study design of monitoring depredations for two years before taking management actions in the third year was changed "due to the contentiousness of the depredation issue" and "resulted in the early translocation of 1 bear [Bear 209] from MS 2 habitat" (Anderson and Moody 1997:13). MS 2 habitat allows bear activity or human activity to be altered to resolve conflicts between bears and humans, and it is significant that the study specifically states that the bear was removed from MS 2 habitat; the intent to sue stabilized expectations that bears receive priority on MS 1 habitat.

Despite the controversy surrounding the study, WYGF researchers suggested management strategies as a result of the study's findings. For example, they found that older males are the most common chronic depredators, but killing cattle is an individualistic trait in bears (Anderson and Moody 1997). Consequently, the researchers proposed to

continue the policy of moving depredated bears and killing ones that return. The authors state, "It is not realistic or in the best interest of the grizzly bear population to force cattle operators to live with management burdens created by depredated grizzly bear, or to require them to abandon all allotments inhabited by grizzly bears" because it would increase the likelihood of ranchers "implementing their own management actions" (Anderson and Moody 1997:52). Other agencies involved in managing land on which bears kill cattle agree with such perceptions. For example, Dale Gomez, a wildlife biologist for the Bridger-Teton National Forest, said that "removing cows would end up getting bears killed because of the fragile acceptance of bears in rural areas. The tolerance of good bears would really drop" (Adams 1996a).

The study recommended no change in current management practices, which means grazing will continue on the BRSC and ERE allotments, cattle carcasses will continue to be removed to prevent bears from being attracted to the allotment, and aversive conditioning techniques will continue to be used on Bear 203 (Anderson and Moody 1997). There are no contingencies concerning what should be done if different bears, displaying behavior different from that of Bear 203, begin to depredate these allotments.

The series of events during the WYGF study stimulated criticisms of the grizzly bear recovery program. In response to the removal of Bear 209 in 1995, the Jackson Hole Alliance for Responsible Planning sent a letter to GTNP superintendent Jack Neckels that stated, "by condoning the removal of a grizzly bear off National park land, you have reneged on your word, you have wasted limited agency funds, and you have potentially seriously jeopardized an important study" (Garland and Lichtman 1995). An editorial in the *Jackson Hole News* mentioned that the removal of Bear 209 in 1995 "gummed up the scientific integrity of the study" (Anonymous 1995). Even those conducting the study expressed similar sentiments that because of orders from top WYGF officials, "the study fell apart at that time" (Moody, interview 1997).

The claims about the WYGF study, particularly charges that it had been changed to accommodate special interests, reiterate complaints made previously about intelligence in the recovery program. The effect of moving Bear 209 on the WYGF study illustrates an absence of creativity, reliability, and openness in the intelligence phase of the grizzly bear recovery program. Participants have expressed concern that the design was compromised for the interests of one rancher, and this decision led the public—and even those conducting the study—to call into question the dependability and openness of the decision-making process. One editorial claimed that "Before 203 could be caught, he

slipped away. Instead, another cow-killer in nearby Grand Teton National Park, Bear 209, was trapped. With nine cattle kills to his credit this year, he appears to have been a good enough substitute, and so was shipped off to Yellowstone. . . . Now thousands of dollars, long hours of study and difficult work with dangerous animals has been undermined. And the move didn't even satisfy the complaints of the main protester—Terry Schramm—nor take care of the principal 'problem'—Bear 203" (Anonymous 1995). Thus, the WYGF study, as part of the larger trend described above, indicates the lack of public trust in the dependability of data collected that informs decision makers about how to proceed in grizzly bear recovery.

Interviews with agency officials, on the other hand, indicate that they feel deprived in terms of respect because of the lack of public trust in their decisions. They see themselves as skilled decision makers and scientists, and feel that they know better than anyone else the reasons for their decisions. While some participants object to the institutionalization of intelligence within the IGBST and its exclusionary nature, they do not seem to dispute the competence of individual researchers in that system. For example, one of the lessees says that he supports the decisions WYGF officials feel they must make (Mead 1997), and a member of the Jackson Hole Alliance for Responsible Planning expressed similar respect for the research abilities of those in WYGF (Camenzind, interview 1997).

The removal of Bear 209 from GTNP and his death in 1996 followed a long-standing controversy over how to handle grizzly bear-cattle interactions as well as how to collect data and how to proceed with the recovery program. Controversy had already increased with the removal of Bear 209 in 1995, with no change in the procedure for handling grizzly bear-cattle conflicts or public reaction to management decisions. With the death of Bear 209, however, the stakes increased. This was an endangered species in a national park eating cattle that, according to some participants, were in the park illegally.

### Reactions to the Death of Bear 209

The location of Bear 209 on MS 2 habitat—but habitat that was in a national park—two of the three times he was removed (see Table 8.1) raised the issues of conflicting authority and conflicting prescriptions in grizzly bear management. Both the Blackrock/Spread Creek and Elk Ranch East allotments include primarily MS 1 (47%) and 2 (39%) zones, with some MS 3 and 5 zones (14%) located near roads (Anderson and Moody 1997). In MS 1, grizzly activity receives priority; in MS

2, bear and human activity receive equal priority; in MS 3 and 5, grizzly presence is discouraged and grizzlies are controlled (Mealey 1986).

Jay Lawson, wildlife division chief of the WYGF, justified the killing of Bear 209 because the bear was on MS 2 habitat (Barron 1996). Pam Lichtman of the Jackson Hole Alliance for Responsible Planning stated that although she disagreed with the decision, "they have every right to move this bear because it's in Situation 2" (Adams 1996d). Steve Thomas of the Greater Yellowstone Coalition also expressed concern that there were no grounds for legal action in this case because Bear 209 was in MS 2 habitat (Landreth 1996). However, an attorney for the Sierra Club Legal Defense Fund said "MS designations had nothing to do with habitat quality. [The land from which 209 was taken] was designated MS 2 because they already had grazing" (Angell, interview 1997). Some conservationists, however, are reluctant to push this point because they apparently feel that following the intent to sue over the planned removal of Bear 203, grizzlies at least receive protection in MS 1 habitat (Lichtman, interview 1997).

The management situation zoning system is one component of a larger interagency effort to coordinate management. In theory, MS zoning offers prescriptions for handling human-grizzly bear conflicts uniformly across agency jurisdictions. However, many participants referred to the conflicting mandates of protecting resources in national parks and following management guidelines established for different management zones. Jack Neckels, GTNP superintendent, remarked that "If the Greater Yellowstone area is to be managed as a whole, with all agencies involved cooperating for the good of the resources, especially recovering populations like the grizzly, then management actions must adhere to determined guidelines that work to protect resources and the human interests in the area. In the long run, such cooperation will do the most to protect this precious [open] space" (Olson 1996). Additionally, a GTNP management summary of the killing of Bear 209 states that "as full cooperators in the interagency grizzly bear management agreement represented by the Guidelines, GTNP may occasionally be required to take action against livestock-depredating grizzly bears" (National Park Service 1996). Thus, the park superintendent and other park officials justified in part the decision to kill Bear 209 by identifying GTNP as part of a larger area with resources crossing political boundaries. They claimed essentially that if they are going to cooperate with other agencies in managing resources, decisions like the one to kill Bear 209 are inevitable.

Another complicating factor in this case is the mandate to allow grazing in GTNP. Park officials argue that in addition to coordinating

management efforts, they are also legislatively required to permit grazing, which burdens them with additional responsibilities in making management decisions: "The action [the killing of Bear 209] is atypical for the National Park Service and somewhat inconsistent with the values and management direction the public associates with the park. The uniqueness of the situation lies in the fact that, unlike almost all other national parks, GTNP has been mandated by legislation to permit livestock grazing within its boundaries" (National Park Service 1996). Thus, GTNP is aware that the killing of Bear 209 was "atypical" for activity within a national park. However, it justified this action on two grounds: (1) that it is part of an interagency effort to manage bears (and other resources), and (2) that it was necessary because of the unique grazing situation in the park. It may be significant that the language used in the management summary quoted above states that the inconsistency of Bear 209's death with park values and management direction emerges from what the "public associates with the park," and not necessarily with how park officials view those park values and management directions.

In contrast to the acceptance of the claim of legality under MS zoning (despite debate about the zoning itself), many participants do not see interagency coordination efforts or the special grazing situation in GTNP as legitimate reasons to kill a grizzly in a national park. A petition organized by a local citizen and signed by residents and tourists makes clear the expectation that resources should be protected in national parks, regardless of other uses: "We, the undersigned, protest the August 5 [4, sic], 1996 killing of grizzly bear #209 to protect cattle grazing interests within Grand Teton National Park, Wyoming. We believe that a threatened species such as the grizzly bear should receive priority protection on its own habitat, particularly when that habitat lies within the boundaries of a National Park" (residents petition 1996). Other participants expressed similar sentiments about the outrage they felt over their perception that interagency efforts and ranching interests took precedence over the life of an endangered species in a national park. The citizen who organized the petition argued that "this is a threatened species protected under the Endangered Species Act, surviving on marginal habitat on public land and within a National Park" (Stratton 1996). She "felt betrayed by a Park Service that [she] had believed was doing all it could to protect a threatened species within its borders" and cited the lack of response from a top park service official as well as frustrating encounters with other officials as evidence of citizen demands being ignored (Stratton, interview 1997). Jack Turner, writing about conservation biology, mentions Bear 209 as an example

that "these animals live in one of the largest protected preserves in the U.S. It didn't save them from management policy and wildlife biologists" (Turner 1997). Conservationists argued that "national parks are supposed to be refuges for native flora and fauna and the processes that support them" (Lichtman, interview 1997) and that "in a national park bears should be protected, period, unless there is a human threat" (Camenzind, interview 1997). Steve Thomas of the Greater Yellowstone Coalition remarked that "'We're thinking about what to do with that issue right now, and we haven't come to any conclusion on that: the issue of taking bears in a National Park'" (Landreth 1996). Sierra Club Legal Defense Fund attorney Jim Angell observed, "It is bad when bears are taken even from the park" (Angell, interview 1997). Even some officials from the WYGF see the problem as "should cows be grazed in the Park" because "if cows weren't there, then bears don't have a problem" (anonymous interviewee 1997).

The WYGF officials who made the decision to euthanize the bear and carried out that decision, however, felt there were no other options. Dave Moody, large predator coordinator for the WYGF, said that "We were out of options in managing No. 209. There was nowhere in the Greater Yellowstone ecosystem area to relocate him that he would not return from; zoos did not want him; and other states will not willingly receive Wyoming's problem bears, especially a bear habituated to human contact or livestock" (Thuermer 1996b). WYGF officials thought that the location of cows within GTNP led to a situation in which they had to make a decision about killing a grizzly inhabiting a national park. Given this situation, they did not see any option other than killing the bear because he had been moved twice before and returned and no captivity sites were available.

However, this justification points not only to the issue of removing bears from parks but also to the effectiveness in general of moving and removing bears. Moving bears is one nonlethal option. However, many bears return to their "home ranges," or the areas from where they were removed (Bruscino, interview 1997).

Other participants claim that options other than moving or killing bears should be considered. A number of conservation groups have pointed out that moving bears does not work, an observation that is especially crucial when considering that the bears are being moved from national parks: "In 1948, a study by Adolph Murie was published in the *Journal of Wildlife Management* on livestock depredations by bears in this same area. In it, he remarked 'A number of grizzlies have been taken off the cattle range over a period of years but

the predation has persisted.' It is time to learn from history that simply moving grizzlies will not solve the problem" (Stevens 1996). Other conservationists have said that "there seem to be other things that have worked to reduce bear-cattle incidences, and there is no reason to be removing bears" (Adams 1997) and that "in a national park, bears should have as many strikes as they need if the strike is for killing livestock and not human safety" (Lichtman, interview 1997). One conservationist has stated her belief that bears are listed because in years past, the strategy was to remove "problem bears" (Taylor, interview 1997).

Even members of the forest service, in an Environmental Assessment of the Blackrock/Spread Creek allotment, stated that "there may come a point in time when moving/removing grizzlies is no longer politically nor biologically sound" (U.S. Forest Service 1997). The study conducted by the WYGF discussed above found, in reference to the effectiveness of moving bears, that "the removal of bear 209 and the absence of 203 did appear to reduce losses during 1996," but that "in cases involving adult, habitual depredators, such as we observed during this study, a reappearance of problem individuals is expected, and translocation efforts are not a long-term solution" (Anderson and Moody 1997:50). The study went on to state that attempts at translocations can help identify "problem bear, chronic situations or habitual offenders" (Anderson and Moody 1997:50). In the cases where these habitual offenders are identified and killed, however, "new bears moving into the areas could become chronic depredators, thereby creating a population sink" (Anderson and Moody 1997:51).

The ranchers involved in the Bear 209 case from the time he was first moved in 1995 differ in their opinions on the effectiveness of moving bears. One member of the family with an allotment in GTNP sees cattle losses to bear depredation as just one of many risks of running cattle on land on which grizzlies live, and seems satisfied with the compensation program currently in place that pays ranchers for livestock lost to grizzlies. However, he "respected that WYGF felt they had an obligation to enact the ["three-strike"] policy" (Mead, interview 1997). The other rancher on the Elk Ranch East allotment in GTNP seems satisfied with the "three-strike" policy in which "the rules are if a bear is caught three times, he is killed," but he does not think that ranchers should have to deal with repeated depredations (Gill, interview 1997). The rancher and range manager on the Blackrock/Spread Creek allotment on forest service land thinks that grizzlies may cause deaths not only directly through depredation but also by causing stress in animals

grazing near the bears. The WYGF study addresses these allocations, but the findings were inconclusive (Anderson and Moody 1997). Those working on the BRSC allotment tend to favor the removal of depredating grizzlies and have pushed for such removals (Anonymous 1995; Brusino, interview 1997; Moody, interview 1997; Primm, interview 1997). The range manager for this allotment appeared in the fall 1997 issue of *Range* magazine wearing a shirt that read "Screw the bears and wolves, save the cowboy" (Raab 1997).

The consensus seems to be that moving bears is not always effective, because bears often return to the areas from where they were taken. However, moving depredating bears seems to help managers identify the circumstances under which habitual depredators return. When those circumstances are identified, participants' expectations differ. The justifications for the death of Bear 209, together with statements in the WYGF study and from an environmental assessment done on forest service land, all indicate that many government officials see killing depredating grizzlies as the only viable option to create tolerance for bears. Other participants, including conservationists and citizens concerned with wildlife and national parks, think that other options may be more effective and meet the expectations of more of the public. Ranchers are more divided on the issue—some expect compensation, others expect bears to be killed.

Overall, participants do not view what happened in the Bear 209 case as an indication that this is a ranching versus wildlife issue. One citizen has said that "we are intelligent and creative enough to have ranching and wildlife coexist" (anonymous interviewee 1997). A letter from the Jackson Hole Alliance for Responsible Planning states that "cattle grazing and bear habitat are not inherently incompatible; they are made so through management decisions that favor cattle grazing over bears" (Lichtman 1997). When discussing alternatives to prevent outcomes similar to that in the case of Bear 209, participants have mentioned several specific strategies to minimize contact between grizzlies and cattle, such as removing dead cattle carcasses that may attract grizzlies to an allotment, using guard dogs to chase away bears, or moving cattle to different allotments. A frequently suggested alternative strategy is to encourage more dialogue among participants. Some conservationists are suggesting that "all interested parties move forward on finding a long term solution" (Staff 1995). A member of the Greater Yellowstone Coalition has said that "there can be cattle on public land, and there can be bears if we do things right" and that she preferred trying to work with ranchers and agencies rather than bringing all controversies to court (Taylor, interview 1997).

Some attempts at dialogue have been made in the past and have failed for various reasons (Primm 1994, interview 1997). One reason is the contentious and polarized political atmosphere surrounding grizzly bear recovery, which seems to intensify with time. For example, many participants have mentioned that they would be willing to work with groups that have differing perspectives on these issues, but that they expect other participants to "say no to everything" (Gill, interview 1997). Moreover, because some agreements have been violated—as in the WYGF study of grizzly bear–cattle interactions on the BRSC and ERE allotments (Anderson and Moody 1997)—some participants now have a hard time trusting other participants.

This does not mean that dialogue is impossible. A member of the Greater Yellowstone Coalition has pointed to the strategy of blowing up cattle carcasses that may attract bears as a successful compromise that has been reached among ranchers, conservationists, and agencies (Taylor, interview 1997). Additionally, in a workshop on problem solving held in Jackson, Wyoming, in September 1997, which examined ways of overcoming problems in the decision-making process, grizzly bear policy was discussed at length. I participated in this workshop and observed that although there was much disagreement, participants in the workshop—who represented a broad range of interests—generally agreed that the gathering was a step in the right direction and that more such workshops might help alleviate tensions. Every participant said they would recommend the workshop to other people, including managers, people involved in policy appraisals, group facilitators, journalists, people in the private sector, "people with power, in groups containing opposing views," agency employees, and academics (unpublished manuscript 1997). Although some people felt that certain groups participating in grizzly bear policy, such as government officials and ranchers, are criticized too harshly and used as scapegoats, the overall feeling was that progress was being made.

More specifically, participants in the workshop said that decision process appraisals helped them to "think through the whole decision process," to "keep social process in the conscious forefront," and to "direct attention to [a] comprehensive range of components" (unpublished manuscript 1997). They also mentioned that, overall, "the human element needs a lot more attention" (unpublished manuscript 1997:3). They discussed specific aspects of decision and social process appraisal. For example, they mentioned the need to "always be willing and open to assessment/appraisal" and that "this process forces us to rethink the 'paradigms' . . . by allowing us to discover the 'anomalies' in how we get involved in issues we're passionate about" (unpublished

manuscript 1997:3-4). Thus, while some attempts at dialogue have met with limited success, many participants in this policy process seem enthusiastic about engaging in dialogue to solve problems.

### Projections

As mentioned earlier, both houses of Congress passed a bill (105 S. 308) in 1997 that authorizes a study of the relationship between open space and ranching in the West and permits grazing in GTNP to continue for the duration of the three-year study. The bill awaits President Clinton's signature. Therefore, it is likely that grazing in GTNP will continue for at least three years. Conservation groups will most likely not sue over such an extension as long as wildlife is protected during that time. However, it is important to note that the Jackson Hole Alliance for Responsible Planning pushed for two amendments to the congressional bill, one mandating the priority of wildlife needs over the needs of cattle and another that limited the grazing extensions to the duration of the three-year study (Camenzind et al. 1997). Because the bill was passed without the amendments despite letters from conservation groups to Senator Thomas (who introduced the bill to Congress) (Camenzind 1997b) and repeated correspondence with park superintendent Jack Neckels (Camenzind and Taylor 1996), conservationists can expect that depredating bears will continue to be removed from GTNP land. In addition, park officials can expect that removal or killing of grizzlies in the park in response to depredation will trigger a reaction from conservationists similar to if not more dramatic than that stemming from the death of Bear 209. Conservationists have expressed their desire to maintain discussions about grazing in the park that are open, out of the media focus, and more on a one-on-one basis with concerned parties. They have also expressed the potential need, however, to call more attention in a public arena to the current grazing situation and original legislation that outlawed such grazing (Taylor, interview 1997, and *Jackson Hole News* 1997). Conservationists anticipate problems because "park grazing has other consequences" such as the death of Bear 209 for "killing cattle on the Grand Teton grazing allotment" (Thuermer 1997a), and they feel that "repeat situations are unacceptable" (Thuermer 1997b). To prevent future conflict similar to that surrounding Bear 209, it will be necessary to use strategies to stabilize expectations and meet participant demands.

In any case, it is also likely, given historical and recent trends of cattle depredation by grizzly bears on the BRSC and ERE allotments, that depredations will continue. This will be especially true if there is a

bad natural food year. Bear 203 returned to the BRSC in 1997 and will most likely return again in upcoming years, and aversive conditioning may or may not continue to scare him away. However, it is also likely that new bears will move in to replace Bears 209 and 203. Controversy will probably continue, whether the depredations take place on park service or forest service land. Government officials are concerned with creating tolerance for "good bears," and they project that not removing "bad" bears will lead ranchers to kill all bears. Ranchers seem divided on this projection. Some ranchers may feel compelled to take matters into their own hands, while others seem content with receiving compensation, and others may push for the continuation of the three-strike policy or another policy to remove depredating bears.

While certain agencies have been pushing for delisting of the grizzly, it seems that this will not happen soon. Part of the criteria for delisting involves limited grizzly mortality. Seven bears were killed in fall 1997 alone by hunters who claimed self-defense. However, when it comes to depredation, bears will probably continue to be treated more as a recovered species, and bears that continually depredate will probably continue to be killed if aversive conditioning does not seem to work. Continuation of such action will probably lead to continued public outcry with little response by decision makers. It is likely that if such conflict and erosion of trust continues, there will be a court case in the future. Some ranchers have said that they will stop reporting depredations, which would allow them to avoid the public outcry.

Groups with diverse and apparently conflicting interests are beginning to organize around what appear to be less contentious issues, such as how to learn about decision-making processes. Many contending groups in the grizzly bear case have found common ground on other issues such as bison management. Thus, while the ability of participants to discuss grizzly bear issues has been shaky in the past, the current movement toward collaborative problem solving seems to be slowly eroding the layers of mistrust that have built up over the years.

### Appraisal and Recommendations

#### *Normative Issues*

##### Expectations About When It Is Appropriate to Move Bears

A number of normative issues are at stake in this case. The first such issue, one that is very specific, is what to do when bears come into conflict with cattle. Almost all participants agree that this is natural behavior—bears cannot distinguish between elk and domestic



calves. However, the WYGF, the "Interagency Grizzly Bear Guidelines," and the "Grizzly Bear Recovery Plan" consider depredating bears to be "nuisance" bears, which means management actions must be taken to reduce cattle-grizzly bear interactions. The guidance for determining such actions comes from the grizzly's status as "threatened" under the ESA and the "Interagency Grizzly Bear Guidelines" on how to handle nuisance bears within different management situation zones.

The first normative issue, then, is how to determine the circumstances under which it is acceptable or unacceptable to move or kill grizzly bears, especially those that depredate cattle. A range of situations exists. Depredations may take place on public lands such as forest service, park service, or Bureau of Land Management land, or on private lands. They may take place in various management situation zones. Depredators which display behavior such as Bear 209 are almost sure to return even if translocated, while ones such as Bear 203 may respond to aversive conditioning (scare tactics, such as gunshots) and not return for the grazing season.

#### Expectations about the Management Situation Zoning System

One strategy that decision makers have used to make determinations about how to handle nuisance bears was to establish and apply the management situation (MS) zoning system described above. The intent to sue that helped block the removal of Bear 203 reaffirmed the expectation that bears should not be captured in MS 1 habitat. However, bears have large ranges and typically do not conduct all their activity in one MS zone. Consequently, deciding upon the appropriate action against a depredating grizzly involves, in turn, determining whether the MS zoning system is to be applied in reference to where the bear is captured, where it lives primarily, where it depredates cattle (or commits another offense that renders it a "nuisance" bear), or a combination of all three factors. Currently, grizzly bears captured in MS 1 habitat cannot be killed or removed for livestock depredation, as the successful attempt to block Bear 203's removal has clarified. However, it is almost inevitable that a grizzly will be captured in MS 2 habitat even though it depredates primarily or even episodically in MS 1 habitat. This eventuality will stir controversy; talk of this possibility arising with regard to Bear 203 was common in summer 1997 and was discussed in an environmental assessment of the BRSC and ERE (U.S. Forest Service 1997).

In addition, it cannot be assumed that the MS zoning system is always the appropriate instrument or frame of reference for making de-

isions about depredating bears, as the reaction to the Bear 209 case exemplifies. For example, it remains unclear how to proceed when mandates according to the MS zoning system conflict with other agency mandates. Park and WYGF officials seemed to agree that trapping Bear 209 within the park and euthanizing him was permissible because of interagency cooperation established for grizzly bear management. However, concerned citizens and conservationists argued that interagency cooperation should not necessarily trump mandates of the park service to protect wildlife within its borders, especially endangered wildlife.

The second normative issue, then, involves clarifying how participants expect the MS zoning system to be applied to determine appropriate management action. Clarification requires a determination of which grizzly bear activity the zoning system applies to (bear range, conflict, or capture), how the zoning system relates to other agency mandates, and whether to apply it to determine the status of a bear as a nuisance on the basis of property damage on public land or in terms of human safety only. It also involves determining how the MS zoning system relates to other agency mandates, such as the National Park Organic Act of 1916.

#### Expectations about Allowing Grazing in the Park and the Relationship of Grazing to Wildlife

Participants have also made claims about the desirability and legality of allowing grazing to continue in GTRP. Ranchers claim that they cannot move their cattle to another allotment because it would cost too much in time, labor, and money and that the only way they can stay in business is to continue using parkland for grazing their cattle. They have claimed that inheritance taxes would require their children to subdivide land outside the park, rather than keep it as open space, if they cannot continue to operate within the park or find alternative solutions. Government officials have claimed that this issue requires further study; the bill mentioned above that is awaiting President Clinton's signature would authorize such a study and would allow grazing to continue for at least three more years. While concerned citizens and conservationists feel that any grazing in a national park is inappropriate, the demand they are making is that grazing and other commercial uses of GTRP should not take precedence over wildlife within the park's borders, regardless of what happens outside the park (Camenzind 1997a; Taylor, interview 1997).

This discussion leads to a third normative issue, which involves

GTNP's relationship with land surrounding the park. The issue in this case relates specifically to land outside the park owned by the same ranchers who graze their cattle within the park. How should park policy relate to wildlife and/or cattle within its borders when, as part of living, the wildlife and/or cattle also spend time beyond the park boundary?

#### Expectations about Interagency Decision Making and about Participation in Decision Making

The final normative issue I discuss, one that encompasses all the others, centers on who is involved in the decision-making process—who decides, for example, under what conditions removing grizzlies for cattle depredation is acceptable. Many people claim that the entire decision-making process is unreliable and that there is a lack of trust overall. They claim that the decision to kill Bear 209 in a national park for killing cattle grazing on expired allotments and the reaction that followed typified the reasons for the lack of trust on all sides, because no one seemed truly happy with the situation or the decision.

Nonetheless, the Bear 209 case clarified people's expectations about at least one grizzly bear-human conflict—cattle depredation in national parks. Many citizens, tourists, and conservationists demand that wildlife take precedence over cattle in national parks, regardless of management situation zoning. The WYGF does not want to have to make decisions about grizzly bears that depredate on cattle in national parks. Ranchers want to avoid public outcry. Given that the recent bill approved by both houses of Congress will extend grazing in the park for at least three more years, and that Bear 203 returned in summer 1997, cattle depredation is likely to occur again in the park. To prevent another public outcry, the decision-making process that responds to and shapes the demands of grazing interests and conservationists must be, at the very least, far more inclusive and transparent than in the past. This change would relieve Wyoming Game and Fish of the burden of having to make unilateral decisions about bears in national parks, and it would lessen the perceived public need to scrutinize ranchers.

In summary, then, a final normative issue emerges: Who should make or have input into decisions about grizzly bear policy, and how should those decisions and input be made?

#### Alternatives

The goal of grizzly bear recovery is to increase the population of bears, which involves reducing grizzly mortality. The grizzly bear recovery

plan states that one of the "leading challenges" in recovery is the reduction of human-caused mortality (Servheen 1993:10). Dave Mattson has said that mortality is related primarily to the frequency of bear contact with humans and the lethality of that contact (Mattson and Craighead 1994). Reducing mortality therefore involves reducing the frequency and lethality of contact. Reaching these goals involves changing human practices so that, over time, such practices engage grizzly bears less often.

The Bear 209 case has clarified the expectations of participants on many normative issues involved in the attempt to reach grizzly bear recovery goals. In addressing the appraisal and recommendations that follow, I make specific recommendations wherever possible regarding how to stabilize expectations concerning a given normative issue. These issues include how to handle cattle depredation by bears in national parks and possible alternatives to create a more inclusive decision process. Regarding other normative issues, including how to apply and/or improve the MS zoning system and how interagency coordination relates to the application of this system and to the Endangered Species Act, I feel it is not yet possible to make specific recommendations. The wide range of expectations regarding these issues has been evidenced in the discussion of Bear 209, and few alternatives can be offered without further clarification of participant expectations and demands by the participants themselves. Creating a more inclusive decision-making process can help clarify such interests.

#### Clarifying Expectations and Demands about the Conditions under Which Moving or Killing Bears Is Acceptable and about Grazing in the Park

Many of the normative issues outlined above are related to the decision to permit grazing to continue in GTNP. Many participants feel that allowing cattle to take precedence over wildlife in the national park is unacceptable. Therefore, they do not feel that the MS zoning system is sufficient justification for making decisions such as the one to remove Bear 209 from GTNP or to kill him. Many participants mentioned that if Bear 209 had been captured outside the park, the decision would have been no more acceptable, because the depredations did occur in the park; therefore, it matters both where a bear depredates and where it is captured.

Some participants have suggested that the majority of parkland should have been designated as MS 1 habitat initially and might now be redesignated accordingly (Angell, interview 1997; Primm, interview

1997). Redesignating parkland as MS 1 habitat has biological and political benefits. Historical grizzly habitat and current grizzly range indicate that the area designated as MS 2 habitat in GTNP where the grazing allotments currently exist may be more appropriately designated as MS 1 (Hoak et al. 1981). Vegetation maps of food sources may provide information on habitat quality, and could provide a tool for conservation groups who claim that the zoning of the BRSC and ERE allotments as MS 2 is inappropriate (Angell, interview 1997). Such a redesignation would also relieve the WYGF of having to make decisions about human-bear-cattle conflicts on that land because expectations have been stabilized about land designated as MS 1; grizzly bears cannot be touched on this land without first significantly altering human activity. Compensation for depredations can continue to address deprivations experienced by ranchers.

However, although GTNP ultimately has authority to redesignate land within its boundaries and could use biological data such as vegetation maps, habitat quality, and bear distribution on the land to make such a decision (Mealey 1986:3), the political environment may preclude such an option. Given the long-standing debate about the effectiveness of the MS zoning system (Keiter 1991), efforts at redesignation may not occur in a timely manner and may exacerbate the ongoing debate over grizzly bear-cattle conflict in GTNP. For example, redesignation sets up a potential win-lose situation between ranchers and conservationists and could draw more public attention to an issue that is already contentious. Generating public attention may be a legitimate strategy for conservationists in the future, but it has been mentioned as an alternative to avoid if possible. Conservation groups, government officials, and ranchers have also been meeting to discuss what to do about the grazing situation; attempting to force redesignation may undermine such efforts. Finally, although expectations are clear concerning the protection of bears in MS 1 habitat, one underlying norm involved in the case of Bear 209 relates to the necessity of determining how to handle "nuisance" bears in national parks regardless of MS zoning. Thus, redesignation could achieve the desired outcome of protecting bears in a national park and could be an effective long-term strategy, but it may not immediately address the prevailing expectations about management of bears within park borders regardless of MS zoning designations.

In addition, one family with an expired grazing allotment "requested an extension of their previously-held grazing privileges to avoid having to sell the ranch. In return they committed to actively exploring options to preserve their ranchlands, including giving scenic easement to

the Jackson Hole Land Trust, seeking a conservation buyer and other options" (U.S. Senate, Committee on Energy and Natural Resources 1997:4). While conservationists oppose the link between the study and the extension of grazing privileges in bill S. 308 (Camenzind 1997b), "a coalition of conservation groups are interested in helping the ranching families in Jackson Hole find ways to continue their ranching operations, which in turn helps to protect open space and wildlife habitat" (Camenzind et al. 1997:1). The study and current dialogue around that study offer a potential strategy for ranchers, conservationists, and government officials to work together to clarify their own and other participants' perspectives, to clarify expectations and demands they have in common, and to find creative and integrative strategies to meet common interests.

One option that could be raised is the possibility of writing into existing leases that ranchers will receive compensation for confirmed depredations but cannot demand that bears be removed from or killed in the park. This would allow grazing to continue while meeting the demands of ranchers and conservationists to minimize contention while protecting both grazing and wildlife interests, and it would provide some time for ranchers with leases to make plans to move their cattle, phase out of ranching, or find other options with the help of rather than opposition from conservation groups. At the same time, continuing compensation programs, removing cattle carcasses so that bears are not attracted to them, and attempting other activities to deter bears from wandering onto allotments can minimize financial deprivations and concerns over respect and loyalty that ranchers might experience by complying with such an agreement. This strategy would also help avoid drawing attention from a less understanding national audience about the continuation of cattle grazing in a national park and about management decisions on the basis that grizzlies are a recovered species, not a recovering species.

Rewriting leases in the manner suggested would also make irrelevant the uncertainty that persists about the application of the management situation zoning system. The zone in which potential grizzly depredators live, depredate, or are captured would have no bearing on a decision to remove or kill as long as these activities occurred in the park. Finally, the WYGF would no longer have to make decisions on how to apply the zoning system in the park. The option of rewriting leases could also be prescribed and applied in a timely manner, in part because it is not likely to stimulate institutional resistance.

Other options such as conservation easements can be explored to help alleviate financial burdens, such as inheritance taxes on ranchers'

children (Berry, interview 1997). The Jackson Hole Land Trust is exploring such options with the ranchers involved on the ERE (Berry, interview 1997). The Sonoran Institute, a nonprofit organization that promotes community-based strategies to meet ecological and economic needs, has produced a publication, "Preserving Working Ranches in the West," that discusses options such as conservation easements, estate planning, limited development, voluntary zoning districts, and collaborative planning more fully (Rosan 1997). This publication points out that a conservation easement is "a voluntary contract that permanently limits the type and intensity of future land use while allowing landowners to retain ownership and control of their property," and is "tailored to the needs of each landowner" (Rosan 1997:15). Such agreements lower the property value of, and thus the property and inheritance taxes on, the land while ensuring that development remains limited.<sup>6</sup>

#### Clarifying Expectations and Demands about Interagency Coordination Efforts and about Participation in Decision Making

When the outcome of coordinating agency efforts to reach the goal of grizzly bear recovery places obstacles to reaching that goal, the efforts—however well-meaning—need to be assessed. While parks do not exist in vacuums, and their political borders may seem arbitrary, certain expectations and demands that are not being met exist in the minds of conservationists and other concerned citizens regarding what happens within those borders. These expectations and demands—which include protecting endangered wildlife, especially in national parks and especially when the threat to the well-being of wildlife comes from special interests of individuals using park resources—do not change because agencies are attempting to coordinate efforts to increase the grizzly population. In addition, while cooperation across agencies is essential in thinking about grizzly bears as part of a larger ecosystem and not confined to political borders, the outcome of current efforts has been that borders designating property and jurisdiction have been redrawn with respect to the MS zoning system and expectations and demands of various participants are still not being considered adequately. More fully realized interagency cooperation requires consideration of prevailing expectations and demands about national parks and the relationship of those expectations and demands to meeting the goal of grizzly bear recovery.

It is important to create tolerance in rural communities for "good

bears" by handling "nuisance bears," but it is also necessary to be selective in management actions that disturb a grizzly's natural activity. Conservationists have stated repeatedly that they would like to trust government officials in their decisions to move or kill bears, and that they are not opposed categorically to such management strategies. However, when decisions such as the one to kill Bear 209 are made, conservationists claim it is hard to trust that agency officials will consider their demands to protect wildlife, especially in national parks, for offenses that do not endanger human life (Lichtman, interview 1997; Taylor, interview 1997, and *Jackson Hole News* 1997). The strategy to move bears when they come into conflict with humans—especially when efforts to change human activity to deter such contact is minimal—can and has lowered tolerance for management actions that alter bear activity and has contributed to diminished trust in the decision-making process.

This assessment that interagency efforts are failing to meet the expectations and demands of all participants is made with the realization that there have been overall improvements in the grizzly bear recovery policy process. Criticisms about data on human-grizzly bear interactions have been answered, for example, by a dramatic improvement in the record-keeping of those interactions over the past decade. In addition, while government officials in the past have refused to participate in workshops aimed at generating dialogue among participants with conflicting perspectives and values, recently officials from the forest service, the park service, and the Interagency Grizzly Bear Committee were willing and enthusiastic participants in a problem-solving workshop that discussed many contentious issues in the GYE.

In light of both the criticism and achievement of interagency efforts discussed above, it is important to consider the many demands made on government officials by various sectors of the public and the responses by officials to those sectors. In addition, the agency officials with whom I have talked seem genuinely concerned with both grizzly bears and the sector that wants to protect bears and to protect property and human safety. They are skilled and knowledgeable about matters of grizzly bear behavior and ecology and are aware of the contentious politics of grizzly bear conservation. However, there seems to be a lack of training in policy sciences, social sciences, law, conflict resolution, and other areas which focus systematically and empirically on the human dimensions of grizzly bear conservation. Although agency budgets may restrict the possibility for hiring people trained in understanding these human dimensions, there is a need to train officials in

areas such as understanding social and decision processes. Such training can help officials clarify their own and others' expectations and find ways to address everyone's demands.

Agency employees have a responsibility to and are constrained by the system in which they operate, a system that already places multiple demands on budgets and each individual's time and energy. "The system" is made up not only of written prescriptions and procedures, but also of individuals. These individuals include not only those who write prescriptions and make and enforce decisions based on those prescriptions, but also those who gather information that informs the prescriptions and decisions, those who influence decisions to be made in certain ways, and those who assess and challenge or support decisions—formally in court or informally through correspondence or in the press.

Cross-jurisdictional management and cooperative planning are necessary components in grizzly bear recovery and in ecosystem management in a more general sense (Mealey 1986; Primm and Clark 1996; Servheen 1993) because no one agency or organization "working alone, has the resources, such as expertise, funds, and authority, necessary or sufficient to get the job done" (Clark and Brunner 1996:1). However, interagency efforts as they now exist are in a sense both too much and not enough. They are too much because often in the genuine and taxing effort to coordinate across political boundaries—as in the case of Bear 209—the goals of grizzly bear recovery, achieving individual agency mandates, and meeting the interests of a substantial number of people to protect endangered species and to protect wildlife within national parks are not being met. The possibility exists, as in the case of Bear 209, for these latter goals to be subsumed by the goal of interagency coordination. This problem can be addressed by working less toward interagency coordination as a goal in and of itself and more toward the goal of grizzly bear recovery, with interagency coordination as one means to do so. Training agency personnel to conduct problem-oriented analyses, as discussed below, is one means to help place interagency efforts within the context of grizzly recovery goals (Clark 1997; Primm and Clark 1996).

Interagency efforts are not enough because the pool of participants involved in decision making extends beyond agency officials. Therefore, interagency efforts should be expanded to include nonagency citizens in the decision-making process. Researchers gather and analyze data presumably to inform officials so that they can make better decisions. As discussed above, many researchers have claimed that this process has been dominated by the IGBST, a group of agency personnel. An intelligence function that is dependable, open, and creative should

allow for the inclusion of data from nonagency researchers. Government agencies can begin to work with outside researchers to determine why discrepancies in data exist, rather than arguing over whose data is correct.

In addition, although data on human-grizzly bear conflicts has improved significantly since the turn of the twentieth century when Yellowstone National Park officials began recording such data and since the late 1980s when data gathering became part of the IGBST activities, data gathered on grizzly bear policy is still lacking. Current research is dominated by natural science information. With few exceptions, little research has been done with respect to social or decision-making processes in the twenty-three-year story of grizzly bear recovery policy. Just as data about ecological issues, such as grizzly habitat, food distribution, population, and behavior, is critical in creating effective grizzly bear policy, so is information about such issues as the expectations and demands of the human population. Research coordinated by the IGBST should therefore actively seek not only nonagency data but also analyses of social and decision processes. Expanding interagency efforts to include nonagency expertise, such as people skilled in understanding social and decision processes, can improve the ability of agencies to meet grizzly bear recovery goals. The first place to start is intelligence.

For example, data concerning grizzly bear-human interactions and management actions has improved in the past decade. For each grizzly bear-human confrontation, this information includes any management action taken, and whether or not there was human-caused grizzly bear mortality, the date of the confrontation, the management situation zone in which the confrontation occurred, the type of land ownership (park service, forest service, private, etc.) and the location of the confrontation, the bear's identification number, the type of conflict resolution, and the sources of all the data. Data such as public or private responses—including, for example, the number of newspaper articles and editorials concerning a management action, petitions to government officials, and personal correspondence to various agencies regarding an action—to control actions or lack of control actions can be added to reports about grizzly bear-human confrontations. Such data might clarify people's expectations about when it is appropriate, for example, to move bears. Steven Primm and Tim Clark, two policy scientists who have conducted extensive research in the Greater Yellowstone Ecosystem, describe the importance of tracking trends: "Tracking trends . . . allows us to establish standards on key measures by evaluating what was considered acceptable in the past. Analyzing historical trends also gives

us an idea of how much variation to expect on a regular basis" (Primm and Clark 1996:151). While Primm and Clark were referring here primarily to biological and ecological data, their observations hold true for political and sociological data. It is important to determine what was and is considered acceptable or not acceptable with respect to moving and killing bears in response to various actions such as livestock depredation. Such data should not be used to predetermine policy decisions, but they can help configure decisions that consider the expectations and demands of a variety of participants.

Research, however, is only part of decision making, and only one part in which those outside of government agencies should be included. Conservation groups, citizens, and ranchers have promoted various creative alternatives to help prevent cattle-grizzly bear interactions. These alternatives are sometimes ignored or blocked by those within agencies who focus on the difficult tasks of invoking and applying mandates put forth by the IGBC and creating tolerance among ranchers who "may take matters into their own hands" and kill all grizzlies on their property, not just problem bears (Bruscino, interview 1997; Moody, interview 1997; Puchlerz, interview 1997). For example, the refusal to participate in meetings, such as the one organized to resolve cattle-grizzly bear conflicts on Togwotee Pass, indicates a certain amount of resistance on the part of government officials to listen to alternatives such as collaborative problem-solving efforts (Primm, interview 1997). The removal of Bear 209 from GTNP in 1995 while the WYGF study was being conducted is an example of an agency ignoring its own alternative—studying the problem—to find ways to resolve the grizzly bear-cattle conflict. The rejection of the amendments proposed by conservationists to the open-space study and grazing bill is a more recent example of alternatives being precluded.

This contention is not universal, however. Agreements such as the one reached among agencies, ranchers, and conservationists to blow up cattle carcasses indicate that collaborative efforts are being made to prevent conflicts. While conservation groups, citizens, and ranchers point to such agreements as examples of how bears and cattle can coexist—and that bears and people can as well—some of these participants also hesitate to engage in dialogue because of the perception that previous attempts have failed, because certain personalities are more comfortable with one-on-one or small group interactions, or because of the erosion of trust in decision making caused by twenty-three years of contention. Those who promote dialogue must be willing to take risks to participate in it. All members must offer some trust in order to receive the trust of other members.

One way to try to create trust is to conduct workshops organized around a common interest, such as how to make better decisions through extensive problem orientation that examines natural science, social process, and decision process. Within such workshops, focusing in depth on specific issues is vital (Participants 1997), but including an emphasis on social and decision processes allows participants to step back from the details and their passions and look at the larger picture. The strategy helps refocus attention on the root causes of problems such as value deprivation, expected value deprivation, and built-up frustration. Connecting possible solutions with root or core problems in participatory workshops can help alleviate tensions, personalize the "opposition," and reduce the tendency to point fingers at one common enemy. It is also a way to combine practical problem solving with skill building, given limited agency funding and time. Assessment is a vital part of such workshops to determine what works and what areas can be improved.

In addition, this debate over bears and humans competing for the same resources lies within the context of a larger debate over increasing pressure on resources in the GYE and who should make and participate in making decisions about those resources. Lessons can be learned from efforts in related debates in the GYE. For example, a number of groups around the GYE have organized to find solutions to various policy problems involving bison in Jackson Hole and Yellowstone. The work of these groups provides valuable lessons for those who want to establish problem-solving groups. A group organized to work on the Jackson Hole bison herd problem—conventionally discussed as a problem of maintaining a self-sustaining population, of minimizing the potential for transmission of brucellosis, of reducing dependency of bison on feeding programs, and of minimizing potential for bison-human conflict—began with a year-long study group phase, which was composed of ten people, including wildlife biologists, policy scientists, environmental activists, local politicians, and artists. The group focused on clearly diagnosing the problem by examining the decision processes that had led to the current policy for the Jackson Hole bison herd. They diagnosed the problem not in techno-rational terms, but in terms of value conflict, malfunctions in the decision-making process, and insufficient public input. The group then ran a promotional activity, the Buffalo Jubilee, a one-day event that included art, Native American dancing, poetry reading, children's activities, and presentations on bison ecology and management, decision making, bison ranching, and human relations to wildlife (Curlee and Day 1997).

The group is now in the Buffalo Forum phase. This forum aims to

"facilitate a community-based decision making process characterized by partnerships among stakeholders, constructive public involvement, credible social and physical science, cooperation and a genuine commitment to the goal of sustainable, wholistic [*sic*] natural resource management" (Curlee and Day 1997). The methods of achieving this goal include convening a Buffalo Forum decision seminar and working group to plan a series of public forums. The public forums, which are intended to include the general public, representatives of responsible agencies, and representatives of organized interests, will be designed to clarify goals and a long-term vision for the Jackson bison herd in the context of wildlife management as a larger issue. From these meetings, the group hopes to draft a proposal for future action based on well thought out intelligence and appraisal activities and on broad and balanced participation that can address common rather than special interests. The group will hold town meetings to gather input on a draft for future action and then present a formal report and recommendations to responsible agencies. The group plans to continue monitoring activities, carry out consistent promotional activities, document their efforts, and convene a second Buffalo Jubilee (Curlee and Day 1997).

Longer-term goals of similar working groups focusing on grizzly bear conservation could be to assess the management situation zoning system and its role in interagency efforts and the larger context of grizzly bear policy. Much contention has arisen over the use or misuse of this zoning system in applying the Endangered Species Act (ESA) to meet the goal of grizzly bear recovery. The death of Bear 209 indicates that expectations and demands related to this system remain inconsistent. While it is clear that grizzlies captured on MS 1 habitat cannot be removed, it is also clear that participants do not accept the MS zoning system as a solitary prescription that can be invoked in applying the ESA. Multiple demands, such as other agency mandates, and expectations, such as whether to allow cattle to graze in the park, must be considered. In addition, such a working group could try to determine how to apply and/or improve the MS zoning system. Groups could also address other normative issues, including the rewriting of leases, redesignation of land, treatment of bears as a species that is still listed, rationale for and effectiveness of interagency coordination, and decision process in general.

In summary, workshops that aim both to address specific issues, such as finding alternative methods to handle grizzly-cattle-human conflict, and to help participants to develop problem-solving skills can bring participants together to work toward three goals: clarifying their

own expectations and demands; understanding the expectations and demands of other participants; and finding areas of common interest that might lead to solutions addressing the expectations and demands of all participants.

### Conclusions

Bear 209 was one grizzly involved in a limited number of management actions, yet the events leading to the decision to kill him, his death, and subsequent reaction are indicative of problems in a larger policy arena—ecosystem management in the Greater Yellowstone Ecosystem. The Bear 209 incident involved three agencies directly—the National Park Service, the U.S. Fish and Wildlife Service, and the Wyoming Game and Fish Department—and one wildlife species in an area, Jackson Hole, with a human population of about 5,000. The GYE encompasses at least 28 local, state, and federal agencies and about 300,000 residents, and an additional 10 million visitors annually including groups as diverse as ranchers, recreationists, oil and gas companies, mining companies, developers, residents, tourists, and park and forest concessionaires competing for resources (Burroughs and Clark 1995). Thus, there exist many groups with differing myths, expectations, and demands concerning the use or conservation of resources such as grizzly bears and national parkland. As a result of these factors, both grizzly bear conservation and related policy discussion in the GYE have a long history of controversy, marred by a lack of trust among many participants (Burroughs and Clark 1995).

The Bear 209 case, and grizzly bear conservation more generally, provides lessons for improved decision making in the GYE. While change does not happen overnight, and it is difficult to alter the course of a twenty-two-year-long current of contention, there are encouraging trends indicating that efforts at coordination and dialogue may be working. The decision process workshop held in Jackson and interest in more such workshops, efforts made around the GYE to find common ground on bison policy, and continued meetings among ranchers, conservationists, and government officials involved in administering the grazing allotments in GTNP are a few examples of successes.

Creating more open and inclusive decision-making processes—in which participants can listen to and address one another's expectations and demands—is one necessary component to successful ecosystem management. Such efforts provide an opportunity for participants to work toward a shared goal of improving decision-making processes so that they can be more effective at meeting the stated goals of grizzly

bear recovery. However, successful efforts at dialogue and inclusive decision making will require the building of trust among participants, the coordination of agencies to meet goals specified by those within and outside of agencies, and the cooperation, participation, and acceptance of responsibility by all interested participants.

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#### NOTES

1. For example, Adams 1996d, Barron 1996, Olson 1996, Stratton 1996, Thuermer 1996a, b.
2. Harold Lasswell (1966:9) has described political myths as "fundamental assumptions' about political affairs." They include "basic expectations and demands concerning power relations and practices in the society," and an important component of myths is the elaboration of social norms, of what is right (Lasswell 1966:9-11). Myths also articulate concrete power patterns and symbols and slogans

that elaborate, repeat, and apply the political myth (Lasswell 1966). The debate over Bear 209, in the claims, expectations, and demands of participants, offers a window into the political myths and personal values involved in grizzly bear conservation.

3. Data gathered by the IGBST has led to improved management strategies in Yellowstone. For example, information about human-grizzly bear conflicts has helped in the development of strategies to minimize conflicts. In 1960, Yellowstone National Park instituted for the first time a bear management program to reduce the number of bear-caused human injuries and property damage. Most of this management involved the removal of bears rather than preventative measures such as reducing human food and garbage sources that attract bears. A program was implemented in 1970 that involved removing these sources from developed areas and roadsides. By 1973, human-caused injuries had dropped to about ten per year, down from an average of forty-eight between 1931 and 1959. A program implemented in 1983 emphasized habitat protection in backcountry areas and has led to an average of only one bear-caused human injury per year and an average of four grizzly bear translocations and one grizzly bear removed from the population per year (Gunther 1994). The accomplishments of the IGBST are also mentioned in Primm (1993) and Schullery (1986).

4. For a more complete picture of the history of the institutions involved in grizzly bear recovery, see Primm (1993), Mattson and Craighead (1994), and Schullery (1986).

5. This option, called aversive conditioning, did not work for Bear 209 because bear behavior varies from individual to individual. Bear 209 would leave for a few days and return to the cattle-grazing allotments, while Bear 203 routinely disappears for the remainder of the grazing season.

6. A number of organizations located in Wyoming—including the Wyoming Department of Game and Fish in Cheyenne; the Wyoming governor's office in Cheyenne; Wyoming State Forestry Division in Cheyenne; Wyoming Open Lands in Buffalo; the Jackson Hole Land Trust in Jackson; and the Wyoming Outdoor Council in Lander—are involved in helping ranchers create land trusts. A number of publications are available as well, including: *The Conservation Easement Handbook* by Janet Diehl and Thomas S. Barrett, published by the Trust for Public Land and the Land Trust Alliance in Washington, D.C., in 1988, and *Preserving Family Lands: Essential Tax Strategies for the Landowner* by Stephen J. Small, produced by Landowner Planning Center in Boston, Massachusetts, in 1992.

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