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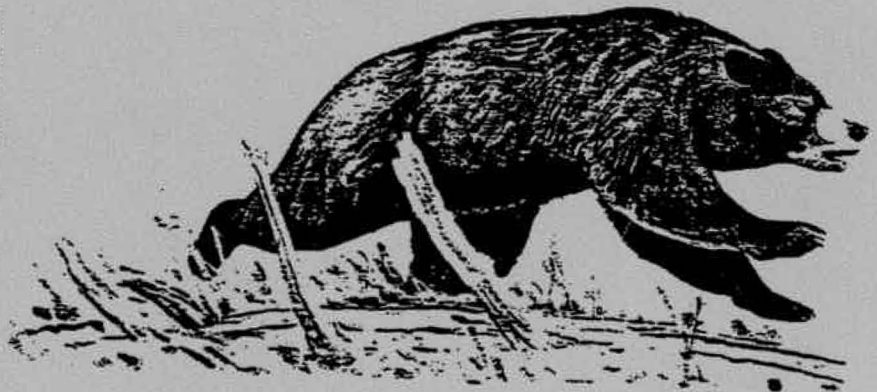


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THE COLORADO BLACK BEAR HUNTING CONTROVERSY: A Case Study of Human Dimensions in Contemporary Wildlife Management

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February 1994

HDRU Series No. 94-4

Prepared by:

Cynthia A. Loker and Daniel J. Decker
Human Dimensions Research Unit
Department of Natural Resources
Cornell University
Ithaca, NY 14853-3001

R. Bruce Gill, Thomas D.I. Beck,
and Len H. Carpenter
Terrestrial Wildlife Section
Colorado Division of Wildlife
Denver, CO 80216

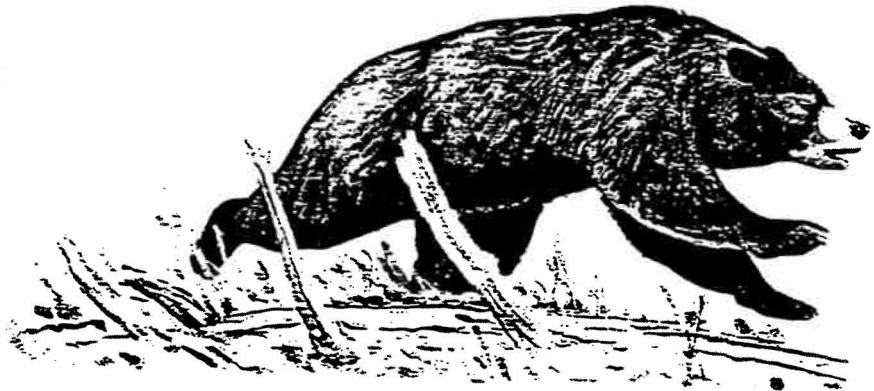
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ABSTRACT

On 3 November 1992, Colorado voters overwhelmingly supported an amendment to ban three black bear hunting practices: hunting in the spring, the use of bait, and use of dogs. The 2-1 voter approval of a moratorium on these traditional bear hunting practices caught the attention of the hunting and wildlife management communities nationwide. In addition, pressure is increasing for state and federal wildlife agencies to routinely include significant public input into the wildlife policy-making process.

We employed two theoretical frameworks to evaluate the three-step decision-making process used by the Colorado Division of Wildlife for policy making; the general policy process model of Brewer and deLeon (1983) and the wildlife management paradigm proposed by Decker et al. (1992). Our analysis followed the basic case study approach outlined by Yin (1992).

The black bear controversy passed through four periods and three cycles of the wildlife policy decision process. The first period extended roughly from 1975-1980, years during which hunters could hunt black bears virtually from den exit in the spring to den entry in the fall. The second period extended from about 1980-1985 and was characterized by increasing public awareness of (a) apparent downward trends in bear population statistics and (b) the ways in which hunters were allowed to hunt bears (e.g., hunting in the spring when death of nursing females resulted in death of her cubs; hunting over bait and/or with dogs). Public concerns over the spring hunt and hunting with bait and dogs caused the Colorado Wildlife Commission to revisit bear management policy (Cycle 1).

The third period extended approximately from 1985-1990 during which public attitudes began to move from awareness to concern over black bear hunting issues. Public objections to hunting bears in spring and with bait and dogs became stronger and more focused. The Wildlife Commission examined bear management policy once again (Cycle 2).

During the fourth period, 1990-1991, a survey of voters indicated that if black bear hunting issues were placed before the voters in the form of a ballot initiative, voters would support an amendment to

eliminate the spring hunt and the use of bait and dogs. The Wildlife Commission tried to avoid this outcome and at the same time support the interests of bear hunters by proposing to diminish but not prohibit spring hunting and the use of bait and dogs (Cycle 3). As predicted by the survey, in 1992 Colorado voters overturned the Commission's decision by a majority vote prohibiting the spring bear hunt and the use of bait and dogs to hunt bear.

The Colorado black bear hunting controversy emphasized the importance of understanding and the difficulty of incorporating human dimensions information in the wildlife policy decision process. This controversy was unique in several respects, especially because of the extent and quality of the human dimensions data that were available to predict the outcome. This information was integrated with biological data by analysts in the Colorado Division of Wildlife as they prepared black bear hunting alternatives and selected one to recommend to the Commission. Public reaction when the Commission did not accept that recommendation revealed several important harbingers for the future of wildlife management.

In this case study the development of the Colorado black bear controversy is reviewed in detail. Specific uses of human dimensions information are explained. The difficulties of applying such information in the traditional policy-making process for wildlife management are explored with consideration of inherent value conflicts due to the decision makers' own stake in the outcome and the agency's traditional and continuing unique relationship with hunters and livestock producers.

The Colorado black bear hunting controversy reveals useful insight for incorporating human dimensions input into controversial wildlife management decisions. From our analysis, we conclude that the systematically collected human dimensions information available about public attitudes regarding black bear hunting by the Colorado Division of Wildlife staff was weighted heavily in their recommendation to end the spring hunt. However, the Colorado Wildlife Commission relied primarily on informed input from traditional stakeholders as input in their decision to maintain

the spring season. Consequently, even with the availability of substantial human dimensions data, the staff and the Commission came to different conclusions about which regulations best reflected the interests of the public. An implication of this is that perhaps states need to assess wildlife decision-making systems where an agency mandated to represent all citizens' interests in wildlife is overseen by a commission that by design disproportionately represents specific interests. Four questions surfaced for contemplation by wildlife agencies and commissions attempting to respond to contemporary wildlife management issues:

1. Does membership of commissions (or the characteristics of agency staff) reflect the interests and character of the full range of stakeholders they and the wildlife

agency they work with are expected to represent?

2. Are appointment criteria of commissions consistent with wildlife agency missions or mandated responsibilities?
3. Do processes wildlife agencies or commissions employ to make decisions and the decisions rendered demonstrate that interests of all stakeholders are fairly considered?
4. Does the process of selecting wildlife commissioners involve all stakeholders in wildlife management?

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We appreciated the assistance of Jody Enck (HDRU), who contributed to the early conceptual development of the study. We thank Linda Sikorowski (CDOW) who reviewed drafts and organized a review meeting of the authors. We would also like to thank Heidi Christoffel (HDRU) for her helpful review of the draft document. Special thanks to Margie Peech (HDRU) for her patience and help with compiling this document.

INTRODUCTION

In this case study we examine the human dimensions aspects of a wildlife management controversy. Inquiry about the human dimensions of wildlife management focuses on identifying what people think and do regarding wildlife and its management, understanding why, and incorporating that knowledge into policy decisions and management programs. We believe that progress in understanding and applying human dimensions insight in wildlife management is enhanced by objectively analyzing situations where diverse public attitudes, beliefs and values have played a major role in establishing wildlife policy. Although human dimensions information of some type has a role in nearly all management decisions, in the light of public controversy its role is magnified. Therefore, examination of an issue for which widespread and deep public concern exists may reveal much about applications of human dimensions in wildlife management.

The black bear hunting controversy that occurred in Colorado over recent years presents an excellent opportunity for studying the challenges of applying human dimensions insight to contemporary wildlife management. This controversy began in the mid 1970's and culminated on election day, 3 November 1992. Besides the nature of the controversy itself, this case has several characteristics making it amenable for study:

- * Several measures were taken by the Colorado Division of Wildlife (CDOW) to obtain public input for decision making, including public attitude surveys, focus groups and public meetings.
- * The black bear hunting controversy received national attention by the outdoor sports media, a variety of state and national interest groups and the wildlife profession.
- * The public policy development process of CDOW and the Colorado Wildlife Commission includes sufficient documentation for detailed review purposes.

- * The controversy is multifaceted in terms of the array of interests involved.
- * CDOW biologists have determined that the spring black bear hunt had little biological impact on the bear population because the kill was regulated to account for probable female harvest. On the other hand, the spring hunt was not necessary for population control.
- * Nationally, CDOW is highly regarded by the wildlife profession as a leading agency in wildlife management.
- * CDOW has made a commitment to develop its capacity in human dimensions, and staff involved in black bear management have encouraged and collaborated in this case study.

The combination of these traits enhances the potential for development of a comprehensive and illuminating case study that we hope will contribute to understanding the role of human dimensions in wildlife management.

The Colorado black bear hunting controversy is interesting from a broader perspective—it exemplifies a general paradigm shift for wildlife management in North America. Over the last 20 years, increasing emphasis has been placed on involving the public in wildlife management decision making (Shanks 1992). This change has come as a response to heightened public interest in wildlife and other natural resource management issues. A shift is occurring in the relative priority placed on professional managers' value judgments, which have largely reflected traditional interests such as hunting and agriculture, versus a broader range of public desires in management decisions (Henning and Mangun 1989, Decker et al. 1991). An outgrowth of this phenomenon has been greater accountability and openness of public wildlife management agencies regarding decision criteria and data. Some agencies are responding to this situation by integrating systematically collected human dimensions information with biological information for wildlife

decision making. This is increasingly viewed as a necessity because of the diversity of public interests in wildlife, and the political consequences of misunderstanding those interests.

Wildlife agencies attempting to be proactive recognize the value of monitoring public beliefs and attitudes vis-a-vis wildlife and anticipating the changes in such characteristics that have implications for management. For example, a trend of great interest to wildlife agencies is public concern about people's interaction with animals, as evident in the animal-rights viewpoint and perhaps in a more widespread concern about the welfare of animals (Schmidt 1990). Because people holding animal-welfare and animal-rights views are becoming more vocal, better organized and politically active, many wildlife agencies want to study and understand such views when developing wildlife policy. While some information gaps are greater than others, the need exists to develop better understandings of all categories of management stakeholders. In addition, pressure is increasing for state and federal wildlife agencies to routinely include significant public input into the wildlife policy decision process.

The purpose of this case study is to examine the role of human dimensions in a controversial policy decision regarding black bear hunting in Colorado. This case study has two general objectives for accomplishing this purpose:

1. To examine the uses of human dimensions information/insight regarding public values, and in so doing reveal the interplay of such input with the decision makers' attitudes about black bear hunting in the policy setting.
2. To analyze the reactions of key stakeholders and Colorado voters to a black bear hunting decision, and the public involvement and policy-making process used to inform that decision.

Examining of these objectives for the Colorado black bear hunting controversy can help managers learn more about the fundamental challenges facing the wildlife profession as it strives to be responsive to a

broader spectrum of interests and overall to the "public interest."

In the following sections we discuss methodological aspects of the study, present the history of black bear management leading up to the height of the hunting controversy, analyze and summarize key events, and then offer some conclusions and implications stemming from our analysis of the controversy.

In this report we use two sets of ideas as our theoretical foundation for describing, analyzing, and understanding the complexity of the policy-making process regarding black bear hunting in Colorado. The two conceptual frameworks we employ are: (1) the policy process portrayed by Brewer and deLeon (1983) and (2) the wildlife management paradigm described by Decker et al. (1992). The Brewer and deLeon model helps us conceptualize a broad public policy process while the Decker et al. model focuses more specifically on wildlife management. We relate the policy process followed by CDOW to these two general models.

APPROACH AND METHODS FOR THE CASE STUDY

The basic case study approach described by Yin (1984) was used. Yin suggests that a case study is the "preferred strategy when 'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context." Data sources include primary (e.g., personal interviews) and secondary (e.g., newspaper articles) information. Both qualitative and quantitative analyses contribute to the study.

Data were collected in two chronological phases. Phase One includes data collected from 20 August 1992 to 3 November 1992. Phase Two includes data collected from 4 November 1992 to 31 January 1993.

Phase One: Pre-vote Period

The subjects of our primary investigation represent a variety of stakeholders in the controversy. Stakeholders are those who have an interest in or are effected by a particular issue (e.g., managers,

organized interest groups, individual hunters, concerned citizens). The primary data in Phase One consists of open-ended interviews with a few key stakeholders who were especially familiar with the broader range of interests in the controversy and therefore were essentially informants about other stakeholders' views. These preliminary interviews intentionally were not highly structured. Interviewees were asked to share their impressions of the black bear hunting controversy and to analyze and discuss the controversy as they observed it. The following people were interviewed in Phase One:

- (1) Len Carpenter, State Wildlife Manager, Terrestrial Section (CDOW)
- (2) Bruce Gill, Wildlife Research Leader (CDOW)
- (3) Denny Behrens, Director of Coloradans for Wildlife Conservation (CWC)
- (4) Michael Smith, Director of Coloradans United for Bears (CUB)

One purpose of these initial interviews was to obtain information that would aid in developing a more structured protocol to be used in subsequent interviews with other stakeholders in the controversy. The initial interviews also provided a general orientation to the controversy from perspectives of key stakeholders who largely defined the salient issues in the controversy.

Additional data sources for Phase One consisted of letters to CDOW, videotapes, news clippings, meeting minutes, legal documents, and interest group information. Videotapes of a Colorado Wildlife Commission meeting held in November 1991 and a focus group meeting on bear management held in June 1991 were obtained. Media information included articles, editorials, and letters to the editor. This information was collected from the two primary newspapers in the state, the *Rocky Mountain News* and *The Denver Post*, and from smaller, local newspapers. Meeting minutes were obtained for the three Colorado Wildlife Commission (hereinafter referred to as "the Commission") meetings dedicated to the three-step process for developing black bear

hunting regulations for 1992-1994. Those meetings were held in July, September and November 1991. Legal information pertained to the lawsuit filed by the Boulder County Audubon Society against CDOW in March 1992 to circumvent the Commission's decision to continue spring black bear hunting in Colorado. A sample of letters received by CDOW from the public between January 1991 and August 1992 about the spring bear hunt, use of bait when hunting bear, or use of dogs to pursue bear were selected from CDOW files for content analysis. Finally, materials from the two political action groups in Colorado involved with this issue, Coloradans United for Bears and Coloradans for Wildlife Conservation (CWC), were obtained for review and analysis.

Phase Two: Post-vote Period

Primary data collection in Phase Two entailed open-ended interviews consisting of eight questions (Appendix A). For comparison purposes, identical interviews were given to CDOW staff, commissioners and various other stakeholders (Appendix B). The primary focus of these interviews was on stakeholder interpretations of the issues involved in the controversy and their perceptions about the use of human dimensions information in this case. Phase Two involved further secondary data collection, such as obtaining additional news clippings, KUSA Denver news footage covering the issue before the election, a CUB television commercial, and information from interest groups. Also, additional letters written to CDOW between August 1992-January 1993 were analyzed to determine public interpretations of the issues.

Relevant background literature was reviewed. Background information pertaining to black bear management in Colorado was found in *Black Bear Management Plan* (Gill and Beck 1990) and in *Analysis of Season Structure Alternatives* (Gill and Beck 1991). (These two CDOW reports should be consulted for details of bear biology and management history in Colorado.) Further background information was obtained through personal interviews and statements.

Content analysis (Carney 1979) was performed on letters to CDOW; letters to the editor, articles and editorials in various publications; and public

comments at Commission meetings regarding the black bear hunting controversy. This analysis revealed how various publics interpreted the controversy.

Editorials, letters to the editor, letters to CDOW, and comments from the public at Commission meetings were used as direct sources of public opinion. Only direct quotations and interviews were used from articles; general reporting was not included in the analysis. Our content analysis was useful in that it helped us organize and categorize the various specific issue interpretations that CDOW had to consider in this controversy.

Qualitative and comparative analyses were done on the open-ended interviews conducted with stakeholders (Phase Two data collection). Comparisons were made to contribute to our understanding of various stakeholders' interpretations of the controversy and of opinions about the usefulness to decision makers of human dimensions information in understanding the controversy.

EVOLUTION OF THE BLACK BEAR HUNTING CONTROVERSY IN COLORADO

The Colorado Wildlife Commission and CDOW Staff

To understand the process used to set policies and regulations for CDOW, one first needs to appreciate the relationship between the Colorado Wildlife Commission and the Director of CDOW. The Commission is an eight-member board, each member appointed for fixed terms by the Governor. The commissioners are unpaid volunteers, five of whom represent five different districts in Colorado, roughly coinciding with the five administrative regions of CDOW. These commissioners are appointed to represent the wildlife interests of livestock producers, farmers, sportsmen or outfitters, wildlife organizations, and local elected officials. The remaining three commissioners represent the public at large. No more than four of the commissioners can be members of the same political party. The Commission sets regulations and policies for hunting, fishing, watchable wildlife, and nongame, threatened and endangered species programs for CDOW. It is also responsible for making decisions on land purchases, compensation payments for property damage caused by big game, and approving the

Division's annual budget proposals and long-range plans.

CDOW is comprised of professional wildlife biologists, managers and other staff headed by a Director who is the principal liaison with the Commission and other units of state government. The Director, typically via his staff, provides data, analyses, and recommendations for Commission consideration when addressing regulations and policy decisions.

Because of the key roles that the Director and commissioners play in the policy process, the philosophies of these nine individuals about particular issues can greatly influence policy decisions. A change in Director or a new commissioner has the potential to modify CDOW's formal outlook on an issue. The composition of this key policy-setting group can be expected to influence significantly the dynamics of black bear management decision making. This was evident in our inquiry. During the period that black bear hunting developed as a controversy in Colorado there were three different CDOW directors and frequent changes in the composition of the Commission (Appendix C). As new directors and commissioners entered as stakeholder representatives and decision makers, CDOW's philosophy and policies changed.

History of Black Bear Management Prior to 1984

Black bear management has a complicated history in Colorado, and particular season structures have persisted for only 4-5 years on average (Gill and Beck 1991)¹. Reasons for frequent change hunting seasons for black bear in Colorado include: (1) desire to improve bear hunting; (2) desire to prevent bear damage by letting hunters shoot bears that might not otherwise be taken; (3) concerns about bear populations being overharvested; (4) concerns about too many females being shot; (5) concerns about too many females with dependent cubs being shot (Gill and Beck 1991). These factors have contributed to

¹For more detail regarding the history of black bear management in Colorado refer to *Black Bear Management Plan* (Gill and Beck 1990) and *Analysis of Season Structure Alternatives* (Gill and Beck 1991).

black-bear-management policy in varying degrees depending on public attitudes about bear hunting at the time. Protecting cubs or females with cubs has been an issue from the beginning of black bear management in Colorado.

Although attempts were made in 1899 and 1916 to classify black bears as game animals, the species received no legal protection from being hunted or being killed as vermin until 1935 (Gill and Beck 1990). The earliest statutory reference to bears appeared in 1933. It authorized landowners to kill grizzly bears and black bears found on grazing lands, provided the landowner reported the bear's death within 30 days. Black bears were declared game animals in Colorado in 1935, at which time the killing of cubs or females with cubs was made illegal. For the next 20 years the bear hunting season coincided with that for deer and elk, and anyone possessing a big game license could hunt black bear (Gill and Beck 1991). In 1955, a separate bear license was created and the first "bear-only" hunting season (i.e., a hunting season for bears that was not concurrent with the elk and deer season), scheduled from 15 August through 1 October, was established in Colorado. At that time hunting with bait and dogs was legal.

The early 1960's brought a more liberal bear season during which bears could be hunted from den emergence to den entry in certain areas of the state. The separate bear season was lengthened to run from 1 April through 15 September. In 1965, this season was extended to 30 September. From 1960-1969 the annual bear harvest averaged 563, and approximately 50% of the harvest was taken in the separate bear-only hunting season. In 1967 CDOW introduced the *Sportsmen's* license, which allowed hunters to hunt deer, elk, mountain lion, and black bear on a single license at a price lower than the cost of purchasing the four licenses individually. Thus, hunters not specifically hunting bears could take bears opportunistically, increasing the potential bear kill.

By shortening the separate bear-only season to 1 April-30 June in 1970, a true spring black bear hunting season was set. The mid-summer months of July, August, and September were added to the bear-only hunting season in many areas of the state beginning in 1972. The 1 April-30 September season

was statewide by 1975. In 1975, however, the separate bear-only season was changed again, to 1 July-30 September. This was the last year of the *Sportsmen's* license, and bear hunter numbers and bear kills reached record highs.

Concerns that liberal bear hunting seasons combined with an increase in the number of Colorado residents would result in more complex black bear management situations prompted the Black Mesa bear study in 1978. This eight-year study of black bear biology was conducted in an area with a bear population believed to be typical of other bear populations in Colorado.

In 1979, CDOW's mandatory check statistics were indicating that 40-45% of the total bear harvest was female. In the late 1970's and early 1980's, CDOW established another experimental season. CDOW established two separate bear-only seasons: the entire state was open to bear hunting 1 April-30 June, and part of the state was open an additional 3 months to 30 September (the latter season schedule was shortened to 28 August in 1981). In 1978, the first baiting regulations were established. By 1983, the second bear-only season was eliminated, and once again the bear-only season was limited to the spring, a fall season was still held, but it coincided with deer and elk season and was thus referred to as a concurrent season.

The Emerging Black Bear Hunting Controversy: 1982-1990

By 1982, it was apparent that concerns about black bear management in Colorado were not confined to hunters. A broader public issue was developing, and the Commission directed CDOW staff to prepare a comprehensive analysis of black bear management in 1983. By February 1984 the staff had not provided an analysis, so the Commission established a citizens' bear management advisory task force to offer collective input on bear management. The objective of the task force was to advise the Commission about whether and how to change Colorado's black bear management program. The charge given this task force by the Commission was: "to consider and make recommendations on outstanding black bear management issues in Colorado" (Bear Management Advisory Task Force Report 1984). The primary concern addressed by the

task force was how to reverse the apparent decline in the black bear population in Colorado. The twelve-member task force was comprised of representatives from the following organizations and agencies reflecting the interests of sportsmen, guides and outfitters, agriculturalists, nonhunting wildlife and nature enthusiasts, and a group concerned with the welfare of bears (see Appendix D for individual members):

1. American Wilderness Alliance
2. Colorado Cattlemen's Association
3. Colorado Audubon Chapters
4. Colorado Bowhunters' Association
5. Colorado Guides & Outfitters
6. Colorado Wildlife Federation
7. Colorado Woolgrowers' Association
8. Federation of Colorado Houndsmen and Colorado Houndsmen Association
9. Great Bear Foundation
10. United Sportsmen Council

As a result, the composition of the task force was tilted in favor of commodity interests.

Over the course of seven meetings between 3 May 1984 and 8 November 1984 the task force identified many of the contentious issues interwoven in black bear management. The general thrusts of the recommendations made by the task force involved the recognition of black bears as valuable resources and some possible measures to reverse the perceived decline of black bears in Colorado (e.g., "Implement some experimental management programs to test population and hunter response to certain restrictions or closures on certain methods of take or time of year by data analysis unit . . ."). Perhaps more significant was the task force recommendation that ". . . DOW should not endeavor to legislate or regulate moral or ethical considerations, but leave these to individuals (sic) discretion, unless significant biological impacts are apparent" (Bear Management Advisory Task Force Report 1984, p. 12). (See Appendix E for the complete list of recommendations.) The task force report was submitted to the Wildlife Commission on 15 November 1984. The report prompted the

Commission to limit the number of licenses available for spring bear hunting in an attempt to curb the apparent population decline.

Controversy about spring black bear hunting surfaced again at the November 1988 Commission meeting, at which the first three-year season structure for black bears was to be set. The Commission agreed to shorten the 1989 spring season by 15 days (from 1 April-15 June, to 1 April-31 May). The Commission also instructed CDOW staff to prepare a comprehensive black bear management plan, including recommendations for hunt regulations for 1990-1992 to be presented at the November 1989 meeting.

In the interest of reaching a consensus among stakeholders involved in the bear hunting issue, CDOW staff cooperated with Jerry Mallett, a board member of both Wildlife 2000 (a nonconsumptive wildlife interest group) and Safari Club International, and Bob Young, president of United Sportsmen's Council (USC). They organized meetings among various individual stakeholders and representatives of stakeholder organizations to review drafts of the Black Bear Management Plan. This collaboration brought a diversity of interests into the public review process; however, to avoid irreconcilable contention during these meetings, people representing extreme views on the issue were not invited (i.e., extreme animal rights and sportsmen's groups) (B. Young 1993).

CDOW sought agreement among the various stakeholders regarding regulations that would satisfy all relevant interests. The staff hoped to present the Commission with a recommendation about black bear regulations that was acceptable to all interested parties. Although many involved in the process believed they were progressing toward a consensus, this proved not to be the case. Wildlife 2000 was circulating a petition and informational brochures in support of its argument to stop spring bear hunting, the use of dogs to hunt bear, and baiting bears. When traditional stakeholders learned that Wildlife 2000 received funding from various animal rights groups for its information campaign, these stakeholders no longer wanted to negotiate, suspecting that Wildlife 2000 was advocating an antihunting agenda (Beck 1993). In the final meeting the representatives of the livestockmen, outfitters, and hunting groups reverted to their

original position of promoting a long spring season, and the negotiations crumbled (Gill 1993).

As the prospects of a negotiated compromise solution waned, opponents to the three bear-hunting practices in question were becoming organized. With 9000 Coloradans' signatures on their petition, Wildlife 2000 sought additional public input regarding the three bear-hunting practices. Thus, in October 1989, Wildlife 2000 asked Jerry Mallett to conduct a nonscientific survey of 900 nonhunters who had signed the petition (pers. comm. J. Mallett 1992). The purpose of the survey was to better understand nonhunting voters' attitudes about spring bear hunting in Colorado. The main questions they wanted addressed were: (1) Would this issue be opening the door for an antihunting group to become involved in wildlife management in Colorado? and (2) Is hunting a species when it is rearing its young considered unethical? The primary focus of the survey included three elements:

1. What was the general attitude of the public regarding hunting?
2. Would a referendum during a general election to stop spring bear hunting pass?
3. What would be the financial position of a group that placed the spring black bear hunt on the ballot?²

Although this was a nonscientific survey, the fact that it was initiated in the early stages of the controversy demonstrates the insight and sensitivity that some sportsmen and at least one wildlife interest group had regarding hunting ethics and the importance of the voting public acceptance of hunting practices. The results of this survey indicated the majority of Coloradans would both vote to end the spring black bear hunt and would financially support an organization promoting such an outcome.

CDOW also was anticipating an emerging public controversy over black bear hunting in June 1989, so

the Terrestrial Wildlife Section of CDOW contracted with Standage Accureach, Inc. to conduct a focus group meeting to identify areas of public concern regarding black bear hunting. The focus group consisted of bear hunters, other hunters and nonhunters. The focus group identified key issues and measured the emotional potential of these issues (Gill 1993). The focus group suggested that ethical questions about black bear hunting practices would inspire a strong emotional reaction in people. CDOW decided to seek more information from the public on this topic. Thus, Standage Accureach, Inc. conducted a telephone survey of 612 randomly selected Colorado residents during November 1989 to determine public attitudes about black bear hunting. CDOW staff were interested in the degree to which black bear hunting concerns were emotion-laden. With such information they could anticipate how public opinion could be manipulated by interest groups if the issue was brought to the public via a citizen referred ballot initiative. The survey had the following objectives:

1. measure Coloradans' knowledge of, and attitudes toward black bears in Colorado;
2. gauge public concerns about the methods and seasons of black bear hunting in Colorado; and
3. determine the level of interest the general public has in becoming involved in wildlife management decisions through referendums and ballot initiatives.

(Standage Accureach, Inc. 1989)

The survey findings clearly illustrated a strong aversion among Coloradans to hunting black bear in spring. This sentiment is due primarily to the possibility of killing a female with nursing cubs. The survey also showed considerable concern about the use of bait and dogs when hunting black bear. On the other hand, the survey emphasized that Coloradans, for the most part, were supportive of hunting in general and of CDOW's ability to manage wildlife. During the November 1989 Commission meeting, CDOW presented to the Commission the results of the survey along with the Black Bear Management Plan. In conjunction with this information, the staff

²J. Mallett 1991. Letter to Bob Radocy regarding a nonscientific poll Mallett conducted for Wildlife 2000 in 1989.

recommended that the Commission shorten the 1990 and 1991 spring bear season from 1 April-31 May to 1 April-15 May. Analysis of den emergence dates of Black Mesa bears indicated a 15 May hunting season closure ought to reduce significantly the harvest of females with cubs. Although many females would have left their dens by this date, activities and travel distances would be much restricted. The Commission approved this recommendation, effectively reducing but not eliminating the likelihood of hunters killing sows with dependent cubs.

In January 1990, CDOW took an important step toward making explicit one human dimensions aspect of black bear management in its Long Range Plan. The Long Range Plan is updated periodically and has the following purpose:

The Long Range Plan describes the Division's mission and fundamental operating philosophies. It establishes clear, explicit long range objectives for the Division as a whole and for each of the Division's major programs. It describes the major policies and constraints that will be observed in pursuing these objectives and discusses the key strategies that will be employed. It also lays out 15-year spending targets for the Division as a whole and for each of its programs.

The Long Range Plan is concerned more with where the Division should be going than on how specifically to get there. Its purpose is to ensure that everyone has a common understanding of what the Division is ultimately trying to accomplish. Specific strategies, projects, and activities are of concern at the long range planning stage only as required to reasonably estimate the cost of achieving the long range objectives. Once the Long Range Plan is approved, subsequent plans will develop the necessary details concerning what must be done, by whom and when in order to accomplish the long range goals.

(CDOW Long Range Plan 1991)

While updating the Long Range Plan for CDOW, the staff, using considerable public input, crafted the following objective (Objective #2) to include in the Black Bear Management section: "We

will establish regulations and schedule timing of black bear hunting seasons to protect females with dependent nursing cubs." The goal was to integrate some measure of public concern about individual animal welfare into its management objectives. A problem with the objective is in the interpretation of what "protect" means--total protection or merely reducing the probability of a nursing female being shot to some acceptable, but undefined level.

Although the Commission voted unanimously to include Objective #2 in the Long Range Plan, they may not have fully understood how it and the rest of the Long Range Plan would be construed by the public--i.e., as a contract between CDOW and the public (pers. comm. Carpenter 1992). Retrospectively, the inclusion of Objective #2 could be viewed as a proactive move to achieve concordance between broadly held public values regarding treatment of wildlife and the ethics of hunting practices. However, the Commission eventually would suggest that the objective was not intended to reflect this ethical perspective, but rather to reflect concern about the biological implications of cub mortality.

This latter interpretation notwithstanding, unanimous acceptance of the objective for black bear management in the Long Range Plan created expectations among staff and some members of the public that the Commission was willing to establish ethical standards in its bear management decisions. But, the ambiguity of the objective as written led to divergent expectations of how the Commission's commitment might be met. These expectations ranged from encouraging bear hunters to take voluntary precautions to avoid killing females with cubs, to a total moratorium on spring bear hunting so that no females with cubs could be harvested accidentally. This disparity in expectations set the stage for intensification of the controversy.

CDOW Policy Process

In addition to refining the Long Range Plan in 1990, CDOW was developing a new process to increase public participation in wildlife policy making (Fig. 1). The process was designed to encourage public input and ensure that such input is systematically integrated into decision making. We are primarily concerned with the first three steps describ-

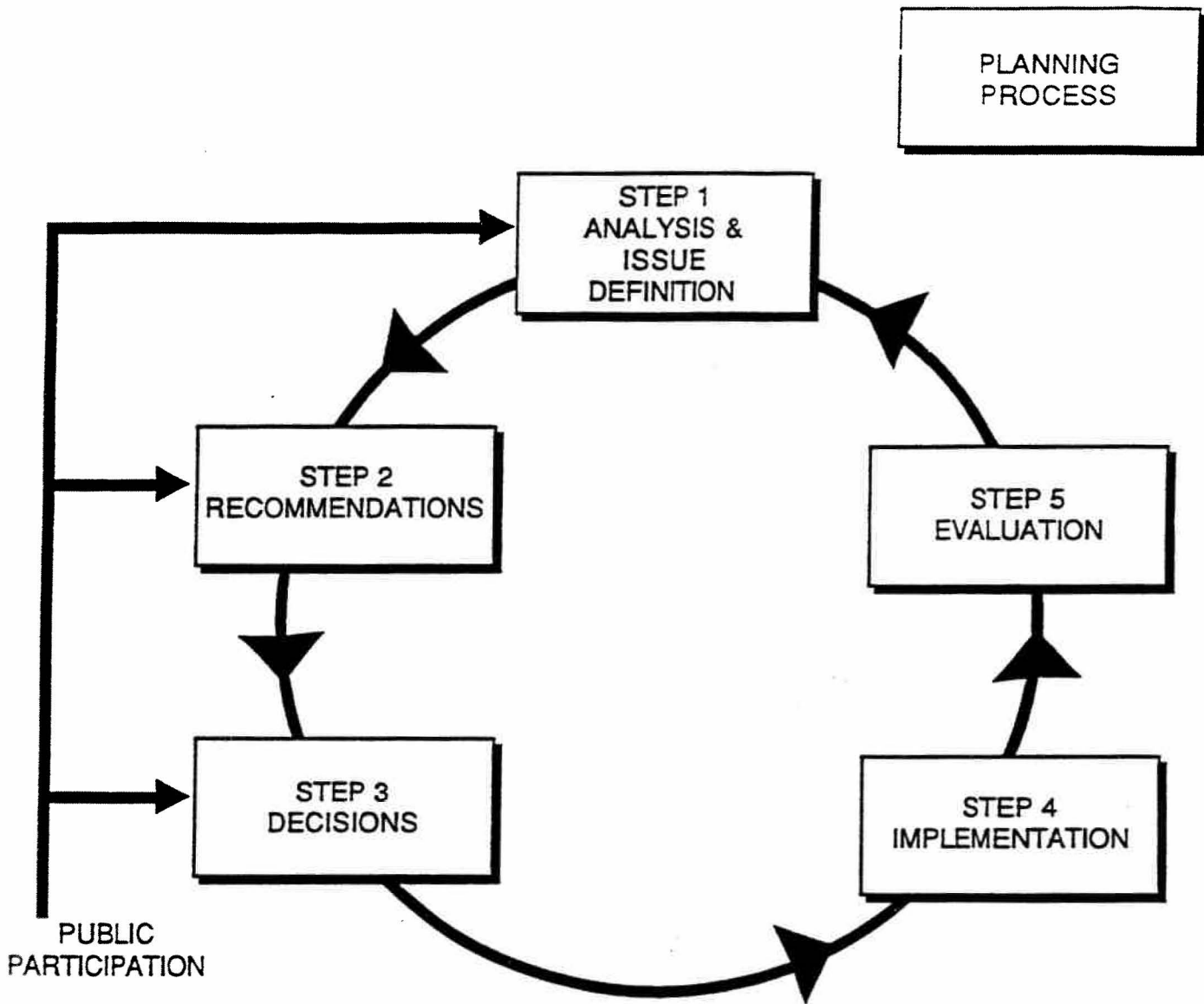


Fig. 1. The Colorado Wildlife Commission/Division wildlife management decision process.

ed below, which involve the actual public participation aspects (hereinafter referred to as the three-step process). Through the latter two steps of the process, the regulations and policies of the Commission that emerge from decisions made at step three are implemented and evaluated by CDOW staff.

Here is how the first three-steps of the process work. The Commission has six public meetings a year to consider changes in CDOW regulations and policies. Major changes are discussed over three consecutive Commission meetings. Public comments are welcome at any point, but the earlier that public input is received in this process, the more time the Commission and Division have to review and consider it. (The Commission also has six workshops per year during which topics of concern are discussed among themselves and CDOW staff, but no binding policy decisions are made.) Step One of the three-step public involvement process includes the first Commission meeting (Fig. 2). Prior to and during this meeting, the Commission takes comments from the public. Issues are identified, and the Commission agrees to a list of issues for future consideration. It should be noted that the identification of issues is a product of both public concern generated during this first step and CDOW's ongoing analysis of public concerns that they anticipate will become issues. The second Commission meeting, or Step Two of the process, entails obtaining additional public comments. During step two CDOW staff recommend draft regulations or policies for each issue. Step Three is the final decision-making step of the process. During this third meeting, further public comment is taken, CDOW staff present revised recommendations, and the Commission makes final decisions. Written or verbal comments are also accepted by CDOW between Commission meetings.

The CDOW's "three-step process" contains the essential elements of the policy formulation process described by public policy experts. For example, Brewer and deLeon (1983) present a model of the policy process that consists of six phases, each with a set of steps. The three-step policy formulation process used in Colorado is not identical to the Brewer and deLeon model (Table 1), but reflects the important elements of it. The first phases of the Brewer and deLeon model emphasize determining a public, and coincide in concept with the stages and

activities involved in Colorado's three-step policy process. Upon reviewing the Colorado black bear hunting case in light of these phases, we have determined that only the first three—initiation, estimation, and selection—are applicable to this study because the remaining three pertain to phases into which this case has not yet moved. The pertinent three phases that correspond with CDOW's three-step process are described briefly in the following subsections.

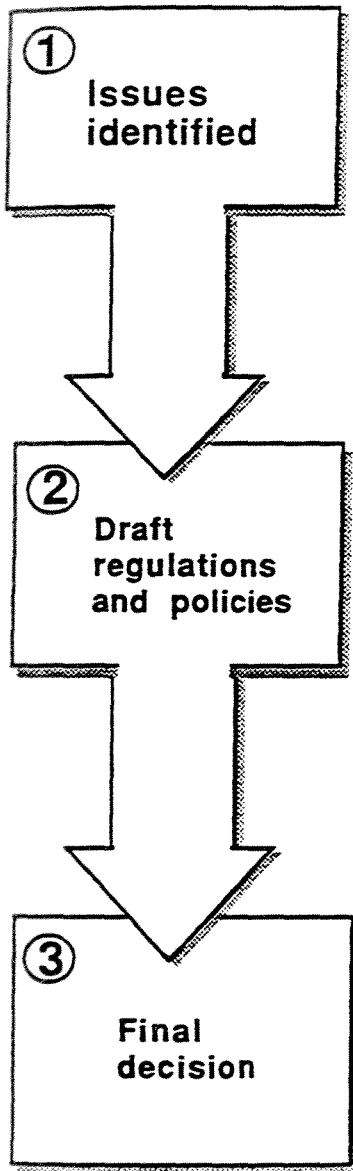
Initiation: A potential problem or opportunity (i.e., an issue) is identified by decision makers or their staff, as in Step One of CDOW's three-step process. At this early stage the issue is ambiguously defined, and various ideas are generated to address the issue. Further analysis may reveal that these ideas are unclear or inappropriate, so additional effort is often needed to focus the issue. As part of the focusing process, the significance of the issue is defined and decisions are made about whether or not to pursue it further. If deemed sufficiently important, exploration of the issue continues, clarity of definition improves with additional information, and the range of potential policy alternatives begins to emerge.

Estimation: Like Step Two in CDOW's three-step process, this phase involves analysis of potential alternatives and projection of consequences of each. Estimation relies on quantitative and qualitative data to anticipate likely outcomes of alternative actions. Importantly, this phase also considers normative aspects of alternatives, such as public acceptability. Both the biological and human dimensions of an issue should be considered in this phase of the policy-making process. Understanding both dimensions helps decision makers in the next phase.

Selection: Similar to CDOW's Step Three, in this phase policy makers use the outcomes of the previous phases to make a decision (failure to make a formal public decision represents a de facto decision). This is the most political phase of the policy process. The observations of Brewer and deLeon (1983:18-19) capture the political nature of this phase:

Decisions are seldom made only on the basis of prior technical calculations and estimates. Many

How the Commission sets regulations and policies



Before first Commission meeting:

- Rule-making notice of regulations scheduled for next Commission meeting sent to public (six weeks before meeting)
- Public should submit written or verbal comments on suggested issues to the Division 30 days before first Commission meeting.
- Division will hold public meetings depending on the magnitude of issues.

First Commission meeting:

- Public comments taken.
- Commission agrees to a list of issues to be considered.

Before second Commission meeting:

- Public should submit written or verbal comments on identified issues to the Division 30 days before second Commission meeting.
- Division formulates draft regulations; draft mailed to public and Commission (10 days before meeting).
- Division will hold public meetings depending on the magnitude of issues.

Second Commission meeting:

- Division recommends draft regulations or policies for each issue.
- Public comments taken.
- Commission makes preliminary decision and identified unresolved issues.

Before third Commission meeting:

- Public should submit written or verbal comments on unresolved issues to the Division 30 days before third Commission meeting.
- Division will hold public meetings depending on the magnitude of issues.
- Division makes final recommendations on unresolved issues; recommendations are mailed to public and Commission (10 days before meeting).

Third Commission meeting:

- Division presents final recommendations.
- Public comments taken on unresolved issues.
- Commission makes final decision.

Fig. 2. CDOW's three-step public involvement process.

Table 1. Phases and characteristics of the policy process.^a

Phase	Characteristics/uses
<i>Initiation</i>	<p>Creative thinking about a problem.</p> <p>Definition of objectives.</p> <p>Innovative option design.</p> <p>Tentative and preliminary exploration of concepts, claims, and possibilities.</p>
<i>Estimation</i>	<p>Thorough investigation of concepts and claims.</p> <p>Scientific examination of impacts; e.g., of continuing to do nothing and for each considered intervention option.</p> <p>Normative examination of likely consequences.</p> <p>Development of program outlines.</p> <p>Establishment of expected performance criteria and indicators.</p>
<i>Selection</i>	<p>Debate of possible options.</p> <p>Compromise, bargains, and accommodations.</p> <p>Reduction of uncertainty about options.</p> <p>Integration of ideological and other nonrational elements of decision.</p> <p>Decisions among options.</p>

^aAdapted from Brewer and de Leon (1983:20).

other aspects need to be considered, not the least of these being the multiple, changing, and sometimes conflicting goals held by those interested in the problem and its resolution. To the extent that the analytic efforts exercised during estimation neglect non-rational or ideological information, decision makers may find themselves forced to rely heavily on their own experience and intuition to integrate these essential ingredients of workable decisions. . . .

Although the preceding quote is a generalization of the policy process, its relevance to the Colorado black bear hunting case study will become apparent as we present specifics of the case.

We use the steps Brewer and deLeon identified for the first three phases of the policy process as "an organizational guide" for assessing the process followed by CDOW in establishing policy for black bear hunting. It is relatively easy to determine whether or not a step was included in the policy process; the challenge is to assess qualitatively the adequacy of effort and the extent to which the outcomes of that effort affect the process. We attempt to do this retrospectively, informed by key participants in the controversy.

The Height of the Black Bear Hunting Controversy: 1991-1992

The three-step process: May 1991-November 1991

The May 1991 Commission meeting marked the beginning of the three-step process for the Commission to establish regulations for black bear hunting over the three-year period 1992-1994. We present chronologically the events surrounding the three-step process, leading to the Commission's decisions regarding season structure and black bear hunting methods.

Step One

Public input prior to and during the May 1991 Commission meeting unveiled public concerns regarding three bear-hunting practices: (1) hunting black bears in spring, (2) hunting with bait and (3) hunting bears with the aid of dogs. Our content analysis of media articles and written correspondence to CDOW indicates that CDOW was presented with six primary viewpoints even at this early stage in the

controversy: (1) antihunting vs. hunting view, (2) biological dominance view, (3) ethical acceptability, (4) hunting culture/experience maintenance, (5) management responsibility and (6) economic impact. We refer to these categories as the publics' "issue interpretations." Our analysis of subsequent information sources revealed that these issue interpretations endure as themes throughout the evolution of the black bear controversy. They are described below before.

Antihunting vs. hunting issue interpretation:

Concern among traditional stakeholders (e.g. hunters and agriculturalists) that the effort to stop the spring black bear hunt was principally a tactic of the antihunting movement. People with this concern about antihunting presume that banning spring bear hunting could subsequently initiate a "domino effect," restricting or eliminating one hunting practice after another until hunting is eliminated altogether. Although in-state advocates of the cessation of the spring black bear hunt and the use of bait and dogs proclaimed these practices to be the limit of their concern, the involvement of out-of-state animal-rights groups heightened antihunting concerns among sportsmen.

Biological dominance issue: Biological information about the black bear population is purported by some to be the only appropriate basis for wildlife decisions, but both those for and against spring bear hunting can find biological data to support their positions. The main biological concern relates to the long-term viability of the black bear population in Colorado. Those against the spring black bear hunt stress that this hunting season increases the possibility of killing a female with dependent cubs. Thus, they argue that the spring hunt endangers the population because the killing of one female could mean the additional death of one or two cubs.

Conversely, some proponents of the spring black bear hunt are convinced that because there is nothing biologically detrimental about a regulated spring black bear hunt (the number of females with cubs likely to be killed can be calculated and overall mortality regulated accordingly), there is no significant reason that it should be stopped. The spring hunt is consid-

ered by some people as necessary to control the bear population. In addition, the question has been raised as to whether an extended fall season would have a more adverse effect on the bear population than a spring season. Because females are pregnant in fall, a lengthened fall hunting season, when females are more likely (than in spring) to be harvested, may result in a greater impact on the population than a spring season.

Ethical acceptability: An ethical interpretation has both compelled and divided those involved with this controversy. Those who support the hunting practices in question stress that wildlife management decisions should be based on traditional values and biological parameters. They see no real ethical problem with hunting bears in spring and/or using bait or hounds. On the other hand, people opposed to these practices proclaim that ethics and public values should be considered when making wildlife management decisions. The most prevalent ethical concern seems to be that one or all of these hunting behaviors is cruel or unsportsman-

like (Box 1). For example, spring bear hunting may result in cubs, too young to survive on their own, starving to death because their mother has been killed by a hunter. It has been noted that in Colorado no big game animal other than mountain lion is hunted while nursing its young. Many believe that baiting bears or pursuing bears with dogs are unethical hunting practices which do not constitute "fair chase."

Hunting culture and experience maintenance issue: The spring black bear hunt and/or the use of bait or hounds is part of the traditional hunting culture of certain Coloradans. To stop this season or these methods is considered an infringement on an individual's freedom of choice. This point is articulated by one Coloradan in a letter to CDOW: "Spring bear hunting is a small but important component of my overall hunting culture that comes at an important time of the year, specifically before the tourist season sets in" (J. Mullen 1991). This concern may be particularly poignant to rural Coloradans who are sensitive to the many growing threats to their rural lifestyle.

"Pooh on Bear Hunting--The Unsportsmanlike Kind"

It's hard to imagine a more cruel and unfair sport than black-bear hunting as it is currently practiced in Colorado.

Not only are bear hunters permitted to use bait to attract their prey, and to use dogs to chase down the animals once they've been ambushed, but they're also allowed to do all this in the spring, when the bears are most ravenous and the killing is most likely to turn nursing cubs into orphans with little chance of survival.

No wonder polls indicate that Coloradoans are overwhelmingly opposed to bear hunting under these conditions...

(The Denver Post 10/20/91)

Box 1

For some Coloradans, the three bear-hunting practices have been learned as acceptable endeavors in their rural culture. Claims that these practices are unethical suggests a problem with the moral character of the participants. The traditions of spring bear hunting and hunting bear with hounds may have familial and community social ties, thus participants are displeased by attempts to outlaw them.

Management responsibility issue: The management responsibility interpretation is common among both traditional stakeholders and the nontraditional interest groups involved in this controversy. These factions are concerned with the quality and future of wildlife management in Colorado. Nontraditional stakeholders are interested in "responsible management" and fair and equal representation among constituents (Smith 1993).

Traditional stakeholders may feel they are receiving less attention by CDOW, an agency that has been especially attentive to their interests since its inception in the late 1800's. They question the appropriateness and validity of public opinion surveys or other attempts to gain broad public input as sources of information for decision making. The use of public attitude information is considered a bad precedent and a threat to traditional wildlife management. It has been suggested that those who "pay" (i.e., buy sporting licenses) should have the greatest influence in wildlife decisions.

Economic impact: An economic interpretation is less common than the other and is held primarily by people who may incur financial loss due to the cessation of one or all of the three bear-hunting practices. For example, because black bear is the only big game animal hunted in the spring, some guides, outfitters and houndsmen rely on this hunt as a source of income during that time. Also, there is some concern among agriculturalists that if the three practices are stopped there will be an increase in the black bear population leading to increased depredations on livestock.

These interpretations of the issues were expressed to CDOW through various communication channels. CDOW recognized that a survey of Colorado voters would help determine the extent to which the voting public held these particular viewpoints.

The 1991 public opinion survey: Anticipating the likelihood of significant public controversy surrounding any CDOW recommendations for black bear hunting regulations and therefore the difficult nature of the Commission's eventual decision about such regulations, CDOW staff chose to have another public opinion survey conducted during Summer 1991. According to one staff member, there were three reasons for a new survey:

- (1) widespread rejection of the 1989 survey data by pro-hunting groups that claimed the survey was flawed with biased questions;
- (2) a desire to focus on registered voters rather than the general public (random households were surveyed in 1989); and
- (3) the survey would give the Commission a clear indication of voters' attitudes toward the three bear-hunting practices, from which voter behavior could be predicted.

(Gill 1993)

Given the ambiguous nature of Objective #2 in the black bear management section of the CDOW Long Range Plan, the 1991 study had the potential to clarify what the voting public and black bear hunters would view as adequate actions to ". . . protect females with dependent nursing cubs." Clarification of what constituted "protecting" females would be helpful to guide decisions about black bear hunting regulations to achieve that end. The biological consequences of alternative regulations could be estimated with the biological data already available to CDOW, but it was felt that the magnitude of the human dimensions consequences may not be apparent without additional survey data.

The survey was implemented by Standage Accureach, Inc. and Ciruli Associates, Inc. in June

1991. Telephone interviews were conducted with 600 registered voters and 300 licensed black bear hunters. The objectives of the survey were to:

- * describe Colorado residents' attitudes concerning hunting, wildlife and environmental problems;
- * analyze voters' and hunters' opinions about spring black bear hunting and their preference when offered alternatives concerning hunting black bear with dogs and bait;
- * measure Colorado voters' preferences concerning who should make decisions about black bear hunting, the Division of Wildlife or the public through a ballot referendum;
- * compare attitudes about the above factors between Colorado voters in general and specifically Colorado residents licensed to hunt black bears; and
- * analyze the data by demographic and political characteristics as well as wildlife and environmental attitude characteristics and memberships.

(Standage Accureach, Inc. and Ciruli Associates, Inc. 1991:1)

These objectives indicate that the survey was intended to target some of the issues we identified from our content analysis of documents, letters, etc. Examination of the actual questions used in the 1991 survey verifies that all six of the issue interpretations were addressed.

A summary of the key findings provides clues to the potential magnitude the controversy could attain if public opinion were mobilized into voter action in the event of an "unacceptable" interpretation of what constitutes adequate protection for female bears during the spring. The findings regarding public opinions about the practices of baiting and the use of dogs punctuate the scope of the existing public concerns regarding black bear hunting in Colorado.

The following are some highlights of the 1991 survey results:

1. Most voters supported hunting from the pragmatic position that it is useful for management of wildlife populations. The majority support hunting if it is done legally and is regulated.
2. Two separate minorities comprised about one-fifth of the voting population; one opposed all hunting while the other believed hunting is a basic right and should have only minimal regulation.
3. An examination of hunting participation and attitudes indicates that about one-tenth of the voting population in 1991 would consider themselves hunters and about one-half did not hunt, but did not object to others hunting.
4. Majority support for hunting existed in all the demographic groups within the voting sample surveyed. Women and residents of the Denver metropolitan area were somewhat less supportive.
5. The voters surveyed rated the loss of wildlife habitat and endangered species as very serious problems in Colorado. They were divided and less certain about the seriousness of problems related to black bear hunting.
6. Over 70 percent of Colorado voters called themselves environmentalists. A small percentage, about one-sixth, claimed to be members of environmental or wildlife organizations.
7. A comparison between the overall voting population and licensed black bear hunters showed stronger support by licensed hunters for hunting as a right. While hunters were also concerned about wilder-

ness areas, they did not believe extinction of endangered wildlife was a serious problem in Colorado.

8. The voting public was not well-informed about issues associated with hunting black bears. Less than 10 percent said they had heard any significant information. But voters were willing to express their views--over three-fourths expressed a position of support or opposition to black bear hunting issues.
9. A majority of the public (54%) was opposed to spring black bear hunting. The voters were primarily concerned about the black bear population being endangered, the killing of females, and the abandonment of cubs. One-quarter of the voting public was in favor of the spring black bear hunt. They believed the hunt helps control overpopulation of black bears. One-fifth of voters were undecided about the issue and the remaining five percent stated their position depends on the circumstances. Most licensed black bear hunters favored the spring hunt and cited the overpopulation of black bears as the reason for their support.
10. Arguments for and against spring black bear hunting that were presented to respondents did not have a significant impact on opinions, with only about one-tenth altering position. The shift was toward opposition to the spring hunt.
11. There was little voter support for black bear hunting with bait or dogs. The black bear hunting community was supportive of both methods with a larger number approving use of bait than approving use of dogs.
12. In summary, voters did not support the elimination of black bear hunt-

ing. However, the spring hunt was controversial and there was strong opposition to hunting with bait or dogs.

13. The overwhelming majority of voters surveyed, as well as licensed black bear hunters, believed black bear hunting issues should be decided by the Colorado Division of Wildlife.

(Standage Accureach, Inc. and Ciruli Associates, Inc. 1991:3-4)

Widespread antihunting sentiment was evident among Colorado voters in 1991, but spring black bear hunting and hunting with bait or dogs specifically seemed to garner more opposition. The three bear-hunting practices identified at the May 1991 Commission meeting were disfavored by most Colorado voters. If comparisons to findings of the 1989 study could be taken as an indication, it would appear that public attitudes about spring bear hunting had changed little with the majority consistently disfavoring that practice. However, the voting public surveyed in 1991 seemed to be more strongly opposed to baiting and the use of dogs than the general public surveyed in 1989.

The survey instrument provided some insight into the ethical bases for some voters' opposition to spring black bear hunting. Approximately one-half of those opposing spring bear hunting reported what could clearly be considered an ethical reason. No such insight is provided regarding baiting and the use of dogs when hunting black bear.

Despite strong feelings among voters about hunting bear in the spring and hunting with bait and dogs, a large majority believed that CDOW, not voters, should make bear management decisions. Thus, voters were concerned about specific black bear hunting issues rather than removing management authority from CDOW.

In the summer of 1991, local and national sportsmen's groups attended a meeting held at CDOW's Hunter Education building to hear a representative of Wildlife Legislative Fund of America (WLFA) advise them on strategies for responding to the evolving black bear hunting con-

trovery. Some CDOW staff were present at the meeting. Attendees were told to resist any change in black bear hunting regulations because opponents of this hunt were merely "front" groups for avowed antihunting organizations such as the Fund for Animals (FFA) and the Humane Society of the United States (HSUS). The 1991 survey results notwithstanding, the WLFA representative assured the group that with WLFA's assistance, they would be able to defeat a ballot initiative prohibiting the three contentious bear hunting practices. This meeting possibly marked the stimulated commitment of the sportsmen's groups to a no-compromise position.

Developing a bear-hunting recommendation: Prior to the September 1991 Commission meeting, which represented Step Two in CDOW's three-step process, CDOW staff considered four alternatives for season structure and method of take that they deemed biologically feasible (Fig. 3). As part of this process, the long-range objectives for black bear management were reconstituted as criteria for evaluating the alternatives. Abbreviated versions of these objectives follow:

1. Protect black bear population from overharvest;
2. Protect females with nursing cubs;
3. Provide reasonable hunting recreation;
4. Prevent reasonable hunting recreation.

CDOW staff made a thorough and specific analysis of public acceptability of the four alternatives. The surveys and the knowledge of public opinion about black bear hunting accumulated over time by CDOW staff were applied in the analysis.

In Colorado, public input came from many sources. In this particular controversy, CDOW received input from individual citizens, people representing ad hoc interest groups that formed specifically to address this controversy (with both local and statewide scope), representatives of well-established interest groups (both traditional and nontraditional wildlife interests), and out-of-state

organizations that were keenly concerned about the outcome (these included animal rights, animal welfare, hunting, and professional wildlife organizations). The attention of out-of-state groups on Colorado's impending black bear hunting decision reinforced CDOW's concerns that this controversy and the state of Colorado had the potential to become the focus of confrontation for nationally active antihunting and pro hunting advocates. Furthermore, peers in the wildlife management profession were scrutinizing CDOW's handling of this volatile situation; the potential existed for important lessons to be learned, as well as for undesirable precedents to surface regarding wildlife management authority. The stage was set for a multitude of actors to attempt to influence the outcome of this controversy.

The biological aspects of the issue were relatively straightforward and placed only broad constraints on the acceptability of the alternatives. In contrast, the criteria for evaluating what constituted adequate protection for females with nursing cubs, reasonable hunting recreation, and sufficient protection from black bear depredations were hotly disputed. According to the evaluation of CDOW staff, none of the alternatives dealt effectively with the issue of bear damage, but only Alternative A met the remaining three objectives (Table 2). Alternative A called for the elimination of the spring bear hunt and a lengthening of the fall season. Bait and dogs would be allowed at various times during the fall season. Alternative A was viewed by CDOW staff as a reasonable and defensible compromise on both biological and ethical grounds. CDOW staff contended that Alternative A would offer the greatest degree of protection for lactating females with cubs because the season would begin at a time when nearly all cubs will have reached six months of age (Gill and Beck 1991). Six months is considered the age when cubs are able to survive independent of their mothers. The staff was also convinced that Alternative A would provide reasonable hunting recreation opportunity because in the fall black bears are more concentrated around rich food areas and thus easier to encounter. This alternative was developed fully as CDOW's preferred recommendation for the Commission. (The detailed analysis of alternatives is presented in Gill and Beck 1991).

ALTERNATIVE #A

LIMITED LICENSES

8/15 - 8/31 BAIT AND DOGS
 9/1 - 10/9 ? BAIT
 10/10 - 11/8 NO BAIT-NO DOGS

NO UNLIMITED CONCURRENT SEASON

ALTERNATIVE #B

NO CHANGE

LIMITED LICENSES

4/1 - 5/15 BAIT AND DOGS
 9/1 - 9/30 BAIT AND DOGS

UNLIMITED CONCURRENT SEASON

ALTERNATIVE #C

LIMITED LICENSES

4/1 - 5/31 BAIT AND DOGS
OR
 9/1 - 9/30 BAIT

SEPARATE APPLICATION FOR
 SPRING AND FALL

LICENSE DISTRIBUTION

	S	F
1992	50%	50%
1993	30%	70%
1994	10%	90%

NO UNLIMITED CONCURRENT
 SEASON

ALTERNATIVE #D

LIMITED LICENSES

4/1 - 6/15 BAIT AND DOGS
 (6/30)

- QUOTA SYSTEM
- ELEVATION CLOSURES

NO UNLIMITED CONCURRENT
 SEASON

Figure 3. Alternatives for black bear season structure and methods of take.

Table 2. Advantages and disadvantages of the four alternatives for black bear management.

ALTERNATIVES	BLACK BEAR MANAGEMENT OBJECTIVES			
	Protect Population From Overharvest	Protect Females With Nursing Cubs	Provide Reasonable Hunting Recreation	Prevent Depredations
#A	YES	YES	YES	NO
#B	YES	NO	YES	NO
#C	YES	NO	YES	NO
#D	YES	NO	YES	NO

Step Two

The mile-post event for Step Two was a Commission meeting held in Grand Junction in September 1991. Grand Junction is the largest city in Colorado west of the Continental Divide, however, it maintains a culture typical of many rural areas of the West. Thus, the location of this meeting facilitated the attendance of rural Coloradans and prohunting advocates but minimized the attendance of urban and nonhunting Coloradans, many of whom resided in metropolitan areas east of the Continental Divide.

At this meeting CDOW staff presented their analysis for season structure alternatives. The analysis was communicated to the Commission and the public in both written (Analysis of Season Structure Alternatives [first draft] [Gill and Beck September 1991]) and oral reports. Preceding the oral presentation by CDOW's policy analyst on the bear issue, the results and conclusions of the summer survey of voter attitudes toward black bear hunting issues were summarized by Floyd Ciruli, a well-known political polling consultant who conducted the survey. Additional public comments were accepted by the Commission during the meeting. It was at this meeting that the spokesperson for the Committee to Save the Bears (CSB) forewarned the Commission that if they maintained the spring hunt, baiting and the use of dogs, CSB would initiate action to overturn the Commission policy and regulations. This action would be pursued either through litigation or a constitutional amendment

banning these practices.³ The Commission also heard testimony from several individuals urging them to maintain a substantial spring bear hunting opportunity, as well as opportunities to hunt with bait and dogs. The issue interpretations that had already emerged during Step One were reiterated during this meeting; importantly, no new major issues surfaced. At the conclusion of the meeting, it was not evident that a compromise acceptable to all primary interests could be reached. CDOW staff were left in the position of explaining their recommendation both to those who wanted to abolish the three bear-hunting practices and to those who wanted the practices continued.

CDOW staff's recommendation to end the spring black bear hunt but lengthen the fall hunt, including continuing the use of bait and dogs, was considered by CDOW staff to be a "prohunting move" (Carpenter 1992). It was meant to be in the best long-term interests of hunters while at the same time reflecting a broader public interest in the ethics of black bear hunting. The staff believed that their recommendation, if accepted as a regulation by the Commission, would enhance the image of black bear hunters among the Colorado public and diminish public concern about black bear hunting, thereby averting

³A constitutional amendment is incorporated into the Constitution of the state and can only be changed by a majority vote of the people, whereas a Legislative amendment is not incorporated into the Constitution and can be modified by the state Legislature.

further momentum of antihunting sentiment on this issue. Their hypothesis reflected the information available; that is, most Coloradans supported hunting generally but most also felt that spring black bear hunting is unethical. Furthermore, the human dimensions information showed that a plurality of licensed hunters opposed spring bear hunting (Ciruli Associates, Inc. and Standage Accureach, Inc. 1991). CDOW staff recognized that concerns raised about spring bear hunting were unique to particular practices and not black bear hunting generally.

Some people representing black bear hunting interests argued that CDOW's recommendation would initiate a "domino effect" ultimately leading to the eradication of all hunting in Colorado. Some CDOW staff considered this to be an extreme view held by a vocal minority that did not reflect the majority of hunters in Colorado. Furthermore, CDOW staff contended that by eliminating the spring bear hunt the reputation of hunters could be improved among the general public, thereby reducing the potential for any domino effect.

In addition to balancing concern for hunters and other wildlife interest groups, CDOW staff also were sensitive to the dilemma in which the Commission found itself. The credibility of the Commission, indeed of the entire CDOW, would hinge on the strength and logic of the rationale developed to support whichever alternative CDOW recommended or the Commission adopted. This decision, possibly more than any other policy decision of the Commission in recent years, would be in the public spotlight and closely scrutinized by Coloradans. Clearly, local and national interest groups had energized media coverage of this controversy. Unlike many routine decisions made by the Commission, the debate here was not just among traditional interests. Data showed that only a minority of Coloradans vigorously held traditional viewpoints regarding black bear hunting, but the controversy had the potential to spark the interest of many other Coloradans who might not usually become involved in wildlife issues. In all likelihood, the deliberations and actions of the Commission would not only be challenged by vocal stakeholders, but also watched by a broad spectrum of Colorado citizens for evidence that Commission policy and regulations reflected diverse wildlife interests.

Thus, the ability and willingness of the Commission to deal with a controversy of widespread public concern had the potential of itself becoming an issue. CDOW fully recognized this potential and its consequences for wildlife management in Colorado. With so much at stake, CDOW staff wanted to offer the Commission an alternative that demonstrated responsiveness to all Coloradans without unnecessarily alienating traditional interest groups who had publicly opposed any restrictions of the three bear-hunting practices in question. Given this predicament, Alternative A was considered by CDOW staff to be the best among the feasible options.

Responding to the vocal spring bear hunting advocates, the Commission took a non-binding "straw" vote at the September meeting. This vote rejected Alternative A to end the spring hunt, and the Commission directed CDOW's Director to reopen discussion with his staff about their recommendation. However, CDOW staff maintained that Alternative A was the best option. They prepared to discuss the rationales in more detail at the Commission workshop in October.

During the October Commission workshop in Alamosa, the analysis of the four alternatives was presented again by CDOW staff for the Commission's review. Commission workshops are informational meetings, not decision-making forums. At the workshop, commissioners questioned, analyzed, and discussed at length the biological and human dimensions data pertaining to the black bear hunting controversy. During their discussion, the commissioners in attendance demonstrated a high degree of understanding of the rationale for Alternative A. Observations of the workshop made by three of the authors indicated a consensus was building for Alternative A. It was obvious that several of the commissioners believed that their traditional hunting constituency (i.e., hunters, guides, outfitters and agriculturalists) would not accept this alternative because they knew that for some it would be viewed as the symbolic tipping of the first "domino" toward greater restrictions on hunting in Colorado. Nevertheless, as the commissioners considered all aspects of the controversy, it seemed that Alternative A was emerging as the alternative representing the best long-term interest of hunters and other Coloradans.

Step Two in CDOW's policy process was significant from the standpoint of integrating human dimensions input into wildlife management decisions in Colorado. At this point, CDOW demonstrated to the Commission and the public how scientifically collected, generalizable data about people's opinions, beliefs, and other characteristics could be used in addition to anecdotal testimonials at public meetings and the collective perceptions of CDOW staff, neither of which are likely to be representative of the public.

Step Three

Events immediately following the September 1991 Commission meeting reflected the seriousness with which opposing stakeholders regarded the upcoming Commission decision about black bear hunting regulations. The efforts of the principal interests coalesced. Considerable effort was made to mobilize various constituents to take action in the form of letters to CDOW, letters to editors of newspapers, and other correspondence making opinions known to CDOW and the Commission. As part of this, the people leading the charge on either side worked to hone their message and to recruit media support. Representatives of the media seemed to recognize that this was developing into a story with broad public appeal. The interplay of themes such as representative government, agency responsiveness to the public, traditional rural values vs. contemporary urban values, and the natural sentiments of people regarding wildlife created appealing storylines.

As the November 1991 Commission meeting approached, media attention grew, and the controversy became increasingly divisive. National attention intensified. Lobbying efforts were stepped-up to influence CDOW and the Commission members, and CDOW increased its efforts to seek compromise between the principal parties.

CDOW staff negotiated with two representatives of important stakeholder interests—Michael Smith, President of Boulder Audubon, and Sherri Tippie, President of Wildlife 2000. They were opposed to spring bear hunting and the use of bait or dogs to hunt bear. Staff were assured by Tippie and Smith that they would not pursue the bait and dog issues if CDOW ended the spring bear hunt. Thus, CDOW staff focused their efforts on (a) convincing tradi-

tional hunter groups to accept the compromise and (b) helping those groups understand the consequences for hunters' public image if they opposed the elimination of the spring bear hunt. CDOW staff believed that if hunters convinced the Commission to continue the spring bear hunt, the risk of catalyzing a massive public opinion backlash increased. In that event, not only spring bear hunting but also the practices of using bait and dogs to hunt bear would be swept aside. From CDOW's standpoint, they were arguing for the most pro-hunting solution that could be hoped for in the controversy. Nevertheless, between September and November 1991 CDOW incurred a great deal of wrath and derision from pro-hunting activists. This included accusations that certain staff members were antihunters, that CDOW was "selling out" to animal rights activists, that they "turned their back" on traditional groups that had historically supported CDOW, and that CDOW was not looking out for the greater good of the bear resource.

By the time the November 1991 meeting arrived, CDOW's concerns were realized; that is, out-of-state animal rights groups had decided to turn the Colorado bear-hunting controversy into an arena for pursuing its antihunting agenda. Clearly antihunting advocates were interested in more than the specifics of the black bear hunting controversy—they saw the potential to make another inroad toward eventual abolition of hunting. The spectre of this eventuality reinforced hunters' suspicions that the real motivation for abolishing spring bear hunting was to appease animal-rights interests that had previously threatened legal action against CDOW. The agency's ability to communicate its actual rationale was severely eroded by the increasing presence of national animal rights and pro-hunting activists. CDOW's credibility suffered.

Even Coloradans who were opposed to the three specific bear-hunting practices but not to hunting were frustrated because the focus of much of the discussion at the November Commission meeting was on the motivation of the animal-rights groups instead of on the ethical concerns being raised regarding the three bear-hunting practices (pers. comm. M. Smith 1992).

Although some CDOW staff and hunters were suspicious of the real intentions of people who were opposing the three bear-hunting practices, some were

quite clear. For example, Michael Smith stated publicly that he was not antihunting, and his opposition to spring black bear hunting was not an antihunting ploy. In fact, he pointed out that the continuation of the spring bear hunt would be counterproductive to hunters' efforts to improve their reputation among the general public in Colorado. Smith stated his position on black bear hunting as follows:

There should be an opportunity for sportsmen to hunt bear in Colorado. But that hunting has to be done in a respectable, responsible fashion. That means do it in the fall, so if you kill a female with cubs, the cubs have got a chance of survival.

(Channel 9 KUSA 1992)

Smith supported Alternative A, finding it a "reasonable compromise" (pers. comm. M. Smith 1992). He had long been involved in the black bear management issue (since 1982) and provided input used to refine the language of Objective #2 for the black bear management portion of the Long Range Plan. Consequently, he was well aware of the significance of the Commission's action to adopt that objective, and the commitment it represented to the welfare of black bear cubs. The black bear welfare interest articulated by CUB was quite different from the animal rights interest that would be expressed later by the Director of the Fund For Animals.

Despite pressures from some hunters and some animal rights advocates who desired changes in CDOW's recommendation, CDOW's continuing analysis indicated that Alternative A was still the best compromise. CDOW had no intentions of meeting the demands of animal rights advocates and did not feel that Alternative A was in any way an appeasement to those demands. Rather, CDOW was interested in addressing the ethical issues (e.g., animal welfare concerns) on their own merits.

Just prior to the November 1991 meeting where the Commission would adopt regulations regarding the season and hunting methods for black bears, CDOW staff activity on the controversy reached its highest level. Their concerns ranged from having well-prepared presentations to ensuring the adequacy of security for the Commission meeting, given threats received to sabotage it. Preparations had to be made

to accommodate media representatives, including television news teams.

On 21 November 1991 at the Denver headquarters of CDOW, the Commission faced a standing-room-only crowd, one of the largest congregations on record for a Commission meeting. With approximately 120 people indicating a desire to make public testimony about black bear regulations, the Commission chose to restrict the number and duration of comments accepted. The audience was told that each citizen would have three minutes to make his or her point. The audience was also told that the Commission was most interested in hearing the breadth of views instead of hearing similar views repeatedly, and therefore were asked to abstain from that practice in the interest of time.

By and large, no new themes of importance to the controversy emerged; the issue interpretations identified during the summer survey still predominated. Three highlights of the meeting significant to this case study were: (1) testimony given by the National Director of the Fund For Animals (FFA); (2) the actual regulation adopted by the Commission; and (3) the Commission chair's closing comments. The National Director of FFA was the first speaker selected among the people signed up to testify. He made it clear the people he represented were against all forms of hunting. However, "in the spirit of cooperation," he accepted Alternative A as a reasonable alternative (Pacelle 1991). The FFA Director closed with a threat of a ballot initiative should the Commission not approve this alternative (Box 2).

Modification of alternatives: After hearing extensive public testimony, the Commission chose Alternative C (with a 5 to 3 majority) instead of Alternative A recommended by CDOW staff. Alternative C was referred to by CDOW as the gradual phase-down approach. Although this alternative appears to be a compromise heading toward abolition of spring bear hunting, such hunting would not be eliminated within the three-year time frame of the regulation and the fate of spring bear hunting beyond that time was still in question. Alternative C also added two weeks onto the spring season closing date, endangering more females with cubs. Thus, those who wanted spring bear hunting to end were not satisfied (because the measure retained and lengthened the spring hunt), but neither were those who wanted it to

"Without a doubt the black bear hunting policies in this state are of the utmost concern to us. And that is what brings me here and that is what has prompted so many of our members throughout the state of Colorado to encourage me to be here and speak on their behalf. There should be no confusion that, just to set the FFA [Fund for Animals] on the spectrum, we do not like any black bear hunting. We are an anti-trophy-hunting organization. We see that as a principal motivation for black bear hunting, and I just wanted to be candid and honest about that from the beginning. And ultimately, yes indeed, there should be no confusion that the FFA and other humane organizations across the country are not pleased with the idea of black bears being shot for recreation and for trophies. We recognize, however, that the Commission is not going to rule on that favorably on our side. There is no question about that.

We are dealing today with some particularly abusive practices with regard to black bear hunting in the state. And the three I would like to devote attention to are spring season hunting..., "and baits and hounds..." "I saw a sheet earlier today that the public comment is 15 to 1 in favor of terminating the spring bear season. It is more than 100 to 1 in terms of favoring the termination of the use of both baits and hounds. We also have two DOW/Commission polls that conclusively indicate that general public attitudes are highly unfavorable on all three of these types of bear hunting...."

We can think of this as a referendum on bear hunting, but clearly the issue before you is not terminating bear hunting altogether today. It is passing judgment on these three particularly egregious elements of bear hunting, and I think it's extremely notable that humane organizations across the board, environmental organizations across the board, have come out and supported a termination of spring [bear hunting], baits and hounds.

"It would be a very grave mistake for the Commission to ignore the mass body of opinion out there that wants some reasonable reform to black bear hunting policies. I come to you with a strong viewpoint about bear hunting in general but in the spirit of cooperation we are prepared to accept reasonable alternatives to our ideal objective, and that is what we want from you today. Alternative [A], the DOW's recommendation to terminate spring hunting, is something that we can live with. We would like to see baits terminated and we would like to see hound hunting terminated. But at the very least, at this time, the spring season must be abolished. The killing of sows with dependent cubs is an element of the spring hunt that is unavoidable..." "To retain a spring season is to guarantee the killing of sows with dependent cubs. Should the Commission not accept the alternative and retain the spring season. It is very clear that the coalition that we have been a part of—the animal groups, the environmental groups—are going to ask the voters of Colorado for much more. At the very least we are going to ask for a termination of spring hunting, bait hunting and hound hunting and we would proceed with that expeditiously to get it on the ballot in 1992..." "We were coming here in the spirit of compromise to get out what is the most egregious element of black bear hunting in the state, which is spring hunting."

(Pacelle 1991)

Box 2

continue as it had been (because of the phase-down plan). Consequently, this attempt by the Commission to offer the interested public a compromise was viewed as inadequate to both sides of the controversy and lacked support from any major sector of the public.

Commission Chairman's summary: Following the Commission's vote to adopt Alternative C, the Chairman made a summary statement about the vote and the proceedings leading up to it. Although out of context the following extract from his statement may seem extreme or reactionary, the appreciative reception he received for his comments by many members of the audience indicates he was reflecting a relevant, popular viewpoint (Box 3). While the content and even the emotion of the presentation resonated among many people in the audience, it did not represent the majority opinion of Coloradans as evidenced by the 1992 ballot results discussed later. The statement was significant from at least two standpoints. First, the statement of the Chairman could be taken to represent the viewpoint of the entire Commission. This implication was not lessened by the fact that no other commissioner chose to question it afterward or offer a substantive statement of his/her own. Thus, on the face of it, one could be left with the impression that the Commission was selective in the views it was willing to consider as legitimate and was not yet receptive to the integration of scientifically obtained human dimensions data.

The second aspect of the Chairman's statement was its ultimatum-like tone which reinforced an adversarial perception wherein the Commission was prejudiced in favor of those representing traditional utilitarian values and therefore was not ready to objectively consider the opinions of anyone or any group with competing or opposing values. Furthermore, his statement, regardless of the actual action voted upon by the Commission, "dropped the gauntlet" for confrontation with the animal rights people as represented by FFA. The Commission may have played into the hands of antihunting activists by legitimizing the notion that Colorado was willing to be a national battleground for the hunting/antihunting struggle and allowing the black bear hunting issue to become a precedent-setting skirmish. More importantly, the Chairman's statement indicated that ethical concerns about black bears held by a wide swath of Colorado's citizenry were "peripheral issues" that had little importance to

wildlife management decisions; this perspective likely did not enhance confidence among many members of the public that the Commission considered their viewpoint in its decision-making process.

For people like Michael Smith who were seeking protection for female bears with dependent cubs, consistent with Objective #2 of the CDOW's Long Range Plan, the Commission's adoption of Alternative C was untenable. The spring season was actually lengthened under this alternative, effectively placing females with nursing cubs in jeopardy for a longer period than previous regulations allowed. This action would be portrayed later as a callous refusal of the Commission to step up to ethical issues in bear management, even in the face of compelling evidence that most Coloradans, including many hunters, were opposed to spring bear hunting.

The Ballot Initiative Period: November 1991-November 1992

Dissatisfied by the decision to "phase-down" instead of end the spring bear hunt, Boulder County Audubon filed an injunction against the Colorado Wildlife Commission in March 1992. Smith claimed that by allowing the spring hunt to continue, the Commission was in violation of Objective #2 in the Long Range Plan. A legal action was intended to stop the 1992 spring hunt and determine its legality. To block the spring hunt, however, Boulder County Audubon had to prove that this particular hunt caused irreparable injury to the bear population. The court testimony of CDOW staff who recommended to end the spring hunt on ethical grounds did not support the cessation of the spring hunt on biological grounds (i.e., CDOW maintained all along that a closely regulated spring bear hunt had no deleterious impact on the bear population). Thus, Boulder County Audubon had little scientific backing for a biological argument against spring hunting, and the ethical argument was deemed legally irrelevant. Consequently, Boulder County Audubon did not obtain the injunction against the spring season. The judge believed that although the "phase-down" decision was not in the best interest of certain individual animals, it was not biologically detrimental to the population and provided adequate protection for a majority of female bears with cubs (*Boulder County Audubon vs. the Colorado Wildlife Commission* 1992).

"There is no biological evidence that the spring hunt would in any way destroy our herd of bear. And I think it's wrong for the Commission to start making decisions about regulating wildlife based on a lot of peripheral issues that have nothing to do with biology. I think you're headed down a lane that you don't want to get into. When you start doing things based on political whims and political pressure by those who make the most noise, you're in dangerous waters. I've served in quasi-public and public positions for the last 40 years in the state of Colorado, and I've been subjected to all kinds of verbal abuse and other kind of abuse over those years. But you have to be willing to stand for something, or you'll fall for anything. I happen to stand for something in this case, and I think that if we start to make decisions based on anything other than sound biological situations, then we're headed in the wrong direction.

There is a great deal of banter about a poll that was taken showing that a high percentage of people are against killing lactating mother bears who might leave dependent cubs. If you go look at the question that was asked, it was begging the answer that they got. If they would have asked me that same question, "would you be in favor of shooting mother bears that had dependent cubs?", I would say "no, I'm not in favor of that." You get a predictable answer out of that question. It was designed to get that answer, and that's what you got. That isn't what is happening. That isn't the real world out there, but everybody's grabbing on to that as if everybody in the world is against hunting because it might kill a lactating female. The killing of lactating females has been a very minimal thing."

"Some of the animal rights groups, all of the animal rights groups let me put it that way, that I know anything about have as their goal to eliminate all hunting. And don't you think for a minute if you pass this motion that we have here today that its going to deter them in any way, shape or form. They're just going to start there and move on from there to try to complete the rest of their agenda. Yes, there are some people who are genuinely concerned about lactating mother bears and cubs, and they have no agenda other than that, I grant you that. But I'm talking about the animal rights groups. And if you listened very carefully to Mr. Pacelle, he was very careful not to imply that this was all of their agenda if we do away with the spring hunt. . . ." "They really have in the back of their mind to try and eliminate all hunting, and I am very much opposed to that. I've been bullied by the best of them in the world, and I know how to face a bully--meet them head on, and get it behind you and go on down the road.

I'm not going to be intimidated by their loud noises nor the people that are afraid of every little issue and make threats about going to the ballot. I guess we better get it on and get it behind us. . . ." "But I'm not going to abdicate my responsibility or be anything less than honest with you in acquiescing to the pressures that are put on by people that make the most noise. I'm simply not going to do it. I don't believe the [Division] really met their responsibility in this area. I think they were scared to death of the politics of the thing. I admonish them for it. I think their decision and their recommendation to us ought to be based on sound biological evidence, and when they fail to do this, they lose me; and they are not going to get my vote on their recommendation."

(Cooper 1991)

Box 3

Having exhausted all other avenues of recourse, Smith and others formed Coloradans United for Bears (CUB), a political organization with the intent of placing the spring bear hunting issue on the November 1992 ballot as a legislative amendment. The ballot initiative process provided Smith the opportunity to combat two other bear-hunting practices that he and certain wildlife organizations questioned, the use of baits to lure bears and the use of dogs to pursue bears. Thus, CUB combined spring bear hunting, the use of bait, and the use of dogs into a multifaceted public debate and began a petition drive to place all three on the ballot as one amendment.

CDOW staff forecasted that one consequence of implementing the Commission's "phase-down" alternative, with its provision to lengthen the spring season by 15 days, would be a dramatic increase in the harvest of lactating females. Specifically they predicted the harvest of lactating females would increase from 6 in 1991 to 20 in 1992 (Gill and Beck 1991). This figure was later amended to 26 during testimony presented at the injunction hearing to halt the 1992 spring hunt. CDOW bear biologists were extremely accurate in their prediction; 25 lactating female bears were killed during the spring 1992 season. The issue of cub mortality in spring 1992 received a great deal of media attention (Box 4) and intensified the controversy. This publicity likely helped CUB with its petition drive.

Primarily using volunteer solicitors (many of whom were FFA members) and flyers, CUB collected 76,360 signatures supporting their agenda and submitted them to the Secretary of State for validation in August. The 50,000 signatures necessary to place an issue on the ballot as an amendment were validated, and thus CUB began a campaign to see its amendment, Amendment #10, win in November. The Amendment summary that appeared on the ballot read as follows:

An amendment to the Colorado Revised Statutes to prohibit the taking of black bears by the use of bait or dogs at any time, and to prohibit the taking of black bears by any means between March 1 and September 1 of any calendar year, and subjecting violators to misdemeanor penalties and a loss of hunting privileges.

(Legislative Council 1992)

The pro-hunting activists formed their own group, Coloradans for Wildlife Conservation (CWC) to counter the efforts of CUB. CWC's purpose was to combat any initiative that would attempt to hinder the Commission's "phase-down" decision. CWC was endorsed publicly and supported financially by well-known national sportsmen's groups (e.g., NRA), local sportsmen and agricultural groups (e.g., Colorado Guides and Outfitters Association and Colorado Woolgrowers Association), and various animal use groups (e.g., Professional Rodeo Cowboys Association). The organizers of CWC regarded CUB's effort as an animal-rights strategy meant to compromise the tradition and opportunities of hunters. Furthermore, CWC presumed that a ban on spring bear hunting, and the use of bait and dogs could subsequently initiate a "domino effect" leading to the elimination of all hunting. Although CUB proclaimed interest in the spring black bear hunt and the use of bait and dogs only, the involvement of out-of-state animal rights groups prompted anti-hunting concerns among sportsmen.

CWC was also concerned that Amendment #10 was a precedent-setting amendment that encouraged wildlife management decisions to be made by the lay public instead of "professional biologists" at CDOW (CWC 1992). They expressed this concern despite the fact that CDOW biologists recommended to end the spring hunt on the basis of animal welfare concerns. The following summarizes CWC's focus:

Animal rights activists are striving to create win situations one step at a time in Colorado. Their first step being to attempt to curtail bear hunting and to remove management responsibility from the hands of the Colorado Wildlife Commission.

(CWC 1992)

In August 1992, the controversy heated up considerably when the amendment was officially approved to be on the November ballot. CWC and CUB were now in the position of vying for the support of Coloradans for their respective positions. Each group chose different campaign strategies meant to disseminate their message and sway voters. CUB voiced its message through flyers and various media channels (e.g., newspaper interviews and one television commercial). Two major financial contributors to CUB were Fund For Animals (FFA),

"Twenty-two Nursing Bears Die in Spring Bear Hunt"

An estimated 40 black bear cubs were left to die in the Colorado back country this spring, as the number of mother bears killed by hunters ballooned more than three-fold from last year.

Twenty-two nursing sows were confirmed killed during the April 1 to June 1 hunting season, state wildlife officials said Thursday. Six were killed in the spring of 1991.

Opponents of the spring hunt were outraged. "The state's wildlife commissioners let loose an absolute slaughter of female bears and their cubs," said Mike Smith of the Louisville-based Coloradans United for Bears.

Late last year, the state Wildlife Commission refused to end the spring hunt despite protest from the public. The ruling went against the recommendation of state wildlife biologists.

Instead, it approved what was deemed a compromise between the divergent interests of hunters and activists: Fewer licenses would be issued in the spring, but a spring hunting season would be extended by 16 days.

The problem was, the hunt was extended during a time when mother bears emerge from their dens, increasing the likelihood of their being killed.

Bear cubs, most often born in January, cannot survive on their own until sometime after August. Sows typically have two cubs, but the number can vary from one to three.

"It's regrettable that any lactating females were killed," said Division of Wildlife spokesman Hugh Cox, who noted it is illegal to kill a female if cubs are near.

But sows often forage without their cubs, and it is nearly impossible for a hunter to determine the sex of a bear before killing it. Still, he said, "there are a lot of signs that Colorado's black bear population is healthy." Between 10,000 and 15,000 bears are thought to live in the state.

He also noted that under the Wildlife Commission's plan, the number of spring bear hunters will dwindle from 1,000 this year to about 200 in the 1994 season.

But, Smith said, relying on fewer spring hunters to stem the killing of mother bears misses the issue. "We don't hunt deer or elk when they have dependent young with them--and we choose not to do that for ethical reasons," he said. "The same standards of ethical hunting that we apply to every other game species in the state should also (apply) to black bear" . . .

(Boulder Daily Camera 07/24/92)

based in Maryland, and the Humane Society of the United States, based in Washington, D.C. Many monetary and volunteer time contributions came from local groups and individuals.

Much of CWC's funding came from large sportsmen's groups such as the Wildlife Legislative Fund of America (WLFA), NRA and the Rocky Mountain Elk Foundation. They also received contributions from local groups and individuals. CWC campaigned by distributing brochures, writing letters to editors of newspapers, and scheduling a press conference in Grand Junction. Although neither group used paid advertising extensively, CWC felt limited in the extent to which it could communicate its views to the majority of Coloradans. Denny Behrens, then coordinator of CWC, explained the reason more money was not spent on advertising was because his group could not raise the \$800,000 to \$1 million necessary to run a successful campaign (*Daily Sentinel*, 12/13/92). Behrens attributed CWC's inability to raise funds of this magnitude, in part, to the fact that neither CDOW nor the Commission backed their efforts. CDOW by law (Colorado Revised Statutes 1-45-116) could not take a stand on Amendment #10, nor could it support the positions of either group.

Stan Sours, also involved with CWC, attributed CWC's minimal funding to the fact that national sportsmen's groups did not contribute the amount of money expected. Instead he believed they concentrated most of their financial support to defeat Proposition 200 in Arizona, a wildlife management controversy running simultaneously with the bear-hunting controversy in Colorado (Sours 1992). Although Proposition 200 primarily was directed at ending trapping on public lands in Arizona, the proposition was worded such that it could have precluded all lethal methods of wildlife management in Arizona. This proposition apparently was considered by national hunting organizations to be a greater direct threat to hunting and thus demanded a higher funding priority.

Perhaps, more effective than advertising for either CUB or CWC was the media attention this issue received. Although it was only one of ten amendments on the ballot in 1992, the two major Denver newspapers, *The Denver Post* and the *Rocky*

Mountain News, plus many smaller newspapers, gave Amendment #10 considerable press coverage, especially in the form of editorials and letters to the editor (Boxes 5 and 6). Bob Saile, a sports columnist for *The Denver Post*, was especially attentive to this issue. To a lesser extent, television stations provided some coverage of this issue.

Although the media drew attention to the controversy, such attention illuminated the extent to which misperceptions clouded the real issues. Prior to the election, local newspapers were replete with editorials and letters to the editor branding the black bear hunting controversy as an animal rights vs. hunting issue (Box 7). These letters and columns fueled the fire on both sides of the controversy and diverted attention from the issue of black bear hunting ethics addressed in Amendment #10.

In the midst of these misperceptions a number of tracking polls were conducted before the election to predict the outcome of the vote. Because all of the polls confirmed that Amendment #10 would pass with a healthy majority, it was not surprising when approximately 70% of Colorado voters voted in favor of Amendment #10 (i.e., they voted to abolish the spring bear hunt, use of baits to hunt bear, and use of dogs to pursue bear).

The outcome of the vote was also predicted by the 1989 and 1991 human dimensions studies that found that the majority of Coloradans were opposed to the three practices. The similarity between the human dimensions studies and the actual vote suggests that Coloradans likely had their opinions well-formed about how they would vote on this issue prior to any advertising or campaigning done by either side of the controversy.

Colorado's 1992 ballot was unusual in that it had ten amendments in addition to candidates for President and the U.S. Senate on which to vote. The supporters of Amendment #10 were concerned that the length and complexity of the statewide ballot would divert attention from Amendment #10. Also, being last on the ballot, it might be overlooked. These concerns notwithstanding, Amendment #10 received the third highest number of votes out of all of the amendments and the fourth highest number of votes of all the issues on the ballot.

"Bear Amendment Won't Really Help our Bear Population"

Proposition #10 is being promoted as an issue to help bears, when it will do exactly the opposite. The Colorado Division of Wildlife has managed bears for years with a management objective of keeping the loss of cubs at the lowest level possible.

It is already against the law to shoot a bear with cubs in the spring or fall, and just as damaging to the cubs. The organizers of this amendment seem to believe it is only a spring issue, but bear cubs need their mother to den up with and survive their second winter too.

Why use bait or hounds? Again, to protect the cubs. Both these methods allow a long and close look at a bear, and many fewer sows with cubs are taken by these methods than by any other.

Spring hunting again tips the scales in favor of taking boars, as they usually emerge from dens first. Also, unlike the deer and elk which are helped by fall population reductions, bears need to eat enough in the spring and summer, or they will not make it through the winter, no matter how many are taken in the fall.

Fall hunting is too late to help the remaining bears; it takes too many sows and orphans too many cubs. This proposal is wrong for the bears. For their sake, and to keep game management within the Division of Wildlife, vote NO on 10!

Gregory M. Jungman
Dillon, CO

(Vail Trail 11/5/92)

Box 5

Another point of interest is in the county-by-county breakdown of votes on Amendment #10. The amendment had majority support in all urban and many rural counties of Colorado, indicating that this was not simply an urban vs. rural issue, as some believed. Many misperceptions about voters' beliefs regarding this controversy could not be clarified by simply looking at the outcome of Amendment #10. Thus, CDOW asked Cornell University's Human Dimensions Research Unit (HDRU) and Colorado State University's (CSU) Human Dimensions in Natural Resources Unit (HDNRU) to collaborate in the design and implementation of a post-election survey to learn more about voter perceptions and motivations concerning the black bear hunting controversy.

The Post-election Survey

A post-election survey was conducted of a random sample of Colorado registered voters and of licensed black bear hunters who voted in the 3

November election to obtain information about voters vis-a-vis Amendment #10. Interviewees consisted of those who voted "yes" on Amendment #10 (n=369), those who voted "no" on Amendment #10 (n=346) and licensed black bear hunters who voted on Amendment #10 (n=258) (Decker et al. 1993). The objectives of the survey were as follows:

1. Determine the extent to which aspects of the black bear hunting controversy presented in Amendment #10 (i.e., three bear-hunting practices) influenced interviewees' voting behavior.
2. Determine voters' interpretations (i.e., perceived issues involved) of the black bear hunting controversy and relative influence of various issues on voting behavior.
3. Assess voters' self-appraisal of the extent and sources of information

"Spring Hunt Raises Ethical Questions"

Opponents of Amendment #10, which would abolish the spring bear hunt in Colorado and prohibit the use of bait and dogs at any time, assert that "professionals should study this thing more." They obviously are unaware or choose to ignore the facts. Colorado is one of only three states which still allows a spring bear hunt and the use of bait and dogs, which says something about how professionals feel in other states. In addition, Colorado's own Division of Wildlife's biologists and management have recommended this ban.

One does not need to be a "religious fanatic" or an "animal worshiper" as claimed by some opponents, to see there are serious ethical questions raised in the killing of a nursing bear. This year, with an even longer spring hunting season, 25 nursing bears were killed, as compared with eight in 1991. As virtually all cubs orphaned in the spring die, this left up to 50 cubs to starve or be killed by predators. Putting emotion aside, killing females and their cubs (two generations) is not conservative management as bears are slow to mature and reproduce. It is illegal now to kill a bear with cubs, but, unfortunately, impossible to tell which bears are the nursing ones, as they typically hide their cubs. No hunters were penalized this year for the 25 that were killed as they claimed no cubs were present. The only way to eliminate this problem is to eliminate the spring hunt.

Some have compared using bait and dogs in bear hunting to imitating a bugling sound to attract elk. Using a pack of dogs to chase a bear up a tree, or setting out a box of food and waiting for a hungry bear to show up is not at all similar.

Bear hunting would still be allowed in the fall, and this amendment would not prohibit the Division of Wildlife from removing nuisance bears posing a threat to humans or property. Please vote YES on Amendment 10.

Melanie Mahoney
Livermore, CO

(Fort Collins Coloradoan 11/1/92)

Box 6

available about the black bear hunting controversy.

4. Identify socioeconomic, demographic or experiential (e.g., hunting involvement) characteristics of voters that correlate with voting behavior on Amendment #10 or beliefs about the nature of the black bear hunting controversy in Colorado.

Possibly the most important observation to be made from the findings of the post-election survey is that the black bear hunting controversy was not viewed primarily as an antihunting issue by most

Colorado voters who voted on Amendment #10, including those who supported the amendment. Most people who supported the amendment were primarily motivated by concerns for bears, either at the individual animal welfare level or population level. Secondly, they were concerned with the "ethical" issues of fair chase or sportsmanship, and the morality of the featured hunting practices (quite likely related specifically to killing females with dependent cubs).

People who opposed Amendment #10 (and bear hunters specifically) viewed the controversy as primarily being about protecting their perceived legal and moral "right" to hunt. They also wanted to avoid the precedent of having voters set hunting policy and

"Leave It To The Pros"

On November 3, Colorado's wildlife management is going on trial. Anti-hunting and animal rights groups are trying to take away wildlife management decisions from the Colorado Division of Wildlife and place them into the hands of uninformed voters.

They seek to end spring bear hunting and eliminate legal hunting methods. The Division of Wildlife has already begun a three-year phase out of spring hunting.

This issue is a smokescreen clouding the animal rights' real agenda of eliminating all hunting, fishing and trapping. Over 90 percent of the funding for this issue is coming from animal rights, anti-hunting groups and not from concerned Colorado citizens as they would have you believe. These are the same groups that would also eliminate rodeos, livestock shows and the use of animals in research for cures for cancer, AIDS and other diseases.

By voting No on Amendment #10, you are showing your support for allowing the Division of Wildlife, not outside radical groups, to continue making sound wildlife management decision for Colorado.

David Cutler
Greeley, CO

(Greeley Tribune 10/23/92)

Box 7

regulations through ballot initiatives, favoring instead the CDOW policy decision process. The post-election survey suggests that many people who opposed Amendment #10 misinterpreted the motivations of most people who supported the amendment, although they may have accurately understood the motivations of the out-of-state animal-rights groups whose views gained such high media profile during the controversy. In reality, few supporters of Amendment #10 considered themselves antihunters (10%); most were nonhunters who did not oppose hunting as an activity (64%), and many were active hunters or had hunted in the past (26%).

The analysis of hunters versus nonhunters revealed a potential pitfall regarding interpretation of who the "yes" versus "no" voters on Amendment #10 were; opposition to the amendment cannot be generalized simply as the "hunters' position", as some people might believe (Box 8). Hunters were closely split in their vote on the amendment; 41% supported and 59% opposed Amendment #10. Hunters considered the well-being of the black bear popula-

tion to be the most important issue rather than animal rights vs. hunting, as commonly indicated by Amendment #10 opponents. Although this particular wildlife management decision was decided by the voters of Colorado, the post-election survey indicated a majority of both hunters and nonhunters preferred that CDOW rather than voters make wildlife management decisions. It should be noted, however, that according to the results of each formal study of the public on this issue (1989, 1991 and 1992), support for CDOW unilaterally to make wildlife management decisions diminished somewhat over a three-year period.

In their analysis of Amendment #10 voters, Decker et al. (1993) identified three important implications for black bear management in Colorado. These implications are summarized here:

1. The black bear hunting controversy was multifaceted in terms of the issues that various segments of the public believe are relevant and important.

(Letter written to CDOW Director Perry Olson)

Dear Mr. Olson,

As a Colorado sportsman, hunter and fisherman, I clearly am pro-hunting and do not consider myself an animal rights activist. I have hunted and fished all my life and have been an active member of hunting and conservation organizations.

However, I am writing to express my concerns, as a fellow hunter, about current bear hunting regulations. It has become increasingly evident from research in other western states and now, it appears, from within the Division of Wildlife itself, that spring bear hunting is likely having an adverse effect on bear populations. Regardless of how careful a hunter may be, it is not always possible to discern those bears with cubs. This leads to needless loss of a valuable resource. In addition, I am concerned about the use of baiting and dogs in the pursuit of bears. As a hunter, I feel this provides an unfair advantage to the hunter and, at best, is un-sportsmanlike.

The Wildlife Commission is appointed to represent the interests of all Colorado citizens. Unfortunately, the outfitters and trophy hunters have a loud voice for such a minority view. I urge the Commission to delete the spring bear hunting season and eliminate the use of dogs and baiting, which are just plain wrong.

(Reynolds 1991)

Box 8

2. Knowledge of stakeholders' (including wildlife professionals) beliefs and attitudes pertaining to a controversy need to be used as a basis of an educational communications effort to ensure widespread understanding of the biological facts and ethical perspectives that exist.
3. Coloradans are interested, though to varying degrees, in having input to or participating in black bear and wildlife management issues.

questions about the general level of "responsiveness" of the Colorado Wildlife Commission to Coloradans' concerns.

Conversely, CWC was interested in continuing their mission of educating and informing the public about their perspectives regarding human use of animals. Thus, they formed a nonprofit organization, Western Traditions Coalition (WTC), to continue their efforts. WTC defines their purpose as follows:

Western Traditions Coalition will provide information and education to Western states' residents pertaining to all aspects of wise animal use for the benefit of humans. This information is to include, but not be limited to, animal husbandry, laws and regulations focusing on wildlife conservation, the use and protection of animals in sporting events, medical research involving animals, the need to strengthen animal welfare laws, and to promote strict enforcement of animal welfare laws and regulations.

Outcomes of Amendment #10

After the election, the two political action groups, Coloradans United for Bears (CUB) and Coloradans for Wildlife Conservation (CWC), disbanded. Michael Smith stressed that "it should be possible to work with CDOW in the future, and a ballot initiative should be a last resort" (pers. comm. M. Smith 1993). Although he hoped that people would stay involved in wildlife issues, Smith emphasized that "there is no future for CUB" (Smith 1993). He suggested that future controversy may arise over mountain lion hunting, leg-hold trapping and

WTC will also serve as an educational organization to inform the public of the growing animal rights movement throughout the United States and to inform the public of the far-reaching detrimental goals of such organizations and their extremist activities.

(WTC 1993)

In addition to becoming better organized, Stan Sours, the Executive Director of WTC, believes that "people who use animals will need to clean up their image and work for better animal welfare laws" (Sours 1992).

Others active in the black bear controversy kept a focus on Colorado. For example, the Director of FFA sent a letter to the Commission in December 1992 calling for an end to bowhunting of bears in Colorado. Ironically, FFA used testimony from bowhunters during the November 1991 Commission meeting stating that baiting was necessary to get a clean shot when using a bow. This argument stressed that because baiting of bears was now illegal, hunters could not get close enough to the bear to get a "clean shot." Thus, bowhunting would result in a greater number of injured bears than when baiting was legal. FFA's attempt to end bowhunting of bears was consistent with the so called "domino effect" theory expressed by many opponents of Amendment #10 and started another round of accusations in the media (Box 9). Those opposed to Amendment #10 may have associated FFA's intentions with those of local groups that supported Amendment #10.

At the January 1993 Commission meeting, FFA's Director once again asked the Commission to consider a ban on bowhunting of bears in Colorado. However, on this issue the Director discovered he had no local support. Groups in Colorado that had supported Amendment #10 such as CUB and Wildlife 2000 reconfirmed that they had no hidden antihunting agenda and merely were interested in banning the three bear-hunting practices that they believed to be unethical. In fact, Sherri Tippie, President of Wildlife 2000, stated:

The passage of Amendment 10 did not intimate that we in Colorado are antihunting . . . Amendment 10 was not an antihunting issue but an ethics issue that many hunters supported. I for one resent the Fund [For Animals] falsely turning it into some sort of antihunting victory.

(*The Denver Post*, 01/17/93)

Michael Smith (Director of CUB) agreed with Tippie and also did not support a ban on bowhunting.

Tippie's speech allowed sportsmen's groups, who may have felt they had lost a hunting-antihunting battle understand what Amendment #10 meant to those local groups that instigated the ballot initiative and, as the post-election survey revealed, what it meant to most Colorado voters who supported the amendment.

After hearing Tippie's comments at the Commission meeting, Bob Radocy, the Chairman of the Board for Colorado Bowhunter's Association, said:

I learned from this issue that there is a difference between animal welfare and animal rights. Sherri Tippie's group is an animal welfare group. It was refreshing to hear what she had to say. It gave sportsmen a lot more respect for animal welfare groups.

(Radocy 1993)

Unfortunately, it was only after months of miscommunication that at least some understanding about the concerns of moderate groups on each side was reached.

The final outcome of the January 1993 Commission meeting was the new bear season structure approved by the Commission in compliance with Amendment #10. The season was set for September 2-30, with 1,000 bear licenses to be sold. Also, unlimited licenses were made available concurrent with the regular deer and elk seasons. The use of bait or dogs to hunt bear was prohibited.

"Hunt Group Won't Panic Over New Movement"

Members of Colorado hunting coalitions say a move by a Maryland-based group to ban bowhunting for black bears is simply another step toward the outright ban of hunting.

The Maryland group—Fund for Animals—backed Amendment #10, which successfully banned spring bear hunting in Colorado, with large contributions. Now Fund for Animals is asking the Colorado Wildlife Commission to ban bowhunting of black bears.

Wayne Pacelle, National Director for Fund for Animals, wrote the Wildlife Commission saying the Amendment 10 vote Nov. 3 "was an unmistakable signal that the Commission must be responsive not just to hunters, but to all Coloradans."

"The results revealed the Commission is markedly out of step with prevailing public attitudes toward bear management and must no longer sanction entirely unsporting and unethical hunting practices."

D.J. Schubert, Director of Investigations for Fund for Animals, acknowledged that the group's objective is to eliminate all sport hunting.

Colorado hunting groups, and even proponents of Amendment 10, have asked the Wildlife Commission to ignore the campaign.

"We aren't particularly panicked, because we knew all along Fund for Animals' agenda was to ban all hunting," said Jerry Hart, President of the United Sportsmen's Council. "We realize this attack will continue, but we also believe the people of Colorado will lose patience with the initiative process and if another comes along, it's going to fail."

And Mike Smith, leader of Coloradan United for Bears—the coalition that pushed Amendment 10—said the Fund for Animals letter is ill-considered. "I don't see this as an issue and I disagree with them on it," he said.

Perry Olson, Director of the Colorado Division of Wildlife, said there are not studies that indicate that bowhunting is either cruel or ineffective. "While I feel people with differing values have a right to state them, I resent it when one group tries to inflict their values on us," he said.

(Glenwood Post 12/23/92)

SUMMARY AND ANALYSIS

Wildlife Management Paradigm

The Brewer and deLeon (1983) policy model provides general guidance for analyzing the decision process related to an issue, but another model is useful for conceptualizing comprehensive wildlife management.

These elements are interactive, operate within limits imposed by the *management environment*, and reflect the need for human dimensions insight in management (Fig. 4) (Decker et. al 1992).

1. *Broad policy* reflects the broad values of society that give recognition to wildlife as a "resource" and relative priority to its management.
2. *Goals* are statements of intent for management, typically articulated as general conditions that should be attained for wildlife and people.
3. *Specific policies* set institutional bounds on management and broad operational guidelines for public wildlife managers.
4. *Objectives* provide measurable definitions of the portion of the goal that is expected to be achieved within a specified period of time.
5. *Opportunity or problem identification* reveals challenges to achieving objectives, leading both to actions and research.
6. *Research* builds the information base with results from basic and applied biological and sociological inquiry.
7. *Actions* affect: (1) wildlife populations; (2) habitat; and (3) people through regulation, communication and education, and manipulation (e.g., economic incentives).
8. *Responses* are outcomes of actions evidenced in wildlife populations, habitat conditions, and people.
9. *Evaluation* measures the response to the actions taken, expressed in terms of accomplishment of stated objectives.
10. *Information base* has two characteristics--source and kind. Sources include experience and intuition, research, theory, modeling/simulation, and culture. Kinds of information include biological, ecological, economic and social science data; "common" knowledge; and prevailing philosophies.

This paradigm of wildlife management provides a framework for organizing the many steps taken by CDOW as it attempted to analyze and understand the ramifications of potential black bear management options. Our analysis of the evolution of the black bear controversy indicates that between 1979 and 1992, CDOW and the Commission have experienced three cycles of the paradigm (Fig. 5). Figure 5 illustrates the three cycles as a means of summarizing the evolution of the controversy. An analysis of the cycles in terms of the two objectives of this case study follows.

Analysis of the Controversy

The Colorado black bear management controversy had many important human dimensions elements. Although biological information played a fundamental role in the evolution of the public controversy, ethical concerns ultimately had the most weight in the passage of Amendment #10 in the November 1992 election. In the following subsections we examine uses of human dimensions information, consider the interplay of decision makers' ethical judgments with human dimensions insights, and analyze stakeholder reactions to those judgments and the use of human dimensions data. The objectives of the case study serve as an organizing framework for this analysis:

1. To examine the uses made of human dimensions information/insight regarding public values, and reveal the interplay of such input with the ethical judgments of decision makers about black bear hunting in the policy setting.

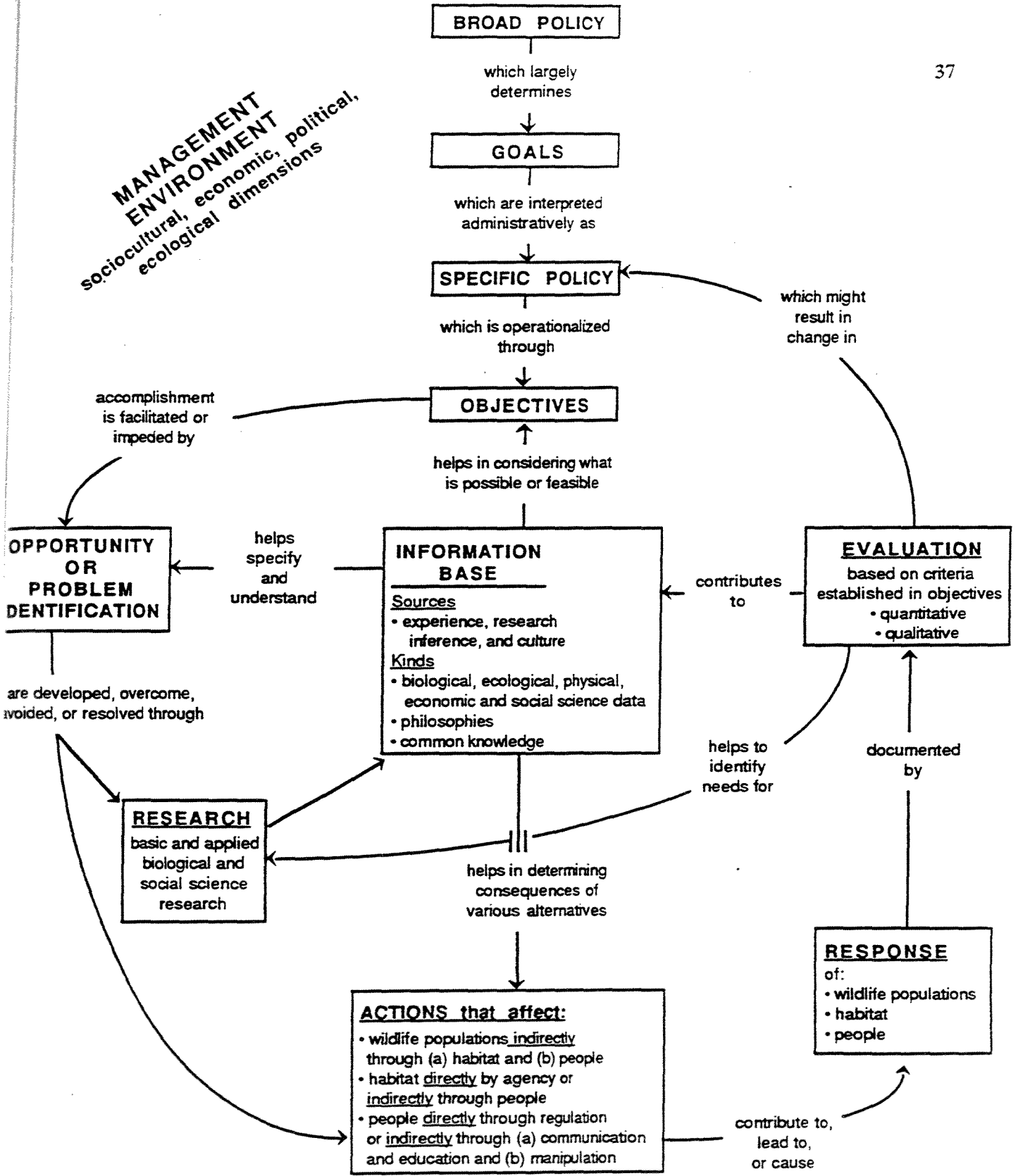


Figure 4. A comprehensive paradigm of wildlife management (adapted from Decker et al. 1992, p. 47).

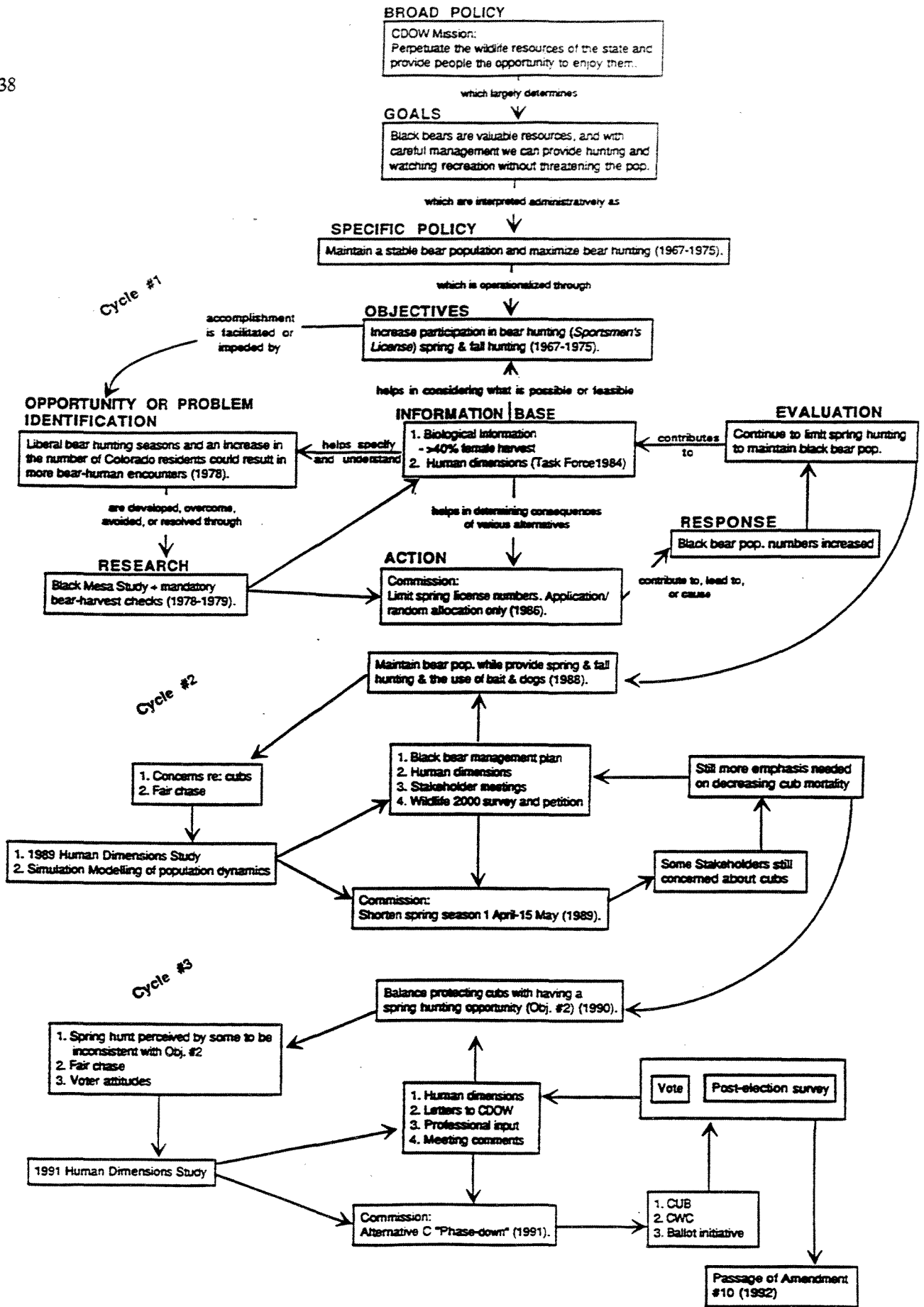


Fig. 5. Cycles of the Colorado black bear hunting controversy.

2. To analyze the reactions and outcomes arising from the black bear hunting decision produced by the policy-making process used in Colorado.

Human dimensions information includes both qualitative (e.g., testimonials by stakeholders) and quantitative data (e.g., survey results). This type of information can provide insight into people's attitudes, values and beliefs regarding wildlife issues. Such insight can be used by managers as information for policy making.

Cycle #1: Wildlife management decision making in Colorado has always had significant human dimensions input. Prior to the advent of CDOW's three-step public participation process in 1990, wildlife managers and Commission members received and synthesized input from management stakeholders through personal contacts, testimony at Commission meetings and other mechanisms. These inputs tended to be nonsystematic; that is, they did not necessarily represent majority viewpoints, or even minorities of known sizes, and were not evaluated analytically. By forming a Black Bear Management Advisory Task Force in 1984, the Commission attempted to bring together various stakeholders and to integrate the recommendations of these stakeholders into their decision-making process. Although many interests were represented by the task force, certain stakeholder groups were not invited to participate, suggesting that the Commission was not willing to consider integration of some nontraditional interests into their decision-making regime. Regarding the purposes and composition of the task force, CDOW staff observed competing agendas in addition to the stated objectives for the task force. For example, guides, outfitters and other service providers for hunters had legitimate economic interests, as did livestock producers concerned about depredations on their sheep and calves. However, it was expected that such self-interests would be set aside by members of the task force as they considered the black bear management situation in Colorado.

The task force report evidenced a common problem in wildlife management, what Decker et al. (1992) called the "blurring of distinctions" between biologically based and ethically based recommendations. The task force espoused the traditional

perspective that black bear management decisions should be "based solely on biological fact," even though many of their own recommendations reflect ethical convictions, some independent of biological data and some in their interpretation of biological information. For example, one recommendation addressed the waste of bear meat, which is an ethical consideration having no relationship to the biology of bear populations. Although the task force stressed that CDOW "should not endeavor to legislate or regulate moral or ethical considerations but leave these decisions to individual discretion, unless significant biological impacts are apparent" (Bear Management Advisory Task Force Report 1984), its own stand on protecting females with dependent cubs (i.e., in spring) is an ethical statement: "The prohibition on taking of cubs or sows with cubs is imperative, ought to be strictly enforced and heavily emphasized in public information brochures" (Bear Management Advisory Task Force Report 1984). Killing a female with dependent cubs in the spring or summer versus killing a pregnant female in fall has the same long-term effect on the population. The difference is the unacceptability of leaving orphaned cubs to die—an ethical, not biological concern. This ethical concern for cubs is not a recent phenomenon; the initial legislation concerning bear hunting in 1935 gave specific protection to cubs and females with cubs.

The significance of the task force to this case study is: (a) the recognition by the Wildlife Commission that a public issue surrounding black bear hunting may have been forming and (b) public input was sought regarding a wildlife management decision. Even so, the makeup of the task force was not representative of the diversity of interests in black bear management. In addition, the task force report did not represent a consensus view, and failed to present recommendations that assisted in resolving most of the issues that were emerging. However, the report did prompt the Commission to limit the number of licenses available for the spring hunt.

Cycle #2: By 1990, CDOW had established the three-step public participation process. This process institutionalized the Commission's and the Division's desire to standardize and open the decision-making process to public input. Undoubtedly, this improved decision makers' knowledge of the nature of the primary issues surrounding a forthcoming management decision but did not necessarily provide an

accurate picture of the extent to which the major viewpoints were held by the general public. During the November 1988 Commission meeting, concerns over bear management, especially the spring hunting season, were voiced by various stakeholders. The complexity of the human dimensions elements regarding this controversy became obvious to CDOW staff and the Commission. Thus, in addition to shortening the spring season by two weeks, the Commission charged the staff to prepare a comprehensive black bear management plan addressing the primary concerns and clarifying CDOW's black bear management strategy.

The 1989 survey of Coloradans was the first attempt by CDOW staff to obtain scientifically collected human dimensions information regarding public perceptions about black bear management in the state. Although the survey was considered biased (i.e., allegations that the wording of certain questions begged desired responses) by at least one commissioner and various stakeholders, CDOW staff believed it a valuable indicator of the intensity of attitudes and beliefs about black bear hunting among Coloradans. The use of survey data was a marked change from normal procedures in that the relative merits of one management alternative versus the other (from the human values standpoint) became less a matter of individual opinion among commissioners and CDOW staff and more an analytical process. Essentially, this was a paradigm shift that could have allowed decision makers to save time and energy that could have been spent on speculation about public wants and desires. CDOW staff were able to lay out in clear, understandable terms which components of the pending decision would be acceptable to various segments of the public. CDOW could even provide estimates of the likely consequences of codifying one interpretation over the others. This degree of certainty, though imperfect, was probably greater than the norm on controversial wildlife issues.

The ability to provide the analysis described above does not mean that the decision before the commissioners would be any easier. They still had the daunting responsibility of weighing the consequences of adopting these alternatives for the future of wildlife management, and more specifically black bear management. The task must have been complicated further by the fact that the commissioners themselves held personal opinions and beliefs

about issues bound up in this controversy. Considering the criteria used in selecting five of the commissioners (i.e., to represent particular stakeholder views, usually from traditional stakeholder groups), their sense of responsibility to particular groups predisposes them towards particular outlooks.

We observed that another confounding factor in this controversy was the awkwardness introduced by the advent of scientifically collected human dimensions data. Although such data have the potential to improve decision making, its mere availability in this situation did not clarify how it should be used. Unlike the established procedures, no accepted rules or traditions existed to guide the Commission in applying human dimensions survey data to decision making. Difficulties arose in two areas, lack of experience incorporating human dimensions data into the decision-making process and the dilemma of possessing evidence of disparity between general public values and decision makers' values. Experiences in Colorado and other states that could provide guidance in this area were few, and poorly documented.

The weight given to various stakeholders in public decision making is not a question simply of relative numbers of people (Decker and Lipscomb in prep.). No formulas existed then or now that take judgment out of the equation. Even standard processes for identifying needs for human dimensions data are lacking. Thus, decision makers in Colorado had the ingredients (the data) in hand, but had to create their own recipe as they proceeded. This kind of situation lends itself to uncertainty, inconsistency, and frustration, even among those having the best intentions and working diligently to make the "right" decision.

This dilemma was not limited to CDOW and the Commission. Interest groups also found themselves in a new and confusing situation. The integration of scientifically collected data on public opinions and attitudes modified the interest group role as the primary representatives of public opinion. It was apparent at the September 1991 Commission meeting that representatives of traditional hunting groups were not reacting favorably to the introduction of survey data into the milieu of information to be considered by the Commission. However, some of these interest groups found ways to utilize data in support of their arguments.

In the big picture of information collection for decision making in the black bear controversy, the relative merits of one mechanism over the other deserve comment (i.e., scientifically collected information vs. voluntary public input). Tension was apparent between the relative importance of (i.e., weight attributed to) public testimony at the Commission meeting versus data collected through a scientifically designed survey. Apparently a conventional approach to winning a favorable response from the Commission on a proposal of interest was to marshal a number of organizations to send representatives to testify personally before the Commission. Essentially, when proponents of a particular viewpoint could muster a large number of people to take up a large amount of time at a Commission meeting, they increased their potential to influence a decision. In addition, a great deal of lobbying of individual commissioners by interest groups occurs throughout the three-step policy process. Commissioners are obligated to listen and consider all inputs from all public sectors in all forms. This lobbying process has the potential for some individuals to gain inordinate influence on the policy process. In fact, many CDOW staff have recognized that certain groups having effective spokespersons have been able to "capture" the policy process (Decker 1992). Imagine the perturbation to this traditional process caused by the introduction of valid, scientifically obtained human dimensions data.

In an attempt to influence the Commission via the three-step process at the November 1989 Commission meeting, Wildlife 2000 presented their petition and survey results that indicated many respondents were opposed to spring bear hunting and the use of bait or dogs when hunting bear, and that the respondents would vote to end spring hunting should it come to ballot. In addition to Wildlife 2000's input, CDOW staff presented the results of their own 1989 study in an attempt to forewarn the Commission of the probable outcome should they maintain the three bear-hunting practices. In addition to this information, the Commission received a record number of letters from citizens opposed to spring hunting.

The Commission's response to the human dimensions information that they received was to once again shorten the spring hunting season by two weeks. Because females emerge from their dens later in the season, CDOW staff predicted that

shortening the spring season would reduce female harvest by 50% (Gill 1993). By shortening the spring season rather than reducing licenses or shortening the fall season, the Commission attempted to address the concern about females with cubs revealed in the human dimensions data, while maintaining a credible spring season for hunters.

Cycle #3: Although Michael Smith was pleased that the Commission shortened the spring season, he and other stakeholders wanted them to espouse a commitment to protect cubs in CDOW's Long Range Plan. Smith was aware that CDOW was working on developing black bear management objectives for its Long Range Plan. He was specifically interested in the development of Objective #2, which vows protection for females with cubs. Knowing that the Long Range Plan is CDOW's "contract with the public" (Carpenter 1992) and that the human dimensions data confirmed that the public is concerned about protecting females with cubs, Smith followed closely the evolution of Objective #2. By integrating stakeholder input into the revision process, CDOW was insuring that multiple perspectives would be represented in the bear management objectives.

The 1991 Standage/Ciruli human dimensions study was undertaken to dispel the validity concerns regarding the 1989 Standage survey and to collect more data for the information base that CDOW staff eventually would refer to when making its recommendation regarding black bear season structure. This time the survey focused on registered voters who again overwhelmingly opposed spring black bear hunting and the use of bait or dogs when hunting bear. Nevertheless, some stakeholders and members of the Commission remained skeptical about the utility of public surveys for wildlife management (Box 10).

Weighing the survey data along with other key considerations, CDOW staff provided the Commission with their recommendation to end spring bear hunting, lengthen the fall season and maintain baiting and dogs. The commissioners were left in the position of weighting the inputs and integrating these inputs with their own beliefs and values as well as those of people they felt they were supposed to represent. Confounding the weighting of inputs by CDOW staff and commissioners was the fact that CDOW is funded by traditional stakeholders (i.e.,

"Nonhunting Public is Risky Group to Survey"

The Great Bear Hunting Debate, Round 3, 4 or 5—I lose track, continues tomorrow in Grand Junction when the Colorado Wildlife Commission opens discussion on whether to do away with spring bear hunting and confine it to the fall. The decision will be made at a November commission meeting in Denver. . . . But it isn't just a debate within the hunting and wildlife management community. The radical anti-hunting element got involved and so did the nonhunting public. And therein lies a serious question that almost has been overlooked:

SHOULD WILDLIFE managers consult the nonhunting public before they make these kinds of decisions?

DOW contracted for two separate public-opinion surveys on the bear-hunting question. The most recent one, done by Standage Accureach Inc. and Ciruli Associates Inc., focused part of its effort on 600 registered Colorado voters who aren't hunters.

Len Carpenter, DOW terrestrial wildlife manager, said the voting, nonhunting public was targeted because of concern that the militant anti-hunting faction is prepared to seek a voter referendum on bear hunting in general if spring bear hunting continues. . . .

WHAT TROUBLES me most about all this isn't that 1,700 spring bear hunters may have to switch to fall hunting and apply for permits. What really bothers me is embodied in Carpenter's observation that the public is ill-informed about bears and bear hunting. He's right. But their ignorance doesn't stop there. It extends to all aspects of hunting and wildlife management.

Is DOW about to embark on a policy of surveying the general public before making any controversial wildlife management decision? That sounds scary because there are so many things about which the public is confused. . . .

Before asking the nonhunting public what it thinks about a pending hunting regulation or game management decision, the Division of Wildlife would be wise to educate that public about wildlife and hunting issues. . . . Then asking the public for input might make some sense.

(The Denver Post 08/18/91)

Box 10

hunters and fishermen through the purchase of licenses) but is mandated to manage wildlife for all Coloradans. Thus, CDOW staff and the Commission are to consider all stakeholder inputs regardless of their financial contribution to wildlife management in the state. However, traditionally, those who paid for the use of wildlife or suffered economic loss due to wildlife held the most weight in wildlife management decisions. Without human dimensions input about public attitudes towards wildlife issues, the views of the majority of Coloradans are easily overlooked.

Because the Commission did not comply with the wishes of the majority of Coloradans, represented by the recommendation of CDOW biologists, it would be easy to assume that the Commission made an imprudent or at least politically-incorrect decision. However, the appointed and self-perceived role of the commissioners to represent specific interests probably weighed heavily in their decision to phase-down but continue the spring hunt. The Commission's role of representing particular interests likely served to complicate their perceptions about applying

the human dimensions information available documenting the views of the majority of Coloradans.

Thus, after having been exposed to quantitative and qualitative inputs, the Commission chose the phase-down option. By phasing down the spring hunt over a three-year period, the Commission was attempting to deal with the ethical concerns about females with cubs. However, the extension of the 1992 spring season by two weeks conveyed to the public an apathy for their concerns about cubs. Considering the degree of public interest and concern in this matter, perhaps the Commission could have articulated their position better (i.e., why they did what they did).

Because the Commission did not end the spring hunt and, in fact, lengthened it by two weeks, Michael Smith felt that the Commission was not living up to its commitment to protect females with cubs as stated in Objective #2. Smith knew that the human dimensions data confirmed that this was an ethical issue and that the majority of Coloradans shared his viewpoint. Thus, Smith knew going into this political fight he had the majority of Coloradans on his side.

On the other hand, CWC chose not to focus on ethical arguments, but rather on a biological one that indicated that spring hunts, etc. could be conducted without detriment to the bear population. CWC disputed the available human dimensions data, and consequently their strategic argument was ineffective with the majority of Coloradans because it did not address the ethical issues that were viewed by the public to be the salient aspects of the controversy. By stressing the biological justification for status quo, CWC missed the point and by default allowed CUB to define the key issues on its terms, which resonated well with the majority of Coloradans.

Because Coloradans for Wildlife Conservation (CWC) and other opponents of Amendment #10 did not address the ethical concerns held by the majority of Coloradans (primarily nonhunters), one has to wonder about the impact the controversy has had on the reputation of hunters. One could speculate that through their opposition to the amendment, hunters may have portrayed themselves as being unconcerned with some ethical aspects of their practices that are apparently very important to the majority of Coloradans.

Stakeholders' Reactions to the Use of Human Dimensions Information in this Controversy

The black bear hunting controversy illustrates how human dimensions research can provide information that accurately reflects the attitudinal orientation of stakeholders on a particular issue. However, if the stakeholders involved (including decision makers) are unwilling to accept human dimensions data as relevant management input or as having significant weight in decision making, then the integration of such information into decision making can be hindered. Previously, we identified possible impediments to the use of human dimensions data in CDOW's policy-making process (e.g., there is no method of weighting scientifically collected data against personal testimony at Commission meetings). Similarly, we discussed the resistance of some stakeholders to the various human dimensions input, especially the 1989 and 1991 survey results, throughout the black bear hunting controversy. Following the passage of Amendment #10, we asked key stakeholders (CDOW staff, Commission members, traditional stakeholders and nontraditional stakeholders) to discuss their retrospective attitudes about the use of human dimensions information in this case and in future wildlife management decisions.

CDOW Staff

Post-election interviews with CDOW staff revealed attitudes ranging from cautious acceptance to enthusiastic endorsement of human dimensions studies. Because they initiated the surveys that accurately predicted public attitudes, the staff likely were encouraged to use similar studies in the future. CDOW's Terrestrial Wildlife Manager believed public attitude surveys are "the champion of learning what people want and understanding their feelings. Human dimensions data is imperative for a public agency to know its many publics" (Carpenter 1992). He stressed that wildlife management decisions should reflect the concerns of the public but cannot always do exactly what the public wants.

Although the public attitude surveys used in the black bear hunting controversy were enlightening in that they measured the extent to which Coloradans held particular attitudes about bear-hunting practices, the use of survey data raised questions about the role of CDOW staff in wildlife management decisions. In actively seeking public input,

CDOW staff set a precedent for replacing much of their personal "judgment" with "hard" data as input to the Commission for wildlife decisions. The Director of CDOW believes that CDOW can no longer "make assumptions without surveying what the public wants" (pers. comm. P. Olson 1992). Thus, espousing of human dimensions ideology requires a change in traditional decision-making criteria. One staff member stressed that "we [CDOW] have to get away from the attitude that we know what is best for you [the public] (Malmsbury 1993)." He believes that this type of attitude change is happening at CDOW.

The Commission

Considering the public reaction to the Commission's phase-down decision, the Commission members we interviewed seemed positive about the use of human dimensions information. Several Commission members considered the public surveys done for CDOW on the black bear hunting issue to be useful sources of information and believed they should be used in the future. One commissioner noted that the Commission did not feel as strongly about the use of the survey data as did the staff, but now believed that the Commission should have used the survey data more effectively (Eve 1993).

Another commissioner, who voted against the majority of commissioners to end the spring hunt, stressed that surveys are useful tools, but that the Commission should not manage wildlife based on survey results alone (Frank 1993). It seems that the use of scientifically collected human dimensions information, like any other new management tool, is going through growing pains within CDOW's policy-making process. However, after the experience of the black bear hunting controversy, it is clear that at least some of the commissioners are willing to accept human dimensions data as a legitimate form of input. One commissioner, who was appointed to the Commission after the November 1991 meeting, was markedly enthusiastic about human dimensions studies. He was confident that "the use of human dimensions information is a central part of policy development in the future" (Salazar 1993).

Traditional Stakeholders

The results of the public attitude surveys confirmed that the majority of Coloradans were

opposed to spring black bear hunting and the use of bait or dogs when hunting bear. Because the surveys did not offer results preferred by some traditional stakeholders, the utility, integrity and motivation behind the surveys were questioned. The Chairman of the Board for Colorado Bowhunters' Association believed that the surveys were useful to gauge public perceptions on certain issues (Radocy 1993). However, he argued that the surveys were misused in this case in that they were designed to see how the public would react to "emotional questions." Perhaps much of the adversity to the surveys by some traditional stakeholders was due to a confusion about their purpose. The surveys were designed to determine the nature and prevalence of public attitudes towards the three bear-hunting practices that were likely to be questioned on "emotional" or ethical grounds. Had CDOW designed a survey to determine public attitudes regarding black bear biology, they may not have been able to foresee so accurately the magnitude of the public controversy that was to come.

One sportsman leader felt that public attitude surveys should not have been used in determining black bear hunting regulations and he considered them "impediments" to black bear management (Sours 1992). He contended that the public must be "educated" before surveys are done (e.g., the surveys should explain the issue in question). In his opinion, surveys can be used productively to determine the nature and magnitude of an educational need prior to developing a program to address it, as a situation analysis for planning.

Nontraditional stakeholders

The survey results convinced some stakeholders who opposed spring bear hunting and the use of bait and dogs to hunt bears that the majority of Coloradans would have supported them in an effort to end the three practices. Thus, it is likely that the public surveys reinforced the resolve of some of these stakeholders to pursue the ballot initiative. The head of CUB felt the Commission was not responsive to his concerns and viewed CDOW staff's introduction of survey data into their decision-making process to be a positive step towards a more representative process: "[CDOW] has to continue getting to people who don't have time to participate in meetings" (Smith 1992).

Some nonhunting stakeholders felt "excluded" from CDOW's policy-making process (Tippie 1993). They believed that in the past, CDOW and the Commission conveyed to them the sentiment (perhaps informal policy) that because they did not pay for wildlife management (i.e., hunting or fishing licenses), they had no legitimate claim to provide input for wildlife management decisions. For those nonhunters who were concerned about wildlife, this perceived discrimination of nonhunters was frustrating. Thus, for some of these people the use of public survey data by CDOW staff to make decisions about black bear management was encouraging. As expressed by one person, the use of this information "showed that CDOW is starting to care how people feel" (Tippie 1993).

CONCLUSIONS AND IMPLICATIONS

Wildlife management has become increasingly complex from the human dimensions perspective. More people with divergent, strongly held interests expect to have their views incorporated into the wildlife management decision-making process. The black bear hunting controversy in Colorado vividly demonstrated the human dimensions challenges involved in contemporary wildlife management. We can draw several conclusions and suggest some implications regarding human dimensions use in decision making based on our analysis of the Colorado controversy. These conclusions and implications relate specifically to the objectives of this study (see page 2).

Human Dimensions Insight and Decision Making

Three kinds of human dimensions information affected management decisions in this controversy: (a) traditional sources of information such as input received from the public in meetings, correspondence, and personal contact; (b) individual professionals' and decision makers' personal values, beliefs and experiences; and (c) systematically collected data reflecting general public attitudes about black bear management. Our observations are that the former kinds of information (a and b) were given greater weight by some policy makers (majority of the Commission) and the latter (c) was given greater weight by the professional staff.

Based on these observations, we conclude that the Commission saw its role as primarily representing

traditional hunting and agricultural stakes; whereas CDOW staff attempted to incorporate broader interests among Coloradans, as reflected in survey results, with those of the traditional groups. This difference in the Commission's and the staff's use of human dimensions data may reflect an inconsistency between CDOW's mandate to manage wildlife for all of the people of Colorado and the appointment criteria (and therefore expectation) for the Commission. Inherent in the process of selecting commissioners is a representational bias favoring farmers, ranchers and hunters. These are the only stakeholders specified in the selection criteria and are ensured to be represented in wildlife management decisions. Such representation is not assured for other minority interests. As more of Colorado's citizens become involved in wildlife issues, CDOW and the Commission will likely continue to be challenged about their wildlife management policies. If a breadth of views are represented by the Commission, the Commission will be in a better position to consider broad public input in its decisions.

Systematically collected human dimensions data can facilitate representation by clarifying the public's attitudes and values on wildlife issues. As we have observed in this case, the level of influence of such information in decision making is not inherent in the data themselves, but is determined subjectively by decision makers. Because their political appointments imply they represent particular interests, commissioners are likely to weigh input from traditional stakeholders more heavily than input from other members of the public. Although quantitative human dimensions data were available in this case, decision makers' personal viewpoints (i.e., ethical judgments) and representational roles were important factors in the outcome of this wildlife management decision.

From our analysis of the outcomes of the black bear hunting controversy, we observe the following conclusions about indirect and direct public involvement in the policy process:

1. Retrospectively, commission members and staff interviewed were positive about the use of systematically collected human dimensions data in this case and the future.

2. Nontraditional stakeholders will likely become more involved in wildlife decisions and have demonstrated the lengths they will go to instigate change.
 3. Those who felt disenfranchised by the Commission in this case may pursue the issue of Commission representativeness.
 4. Extreme hunters and antihunters in Colorado will not change the attitudes of many Coloradans. Groups willing to communicate and compromise have the best chance to reach the public and affect change in wildlife decision making.
2. The appointment criteria of wildlife commissions should be consistent with wildlife agency missions or legal mandates.
 3. The processes wildlife agencies employ to make decisions and the decisions rendered need to demonstrate that interests of all stakeholders are fairly considered.
 4. The process of selecting wildlife commissioners must involve the public more comprehensively. (The process for selecting school board members by public vote or the process for retaining members of the judiciary by periodic public approval for retention are possible role models.)

Implications for future use of human dimensions data

The black bear hunting controversy in Colorado has the potential to impact the way future wildlife management decisions are made. Of particular interest to us is the role human dimensions has played in this controversy. Two implications emerge as potential concerns in this regard.

One implication relates to the difficulty a politically-appointed wildlife commission or typical agency staff has in representing the diversity of wildlife interests in contemporary society. Although the object of a state wildlife agency is to manage wildlife for the people of the state, many wildlife commissions have been established such that they purposely are comprised of members primarily representing traditional stakeholders. As the nature of public interest in wildlife grows, becomes more diverse, and creates new expectations for management, commissions and agencies may find it increasingly difficult to reflect all stakeholders' interests and maintain credibility with them. The Colorado experience indicates that to maintain credibility and effectiveness requires attention to at least four characteristics of a commission or agency:

1. The membership of commissions have to reflect the interests and character of the full range of publics they or the wildlife agency they work with are expected to represent.

Wildlife agency-commission systems with these characteristics are not assured of always making broadly understood and accepted decisions, but absent any of these characteristics, widespread acceptance of policy decisions is unlikely.

A second possible implication emerging from this controversy is the need for an *a priori* consensus among wildlife policy decision makers regarding an agency's foundational values (e.g., guiding principles) that guide decision making in controversies where competing values of various stakeholders confound the policy-setting process. For example, had the term "protect", in CDOW's black bear management objective vowing to protect females with cubs, been clearly defined and agreed upon by all decision makers, the agency would have had a basis for any decision it made consistent with this objective.

A third implication is that even the best human dimensions information will be of limited use to decision makers if it is collected when the management environment has already become extremely polarized over a given issue. Highly polarized management environments are intractable environments. Wildlife agencies must learn to anticipate issues through effective use of environmental scanning techniques so they can begin the issue education process while their publics are still receptive to information.

Conclusion

In conclusion, we believe the accumulating experience in wildlife controversies can be used by wildlife professionals to improve policy-making. The Colorado bear hunting controversy emphasizes the need for a systematic and robust approach for analyzing the human dimensions aspects of a policy decision. A comprehensive issue-analysis process must not only uncover what people believe, but also why they believe it. Development of details for a generic approach to such an analysis for policy decisions, much like the approach used by CDOW, should be an objective with high priority for human dimensions researchers and wildlife managers.

The future of wildlife management will involve a constant weighing of inputs from stakeholders with a range of attitudes and values. The degree to which wildlife management agencies will be successful in the future will be determined largely by their ability to develop policy processes that adequately consider diverse inputs. Wildlife agencies, including both their professional staff and their appointed lay commissioners, will need to examine carefully and openly articulate their own values, achieve corporate consensus about values that will guide their efforts, and communicate them effectively to the public. We believe that in aggregate these actions will be required to maintain public credibility. Improving our human dimensions capacity will be essential, but we do not want to imply that possessing extensive human dimensions information in controversial situations will make decisions easy. However, we do believe decisions will be better when the human dimensions are fully considered.

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APPENDIX A. Generic Interview Questions

1. What do you believe to be the major viewpoints regarding the black bear hunting issue? Which viewpoint about this issue do you hold?
2. What do you consider to be the major implications of the outcome of the black bear initiative?
3. Has the black bear hunting issue affected the relationship between the CDOW staff and the Commission; between the CDOW and traditional wildlife interests; or between the CDOW and the general public?
4. Were the public surveys done for the CDOW on the black bear hunting issue useful sources of information? If yes, why or how?
5. Considering Colorado's experience so far on the black bear hunting issue, do you have any thoughts about the future use of public attitude surveys by CDOW to obtain information for decisions on wildlife management?
6. In light of Colorado's experience with the black bear hunting issue, do you think that wildlife interest groups and animal welfare groups will be considered differently in future wildlife management decisions? If yes, what role will these groups play in the decision-making process?
7. What are the major "lessons learned" from this experience regarding wildlife management in Colorado?
8. What is the next step?

APPENDIX B. Phase Two Interviewees

- (1) Tom Beck (CDOW)
- (2) Dennis Bergstad (Colorado Outfitter's Organization)
- (3) Steve Bissell (CDOW)
- (4) Len Carpenter (CDOW)
- (5) Bruce Gill (CDOW)
- (6) Walt Graul (CDOW)
- (7) Jim Lipscomb (CDOW)
- (8) Tom Lyle (CDOW)
- (9) Todd Malmsbury (CDOW)
- (10) Kris Moser (CDOW)
- (11) Perry Olson (CDOW)
- (12) Wayne Pacelle (Fund For Animals)
- (13) Bob Radocy (Colorado Bowhunter's Association)
- (14) John Smeltzer (CDOW)
- (15) Michael Smith (CUB)
- (16) Stan Sours (CWC)
- (17) Sherri Tippie (Wildlife 2000)
- (18) Bob Young (Safari Club International)

Commission members:

- (19) Thomas Eve
- (20) Rebecca Frank
- (21) William Hegberg
- (22) Arnold Salazar
- (23) Louis Swift

APPENDIX C. Chronological List of Directors and Commissioners

Jack R. Grieb, Director	August, 1973-March, 1984
Assistant Directors	Wayne Sandfort Robert L. Evans

Commissioners serving with Grieb:

Dr. Jay K. Childress	1972-1979
Dean Hull	1973-1977
Vernon C. Williams	1973-1981
Jean K. Tool	1973-1985
Thomas T. Farley	1975-1979
Samuel J. Caudill, Jr.	1975-1983
Roger C. Clark	1975-1979
Wilbur L. Redden	1977-1985
Michael K. Higbee	1977-1985
Donald A. Fernandez	1979-1987
Richard L. Divelbiss	1979-1987
James T. Smith	1979-1987
James C. Kennedy	1981-1985
Timothy W. Schultz	1983-1987

James B. Ruch, Director	April, 1984-1988
Assistant Director	Edgar J. Prenzlow

Commissioners serving with Ruch:

Wilbur L. Redden	1977-1985
Michael K. Higbee	1977-1985
Donald A. Fernandez	1979-1987
Richard L. Divelbiss	1979-1987
James T. Smith	1979-1987
James C. Kennedy	1981-1985
Timothy W. Schultz	1983-1987
Rebecca L. Frank	1985
Robert L. Freidenberger	1985-1989
John I. Lay	1985-1986
George VanDenBerg	1985-1993
William R. Hegberg	1986
Dennis Luttrell	1987-1990
Larry M. Wright	1987-1992
Eldon W. Cooper	1987
Gene B. Peterson	1987-1990

Perry D. Olson, Director	November, 1988-Present
Assistant Directors	Edgar J. Prenzlow Bruce L. McCloskey

Commissioners serving with Olson:

Rebecca L. Frank	1985-
Bob Freidenberger	1985-1989
George VanDenBerg	1985-1993
William R. Hegberg	1986-
Dennis Luttrell	1987-1990
Larry M. Wright	1987-1992
Eldon W. Cooper	1987-
Gene B. Peterson	1987-1990
Felix Chavez	1989-1993
Louis F. Swift	1990-
Thomas M. Eve	1991-
Arnold Salazar	1992-
Mark LeValley	1993-
Rev. Jesse Langston Boyd, Jr.	1993-

APPENDIX D.. Task Force Members

John Brumley, Federation of Colorado Houndsmen and Colorado Houndsmen Association, Brighton

Jack Cassidy, Colorado Guides & Outfitters, Fruita

Kent Connally, sportsman, Denver

Jim Fitzgerald, Colorado Audubon Chapters, Greeley

Wally Gallaher, Colorado Wildlife Federation, Arvada

Warren Jewell, Colorado Woolgrowers Association, Rifle

Marvin Miller, United Sportsmen's Council, Golden

Sally Ranney, American Wilderness Alliance, Denver

Wayne Shoemaker, Colorado Cattlemen's Association, Canon City

Michael Smith, Great Bear Foundation, Boulder

Lloyd Wood, Colorado Bowhunters Association, Lakewood

Reed Kelley, Chairman

Resource Associates, Inc. and State Issues Director, Colorado Wildlife Federation, Denver

APPENDIX E. Primary Task Force Recommendations

A. Management Philosophy

The Colorado Wildlife Commission should adopt a recommended goal statement for black bear which will serve to enhance public understanding of DOW policy and philosophy on bear. The proposed statement emphasizes the importance and value of bear; management by data analysis unit, with specific management objectives; prevention of habitat loss; and protection of agricultural interests from damage by bear.

B. Regulatory Changes

1. Establish a statewide, all season, limited license system for bear beginning in 1986 with the proviso that the public have full opportunity to be involved in the setting of the management objectives and the number of limited licenses to be made available. Announcements of the successful applicants for the Spring draw must be made no later than January 15.
2. Implement some experimental management programs (within the framework of the limited license system) to test population and hunter response to certain restrictions or closures on certain methods of take or time of year by data analysis unit. For example, totally separating hounds from bait by area or time.
3. Add some restrictions to the current regulations on baiting, including limiting individual hunters to two baits and requiring the posting of a clean-up bond and written permission from the land managing agency for bait sites.
4. Limit the size of any pack of hounds used to hunt bear to eight.
5. Require that the mandatory inspection of each bear be carried out by the individual hunter with his or her own bear.

C. Other Recommendations

1. Increase CDOW and public land agency cooperation and commitment regarding the administration of baiting including reduced walk-in accessibility of agency information on bait site locations.
2. Improve accessibility of DOW personnel for mandatory bear checks.
3. Require outfitter reports on hunter success and related information.
4. Design a multi-year expanded research program, to begin in 1986, necessary to obtain better information on bear including population dynamics in important habitat types and improved aging techniques.
5. Devote a larger percentage of CDOW annual budget to bear research.
6. Foster better working relations with landowners and stockmen through personal contacts, appropriate public presentations, and effective enforcement programs in order to counter the prevalent attitude that the legally required reporting of damage control kills causes more problems than it solves. Such efforts should stress the importance of this information to effective bear management.
7. Actively enforce the prohibition on the waste of edible game meat for bear taken as big game.

8. Increase efforts to prevent and prosecute illegal kill (poaching) in cooperation with other states and federal agencies, particularly as it may relate to the sale of bear parts.
9. Counteract the loss and potential loss of bear habitat through effective identification with local governments of critical habitat, improved knowledge of habitat needs, and public information campaigns.