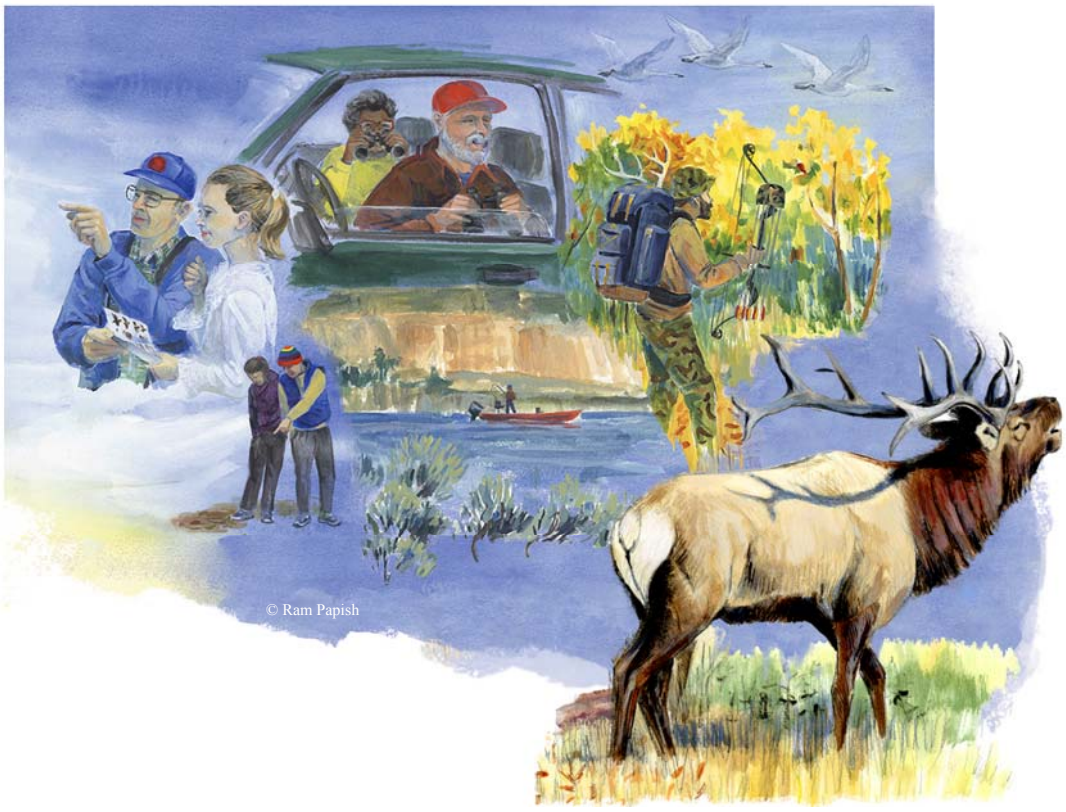
State Report for COLORADO

From the Research Project Entitled

Wildlife Values in the West



A Project of the
Human Dimensions Committee of the
Western Association of Fish and Wildlife Agencies

Produced by the Human Dimensions in Natural Resources Unit
Colorado State University

In cooperation with the Colorado Division of Wildlife

Colorado State University
Knowledge to Go Places

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COLORADO DIVISION OF WILDLIFE

WESTERN ASSOCIATION OF
FISH AND WILDLIFE AGENCIES

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EXECUTIVE SUMMARY

This report documents results of a study that assessed the Colorado public's values and attitudes toward wildlife. Findings are part of the larger research program *Wildlife Values in the West*.

Data were collected using a mail-back survey administered to residents in Colorado. Six hundred forty-one completed surveys were returned, and the response rate for the mail-back survey was 24%. A telephone nonresponse survey was completed, and tests for differences between mail survey respondents and nonrespondents were conducted. Based on these tests, data were weighted to correct for age and wildlife-related recreation participation.

Key findings include:

- *There are diverse types of people, based on wildlife value orientations, in Colorado.*

The four wildlife value orientation types include Utilitarian, Mutualist, Pluralist, and Distanced. Utilitarians believe that wildlife should be used by humans and strongly support hunting. Mutualists consider wildlife to be like part of an extended family and express an emotional attachment to wildlife. Pluralists hold both utilitarian and mutualism wildlife value orientations, and the situation or context determines which of these orientations plays a role in their thinking. Distanced individuals have less interest in wildlife compared to others in the public. The distribution of these wildlife value orientation types in Colorado is: Utilitarian (34%), Mutualist (35%), Pluralist (22%), and Distanced (9%).

- *The public's preferred funding and programming approach for the Colorado Division of Wildlife (CDOW) differed from what was perceived to be the agency's current approach.*

Forty-three percent of the public perceived that hunting and fishing licenses *and* taxes fund the agency with programs that benefit all members of the public. Seventy-one percent of the public desired this to be the agency's approach. Overall, one out of two people indicated that the current approach did not match their desired approach.

- *The majority of people did not believe their opinions and interests are heard and adequately considered in fish and wildlife management decisions.*

Just under half of respondents expressed trust in the CDOW to make decisions without their input. In addition, less than half felt that if they provide input it will make a difference or that the CDOW makes a good effort to obtain input. One-third thought their interests are adequately taken into account, while about 25% of respondents believed their opinions are heard by decision-makers. Approximately a quarter had no interest in providing input to fish and wildlife decisions.

- *The public expressed greater trust in the CDOW than in the state or federal governments.*

Over 70% of the public indicated that they trust the CDOW to do what is right for fish and wildlife management in the state. In contrast, less than 50% indicated that they trust the state government and the federal government to do what is right for the state and the country respectively.

- *Most of the public assigned favorable ratings to the CDOW's performance and to the importance of many of its key activities.*

When asked about the agency's overall performance, 80% of people rated it as either good or excellent, and only 1% felt that its performance was poor. Among activities identified by the CDOW as the focus of its long-term planning efforts, respondents place high priority on the following: protecting fish and wildlife that are at risk of becoming endangered, protecting high priority habitats to support many different types of fish and wildlife, and researching and eliminating diseases in wildlife. At least 50% of respondents included these activities among their top three priorities for the agency to focus on in the coming years.

- *Given limited funds to allocate to conservation, the public favored native, game, and declining species; endangered populations received priority in funding for nongame.*

In public preference for conservation funding, species origin (i.e., whether a species is native or not) was more important than species use (i.e., whether a species is considered a game species or not) or species status (i.e., whether a species is common, declining, or extirpated). Native species tended to be prioritized over non-native species across a range of paired comparisons, and game species tended to be prioritized over nongame species. Declining and extirpated species were more likely to receive priority over common species. When asked directly about where the agency's focus should be in the context of funding for *nongame*, the majority of people (64%) indicated that endangered populations should receive the greatest attention over other types of nongame fish and wildlife.

- *The public tended to express positive attitudes toward hunting.*

The majority of respondents (68%) felt that people who buy licenses and who follow hunting regulations should be allowed to hunt as a means of helping manage wildlife populations. Twenty-two percent indicated that legal hunting is a basic right and should be limited only when necessary for the protection of wildlife populations. Approximately 5% of respondents did not believe in hunting and felt it should not be allowed.

- *In bear-human conflict situations, the public was most accepting of conducting controlled hunts using trained agency staff among a series of population-level control techniques.*

A majority of the public (more than 70%) found "doing nothing" to be unacceptable in situations where bears are either a nuisance or a human safety threat. Less than half of the public supported "providing more recreational opportunities to hunt bears" in a nuisance situation, while just over 50% felt it was acceptable when bears are a threat to human safety. "Conducting controlled hunts using trained agency staff" was acceptable to more than 65% of the public in a nuisance situation and 85% in a safety threat situation.

- *In deer-human conflict situations, the public was generally accepting of increasing recreational hunting opportunities, conducting controlled hunts by trained agency staff, and distributing short-term contraception.*

In nuisance and disease situations, the majority of the public (more than 60%) did not accept "doing nothing" or "distributing pellets with permanent contraceptives", but at least 65% did accept "providing more recreational hunting opportunities", "conducting controlled hunts", and

"distributing pellets with short-term contraceptives." The public was more accepting of "conducting controlled hunts using trained agency staff" and "distributing pellets with contraceptives" in a disease situation as compared to a nuisance situation.

- *The public and hunters (resident and nonresident deer and elk hunters from data collected in a study entitled "Hunters' Responses to Chronic Wasting Disease [CWD]") generally had similar patterns of agreement or disagreement with items regarding perceptions of the risk of CWD, adequacy of CWD information, trust in the CDOW regarding CWD management, and acceptability of CWD management actions.*

The public and hunters had similar mean levels of agreement with statements regarding their perceptions of the risk of CWD and implications of the risk on whether they and their family will eat deer/elk meat. Hunters on average felt more satisfied with the amount of information they had about CWD as compared to the public. However, both the public and hunters tended to agree with statements that indicated trust in the CDOW regarding CWD management and communication with the public. The groups had similar preferences for CWD management, agreeing that testing for CWD was acceptable and doing nothing was unacceptable. Hunters tended to prefer that hunters be used to dramatically reduce herds in CWD-affected zones, while the public tended to prefer that agency staff be used.

- *Most people felt that life in Colorado was much better than in other places they might live and, more specifically, that Colorado's scenic beauty and outdoor recreation opportunities were unique. A comparison of these findings with those of a 1993 study entitled "Coloradans' Recreational Uses of and Attitudes toward Wildlife" revealed that, while overall ratings of life in Colorado remain the same, certain natural resource-related features received less favorability in 2004.*

Approximately 60% of respondents felt that life in Colorado and opportunities for outdoor recreation were much better compared to other places they might live. Seventy-four percent rated scenic beauty as much better in the state compared to other places. Wildlife-related factors also achieved high ratings relative to many of the other Colorado-specific features. For example, about 50% of respondents felt that opportunities to view wildlife in the state were much better than in other places they might live, while only 13% felt this way about career and employment opportunities. The same percentage (60%) of respondents in 1993 and in 2004 felt that life in Colorado was much better than in other places. However, differences were noted across years for ratings of certain quality of life factors, several of which received less favorability in 2004. The largest declines were evident for opportunities to view wildlife, fish and wildlife abundance, fishing opportunities, and scenic beauty.

- *The most important uses of water in Colorado's rivers and lakes, as perceived by the public, were local irrigation and local municipalities, followed by threatened and endangered fish populations.*

Forty percent of respondents felt that local municipalities were the most important use of Colorado's water. A similar percentage (38%) chose local irrigation as the number one use. The next most frequently selected water use was threatened and endangered fish populations, with 15% of people indicating it should be the top consideration in water distribution decisions.

- *Hunters and anglers differed little from those who did not hunt or fish in the past 12 months on attitudes toward key issues measured in the survey.*

Differences between those who hunted or fished as compared to those who did not were only noted on the following issues: interest in providing input to CDOW decisions, importance of certain CDOW activities, priorities among types of wildlife for nongame funding, and acceptability of providing more recreational opportunities to hunt bears and deer as a population-level control technique to address human-wildlife conflict situations.

- *Comparison of responses by wildlife value orientation types allowed for greater understanding of public attitudes toward key issues measured in the survey.*

Wildlife value orientation types proved useful in more thoroughly understanding the basis for diverse attitudes among the public, especially on issues related to public involvement, trust in government, importance of agency activities, and management of wildlife involving lethal means. Typically, Utilitarians and Mutualists differed most from one another, while Pluralists and Distanced individuals were often somewhere in between.

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SECTION I. INTRODUCTION AND OVERVIEW

This report is one of a series derived from a research program entitled *Wildlife Values in the West*. The research project was a collaboration of the Western Association of Fish and Wildlife Agencies (WAFWA) Human Dimensions Committee with Colorado State University and 19 WAFWA-member state fish and wildlife agencies. The overall purpose of the study was to take the first step in acquiring scientific information to address critical questions regarding changes in public thought related to wildlife management.

Wildlife Values in the West is a unique research program due to its regional *and* state-specific focus. The participation of 19 western states allowed for comparisons among states' publics regarding their values and attitudes toward wildlife management issues of importance to the region. These comparisons at the regional level can be found in the regional report (Teel, Dayer, Manfredo, & Bright, 2005). Data were collected in such a way as to allow for states to delve more deeply into their public's responses to the regional issues. Additionally, states were able to examine public responses to pressing state-specific issues. The focus of this report is to provide results specific to the Colorado public's values and attitudes toward regional and state-specific issues assessed through the research program.

A. OBJECTIVES

This report offers findings from *Wildlife Values in the West* for Colorado in line with the following objectives:

1. To provide information about the distribution of wildlife value orientations and basic beliefs about wildlife and wildlife management among the Colorado public

2. To assess the Colorado public's attitudes toward various issues, including:
   - Funding and programming approaches
   - Involving the public in wildlife management decisions
   - Trust in government, including the Colorado Division of Wildlife (CDOW)
   - Performance of the CDOW and importance of its activities
   - Managing for biodiversity and species of concern
   - Hunting
   - Acceptability of population-level techniques to address human-wildlife conflict
   - Managing Chronic Wasting Disease (CWD)
   - Quality of life in Colorado
   - Importance of competing uses for water in Colorado

3. To determine differences in the Colorado public's attitudes on the above topics by:
   - Wildlife value orientation type
   - Participation in hunting and fishing

4. To compare the Colorado public's responses to issues related to managing CWD with hunters' responses to these issues as reported by a 2004 study entitled *Hunters' Responses to Chronic Wasting Disease*

5. To compare the Colorado public's current responses regarding the quality of life issue with responses to this issue examined in a 1993 study entitled *Coloradans' Recreational Uses of and Attitudes toward Wildlife*

B. ORGANIZATION OF THIS REPORT

The body of this report begins with a discussion of wildlife value orientations and their distribution in the state (Objective 1). Results are then presented in the order of issues identified in Objective 2. Supporting tables for the results presented in figures throughout the report can be found in Appendix A. Project methods are reported in Appendix B.

C. GUIDE FOR READING THE RESULTS

Participation in Hunting and Fishing

Throughout this report, differences are explored between hunters/anglers and non-hunters/anglers in their responses to survey items. Hunters/anglers are defined as those who reported that they had participated in hunting, fishing, or both recreational activities in the past 12 months. Non-hunters/anglers are defined as those who did not report participation in hunting or fishing in the past 12 months.

Margin of Error

When reporting results for the entire sample of Colorado residents (n = 641) assuming maximum possible variance on a dichotomous (i.e., two category) variable, the margin of error is $\pm$ 3.9% at the 95% confidence interval and $\pm$ 3.2% at the 90% confidence interval. When we report information obtained from analyses of specific groups within the Colorado sample, the margin of error increases (Table I.C.1). The margin of error estimates take into account unweighted samples sizes, the population size for the state, and estimated population sizes for the groups based on the proportions that the groups represent in the weighted sample.

Table I.C.1. Margin of error for subgroups at the 90% confidence level.

Group	**Margin of Error**
Value types	
Utilitarian	$\pm$ 5.4 %
Pluralist	$\pm$ 6.4 %
Mutualist	$\pm$ 6.0 %
Distanced	$\pm$ 11.0 %
Recreation Participation	
Hunters/anglers	$\pm$ 5.0 %
Non-hunters/anglers	$\pm$ 4.3 %

Conflict Indices

For some items, findings are presented using Potential for Conflict Indices (PCI; Manfredo, Vaske, & Teel, 2003). The conflict indices are displayed graphically as bubbles. The bubbles depict the extent to which conflict exists within a group of respondents (e.g., the public, hunters, or a value orientation type) regarding their attitudes or their acceptance of a management strategy. These bubbles are centered on the mean response for the group for the survey item, which is plotted on the y-axis. The size of the bubble represents the PCI, or the amount of variation (dispersion) in responses. A larger bubble indicates more potential for conflict, or less consensus, among members of the group. A smaller bubble indicates less potential for conflict, or more consensus. PCI values range from 0 (no potential for conflict) to 1 (greatest potential for conflict when 50% of respondents strongly oppose and 50% of respondents strongly support an action or issue).

The formula to compute the PCI (as reported in Manfredo et al., 2003) is below:

$$PCI = \left[1 - \left| \frac{\sum_{i=1}^{n_a} |X_a|}{Xt} - \frac{\sum_{i=1}^{n_u} |X_u|}{Xt} \right| \right] * \frac{Xt}{Z}$$

where:

PCI = Potential for Conflict Index

X_a = an individual's "acceptable" (or "agreement") score (e.g.., 5, 6, or 7 on a 1-7 scale, recoded for calculations as 1, 2, 3)

n_a = all individuals with "acceptable" (or "agreement") scores

X_u = an individual's "unacceptable" (or "disagreement") score (e.g., 1, 2, or 3 on a 1-7 scale, recoded for calculations as -1, -2, -3)

n_u = all individuals with "unacceptable" (or "disagreement") scores

$$Xt = \sum_{i=1}^{n_a} |X_a| + \sum_{i=1}^{n_u} |X_u|$$

Z = the maximum possible sum of all scores = n*$extreme\ score$ (e.g., $Z = 3n$), where n = total number of subjects

SECTION II. WILDLIFE VALUE ORIENTATIONS

The concept of wildlife value orientations has emerged as a way of capturing the diversity of values that people hold toward wildlife. Because wildlife value orientations provide a foundation for more specific cognitions like attitudes and behaviors, identification of wildlife value orientations allows us to anticipate how people will react to a host of wildlife-related topics. In addition, an examination of how wildlife value orientations are changing at a societal level provides direction in planning for the future of wildlife management.

Three of the primary objectives guiding the regional study *Wildlife Values in the West* were:

1. To describe the current array of public values toward wildlife and identify their distribution across states.
2. To segment publics on the basis of their values toward wildlife and understand their sociodemographic and lifestyle characteristics.
3. To begin to understand how and why wildlife values are changing and determine the possible implications of value shift for wildlife management.

Findings related to these objectives are reported by Teel et al. (2005). Further, the regional report provides a thorough description of the history and utility of understanding wildlife values, the development of the concept of wildlife value orientations, and more information about Colorado's place in the regional distribution of wildlife value orientations. This state report addresses these objectives only briefly—as they specifically relate to Colorado—and gives an overview of wildlife value orientations and segmentation of the public based upon the concept. This segmentation scheme—wildlife value orientation types—is used in other sections throughout the report to better explain Colorado residents' wildlife-related attitudes.

A. CONCEPTUAL BACKGROUND: A THEORY ON WILDLIFE VALUE ORIENTATIONS[1]

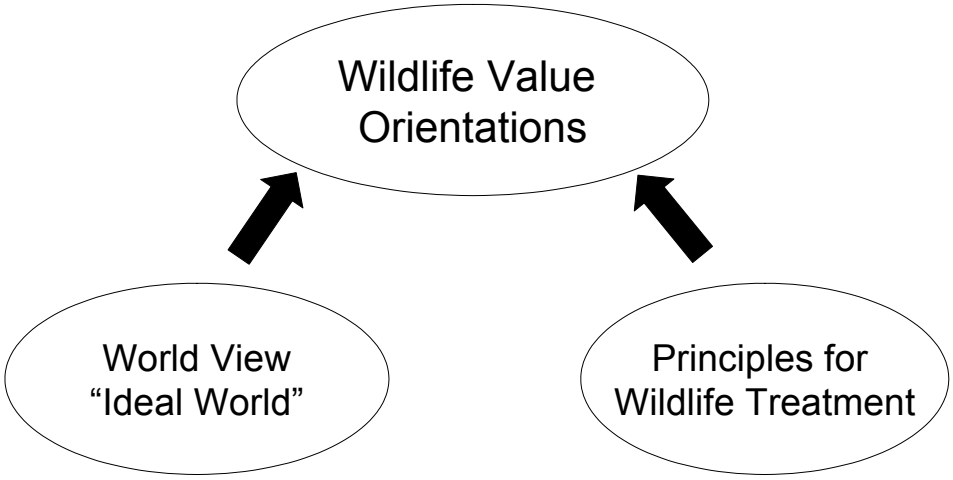
Wildlife value orientations are a component of an individual's hierarchical belief structure. They are an expression of one's values and are revealed through the pattern and direction of basic beliefs held by an individual (Fulton, Manfredo, & Lipscomb, 1996). Value orientations provide the foundation for an individual's attitudes and norms, which in turn guide their behavior. Prior research has shown that wildlife value orientations are effective in predicting participation in wildlife-related recreation (Fulton et al., 1996) as well as support for wildlife management actions (Bright, Manfredo, & Fulton, 2000; Manfredo, Zinn, Sikorowski, & Jones, 1998; Manfredo, Pierce, Fulton, Pate, & Gill, 1999; Manfredo & Fulton, 1997; Manfredo & Zinn, 1996; Whittaker, 2000; Zinn, Manfredo, Vaske, & Wittman, 1998).

Wildlife value orientations can be viewed as *expressions of fundamental values*. A classic definition states that values are enduring beliefs about desired end states and modes of conduct (Rokeach, 1973). They are "goals for living" that define how we want the world to be (i.e., a "worldview") and principles that guide our behavior. In extending this idea to how people relate to wildlife, we have identified two "classes" or categories of thought (Figure II.A.1).

[1] Text and figures for this section have been extracted from Teel et al. (2005).

Worldview captures the notion of "desired end states" in the values definition – an ideal view of what one would want the world to be regarding wildlife. Principles for wildlife treatment represent the idea of "desired modes of conduct" – guiding principles for how an individual perceives we should interact with and treat wildlife.

Figure II.A.1. Conceptual model for wildlife value orientations.



As described by Fulton et al. (1996), wildlife value orientations are composed of "dimensions", or sets, of basic beliefs about wildlife and wildlife management. They are revealed through the pattern of direction and intensity among these beliefs. Our recent work has revealed two main orientations toward wildlife that can be classified along what is known as the **"mutualism-utilitarian"** *value orientation dimension*. The latter can be viewed as a broader category of thought about wildlife that is made up of more specific belief sets. Below is a detailed description of the components of this broad dimension.

1. ***Utilitarian Wildlife Value Orientation***

   The utilitarian wildlife value orientation is one involving a view that wildlife should be used and managed for human benefit. It is linked to the "use" orientation previously identified by Fulton et al. (1996) and is believed to be the orientation that society is moving away from (Manfredo & Zinn, 1996).

Ideal World	Principles for Wildlife Treatment
o Wildlife exists for human use and enjoyment.	o Manage wildlife so that humans benefit.
o There is an abundance of wildlife for hunting and fishing.	o Prioritize the needs of humans over wildlife.

Basic Belief Dimensions

A. *Utilitarian Belief Dimension*	B. *Hunting Belief Dimension*
Philosophy regarding utilization of wildlife for human benefit.	Philosophy regarding hunting as a humane and positive activity.

2. ***Mutualism Wildlife Value Orientation***

This orientation is a refinement of the protection orientation identified by Fulton et al. (1996). It is associated with a desire for humans and wildlife to be able to co-exist or live in harmony. It is linked to a perception that humans and animals depend upon each other and that they benefit one another in their relationship – thus the term mutualism. This orientation is believed to be one that society is moving more toward in terms of people's perceptions of wildlife and how wildlife should be treated.

Ideal World	Principles for Wildlife Treatment
o Humans and wildlife are able to live side by side without fear.	o Assign animals rights like humans.
o All living things are seen as part of one big family.	o Take care of wildlife.
o Emotional bonding and companionship with animals is part of human experience.	o Prevent cruelty to animals.
o There is no animal suffering.	

Basic Belief Dimensions

A. *Mutualism Belief Dimension*	B. *Caring Belief Dimension*
Philosophy regarding co-existence of humans and wildlife as if they were family.	Philosophy regarding a desire to care for animals and prevent them from suffering.

Exploration of Other Dimensions of Thought about Wildlife

To contribute to furthering our understanding of the *diversity* of orientations that exist among the public, two additional dimensions of thought about wildlife were identified and explored in this study:

1. ***Attraction Belief Dimension***

This set of beliefs is associated with an interest in and desire to know more about wildlife. It is grounded in the feeling that wildlife enhances human life experiences. This belief dimension is a refinement of the wildlife appreciation orientation identified by Fulton et al. (1996).

2. ***Concern for Safety Belief Dimension***

This set of beliefs centers around concerns related to interacting with wildlife due to possibility of such things as harm (e.g., due to attacks by wildlife) or disease contraction. Individuals scoring high on this dimension are worried about encountering wildlife while in the outdoors.

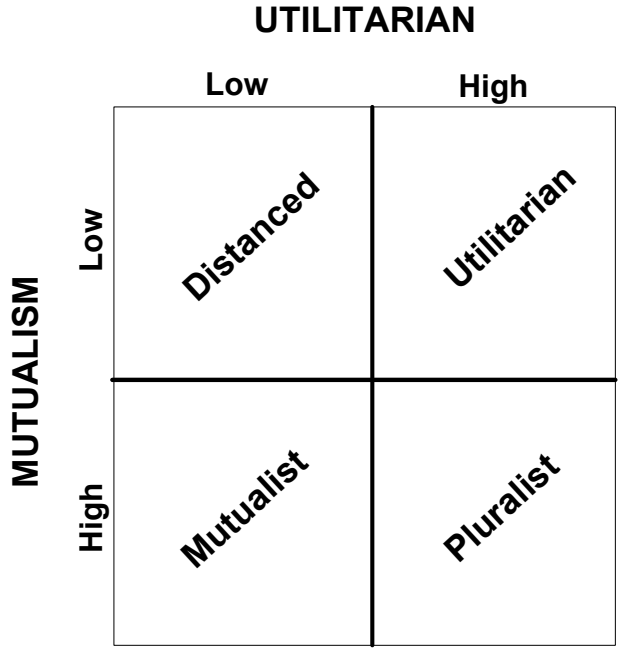
Information regarding the distribution of wildlife value orientations and belief dimensions in Colorado is provided below.

B. SEGMENTATION OF PUBLICS ON THE BASIS OF THEIR WILDLIFE VALUE ORIENTATIONS[2]

A useful way of summarizing information about wildlife value orientations is to identify different "types" of people on the basis of their orientations (Bright et al., 2000). Characterizing segments of the public in this manner allows for a better understanding of the diversity of publics that exists as well as anticipation of how different groups of people will respond to proposed management strategies and programs.

Four unique value orientation types were identified in the current study using the utilitarian and mutualism value orientation scales (see Teel et al., 2005). Respondents were assigned a score on the two wildlife value orientation scales (utilitarian and mutualism) and then compared on both orientations simultaneously through a crosstabulation procedure. A visual display of how each value orientation type was identified in this context is shown in Figure II.B.1.

Figure II.B.1. Four types of people identified on the basis of their wildlife value orientations.



[2] Text and figures describing the wildlife value orientation types have been extracted from Teel et al. (2005).

Below is a more detailed description of each value orientation type, including how people were classified on the basis of scoring on the two wildlife value orientations.

1. ***Utilitarian Wildlife Value Orientation Type***

   Utilitarians were classified as those who scored greater than 4.50 ("high") on the utilitarian value orientation scale and less than or equal to 4.50 ("low") on the mutualism value orientation scale. These individuals possess beliefs about wildlife that society is purportedly moving away from. Specifically, they believe that wildlife should be used and managed for human benefit.

2. ***Mutualist Wildlife Value Orientation Type***

   Mutualists were classified as those who scored greater than 4.50 ("high") on the mutualism value orientation scale and less than or equal to 4.50 ("low") on the utilitarian value orientation scale. These individuals are believed to represent a less traditional view of the wildlife resource, one in which humans and wildlife are meant to co-exist or live in harmony.

3. ***Pluralist Wildlife Value Orientation Type***

   Pluralists hold both a mutualism and a utilitarian value orientation toward wildlife (i.e., they score "high" on both scales). This may appear confusing but can be explained by how these orientations likely manifest themselves in day-to-day situations. The name for this group was taken from Tetlock's (1986) Value Pluralism Model which describes how people can endorse values that have conflicting evaluative implications for specific issues. Drawing upon this model, the influence of the two value orientations is believed to be situationally-contingent. In other words, which of the orientations plays a role is dependent upon the given situation. As an illustration, consider a woman whose husband is a hunter. She finds hunting to be an acceptable practice – it supplies food for her family, and she supports others' participation in the sport. At the same time, however, she can't stand the thought of killing an animal and therefore will not hunt. Her utilitarian orientation manifests itself in the first situation while her mutualism orientation prevails in the other.

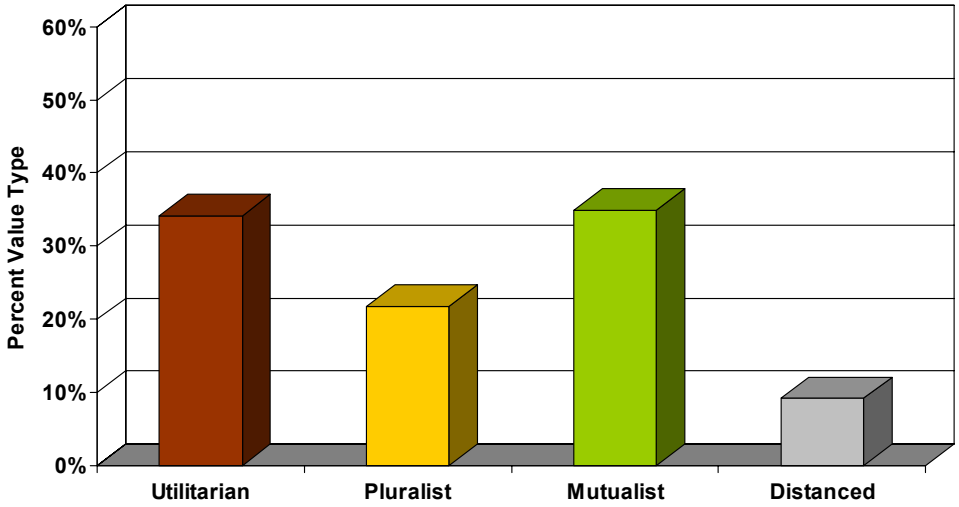
   The Pluralists as a group are believed to be an indication of our society in transition given that they hold both a utilitarian orientation toward wildlife that society is purportedly moving away from, as well as a mutualism orientation that we may be moving toward.

4. ***Distanced Wildlife Value Orientation Type***

   The Distanced individuals appear to be just that – distanced from the issue of wildlife. They do not hold either a mutualism or a utilitarian orientation toward wildlife (i.e., they score "low" on both scales). This could mean that they are less *interested* in wildlife-related issues and that wildlife-related issues are therefore less salient to them. It may also mean that, for whatever reason, their values may not be oriented very strongly toward wildlife.

Figure II.B.2 displays the distribution of each wildlife value orientation type in Colorado. The majority of Colorado residents are Utilitarians (34.1%) or Mutualists (34.9%), while fewer are Pluralists (21.8%) or Distanced (9.2%).

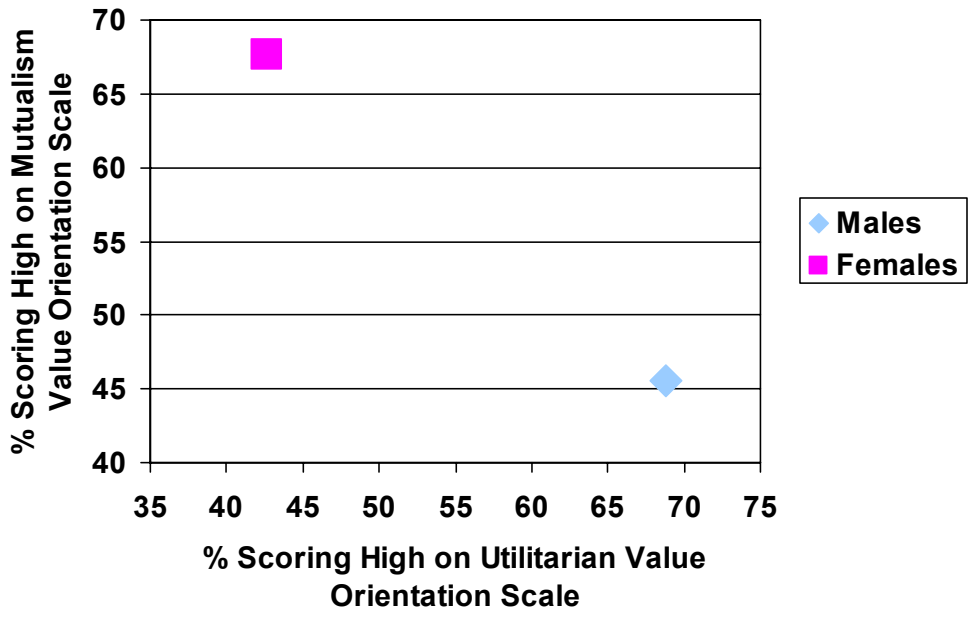
Figure II.B.2. Distribution of wildlife value orientation types in Colorado.



Teel et al. (2005) report that across all 19 states Utilitarians and Pluralists possess certain similar sociodemographic and lifestyle characteristics, which differ from those of Mutualists and Distanced individuals. Utilitarians and Pluralists are more likely than the other two groups of people to be male and also tend to be slightly older on average and to have lived in the state for a longer period of time. Mutualists and Distanced individuals are less likely to indicate past and current involvement in hunting and are also less likely than the other two groups to express interest in participating in this activity in the future.

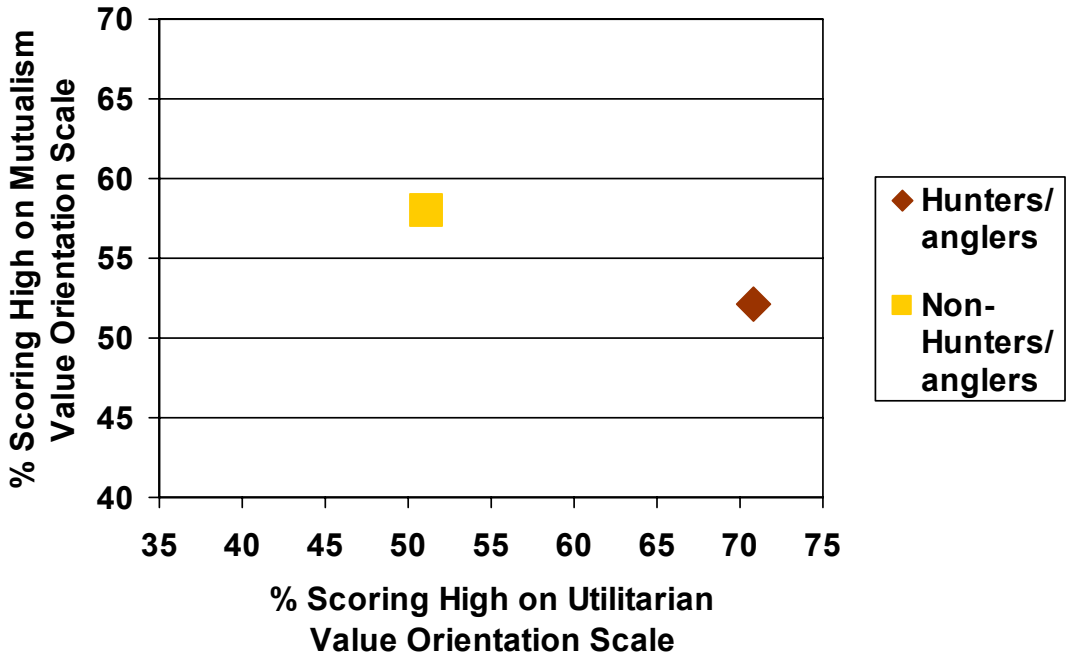
Similar trends are also noted in Colorado. Males are more likely than females to score high on the utilitarian value orientation scale, while females are more likely than males to score high on the mutualism value orientation scale (Figure II.B.3; Table A-1). Additionally, hunters/anglers are more likely than non-hunters/anglers to score high on the utilitarian value orientation scale, while non-hunters/anglers are more likely than hunters/anglers to score high on the mutualism value orientation scale (Figure II.B.4; Table A-1).

Figure II.B.3. Percent scoring "high"[1] on mutualism value orientation scale compared to utilitarian value orientation scale by gender.



[1]"High" defined by score of > 4.5 on mean composite value orientation scale.

Figure II.B.4. Percent scoring "high"[1] on mutualism value orientation scale compared to utilitarian value orientation scale by hunting and fishing participation.

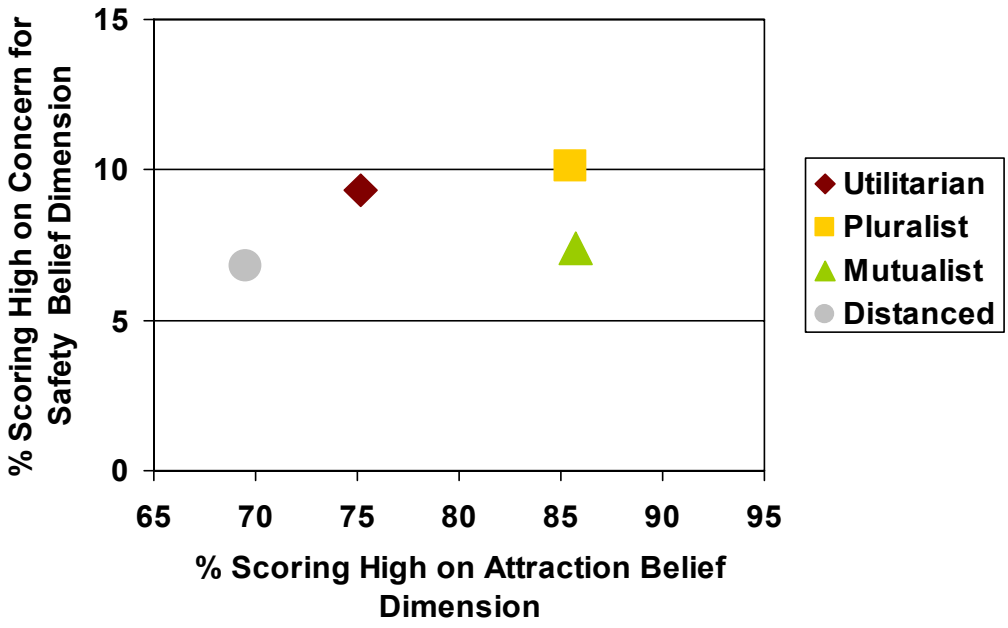


[1]"High" defined by score of > 4.5 on mean composite value orientation scale.

Teel et al. (2005) also note a small difference in how the value orientation types score on the attraction and concern for safety belief dimensions, which is similarly found in analyses of only Colorado respondents (Figure II.B.5; Table A-2). Distanced individuals, for example, are less likely than the other value orientation types to score high on the attraction dimension. This suggests that Distanced individuals are less interested in wildlife and wildlife-related issues.

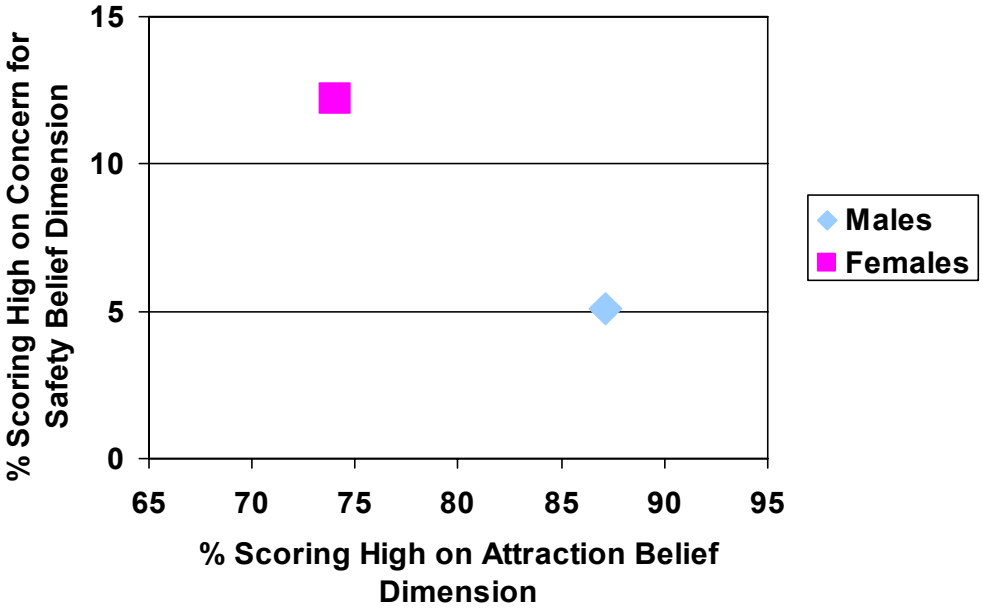
An exploration of the characteristics of those scoring high on the attraction and concern for safety belief dimensions in Colorado highlights other sociodemographic and lifestyle differences by basic wildlife belief dimensions. In general, only a small proportion (9%) of the Colorado public scored high on the concern for safety dimension, while 81% scored high on the attraction dimension. Females were more likely than males to score high on the concern for safety dimension, while males were more likely to score high on the attraction dimension (Figure II.B.6; Table A-2). Hunters/anglers were less likely than non-hunters/anglers to score high on the concern for safety dimension and more likely than non-hunters/anglers to score high on the attraction dimension (Figure II.B.7; Table A-2).

Figure II.B.5. Percent scoring "high"[1] on attraction basic wildlife belief dimension compared to concern for safety basic wildlife belief dimension by wildlife value orientation type.



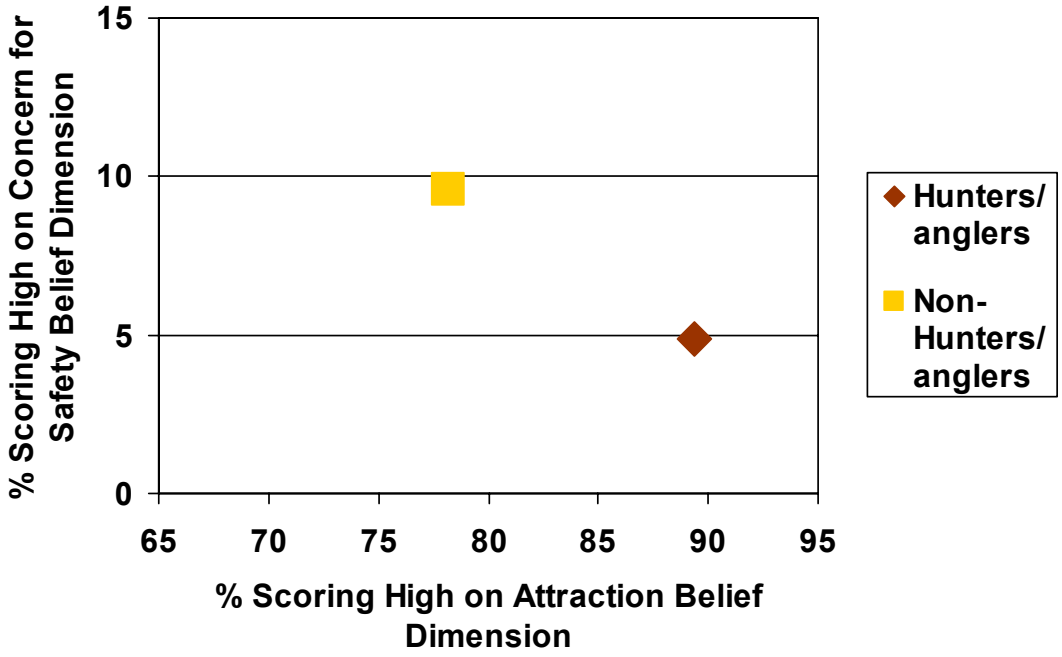
[1]"High" defined by score of > 4.5 on mean composite belief dimension scale.

Figure II.B.6. Percent scoring "high"[1] on attraction basic wildlife belief dimension compared to concern for safety basic wildlife belief dimension by gender.



[1] "High" defined by score of > 4.5 on mean composite belief dimension scale.

Figure II.B.7. Percent scoring "high"[1] on attraction basic wildlife belief dimension compared to concern for safety basic wildlife belief dimension by hunting and fishing participation.



[1] "High" defined by score of > 4.5 on mean composite belief dimension scale.

SECTION III. PHILOSOPHY FOR SERVING AND INVOLVING THE PUBLIC IN WILDLIFE MANAGEMENT[3]

Questions presented in this section, which appeared on the regional portion of the survey, examine the public's perceptions of the agency's philosophy for serving and involving the public in wildlife management. Three components of the topic are addressed:

1. current and desired funding and programming approaches;
2. public involvement philosophy; and
3. trust in government.

The survey items and results for each of these components are presented in order below. Supporting tables for the items are located in Appendix A (Tables A-3 to A-40). Additionally, results placing Colorado in the context of the western region are reported by Teel et al. (2005).

A. CURRENT AND DESIRED FUNDING AND PROGRAMMING APPROACHES

This issue involves an examination of philosophical orientations toward paying for wildlife management. Specifically, it explores approaches for who pays for wildlife management as compared to who "benefits" through programs provided by the agency. Respondents were presented with four hypothetical approaches. The four approaches included all combinations of two options for funding and two options for recipients of programming benefits. The options for funding were *almost entirely by hunting and fishing license dollars* or *substantially funded by both hunting and fishing license dollars and public taxes*. The options for recipients of programming benefits were *primarily those who hunt and/or fish* or *all members of the public*. Following the approaches, respondents were asked to select 1) their perceived current approach in their state and 2) their desired approach for their state.

State fish and wildlife agencies hear from many different groups of people about their interests, making decisions and priorities difficult. Below is a series of hypothetical approaches that describe how priorities *could* be directed. *Please read about each approach. Then tell us how you think things are now and how they should be in your state based on these approaches by answering the 2 questions that follow.*

APPROACH 1
- State agencies develop programs that meet the needs primarily of those who hunt and/or fish.
- Fish and wildlife management is **almost entirely funded by hunting and fishing license dollars**.

APPROACH 2
- State agencies develop programs that meet the needs primarily of those who hunt and/or fish.
- Fish and wildlife management is **substantially funded by both hunting and fishing license dollars *and* public taxes**.

APPROACH 3
- State agencies develop programs that meet the needs of all members of the public regardless of their level of interest in wildlife.
- Fish and wildlife management is **almost entirely funded by hunting and fishing license dollars**.

APPROACH 4
- State agencies develop programs that meet the needs of all members of the public regardless of their level of interest in wildlife.
- Fish and wildlife management is **substantially funded by both hunting and fishing license dollars *and* public taxes**.

1. Of the above approaches, which approach do you think best resembles how things are now in your state? *Check only one (☑).*

❒ **Approach 1** ❒ **Approach 2** ❒ **Approach 3** ❒ **Approach 4**

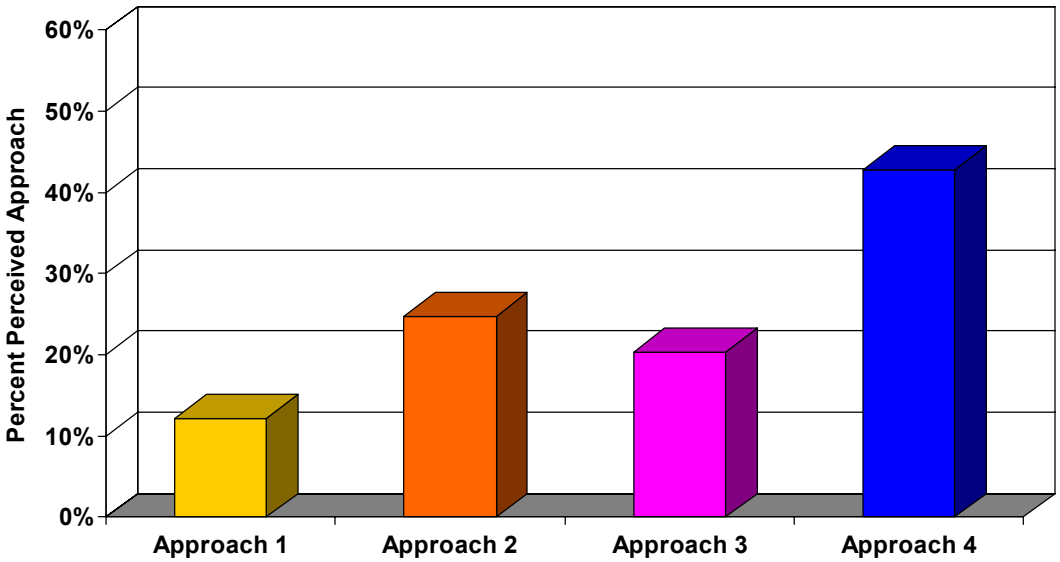
2. Which approach best represents your opinion of how things should be in your state? *Check only one (☑).*

❒ **Approach 1** ❒ **Approach 2** ❒ **Approach 3** ❒ **Approach 4**

[3] Text describing regional issues in this section has been extracted from Teel et al. (2005).

Perceived current approach results. As shown in Figure III.A.1, when considering "how things are now", 43% of the public selected the approach that *meets the needs of all members of the public and is substantially funded by hunting and fishing licenses and public taxes* (Approach 4). The next most frequently selected response was one that *meets the needs of hunters/anglers and is substantially funded by hunting and fishing licenses and public taxes* (25%; Approach 2). The two approaches selected by smaller proportions of people included the funding option of *almost entirely by hunting and fishing licenses*. They were Approach 3 with the benefits option of *meets the needs of all members of the public* (20%), and Approach 1 with the benefits option of *meets the needs of hunters/anglers* (12%).

Figure III.A.1. Percent of respondents indicating each approach[1] as their perceived current approach.

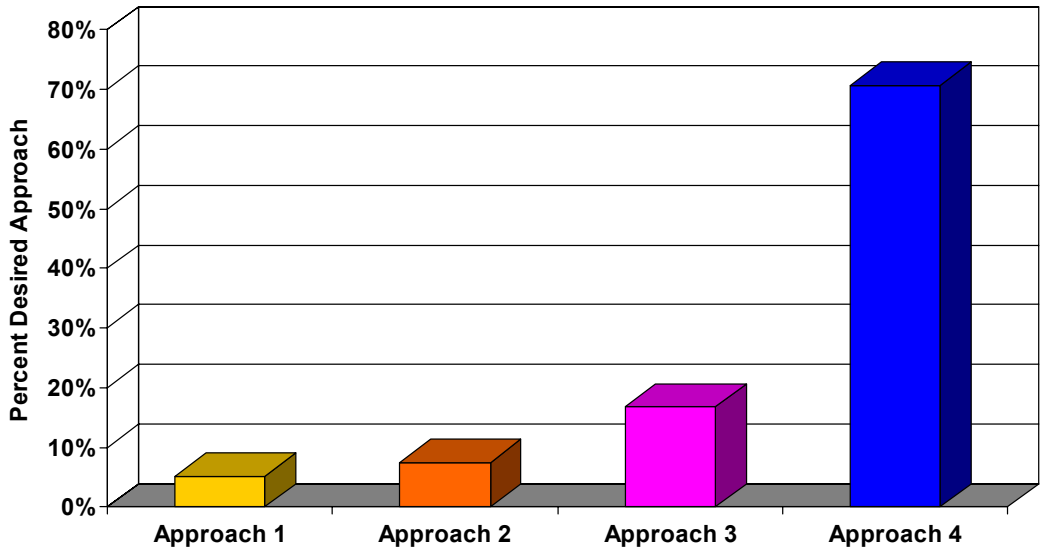


[1]Approach 1- Programs meet the needs primarily of those who hunt and/or fish. Funded almost entirely by hunting and fishing license dollars.
Approach 2 - Programs meet the needs primarily of those who hunt and/or fish. Funded substantially by both hunting and fishing license dollars *and* public taxes.
Approach 3 - Programs meet the needs of all members of the public. Funded almost entirely by hunting and fishing license dollars.
Approach 4 - Programs meet the needs of all members of the public. Funded substantially by both hunting and fishing license dollars *and* public taxes.

Desired approach results. When considering "how things should be", 71% of the public selected the approach that *meets the needs of all members of the public and is substantially funded by hunting and fishing licenses and public taxes* (Approach 4; Figure III.A.2). The second most frequently selected response was the approach that *meets the needs of all members of the public and is funded almost entirely by hunting and fishing licenses* (17%; Approach 3). These two approaches both included the recipients for programming benefits option of *all members of the public*. The two approaches least desired included the benefits option of *meets the needs of*

hunters/anglers. They were Approach 2 with the funding option of *hunting and fishing licenses and public taxes* (7%), and Approach 1 with the funding option of *almost entirely by hunting and fishing licenses* (5%).

Figure III.A.2. Percent of respondents indicating each approach[1] as their desired approach.



[1]Approach 1- Programs meet the needs primarily of those who hunt and/or fish. Funded almost entirely by hunting and fishing license dollars.
Approach 2 - Programs meet the needs primarily of those who hunt and/or fish. Funded substantially by both hunting and fishing license dollars *and* public taxes.
Approach 3 - Programs meet the needs of all members of the public. Funded almost entirely by hunting and fishing license dollars.
Approach 4 - Programs meet the needs of all members of the public. Funded substantially by both hunting and fishing license dollars *and* public taxes.

Comparison of results. A comparison of Figures III.A.1 and III.A.2 highlights that there was much greater consensus within the state on the desired approach than on the perceived current approach. Evaluation of Table III.A.1 reveals how the increased consensus on the desired approach was attained. This table displays a cross-tabulation of the percent of respondents who selected each approach as the perceived current approach as compared to their selection for their desired approach. For example, 36.6% of the respondents selected Approach 4 as their perceived current approach and also their desired approach. In other words, approximately one-half of those with this desired approach (i.e., 36.6% of the 70.6% total selecting it) already perceived it to be the approach. The other half who desired Approach 4 had selected Approaches 1-3 as their perceived approach.

The table also shows how much consistency individuals had in selection of the perceived current approach and the desired approach. The cells for the same approach for perceived current approach and desired approach (along the diagonal—shaded in yellow) sum to the percent of respondents who showed consistency with their perceived current and desired funding

approaches. More specifically, for Approach 1, 1.4% of all of the respondents selected it for their perceived current approach and desired approach, 4.6% for Approach 2, 7.6% for Approach 3, and 36.6% for Approach 4. Thus, 50.2% of the respondents in Colorado selected the same approach for perceived current and desired approaches.

Table III.A.1. Funding approach cross-tabulation of perceived current approach by desired approach.

		Desired approach				Total (perceived)
		Approach 1	Approach 2	Approach 3	Approach 4	
Perceived current approach	Approach 1	1.4	1.0	2.2	7.6	12.2
	Approach 2	1.5	4.6	2.6	16.0	24.7
	Approach 3	1.2	1.0	7.6	10.5	20.3
	Approach 4	1.0	0.7	4.5	36.6	42.8
Total (desired)		5.2	7.4	16.8	70.6	100.0

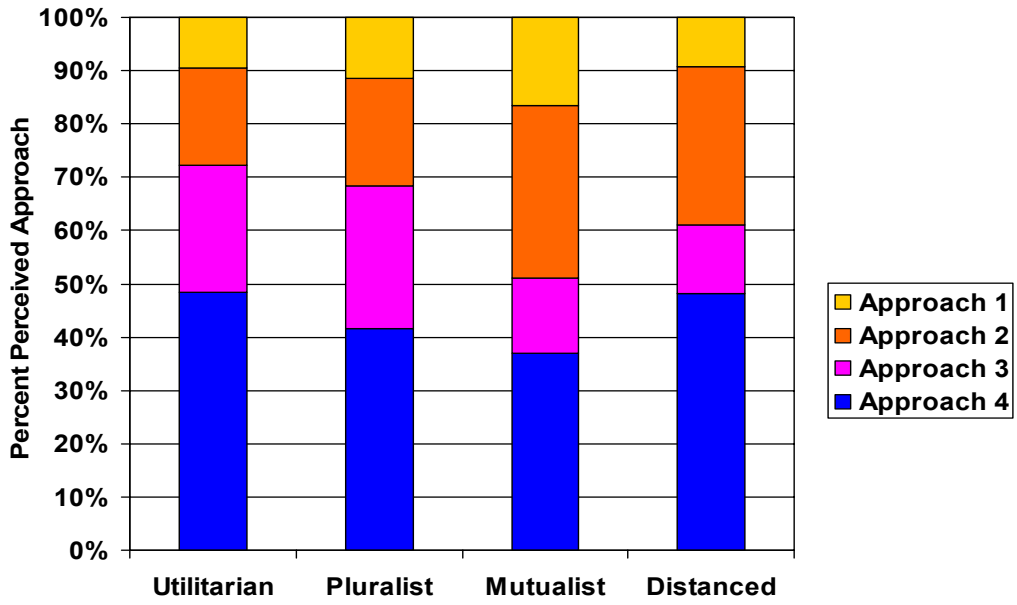
[1]Approach 1- Programs meet the needs primarily of those who hunt and/or fish. Funded almost entirely by hunting and fishing license dollars.
Approach 2 - Programs meet the needs primarily of those who hunt and/or fish. Funded substantially by both hunting and fishing license dollars *and* public taxes.
Approach 3 - Programs meet the needs of all members of the public. Funded almost entirely by hunting and fishing license dollars.
Approach 4 - Programs meet the needs of all members of the public. Funded substantially by both hunting and fishing license dollars *and* public taxes.

Additional analyses were conducted to explore sociodemographic, lifestyle, and cognitive (i.e., values or beliefs) characteristics of those who selected the same approach for perceived current approach and desired approach. Correlations (phi and point biserial—depending on the characteristics of the variables) were conducted with participation in hunting, fishing, and viewing in the past 12 months; gender, age, number of children, education, and income; concern for safety belief dimension, attraction belief dimension, utilitarian wildlife value orientation, and mutualism wildlife value orientation. The only statistically significant correlations were with the utilitarian value orientation ($r_p = .208$, $p < .001$) and the mutualism value orientation ($r_p = -.155$, $p < .001$). Those who scored higher on the utilitarian value orientation scale were more likely to have chosen the same current and desired approach, while those who scored higher on the mutualism value orientation scale were less likely to have chosen the same approach. The effect size for these relationships (represented in the strength of association), however, was quite "small" (Cohen, 1988).

Results by wildlife value orientation type. As Figure III.A.3 shows, respondents differed by value orientation type in choosing the perceived current approach. Utilitarians and Pluralists were more likely than the other two groups to believe that Approach 3, which *meets the needs of all members of the public and is funded almost entirely by hunting and fishing licenses*, was the current approach. Mutualists and Distanced individuals, on the other hand, were more likely than the other types to choose Approach 2, which *meets the needs primarily of those who hunt and/or fish and is funded by hunting and fishing licenses and public taxes*. Between 37% and 49% of all value orientation types selected Approach 4, which *meets the needs of all members of*

the public and is substantially funded by hunting and fishing licenses and public taxes. A relatively low percentage across all groups selected the remaining approach (Approach 1) as their perceived current approach.

Figure III.A.3. Percent of wildlife value orientation type indicating each approach as their perceived current approach.



There was greater agreement among and within each value orientation type as to the desired approach, as shown in Figure III.A.4. Approach 4 was chosen by the majority of respondents within each type, followed by Approach 3. Both approaches focus on *meeting the needs of all members of the public*, though the funding for Approach 4 would come from *hunting and fishing licenses and public taxes* while the funding for Approach 3 would come only from *hunting and fishing licenses*.

Figure III.A.5 reports the percent of each wildlife value orientation type selecting the same response for both desired and perceived current approaches. It shows that Utilitarians and Pluralists were more likely than the other two value orientation types to select the same approach.

Figure III.A.4. Percent of wildlife value orientation type indicating each approach as their desired approach.

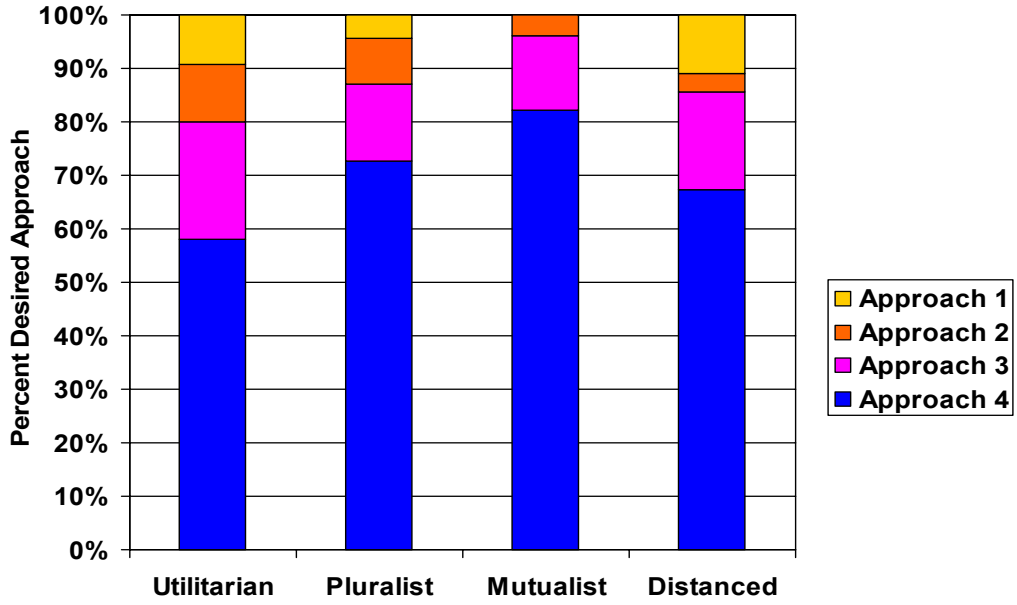
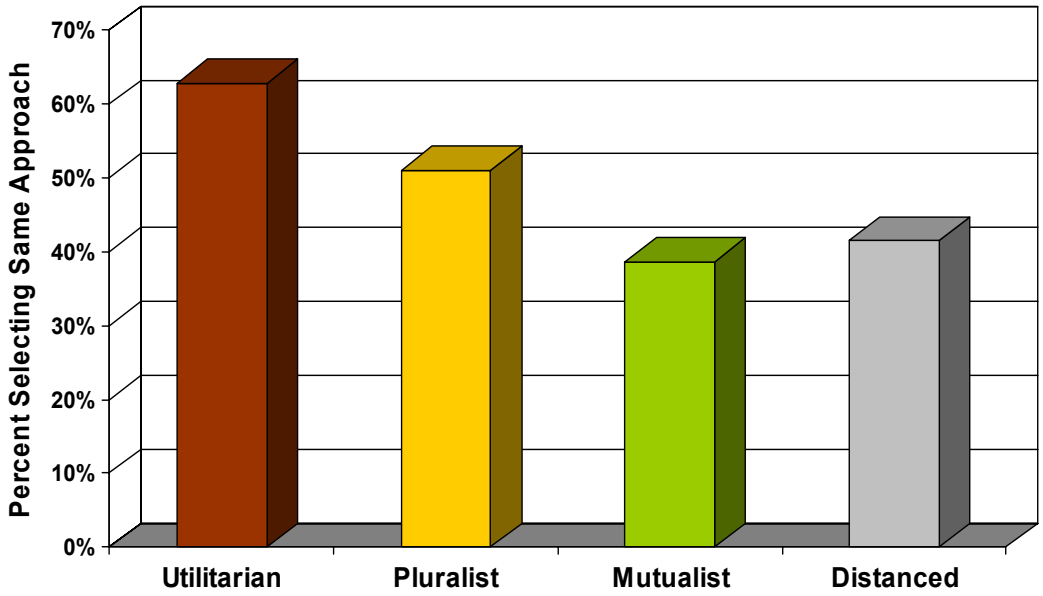


Figure III.A.5. Percent of wildlife value orientation type selecting same approach for perceived current approach and desired approach.



Results by participation in hunting and fishing. As Figure III.A.6 shows, hunters/anglers and non-hunters/anglers did not differ much in choosing their perceived current approach. Slightly more hunters/anglers felt that Approach 3 (*meeting the needs of all members of the public and funded by hunting and fishing license dollars*) was the current approach, and fewer from this group thought that Approach 4 (*meeting the needs of all members of the public and funded by both hunting and fishing license dollars and public taxes*) was the current approach compared to non-hunters/anglers. The majority of both groups (70%) chose Approach 4 as their desired approach (Figure III.A.7). A lower percentage of hunters/anglers selected Approach 3 for this purpose as compared to non-hunters/anglers. Approximately 50% of the latter group and 45% of the former chose the same option for their current and desired approaches (Figure III.A.8).

Figure III.A.6. Percent of hunters/anglers and non-hunters/anglers indicating each approach as their perceived current approach.

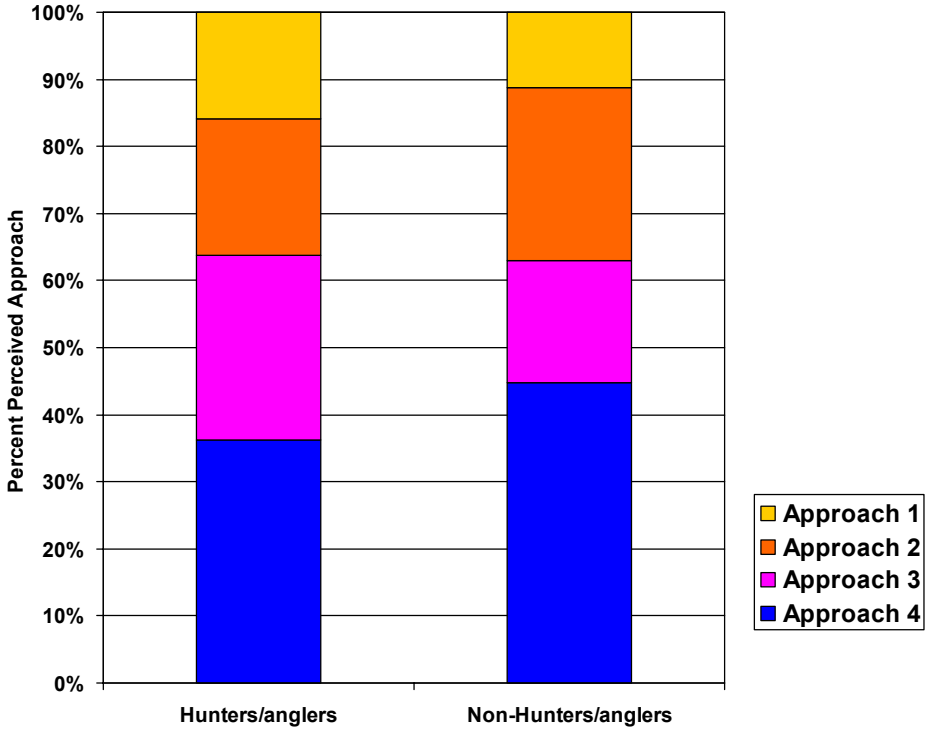


Figure III.A.7. Percent of hunters/anglers and non-hunters/anglers indicating each approach as their desired approach.

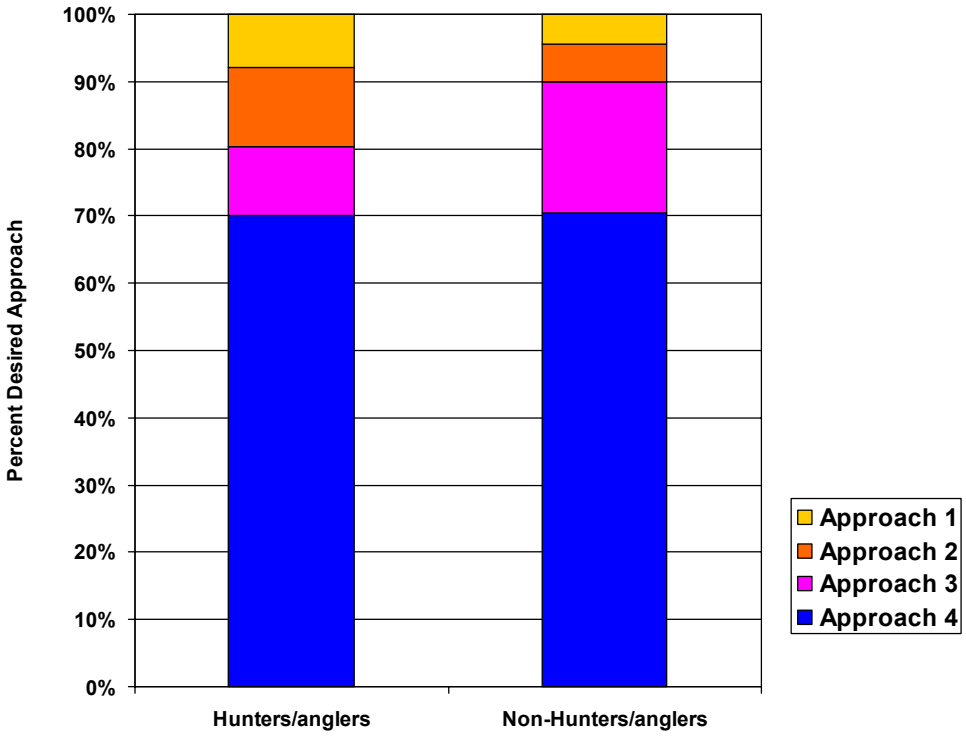
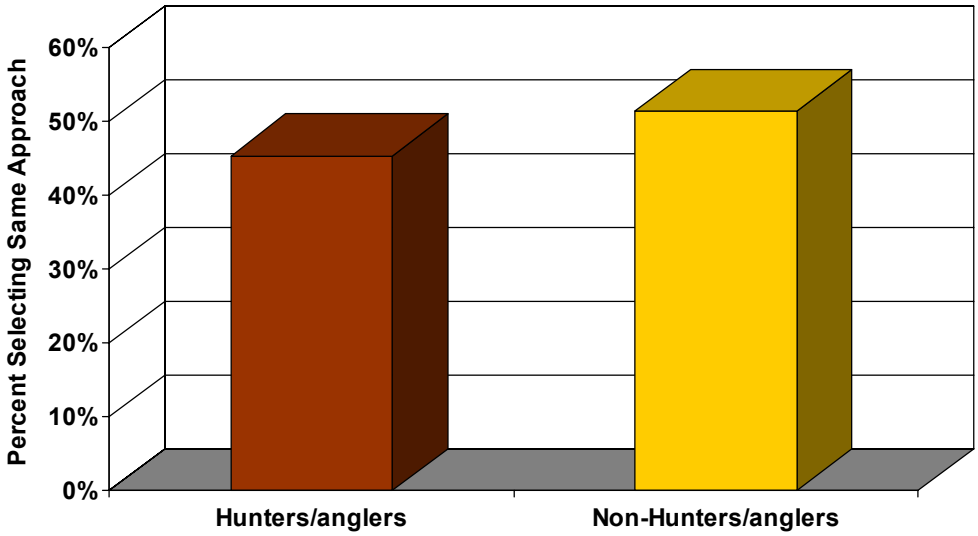


Figure III.A.8. Percent of hunters/anglers and non-hunters/anglers selecting same approach for perceived current approach and desired approach.



B. PUBLIC INVOLVEMENT PHILOSOPHY

This issue measures the public's involvement in fish and wildlife decision-making at the state level. It covers the extent to which people feel their opinions, interests, and input are heard and adequately considered in decisions. It also determines whether or not people have an interest in providing input and if they feel that input will make a difference. Respondents were asked to indicate their level of agreement with each of the six statements listed below.

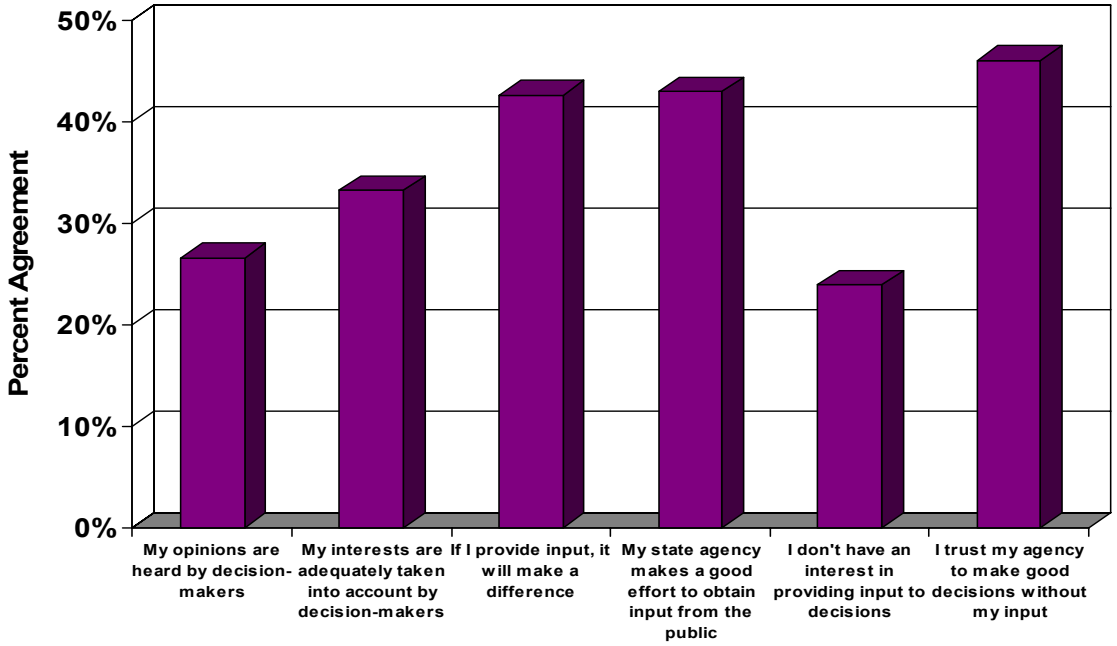
We would like to know how you feel about the extent to which your state fish and wildlife agency listens to and considers your opinions in fish and wildlife decision-making. Please indicate how strongly you disagree or agree with each of the following statements. ***Circle one number for each statement.***

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
1. I feel that my opinions are heard by fish and wildlife decision-makers in my state.	1	2	3	4	5	6	7
2. I feel that my interests are adequately taken into account by fish and wildlife decision-makers in my state.	1	2	3	4	5	6	7
3. I feel that if I provide input, it will make a difference in fish and wildlife decisions in my state.	1	2	3	4	5	6	7
4. I feel that my state fish and wildlife agency makes a good effort to obtain input from the public as a whole.	1	2	3	4	5	6	7
5. I don't have an interest in providing input to fish and wildlife decisions in my state.	1	2	3	4	5	6	7
6. I trust my state fish and wildlife agency to make good decisions without my input.	1	2	3	4	5	6	7

Summary of results. Figure III.B.1 displays the percent of respondents who agreed with each statement (i.e., those who selected "slightly agree", "moderately agree", or "strongly agree"). It is important to note that "neither" had a high percent of response on some items. For example, for statement 1, "neither" was selected by 42% of the respondents. The range across other statements was 12% to 37% (Table A-9).

Approximately a quarter of respondents felt that *their opinions are heard*, while about one-third believed that *their interests are adequately taken into account by fish and wildlife decision-makers*. A greater percentage of respondents (over 40%) felt that *if they provide input, it makes a difference* and that *the agency makes a good effort to obtain input from the public*. Twenty-five percent had *no interest in providing input to fish and wildlife decisions*, and just under half of the respondents *trust the agency to make good decisions without their input*.

Figure III.B.1. Percent of respondents agreeing with the public involvement statements.



Results by wildlife value orientation type. Figures III.B.2 to III.B.7 display PCI graphs for each of the public involvement philosophy statements, showing a PCI bubble for each of the value orientation types and for the entire public. Several trends can be identified in these graphs. Mutualists were more likely than the other value orientation types to disagree with each statement. This indicates they were less likely to think their opinions are heard and to trust the agency's efforts to obtain input or to make decisions without it. Pluralists joined the Mutualists in their tendency toward greater disagreement, relative to the other types, for the statement, *I don't have an interest in providing input*. Mutualists were more in consensus as a group for many of the public involvement statements.

Figure III.B.2. Potential for conflict indices for the statement "I feel that *my opinions are heard* by fish and wildlife decision-makers in my state" by wildlife value orientation type.

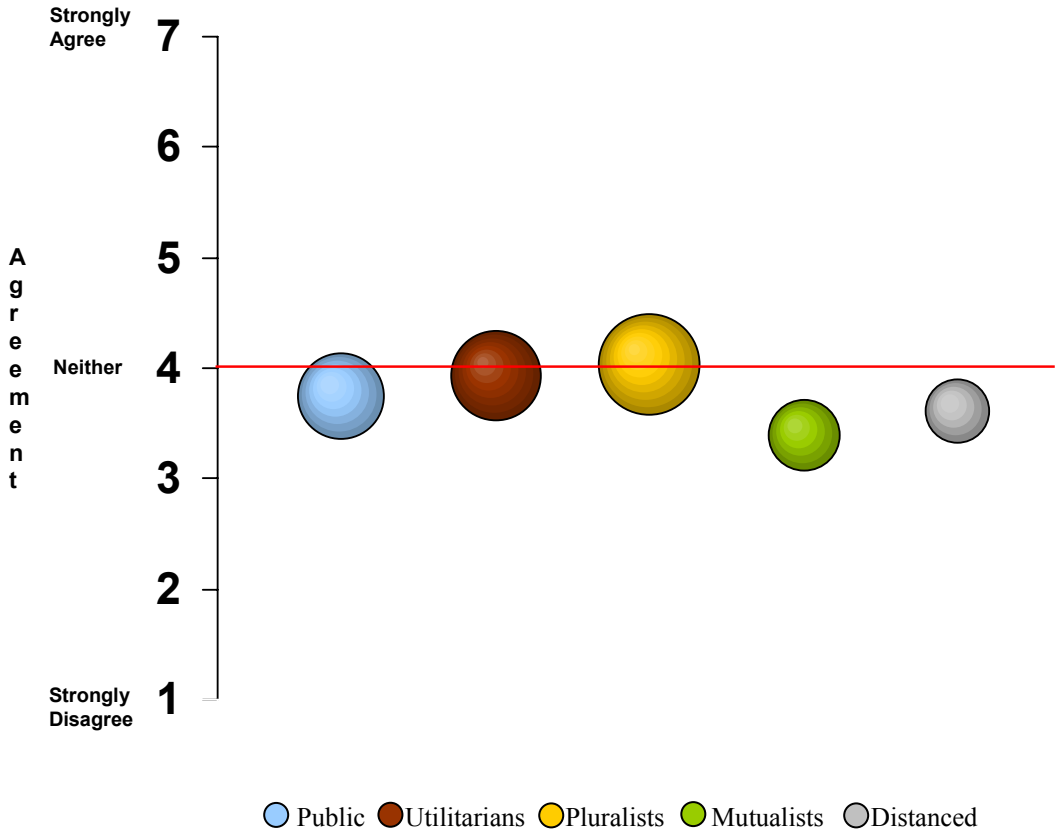


Figure III.B.3. Potential for conflict indices for the statement "I feel that *my interests are adequately taken into account* by fish and wildlife decision-makers in my state" by wildlife value orientation type.

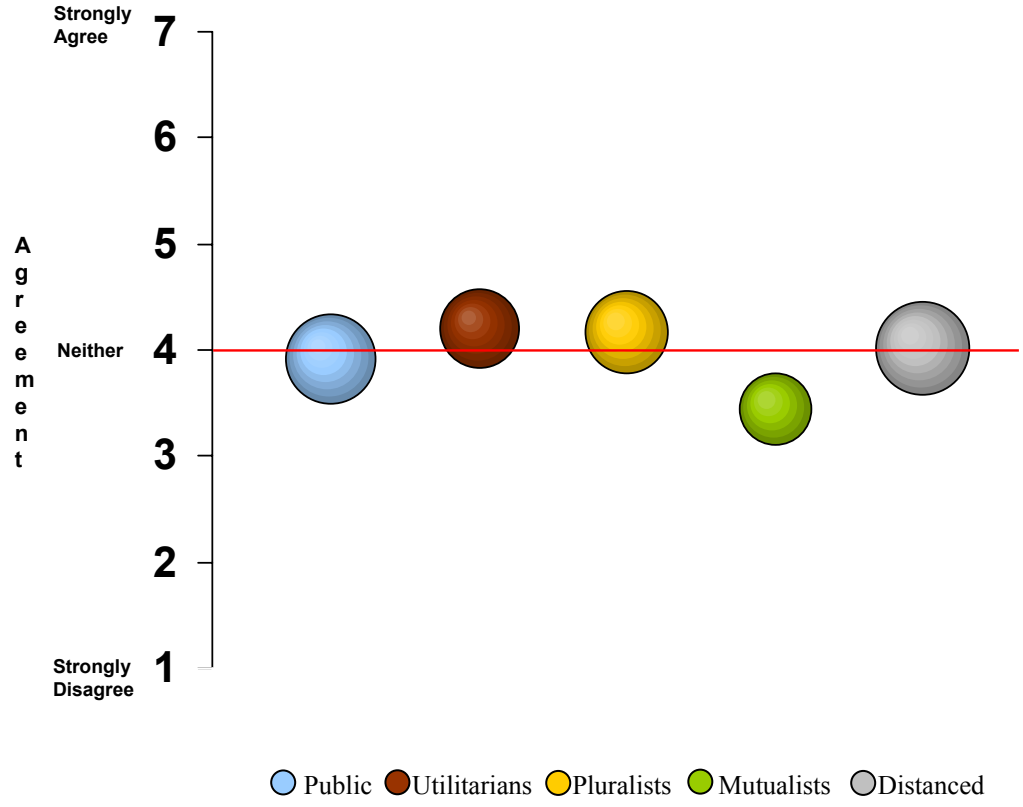


Figure III.B.4. Potential for conflict indices for the statement "I feel that *if I provide input, it will make a difference* in fish and wildlife decisions in my state" by wildlife value orientation type.

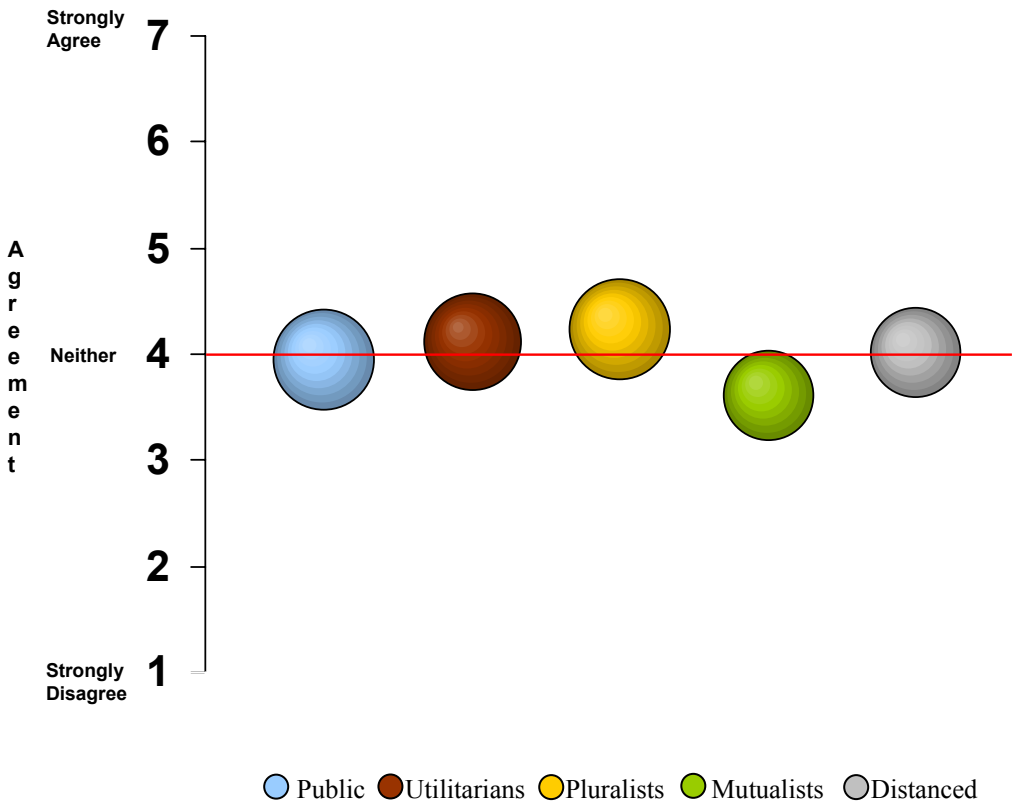


Figure III.B.5. Potential for conflict indices for the statement "I feel that my state fish and wildlife agency makes a good effort to obtain *input from the public as a whole*" by wildlife value orientation type.

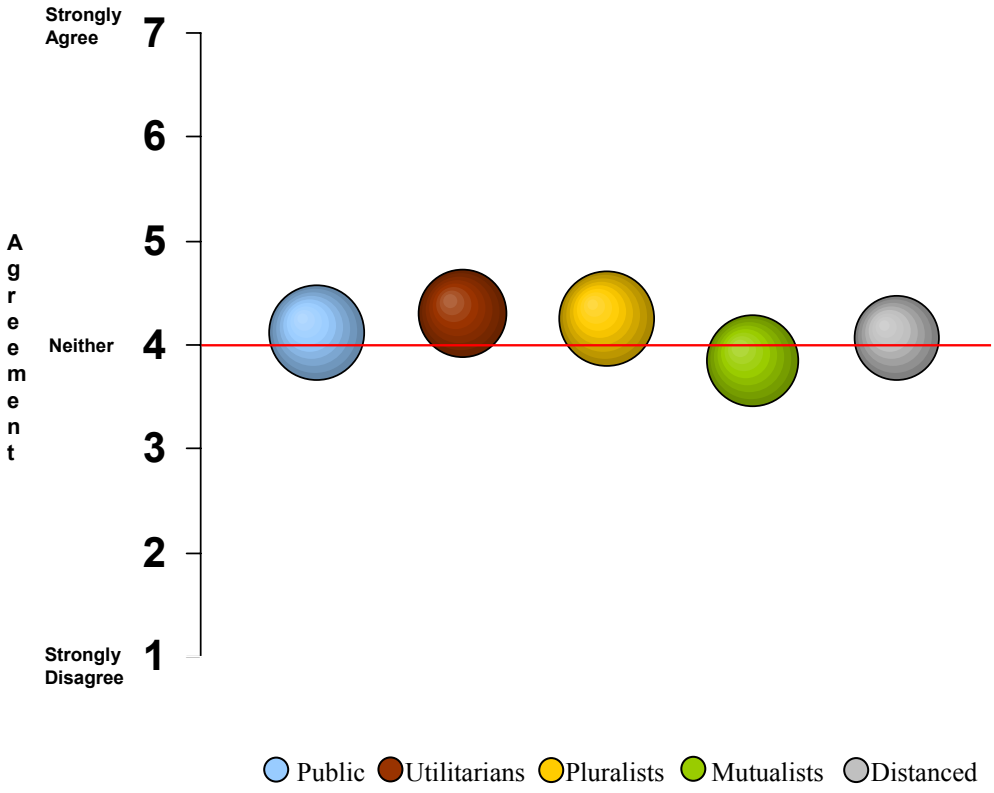


Figure III.B.6. Potential for conflict indices for the statement "*I don't have an interest* in providing input to fish and wildlife decisions in my state" by wildlife value orientation type.

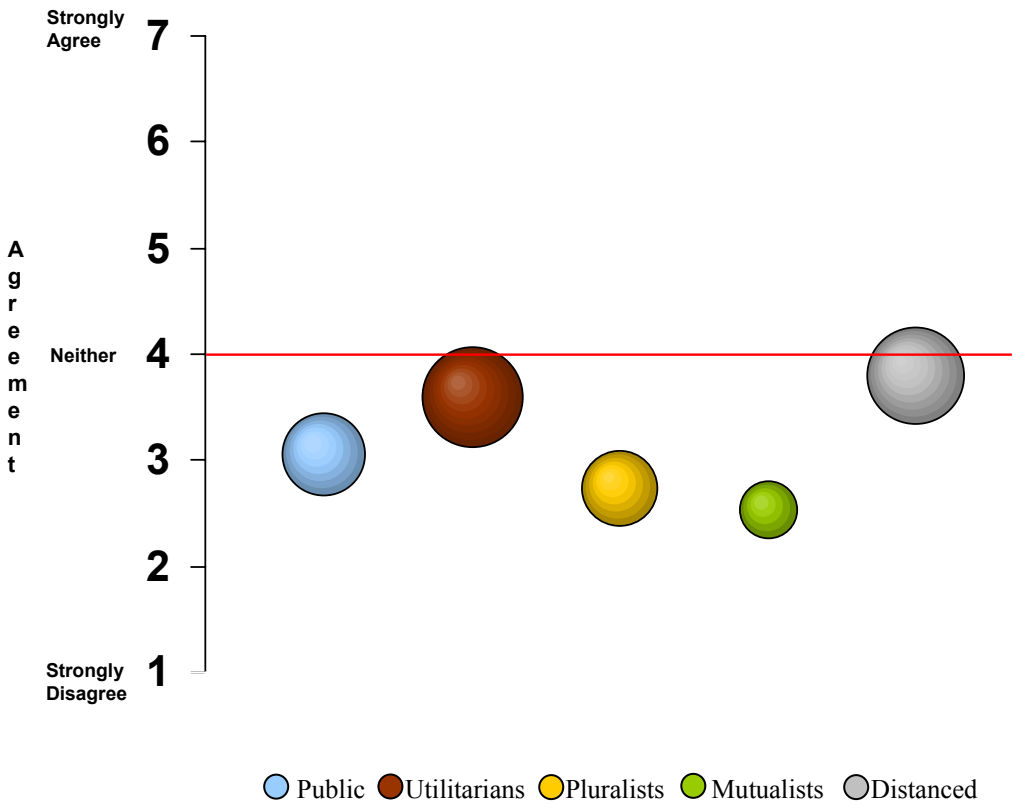
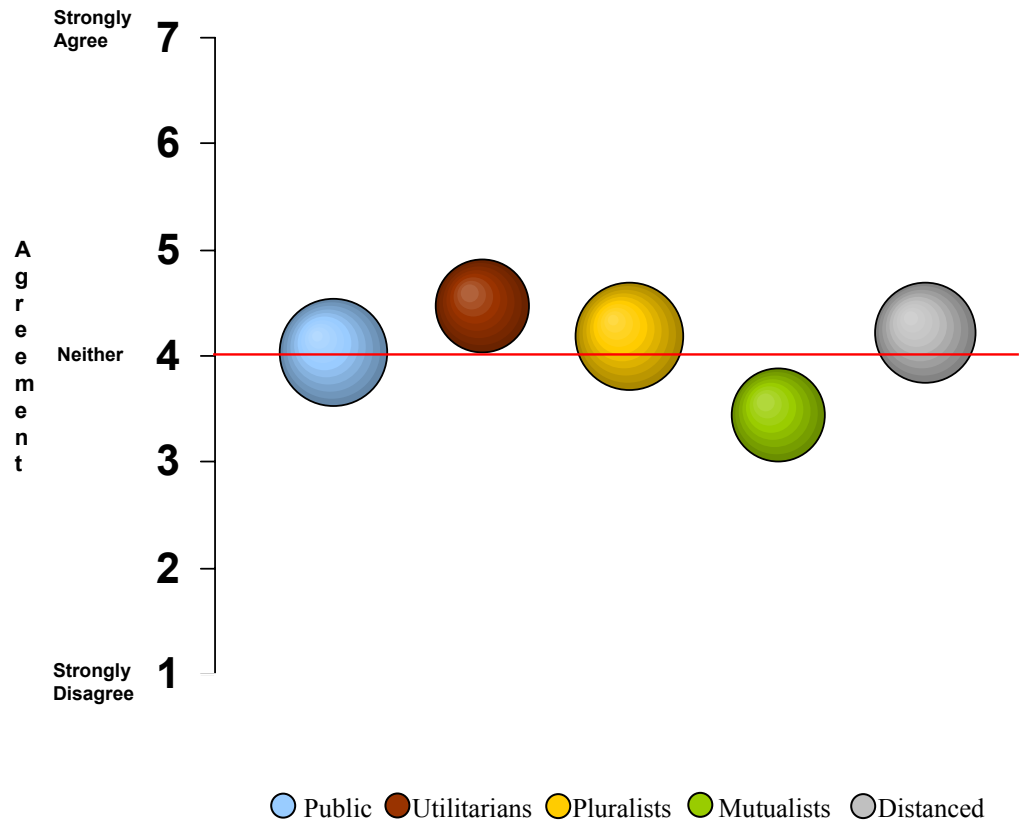
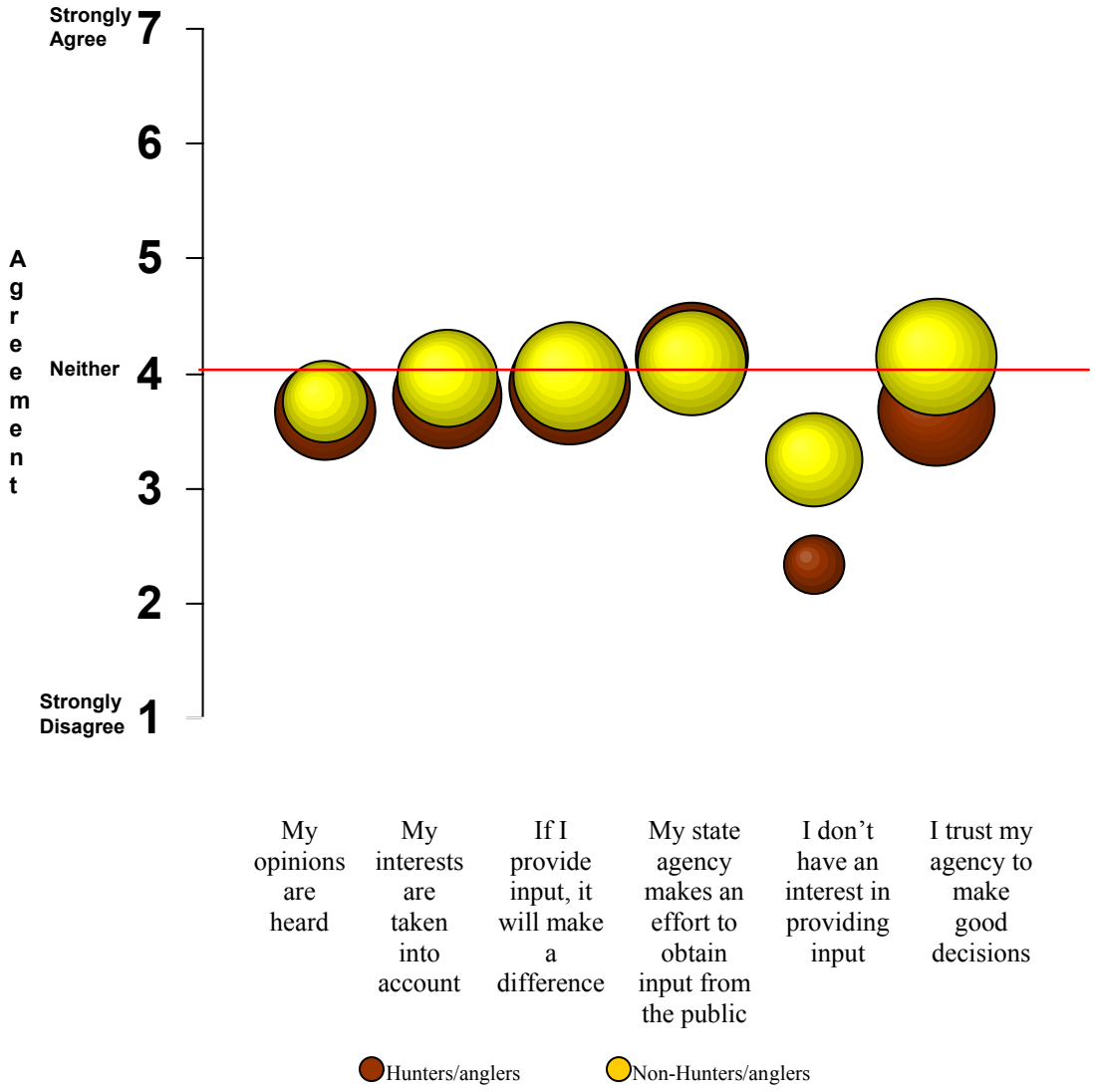


Figure III.B.7. Potential for conflict indices for the statement "I trust my state fish and wildlife agency to *make good decisions without my input*" by wildlife value orientation type.



Results by participation in hunting and fishing. Hunters/anglers and non-hunters/anglers did not differ much on level of agreement or amount of within-group consensus on the first four statements in this section (Figure III.B.8). On average, hunters/anglers disagreed more than the non-hunters/anglers that they *do not have an interest in providing input*, and hunters/anglers showed more within-group consensus than non-hunters/anglers for this statement. Overall, while both groups approached a relatively neutral average response, non-hunters/anglers tended to slightly agree that they *trust their agency to make good decisions,* while hunters/anglers were in slight disagreement with this notion.

Figure III.B.8. Potential for conflict indices for public involvement items by participation in hunting and fishing.



C. TRUST IN GOVERNMENT

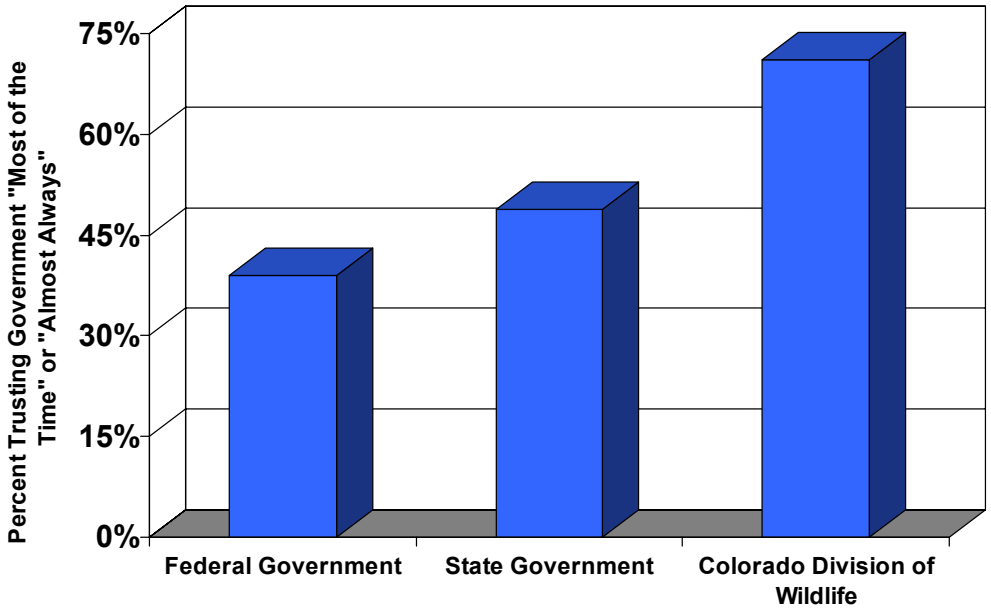
This issue explores the public's level of trust in three forms of government: federal, state, and the state fish and wildlife agency. It complements the public involvement philosophy statement *I trust my state fish and wildlife agency to make good decisions without my input* by broadly asking about trust in the agency, and it puts the responses in the context of other forms of government. Respondents were asked to respond to the statements listed below.

Please respond to the following questions about the extent to which you trust certain forms of government. ***Circle one number for each statement.***

Overall, to what extent do you trust…	Almost Never	Only Some of the Time	Most of the Time	Almost Always
1. …your federal government to do what is right for your country?	1	2	3	4
2. …your state government to do what is right for your state?	1	2	3	4
3. …your state fish and wildlife agency to do what is right for fish and wildlife management in your state?	1	2	3	4

Summary of results. Figure III.C.1 displays the percent of respondents who trust the given government body to do what is right. The percent includes those who selected "most of the time" or "almost always." The federal and state government both were trusted by slightly less than half of the respondents. With 71% of the respondents expressing trust, the Colorado Division of Wildlife (CDOW) was the most trusted form of government.

Figure III.C.1. Percent of respondents expressing trust in different forms of government.

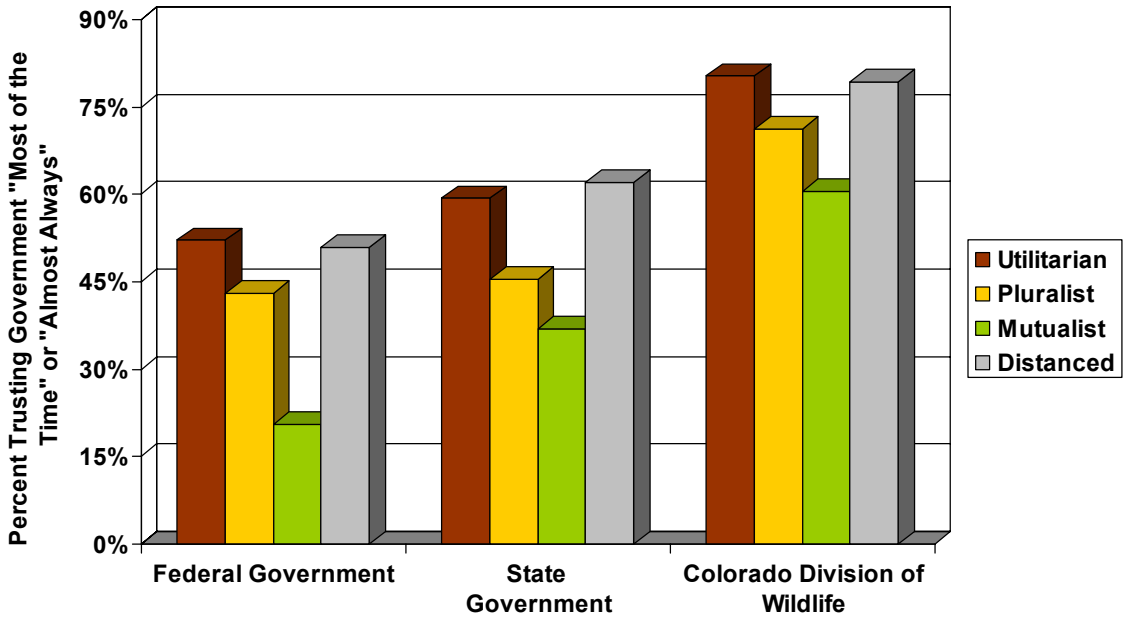


Additional analyses were conducted to explore sociodemographic, lifestyle, and cognitive (i.e., values or beliefs) characteristics of those who were more trusting of the CDOW. Correlations (point biserial and Pearson's—depending on the characteristics of the variables involved in each

correlation) were conducted with participation in hunting, fishing, and viewing in the past 12 months; gender, age, number of children, education, and income; concern for safety belief dimension, attraction belief dimension, utilitarian wildlife value orientation, and mutualism wildlife value orientation. Trust in the agency was statistically significantly correlated with gender (r_p = -.12, p = .002), education level (r = -.09; p = .04), mutualism wildlife value orientation (r = -.14; p < .001), and utilitarian wildlife value orientation (r = .21; p < .001). These relationships show that males and those with a lower education level, a lower score on the mutualism wildlife value orientation scale, or a higher score on the utilitarian wildlife value orientation scale are likely to be more trusting of the CDOW. The effect size for each of these relationships (represented in the strength of association) is considered "small" (Cohen, 1988).

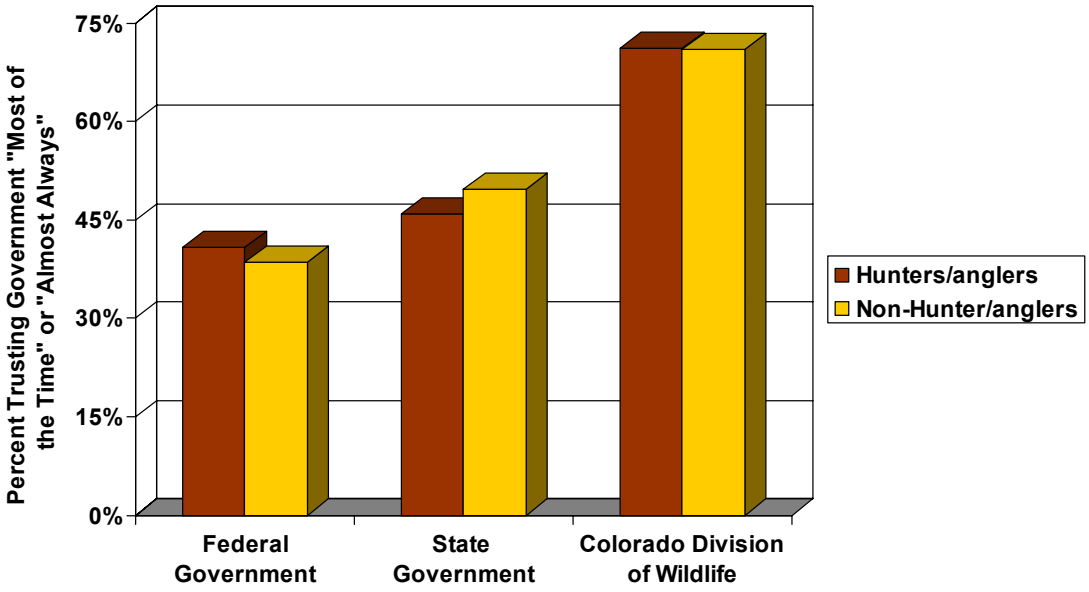
Results by wildlife value orientation type. As Figure III.C.2 shows, trust increases from federal government to state government to the CDOW for all the value orientation types. At all levels, Mutualists were the least trusting, followed by Pluralists. Utilitarians and Distanced individuals were almost equally trusting at each level of government.

Figure III.C.2. Percent of wildlife value orientation type expressing trust in different forms of government.



Results by participation in hunting and fishing. Trust increased for both groups from federal government to state government to the CDOW (Figure III.C.3). There was almost no difference between hunters/anglers and non-hunters/anglers in trust at all levels of government.

Figure III.C.3. Percent of hunters/anglers and non-hunters/anglers expressing trust in different forms of government.



SECTION IV. PERFORMANCE OF THE CDOW AND IMPORTANCE OF ITS ACTIVITIES

This section examines the public's perceptions of the CDOW's performance and the importance of specific activities that the agency could focus on in the coming years. Activities were identified by the CDOW as those that are the focus of its long-term planning efforts. These issues were examined on the state-specific portion of the Colorado survey. Supporting tables for the items discussed in this section are located in Appendix A (Tables A-41 to A-73).

A. PUBLIC RATINGS OF THE PERFORMANCE OF THE CDOW

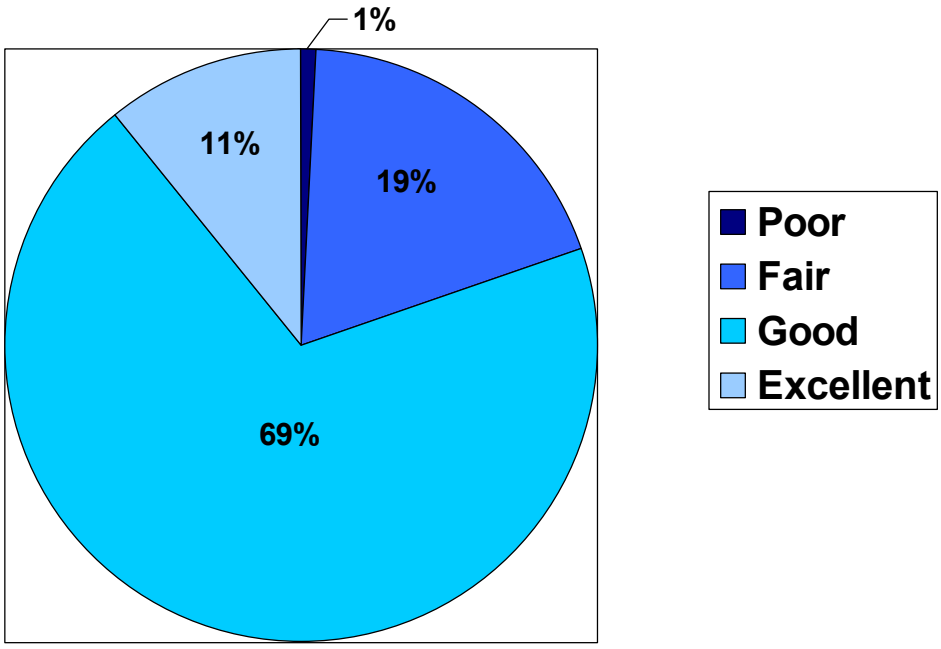
Respondents were asked to rate the CDOW's performance on a 4-point scale as shown below.

2. How would you rate the overall performance of the CDOW? (*Please circle one number for your response*).

Poor	Fair	Good	Excellent
1	2	3	4

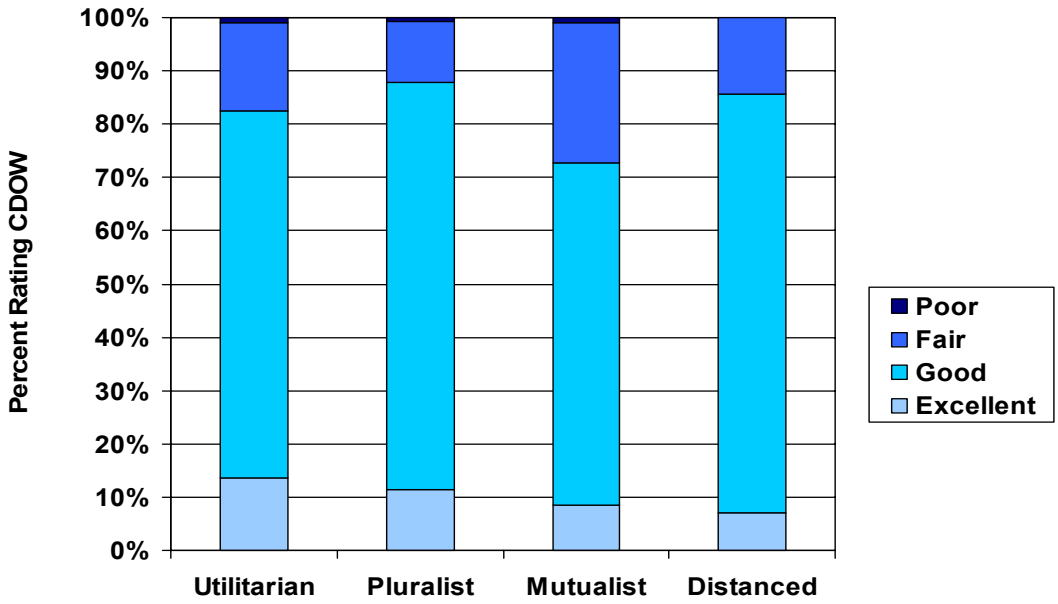
Summary of results. Figure IV.A.1 shows that, overall, respondents assigned favorable ratings to the CDOW's performance. Specifically, 80% rated the agency as either *good* or *excellent*, and only 1% felt that its performance was *poor*.

Figure IV.A.1. Percent of respondents rating the overall performance of the CDOW.



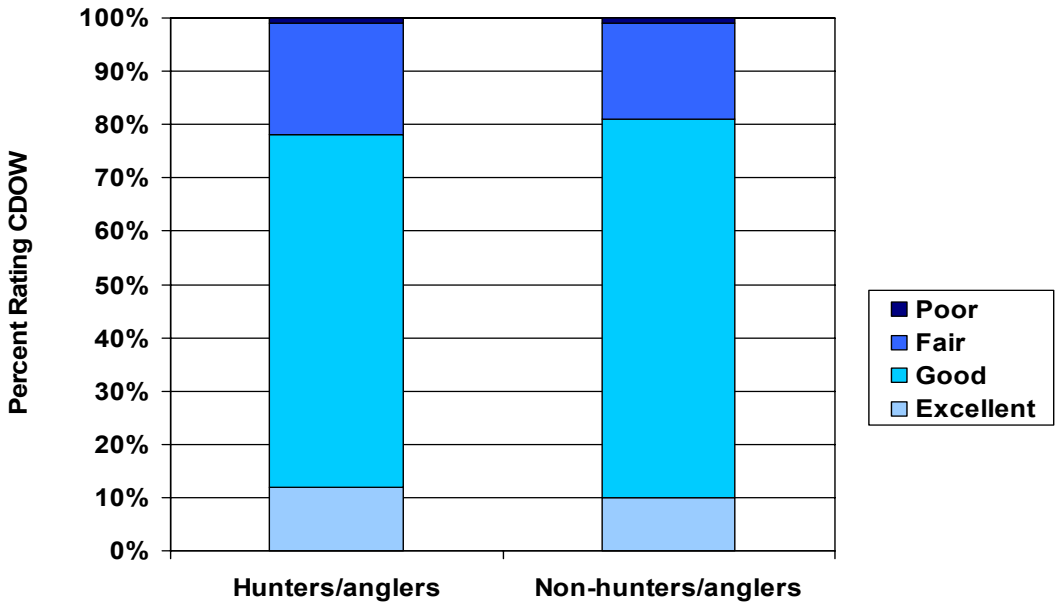
Results by wildlife value orientation type. While the majority (over 60%) of all value orientation types rated the CDOW's performance as *good*, differences in response patterns across the types can still be noted (Figure IV.A.2). Utilitarians were slightly more likely than the other types to rate the CDOW's performance as *excellent*, while Mutualists were more likely than other groups of respondents to assign a rating of *fair* and less likely to rate the performance as *good*. One percent or less of all value orientation types rated the performance of the CDOW as *poor*.

Figure IV.A.2. Percent of wildlife value orientation type rating the performance of the CDOW.



Results by participation in hunting and fishing. Hunters/anglers and non-hunters/anglers rated the performance of the CDOW in a similar fashion (Figure IV.A.3). Non-hunters/anglers were slightly more likely than their counterparts to assign a rating of *good* to the agency's performance.

Figure IV.A.3. Percent of hunters/anglers and non-hunters/anglers rating the performance of the CDOW.



B. PUBLIC PERCEPTIONS OF THE IMPORTANCE OF CDOW ACTIVITIES

Respondents were asked to rate on a 1 to 7 scale the importance of 10 activities that the CDOW expressed interest in focusing on in the coming years. They were then asked to prioritize these activities by selecting the "top three" most important ones for the agency to direct its attention to. The survey items used to address this issue are provided below.

5. Listed below are 10 activities that the CDOW would like to focus on in the coming years. Please indicate how important each activity is to you and your interests. *(Please circle the number for each statement that best represents your response).*

		Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
A.	Researching and eliminating, where possible, diseases in wildlife	1	2	3	4	5	6	7
B.	Managing mule deer populations to reach goals for population size and ratios of male to females	1	2	3	4	5	6	7
C.	Protecting high priority habitats to support many different types of fish and wildlife populations	1	2	3	4	5	6	7
D.	Providing responsive customer service	1	2	3	4	5	6	7
E.	Providing enough fish to allow for good fishing opportunities	1	2	3	4	5	6	7
F.	Protecting fish and their habitats from the whirling disease parasite	1	2	3	4	5	6	7
G.	Expanding partnerships with private landowners to protect fish and wildlife on private lands	1	2	3	4	5	6	7
H.	Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered	1	2	3	4	5	6	7
I.	Implementing recovery plans for fish and wildlife that are already listed as endangered	1	2	3	4	5	6	7
J.	Increasing the number of Colorado students who learn about fish and wildlife	1	2	3	4	5	6	7

6. What do you consider to be the most important activities identified in #5 above? Write one letter, A – J, for each:

_____ **1st most important activity**

_____ **2nd most important activity**

_____ **3rd most important activity**

Summary of results. Results from the initial rating exercise in which respondents were asked to rate each activity on a 1 to 7 importance scale showed that all activities were viewed as "very important" by at least 10% of respondents (Figure IV.B.1). Activities with the highest percentages of respondents assigning this rating were as follows: *implementing recovery plans for endangered fish and wildlife* (49%), *protecting fish and wildlife that are at risk of becoming endangered* (48%), *protecting high priority habitats to support many different types of fish and wildlife* (46%), *researching and eliminating diseases in wildlife* (46%), and *protecting fish and their habitats from whirling disease* (43%). Activities with the lowest percentage of respondents assigning a rating of "very important" included *managing mule deer populations to reach goals for population size and ratios of males to females* (11%), and *providing responsive customer service* (15%).

Results of the follow-up prioritization task in which respondents were asked to select their top three activities revealed a similar pattern (Figure IV.B.2). Activities with the highest percentages

of selection in at least one of the top three included the following: *protecting fish and wildlife that are at risk of becoming endangered* (55%), *implementing recovery plans for endangered fish and wildlife* (49%), *protecting high priority habitats to support many different types of fish and wildlife* (56%), and *researching and eliminating diseases in wildlife* (50%). Again, activities with the lowest percentages for inclusion in the top three, each chosen by only 6% of respondents, were *managing mule deer populations to reach goals for population size and ratios of males to females*, and *providing responsive customer service*. Figure IV.B.3 displays percentages for each activity that correspond only to selection as the "1st most important activity". As this figure illustrates, the number one activity defined by the highest percentage of respondents selecting it as the most important was *protecting high priority habitats to support many different types of fish and wildlife* (27%), followed closely by *researching and eliminating diseases in wildlife* (26%). Only about 1% of respondents chose *managing mule deer populations to reach goals for population size and ratios of males to females*, and *providing responsive customer service*. The activity with the next lowest percentage for selection as the most important was *expanding partnerships with private landowners to protect fish and wildlife on private land* (2%).

Figure IV.B.1. Percent of respondents rating each CDOW activity as "very important".

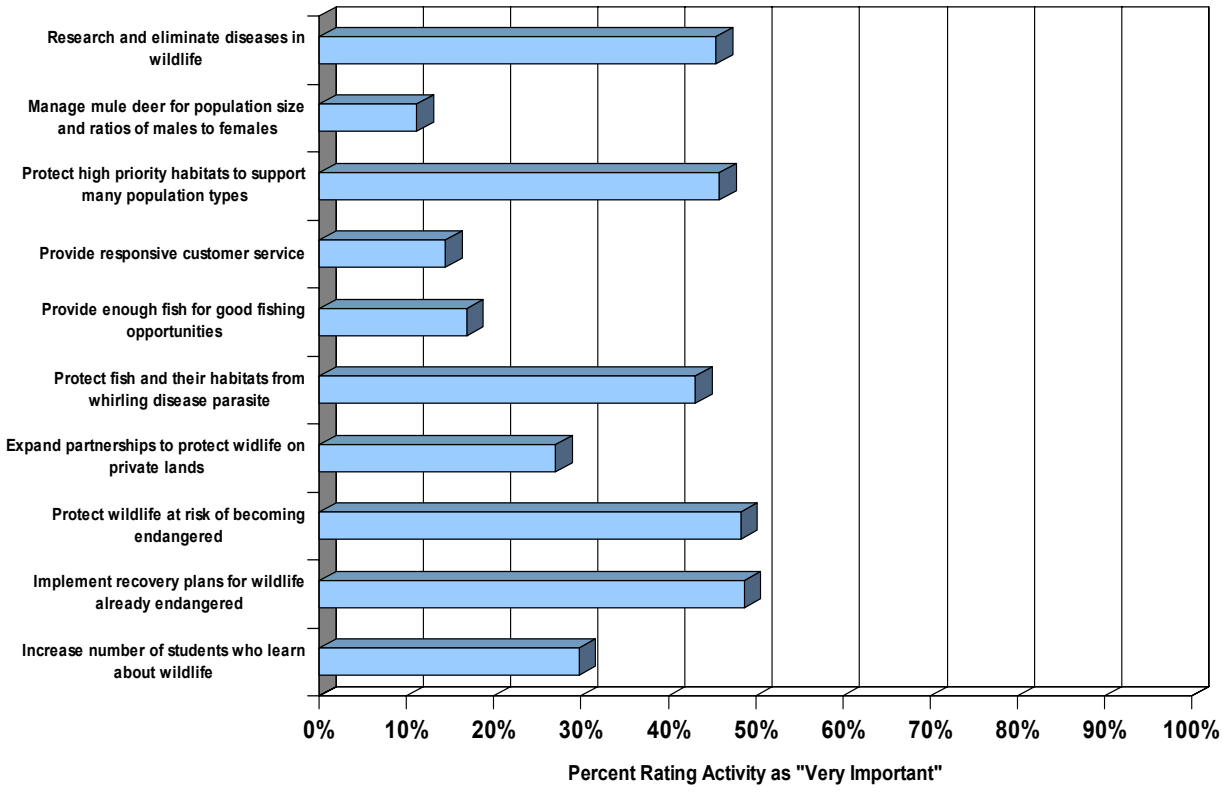


Figure IV.B.2. Percent of respondents selecting each CDOW activity as either the 1st, 2nd, or 3rd "most important activity".

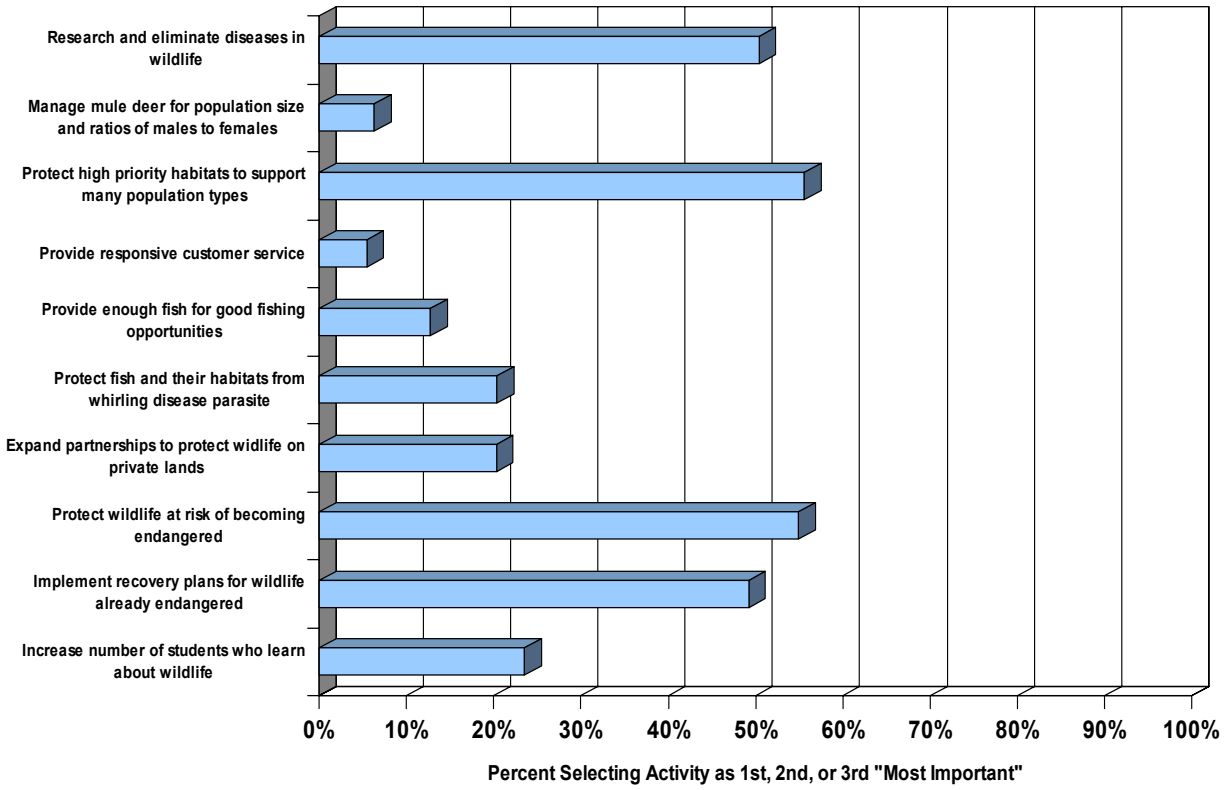
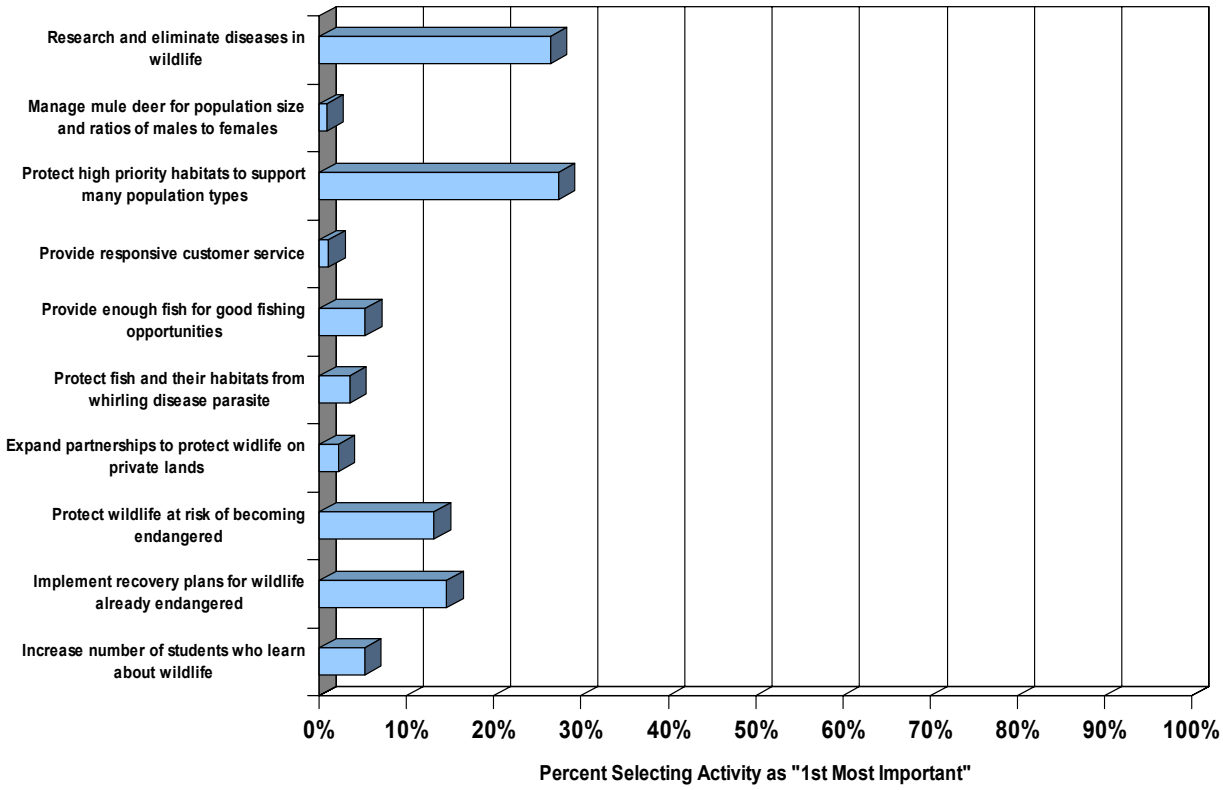
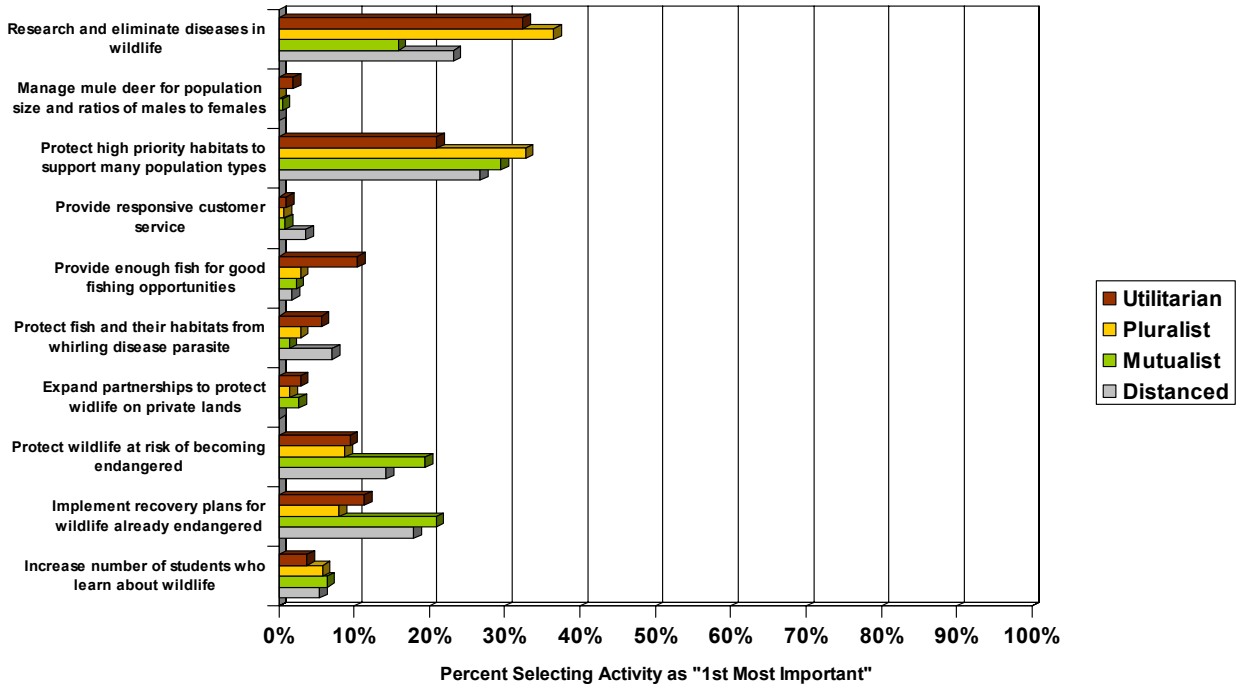


Figure IV.B.3. Percent of respondents selecting each CDOW activity as the "1st most important activity".



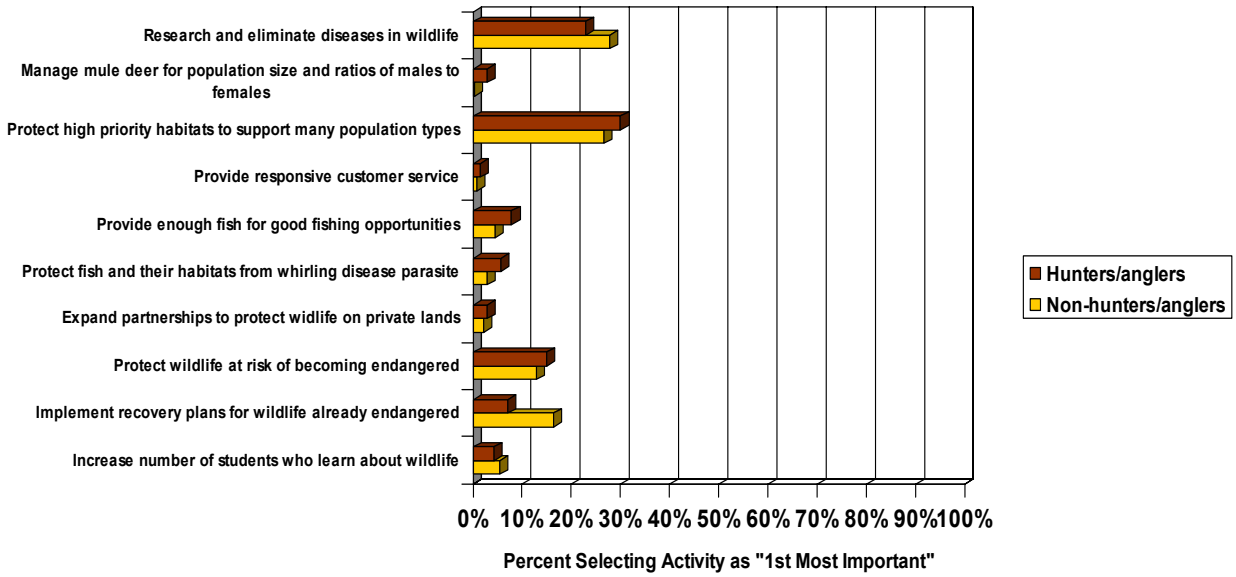
Results by wildlife value orientation type. An examination of the percent of each value orientation type selecting each activity as the "1st most important" for the CDOW to focus on in the coming years revealed some notable differences (Figure IV.B.4). Utilitarians were more likely than the other types to select *providing enough fish to allow for good fishing opportunities*; they were less likely than the other types to choose *protecting high priority habitats to support many different types of fish and wildlife*. Mutualists were more likely than the other value orientation types to think that *protecting fish and wildlife that are at risk of becoming endangered*, and *implementing recovery plans for endangered fish and wildlife* should be the most important activities for the agency to focus on. They were least likely of the four groups to select *researching and eliminating diseases in wildlife*. Pluralists represented the highest percentages among the value orientation types for the latter activity and also for *protecting high priority habitats to support many different types of fish and wildlife*. Low percentages across all groups expressed support for the following: *expanding partnerships with private landowners to protect fish and wildlife on private land*, *providing responsive customer service*, and *managing mule deer populations to reach goals for population size and ratios of males to females*.

Figure IV.B.4. Percent of wildlife value orientation type selecting each CDOW activity as the "1st most important activity".



Results by participation in hunting and fishing. Figure IV.B.5 shows some slight differences between hunters/anglers and non-hunters/anglers for selection of certain activities as most important for the CDOW to focus on. The most notable difference was the greater preference expressed by non-hunters/anglers for *implementing recovery plans for endangered fish and wildlife*.

Figure IV.B.5. Percent of hunters/anglers and non-hunters/anglers selecting each CDOW activity as the "1st most important activity".



SECTION V. MANAGING FOR BIODIVERSITY AND SPECIES OF CONCERN[4]

This section provides information useful to the development of state Comprehensive Wildlife Conservation Strategies (CWCS). Data from the *Wildlife Values in the West* project can contribute in a number of ways to states' CWCS processes (Teel, Manfredo, Bright, & Dayer, 2004). The information collected from the "Biodiversity" portion of the survey (part of the regional section) was designed specifically *to identify public priorities of conservation need and perceptions of biodiversity.*

Survey items were developed to address basic questions relevant to CWCS: How do people prioritize biodiversity relative to other guiding management philosophies? Do people think that the agencies should manage primarily for game species to provide hunting and fishing opportunities, or should the focus be more on sustaining a broad array of species? Is managing for native species preferred by people, or is it acceptable to allow non-native species to thrive in an area? Is restoration of native species acceptable even if it means that non-native species commonly hunted or fished may suffer? Through discussions of these questions, state agency personnel and researchers from Colorado State University identified "categories of difficult choices" related to the topic of managing for biodiversity and species of concern. These categories reflect the types of choices that managers are often faced with when deciding what species should receive the greatest management attention. Survey questions were developed to address the following categories of "difficult choices":

1. Species status (common, declining, and extirpated)
2. Species origin (native and non-native)
3. Species use (game and nongame)

A. METHODS

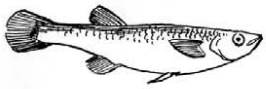
The Survey Questions. The biodiversity and species of concern section presented respondents with a series of eight hypothetical choices between species for prioritization for conservation funding. These choices included two "example species" with given characteristics. Each characteristic was represented by a statement describing a particular level (e.g., native or non-native) of each of the three species factors (i.e., status, origin, use). Based on the number of species factors and their levels, the orthogonal design function in SPSS® 13.0 (SPSS, Inc., 2004) determined both the appropriate number (8) and nature of hypothetical scenarios necessary to effectively examine the effects of each species factor and factor level on species choice. Six subregional versions of the eight scenarios were developed. Each version included **example species** appropriate for the subregion. An effort was made to choose those species with similar characteristics in multiple states in the subregion and to avoid those species with highly conflicting characterizations in several states. Colorado was part of a subregion with Arizona, New Mexico, Nevada, and Utah. The version of the survey sent to respondents in Colorado is shown on the next page. Table V.A.1 summarizes the example species given for each characteristic.

[4] Text describing the issue and portions of the methods (Section V.A) and application of the model section (V.C) have been extracted from Teel et al. (2005).

A fish and wildlife agency manager of a particular area may have limited funds to spend on conservation programs for fish and wildlife. As a result, difficult choices must be made about what type of fish or wildlife deserves the greatest priority. This often involves evaluating different combinations of characteristics of the fish or wildlife. Below is a series of hypothetical comparisons that illustrate the kinds of choices that might be made for an area. ***For each comparison please select the choice with the characteristics you think the manager should spend funds on to maintain or enhance the fish or wildlife population.***

These are hypothetical comparisons. *Even though some of these fish or wildlife may not be present where you live, we are still interested in your opinions.*

1. Which should the manager spend funds on? *(Check one ☑)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Common in the area, and numbers are stable. ➢ Not a hunted/fished species. **Example: Mosquitofish** 		➢ This species naturally occurs in the area. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Hunted/fished species. **Example: Cutthroat Trout** 

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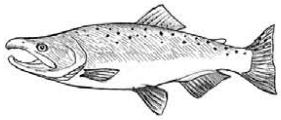
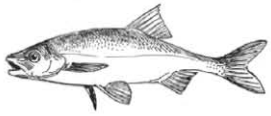
2. Which should the manager spend funds on? *(Check one ☑)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Even though it did exist here at one time, it is no longer present in the area under consideration. ➢ Hunted/fished species. **Example: Coho Salmon**  Survey illustrations © Ram Papish		➢ This species naturally occurs in the area. ➢ Common in the area, and numbers are stable. ➢ Not a hunted/fished species. **Example: Black-chinned Hummingbird** 

3. Which should the manager spend funds on? *(Check one ☑)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species naturally occurs in the area. ➢ Even though it did exist here at one time, it is no longer present in the area under consideration. ➢ Not a hunted/fished species. **Example: Roundtail Chub** 		➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Common in the area, and numbers are stable. ➢ Hunted/fished species. **Example: Brown Trout** 

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4. Which should the manager spend funds on? *(Check one ☑)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species naturally occurs in the area. ➢ Common in the area, and numbers are stable. ➢ Hunted/fished species. **Example: Gambel's Quail** 		➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Not a hunted/fished species. **Example: European Ferret** 

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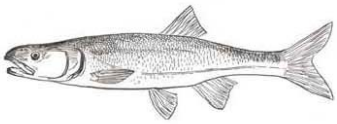
5. Which should the manager spend funds on? *(Check one ☑)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species naturally occurs in the area. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Hunted/fished species. **Example: Blue Grouse** 		➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Even though it did exist here at one time, it is no longer present in the area under consideration. ➢ Not a hunted/fished species. **Example: Monk Parakeet** 

6. Which should the manager spend funds on? *(Check one ☑)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Not a hunted/fished species. **Example: Black Tetra** 		➢ This species naturally occurs in the area. ➢ Even though it did exist here at one time, it is no longer present in the area under consideration. ➢ Hunted/fished species. **Example: Colorado Pikeminnow** 

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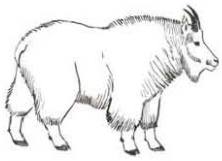
7. Which should the manager spend funds on? *(Check one ☑)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species naturally occurs in the area. ➢ Common in the area, and numbers are stable. ➢ Not a hunted/fished species. **Example: Great Horned Owl** 		➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Hunted/fished species. **Example: Mountain Goat** 

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8. Which should the manager spend funds on? *(Check one ☑)*

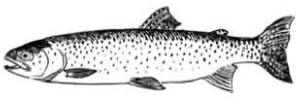
❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Common in the area, and numbers are stable. ➢ Hunted/fished species. **Example: Rainbow Trout** 		➢ This species naturally occurs in the area. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Not a hunted/fished species. **Example: River Otter** 

Table V.A.1. Summary of example species for subregion.

Species Origin		Species Status			Species Use	
Native	Non-native	Common	Declining	Extirpated	Game	Nongame
Cutthroat Trout	Mosquitofish	Mosquitofish	Cutthroat Trout	-	Cutthroat Trout	Mosquitofish
Black-chinned Hummingbird	Coho Salmon	Black-chinned Hummingbird	-	Coho Salmon	Coho Salmon	Black-chinned Hummingbird
Roundtail Chub	Brown Trout	Brown Trout	-	Roundtail Chub	Brown Trout	Roundtail Chub
Gambel's Quail	European Ferret	Gambel's Quail	European Ferret	-	Gambel's Quail	European Ferret
Blue Grouse	Monk Parakeet	-	Blue Grouse	Monk Parakeet	Blue Grouse	Monk Parakeet
Colorado Pikeminnow	Black Tetra	-	Black Tetra	Colorado Pikeminnow	Colorado Pikeminnow	Black Tetra
Great Horned Owl	Mountain Goat	Great Horned Owl	Mountain Goat	-	Mountain Goat	Great Horned Owl
River Otter	Rainbow Trout	Rainbow Trout	River Otter	-	Rainbow Trout	River Otter

Justification of the Method. A common approach to analyzing responses to the eight scenarios is to present the percent of respondents that supported each species. While this provides basic information about preferences of one wildlife species over another, it does not assess the relative impacts of each of the characteristics of those species. If respondents preferred that conservation funding be allocated to an owl species over a deer species, how much of this preference is due to the status of the species (common, declining, or extirpated), its origin (native or non-native), or its use (game or nongame)? To answer this, a more complex statistical analysis was necessary.

The eight "paired comparisons" (i.e., scenarios) were analyzed using *stated choice modeling* following procedures described in *Stated Choice Methods: Analysis and Application* (Louviere, Hensher, & Swait, 2003). Stated choice modeling allowed us to (a) combine the responses, or choices, generated for each comparison and (b) obtain estimates of the relative effects of each species factor and species factor level on species choice. This type of approach can provide more information about factors that influence choices than the descriptive approach described above. For example, while the public may prefer that managers allocate conservation funding to the management of the Cutthroat Trout (a native species) over the Mosquitofish (a non-native species), this preference may be due primarily to the fact that the Cutthroat Trout is a game animal and the Mosquitofish is not – not whether it is a native or non-native species. Stated choice modeling allows us to determine this.

Research Goals. Our approach to analyzing the biodiversity scenarios was designed to understand how the three species factors (status, origin, and use) and the levels of each of those factors influence support for a particular wildlife species for conservation funding. There were two primary goals and corresponding research questions (RQ) for this analysis:

Goal 1. To understand what factors influence public preferences for committing agency resources to the maintenance or enhancement of a wildlife species.

RQ1. Which species factor is most important in influencing public preferences for funding the conservation of a species: status, origin, or use?

Goal 2. To understand what specific characteristics of wildlife species (i.e., factor levels) drive what species the public feels should be emphasized in wildlife conservation decisions.

RQ2. What is the likelihood that an individual would prefer, for conservation funding, a "common" species versus a "declining" species versus an "extirpated" species? [species status]

RQ3. What is the likelihood that an individual would prefer, for conservation funding, a "native" species versus a "non-native" species? [species origin]

RQ4. What is the likelihood that an individual would prefer, for conservation funding, a "game" species versus a "nongame" species? [species use]

These research questions are analyzed by state within the subregion with emphasis on Colorado in this report. For analyses by subregion within the western region, wildlife value orientation type, and participation, see the regional report (Teel et al., 2005).

Statistical Analysis. Research questions were analyzed using logistic regression within the stated choice model. The choice between two wildlife species across the eight hypothetical scenarios was a dichotomous dependent variable. The independent variables were the factor levels that apply to each species. The analysis determined what the relative effects of each species factor level were on species choice. The following statistics were generated by this analysis:

Estimated coefficient (utility score) – This statistic measures strength of association between a species factor level (the independent variable) and species choice (the dependent variable). This statistic is used to compute average importance of a species factor and the odds ratio for specific factor characteristics or levels.

Average importance – This statistic estimates the relative importance of the overall species factor in influencing public preference of a species for conservation funding. The sum of the average importance of each species factor in an analysis totals 100. This statistic was used to answer RQ1.

Odds ratio – This statistic estimates the likelihood that a wildlife species with a specific factor level would be selected over a species with another factor level, controlling for the effects of other species factors. Stated choice modeling identifies one factor level within a species factor as a "reference" level and the other level(s) as "nonreference". The odds ratio compares the likelihood that a wildlife species with a nonreference characteristic would be supported over one with the reference characteristic, controlling for the presence of the other species factors within the scenarios. Table V.A.2 shows the reference and nonreference factor levels for each species factor. As an example, for species status, logistic regression created an odds ratio comparing a "declining" species with a "common" species and an "extirpated" species with a "common" species, controlling for the effects of species origin and species use. An odds ratio of 1.35 for a

"declining" species means that it is 1.35 times more likely to be supported for conservation funding than a "common" species controlling for the fact that species also differ on origin and use. The odds ratio was used to answer RQ2, RQ3, and RQ4.

Table V.A.2. Reference and nonreference species factor levels.

Species factor	Reference level	Nonreference level(s)
Species status	Common	Declining; Extirpated
Species origin	Non-native	Native
Species use	Nongame	Game

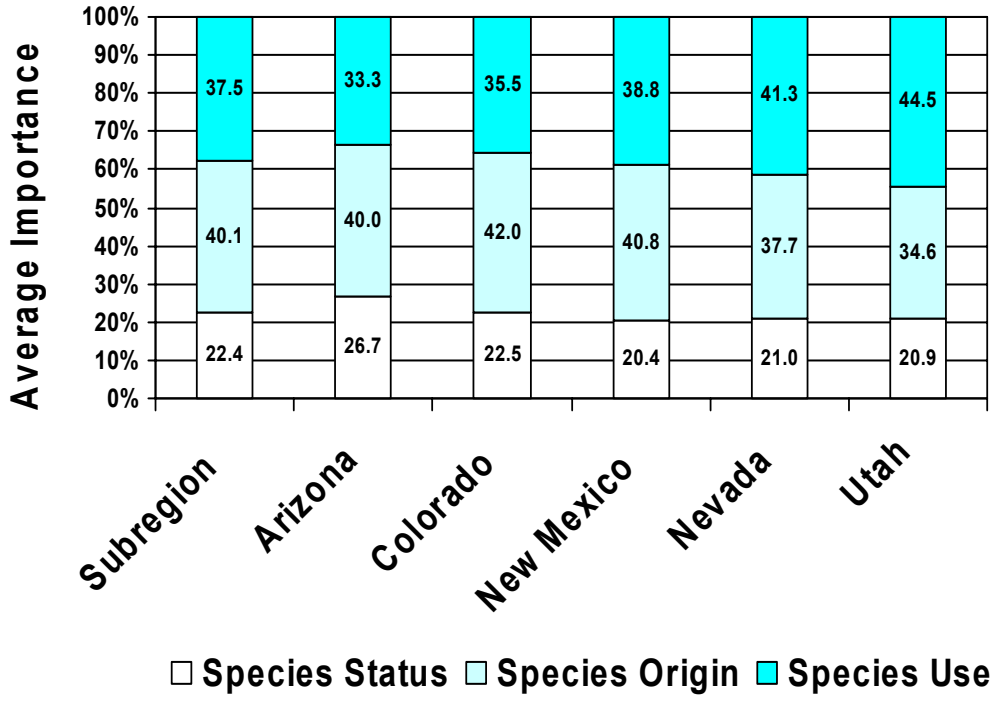
B. RESULTS

A full display of the results for Colorado and the subregion are found in Tables A-74 and A-75.

RQ1. Which species factor is most important in influencing public preferences for funding the conservation of a species: species status, species origin, or species use?

Figure V.B.1 compares the average importance of species factors in conservation funding for the subregion and each of its states. In Colorado, species origin was the most important factor (AI = 42.0) followed by species use (AI = 35.5) and species status (AI = 22.5). As compared to the subregion, Colorado placed a similar level of importance on species status but slightly more importance on species origin and slightly less importance on species use. Overall, there were no major differences among the states in the subregion on the average importance of these factors; yet, the relative importance of species use and species origin differed in Nevada and Utah from the other states in the subregion.

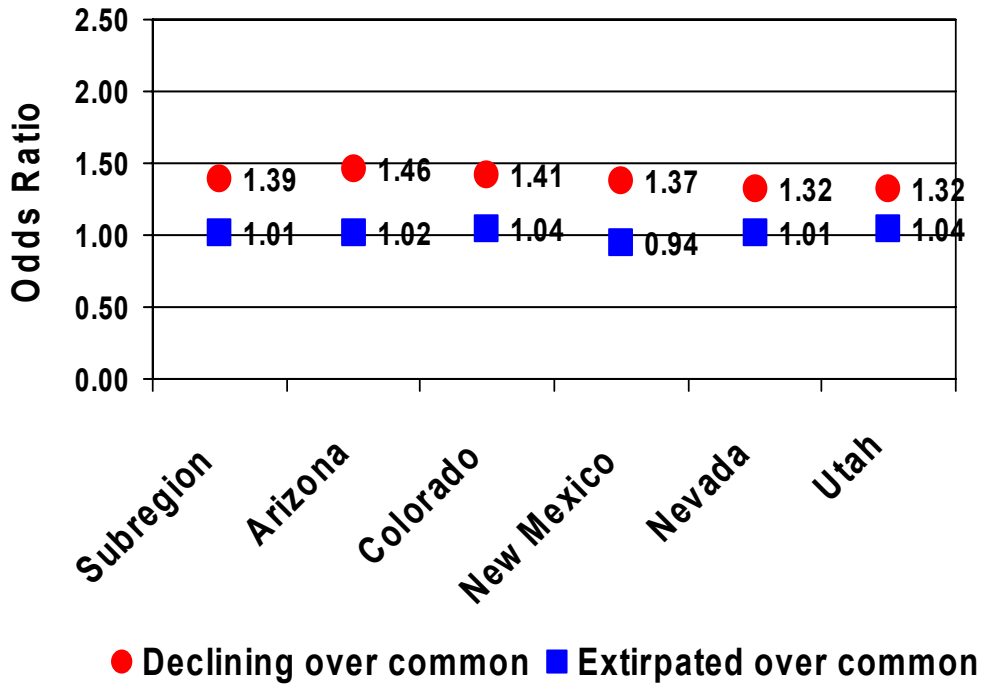
Figure V.B.1. Average importance of species factors by state within the subregion.



RQ2. What is the likelihood that an individual would prefer, for conservation funding, a "common" species versus a "declining" species versus an "extirpated" species? [species status]

Figure V.B.2 compares the subregion and each of its states on the species status odds ratios. Controlling for (holding constant) species origin and use, conservation funding support for "declining" species was more likely than for "common" species in Colorado. The odds of preferring a declining species over a common species was 1.41. "Extirpated" species were only slightly more likely to be supported than "common" species. The odds of preferring an "extirpated" species over a "common" species was 1.04. The results in Colorado were very similar to those found across the subregion except in New Mexico where "extirpated" species were slightly less likely to be supported than "common" species (odds ratio = 0.94).

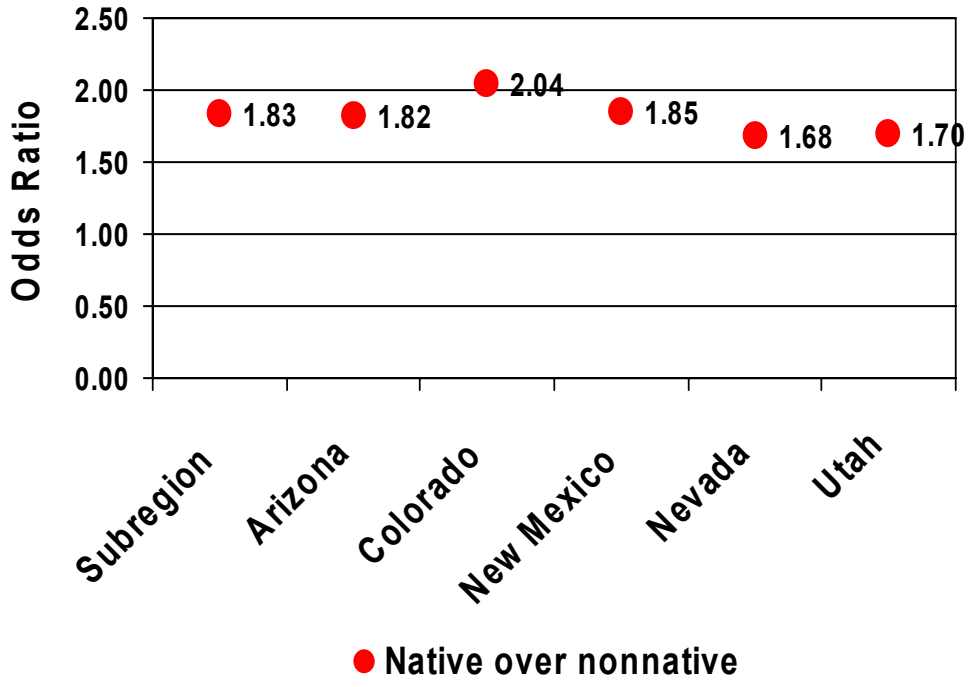
Figure V.B.2. Odds ratios of species status levels by state within the subregion.



RQ3. What is the likelihood that an individual would prefer, for conservation funding, a "native" species versus a "non-native" species? [species origin]

Controlling for species status and use, "native" species were more likely to be supported for conservation funding than were "non-native" species in Colorado (Figure V.B.3.). The odds of preferring a "native" over a "non-native" was 2.04. Although all states in the subregion preferred "native species" over "non-native" species, the odds ratio in Colorado was the highest.

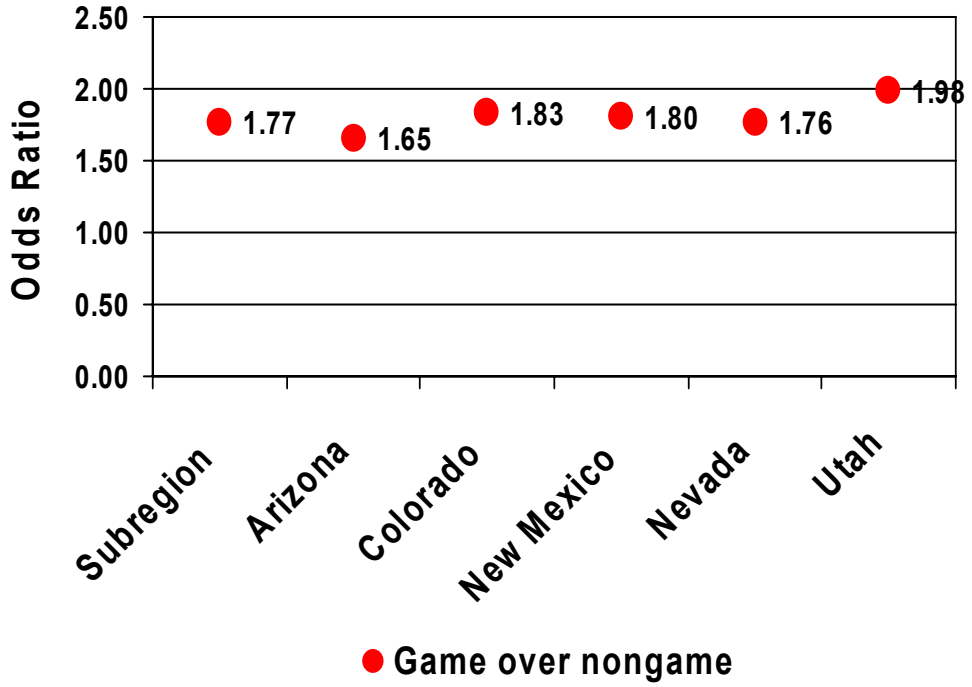
Figure V.B.3. Odds ratios of species origin levels by state within the subregion.



RQ4. What is the likelihood that an individual would prefer, for conservation funding, a "game" species versus a "nongame" species? [species use]

Controlling for species status and origin, "game" species were more likely to be supported for conservation funding than were "nongame" species in Colorado (Figure V.B.4). The odds of preferring a "game" species over a "nongame" species was 1.83. Colorado results did not differ from those of the subregion although there was slight variation in the magnitude of the odds ratio across states.

Figure V.B.4. Odds ratios of species use levels by state within the subregion.



Conclusions. There were limited differences between Colorado and the other states in its subregion on the relative importance of the species factors (origin, use, and status) and on the prioritization of factor levels (e.g., native vs. non-native). Species origin (followed by species use and species status) is most important in influencing public preferences for funding the conservation of a species. People are more likely to prioritize declining species over common species and extirpated species over common species; game species over nongame species; and native species over non-native species.

When considering these findings, it is important to keep in mind that analyses across all states with different subregional versions of this item (that varied on "example species") suggested that support for conservation funding is likely also a result of additional variables. These factors include wildlife value orientation type, participation in hunting and/or fishing, and unmeasured characteristics of species (e.g., whether human-wildlife conflict with the species is prevalent in a state; Teel et al., 2005).

C. AN APPLICATION OF THE MODEL

We adapted a technology from research in consumer marketing and parks and protected area management that represents a practical application of the approach to predicting support for conservation funding for wildlife species described in this study. This technology takes the form of a *calculator* that estimates the proportion of Colorado's population that would support funding for a particular species given specific characteristics based on species status, species origin, and species use. The mathematical formulas within the calculator are based on the estimated coefficients (utility scores) derived from logistic regression analyses described above. As a result, the information provided by the calculator takes into account the odds that the public would support a species at one factor level (e.g., declining) over another (e.g., common) as well as the average importance of all the species factors (i.e., species status versus species origin versus species use).

The calculator presents two wildlife species for which the user is provided instructions to input three characteristics. An estimate of the percentage of the public that would support each species is then given based on those characteristics. Changing the characteristics within a specific species comparison will change the estimated percentages.

As an example, consider a situation where a wildlife manager is considering allocation of funds between the management of two wildlife species. One question he or she may have is "which species would the public prefer?" Species 1 is a declining wildlife species that is not native to the region and is a game species. Species 2 is also a declining species but is native to the area and is not a game species. The wildlife manager would input those characteristics into the calculator, which would then provide an estimate of public support for each species given a choice between the two. Example A in Figure V.C.1 provides the results for this comparison. In this situation, species 1 would be supported for conservation funding by approximately 45% of the public, while species 2 would be supported by about 55%.

Now consider Example B where species 1 is a common species that is native to the state and is a game species. On the other hand, species 2 is a declining species, not native to the state, and is also a game species. In this scenario, approximately 67% of the public would support conservation funding for species 1 while almost 33% would support conservation funding for species 2.

Figure V.C.1. Colorado's species of concern calculator.

Calculator – Example A

Species Factor	Input Level of Species Attribute: Species 1	Species 2
Species Status		
Level 1 This species is ***COMMON*** in the area and numbers are stable.		
Level 2 Numbers are ***LOW***; you don't see this species very often anymore.	2	2
Level 3 This species is ***NO LONGER PRESENT*** in the area.		
Species Origin		
Level 1 This species ***DOES NOT OCCUR NATURALLY i***n the area.		
Level 2 This species ***NATURALLY OCCURS*** in the area.	1	2
Species Use		
Level 1 This species is ***NOT HUNTED OR FISHED***.		
Level 2 This species ***IS HUNTED OR FISHED***.	2	1
Percent of Public Support for Conservation Program	**44.62**	**55.38**

Calculator – Example B

Species Factor	Input Level of Species Attribute: Species 1	Species 2
Species Status		
Level 1 This species is ***COMMON*** in the area and numbers are stable.		
Level 2 Numbers are ***LOW***; you don't see this species very often anymore.	1	2
Level 3 This species is ***NO LONGER PRESENT*** in the area.		
Species Origin		
Level 1 This species ***DOES NOT OCCUR NATURALLY i***n the area.		
Level 2 This species ***NATURALLY OCCURS*** in the area.	2	1
Species Use		
Level 1 This species is ***NOT HUNTED OR FISHED***.		
Level 2 This species ***IS HUNTED OR FISHED***.	2	2
Percent of Public Support for Conservation Program	**66.82**	**33.18**

D. MORE ON MANAGING FOR SPECIES OF CONCERN IN COLORADO: WHERE DOES THE PUBLIC PERCEIVE CDOW'S ATTENTION SHOULD BE FOCUSED?

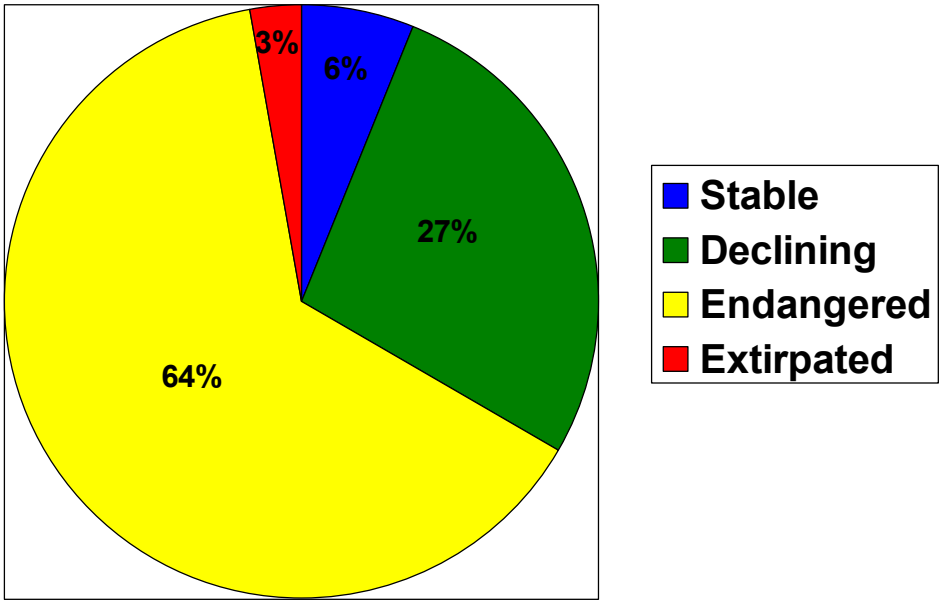
On the state-specific portion of the Colorado survey, respondents were asked to select which of four "types" of fish and wildlife populations should receive the most attention in terms of where the majority of agency nongame funds should be spent. The survey item for this issue is provided below. It is important to note that the approach used to determine where people perceive attention should be focused differs from what was presented in earlier sections (Sections V.A through V.C). In addition, the classification and description of population types differ from what appeared on the regional portion of the survey. As an illustration, respondents were asked here to focus on populations of *nongame* species at the state level as opposed to a certain example species with various characteristics (e.g., game, native, and declining) found in a particular management area. Supporting tables for results reported in this section are located in Appendix A (Tables A-76 to A-78).

3. CDOW is responsible for the management of many types of fish and wildlife populations in Colorado. For the money that is available to manage populations that are NOT hunted or fished, we're interested in knowing where you think the majority of funds should be spent. We want you to do this by telling us which of the following "types" of fish and wildlife populations should get the most attention. (*Please circle only one number for your response*).

"Stable"	"Declining"	"Endangered"	"Extirpated"
1	**2**	**3**	**4**
Populations are neither increasing nor decreasing in Colorado	Populations are declining in Colorado	Population numbers are so small that they are in danger of no longer existing in Colorado	Populations no longer exist in the Colorado, but are found in other places

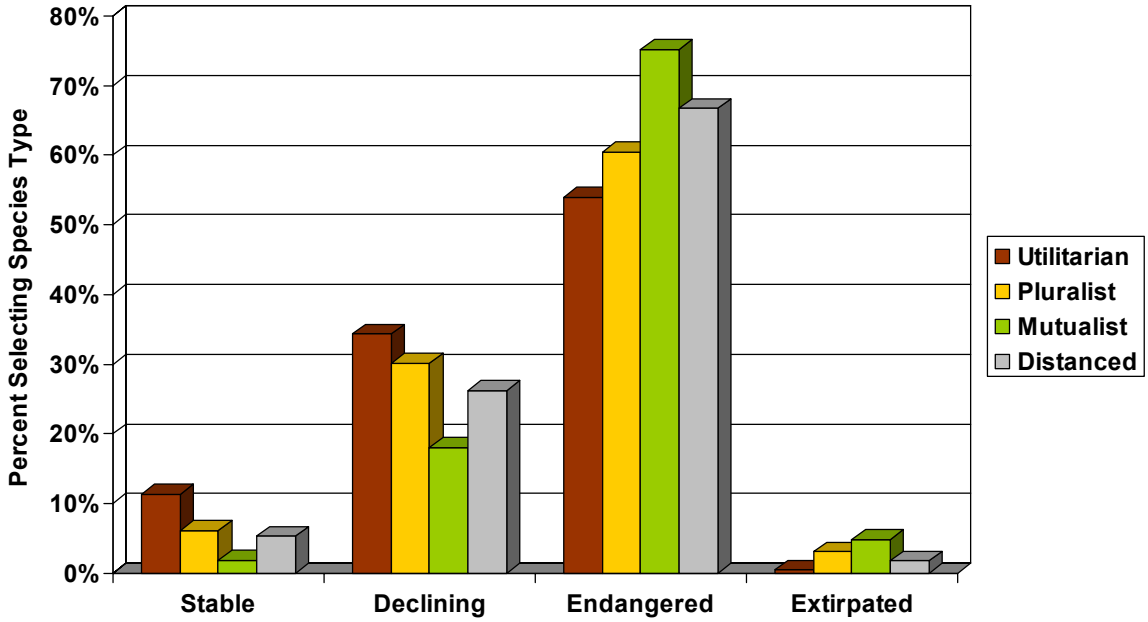
Summary of results. Figure V.D.1 shows that the majority of respondents (64%) felt that *endangered* populations should receive the greatest attention with respect to funding for nongame management. The next most frequently selected response (27%) corresponded to *declining* populations. Less than 10% of respondents selected the remaining two nongame population types (*stable* and *extirpated*) to receive funding priority.

Figure V.D.1. Percent of respondents indicating which type of fish and wildlife populations that are not hunted or fished should get the most attention.



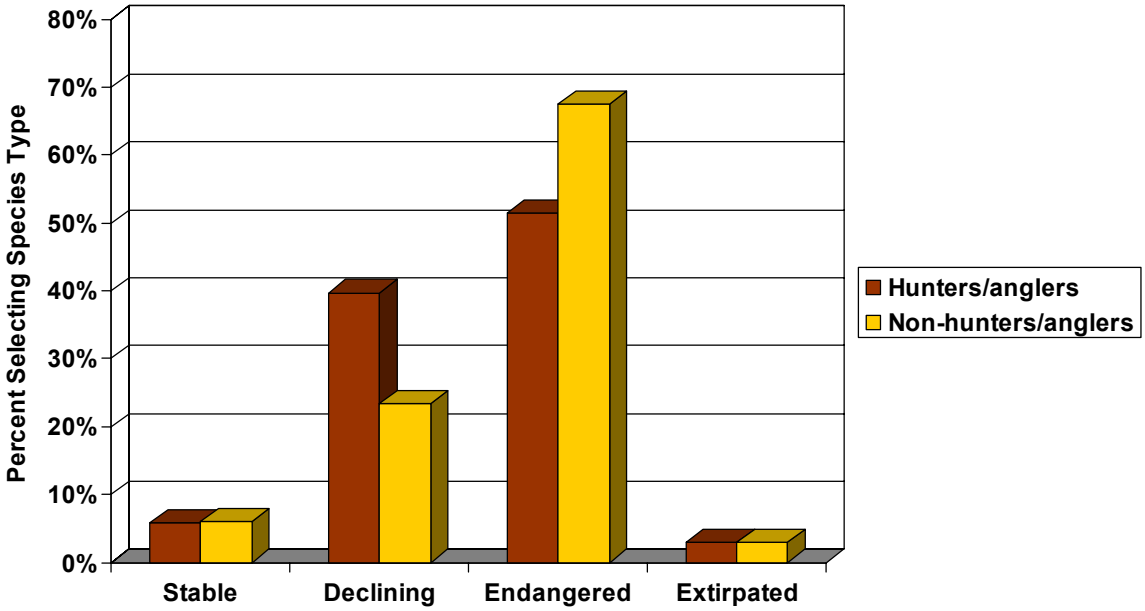
Results by wildlife value orientation type. The most preferred nongame population type to receive funding priority for all value orientation types was *endangered* fish and wildlife (Figure V.D.2). Utilitarians were less likely than the other types to select this option, while Mutualists were most likely to do so. Alternatively, Utilitarians expressed slightly greater preference for *declining* and *stable* populations compared to the other value orientation types. Mutualists were the least likely of all groups to prefer these two categories. *Extirpated* populations were least preferred by all value orientation types except Mutualists whose least preferred option was *stable* populations.

Figure V.D.2. Percent of wildlife value orientation type indicating which type of fish and wildlife populations that are not hunted or fished should get the most attention.



Results by participation in hunting and fishing. The most preferred nongame population type to receive funding priority for hunters/anglers and for non-hunters/anglers was *endangered* fish and wildlife (Figure V.D.3). The two groups responded similarly for *stable* and *extirpated* populations, which were preferred by less than 10% of each group. Hunters/anglers were more likely than non-hunters/anglers to select *declining* populations of nongame to receive management attention, while the reverse was true for *endangered* populations.

Figure V.D.3. Percent of hunters/anglers and non-hunters/anglers indicating which type of fish and wildlife populations that are not hunted or fished should get the most attention.



SECTION VI. ATTITUDES TOWARD HUNTING

This section examines the public's perceptions of hunting. The issue was explored on the state-specific portion of the Colorado survey. Supporting tables for results reported in this section are located in Appendix A (Tables A-79 to A-81).

Respondents were asked to select which of four statements best represent how they feel about hunting. The survey item containing each of the statements is provided below.

4. Below are four statements that represent how different people feel about hunting. Please read each of the statements and then answer the question below.

A. I do not believe in hunting wild animals and feel it should not be allowed.

B. I believe hunting wild animals should be done only by wildlife professionals supervised by the state to reduce animal overpopulation.

C. I believe people who buy licenses and who follow hunting regulations should be allowed to hunt wild animals as a means of helping manage animal populations.

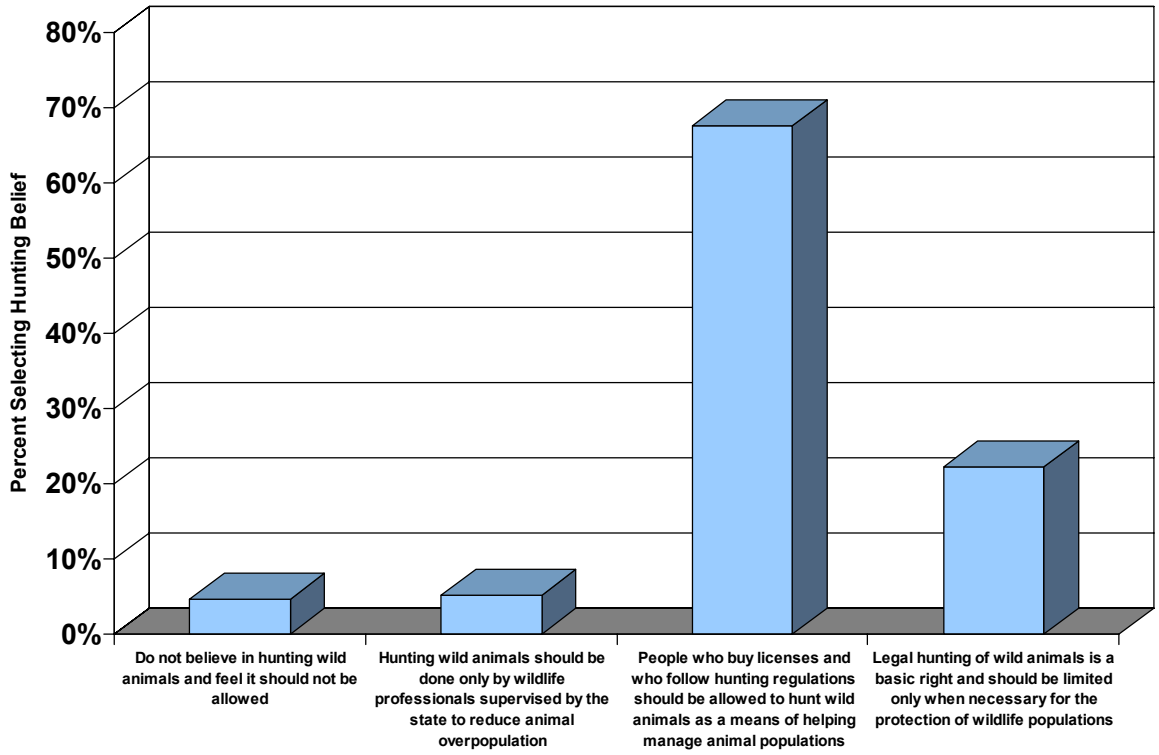
D. I believe legal hunting of wild animals is a basic right and should be limited only when necessary for the protection of wildlife populations

Which of the statements above comes closest to your views about hunting? ***Check one box (☑).***

☐ **Statement A** ☐ **Statement B** ☐ **Statement C** ☐ **Statement D**

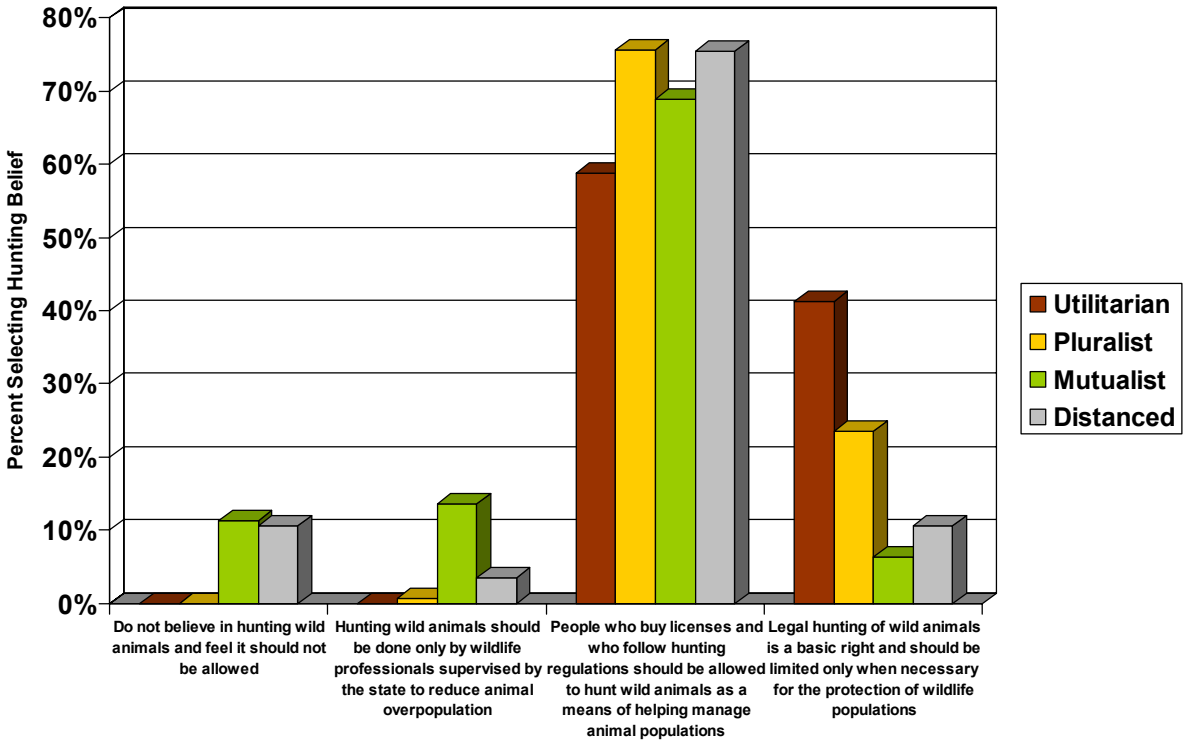
Summary of results. Figure VI.A.1 shows that the majority of respondents (68%) felt that *people who buy licenses and who follow hunting regulations should be allowed to hunt as a means of helping manage wildlife populations*. The next most frequently selected response (22%) corresponded to the belief that *legal hunting is a basic right and should be limited only when necessary for the protection of wildlife populations*. The remaining two statements, which represented less positive views about hunting, were each selected by approximately 5% of respondents.

Figure VI.A.1. Percent of respondents selecting the statement that comes closest to their views about hunting.



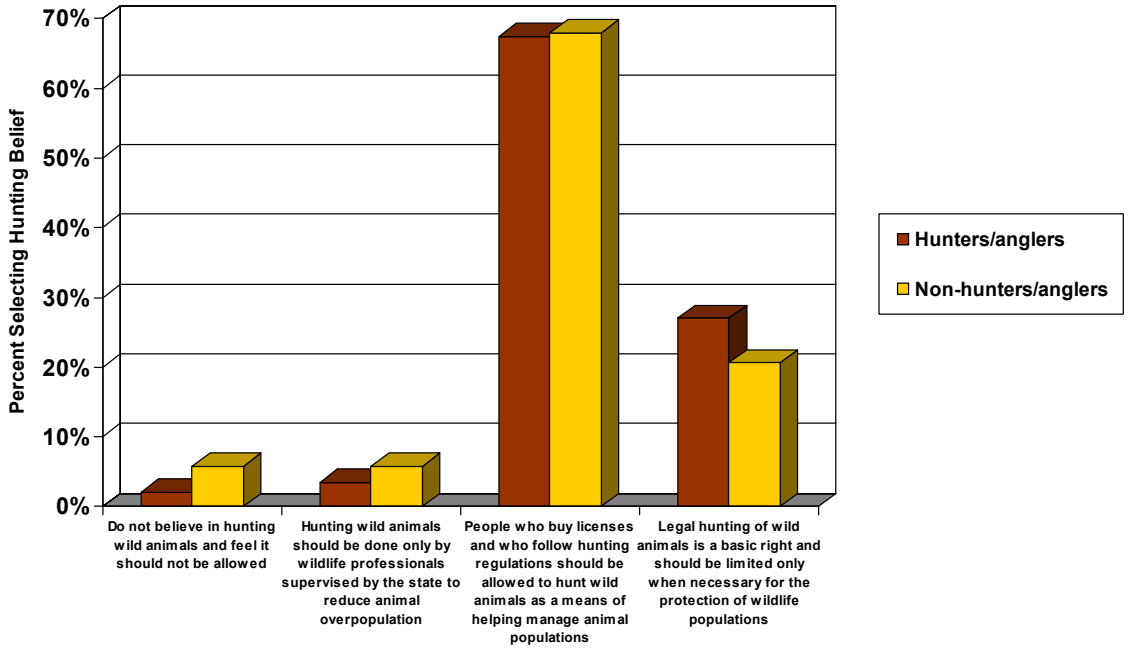
Results by wildlife value orientation type. The most preferred belief for all value orientation types was that *people who buy licenses and who follow hunting regulations should be allowed to hunt as a means of helping manage wildlife populations* (Figure VI.A.2). Utilitarians were slightly less likely than the other types to select this statement but were more likely than the other types to believe that *legal hunting is a basic right and should be limited only when necessary for the protection of wildlife populations*. While less than 1% of either Utilitarians or Pluralists selected the remaining two statements, over 10% of Mutualists and Distanced individuals indicated that they *do not believe in hunting and feel it should not be allowed*. Additionally, between 4% and 11% of the latter two groups selected the statement, *hunting wild animals should be done only by wildlife professionals supervised by the state to reduce animal overpopulation* as representative of their views about hunting.

Figure VI.A.2. Percent of wildlife value orientation type selecting the statement that comes closest to their views about hunting.



Results by participation in hunting and fishing. Hunters/anglers and non-hunters/anglers responded similarly with regard to their beliefs about hunting (Figure VI.A.3). A high percentage of respondents in both groups (over 65%) felt that *people who buy licenses and who follow hunting regulations should be allowed to hunt as a means of helping manage wildlife populations*. Hunters/anglers (27%) were slightly more likely than their counterparts (21%) to believe that *legal hunting is a basic right and should be limited only when necessary for the protection of wildlife populations*. The remaining two statements were each selected by less than 10% of either group of respondents.

Figure VI.A.3. Percent of hunters/anglers and non-hunters/anglers selecting the statement that comes closest to their views about hunting.



SECTION VII. MANAGEMENT OF HUMAN-WILDLIFE CONFLICT[5]

This section examines public perceptions of the acceptability of population-level techniques to address human-wildlife conflict, specifically conflicts with bears and deer. The human-wildlife conflict issue, examined on the regional portion of the survey, was organized into two situations; incident severity increased from nuisance in the first situation to safety threat in the second situation. Following the description of the situations, respondents were asked to select whether specific population-level management actions were acceptable in each of the two situations. Supporting tables for the items discussed in this section are located in Appendix A (Tables A-82 to A-91). Additionally, results placing Colorado in the context of the western region for certain items are reported by Teel et al. (2005).

A. ACCEPTABILITY OF POPULATION-LEVEL TECHNIQUES TO MANAGE BEARS

Respondents were asked to evaluate the acceptability of three management actions for each of two human-wildlife conflict situations (i.e., nuisance and safety threat) concerning black bears. The survey items for these situations are listed below.

Fish and wildlife agencies want to know how the public thinks the agencies should respond to human-wildlife conflict situations. Below are two IMAGINARY situations involving black bears. We would like to know how you feel about certain management actions that could be directed at bear populations to address these situations. *Even though it may seem unlikely that these things could occur where you live, we are still interested in your opinions.*

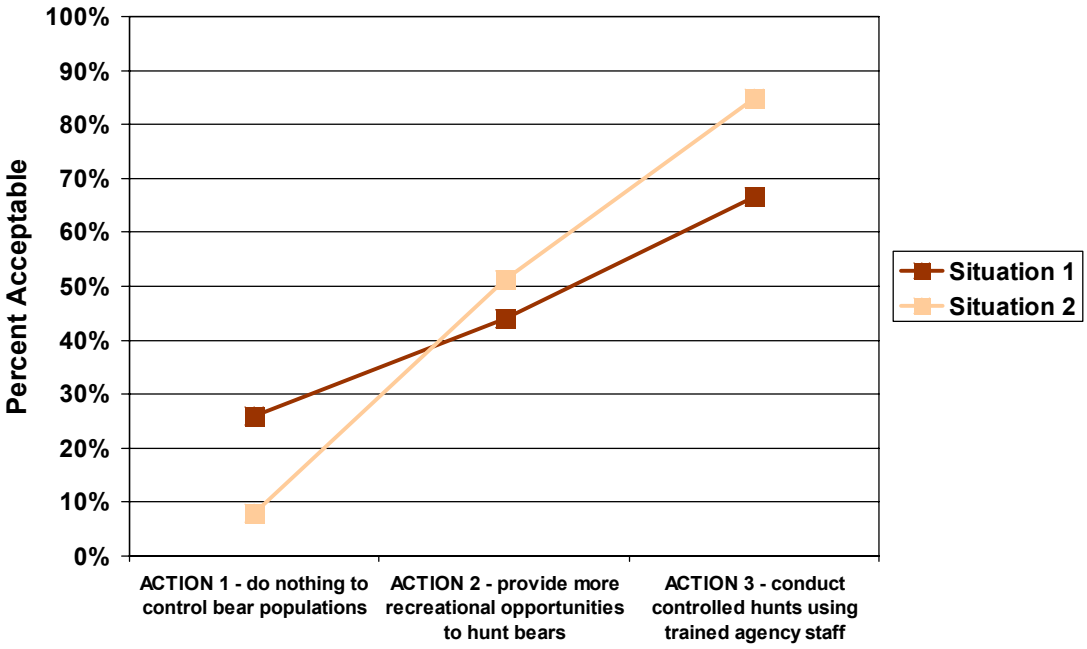
(PLEASE TELL US HOW YOU FEEL ABOUT THE ACTIONS LISTED BELOW FOR EACH SITUATION)

ACTIONS:	SITUATION 1: Bears are wandering into areas where humans live in search of food. Bears are getting into trash and pet food containers.		SITUATION 2: Bears are wandering into areas where humans live in search of food. Human deaths from bear attacks have occurred.	
Is it unacceptable or acceptable to….	Unacceptable	Acceptable	Unacceptable	Acceptable
1. ...do nothing to control bear populations?	❒	❒	❒	❒
2. ... provide more recreational opportunities to hunt bears?	❒	❒	❒	❒
3. ... conduct controlled hunts using trained agency staff?	❒	❒	❒	❒

Summary of results. Figure VII.A.1 shows that, generally, the public found it unacceptable to *do nothing to control bear populations* but acceptable to *conduct controlled hunts using trained agency staff* in both situations. The public was divided with respect to the acceptability of *providing more recreational opportunities to hunt bears*. Just over 50% of respondents felt that *recreational hunting* was an acceptable technique for dealing with a situation involving a threat to human safety (situation 2), while slightly less than half believed it to be an acceptable approach under nuisance circumstances (situation 1). *Doing nothing* was slightly more acceptable when the bears were simply a nuisance compared to when they were a threat to human safety. *Using controlled hunts* was more acceptable in the latter situation.

[5] Text describing the human-wildlife conflict issue has been extracted from Teel et al. (2005).

Figure VII.A.1. Percent of respondents finding management actions acceptable when bears are getting into trash and pet food containers (situation 1) and when human deaths from bear attacks have occurred (situation 2).



Results by wildlife value orientation type. Figures VII.A.2 and VII.A.3 reveal very similar trends for both situations. Over 50% of respondents in all value orientation types felt that *doing nothing* was unacceptable in both situations. Alternatively, with the exception of Mutualists in situation 1, most respondents across all types were supportive of *conducting controlled hunts using trained agency staff*. The acceptability of *providing more opportunities for recreational hunting* was much less agreed upon. While over 50% of Utilitarians and Pluralists in both situations felt this to be an acceptable practice, the majority of Mutualists and Distanced individuals felt it was unacceptable.

Figure VII.A.2. Percent of wildlife value orientation type finding management actions acceptable when bears are getting into trash and pet food containers (situation 1).

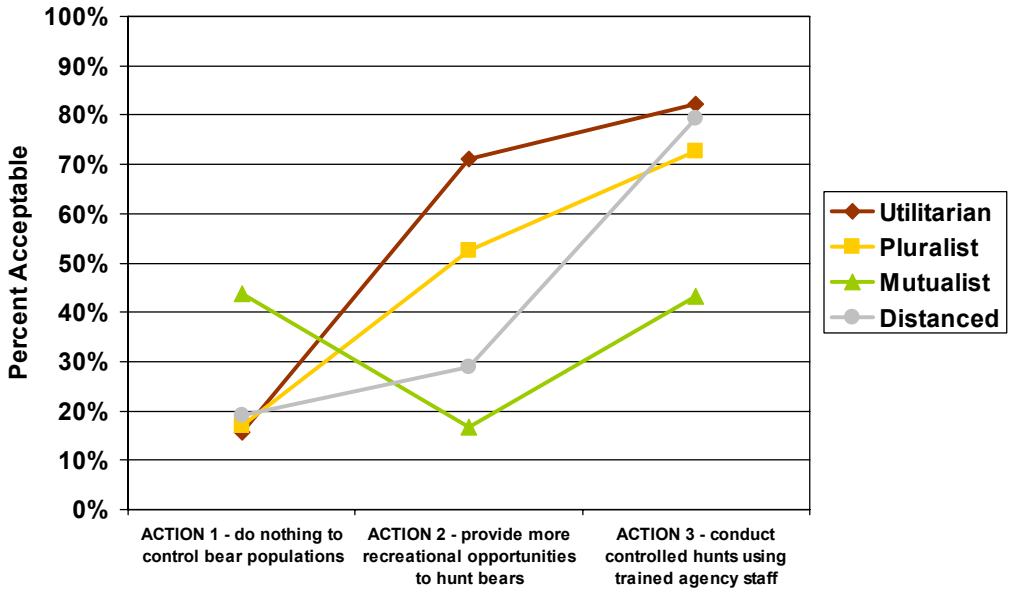
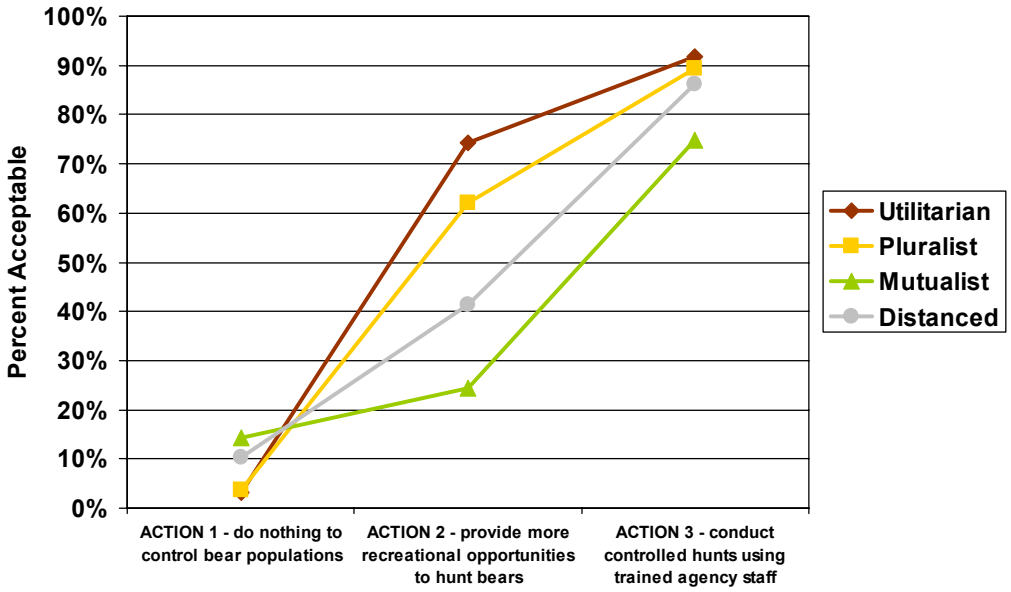


Figure VII.A.3. Percent of wildlife value orientation type finding management actions acceptable when human deaths from bear attacks have occurred (situation 2).



Results by participation in hunting and fishing. Figures VII.A.4 and VII.A.5 reveal a consistent pattern across situations. Overall, both hunters/anglers and non-hunters/anglers felt that *doing nothing* was unacceptable, and a majority in each group felt that *conducting controlled hunts* was acceptable across situations. The groups differed with respect to their acceptance of *recreational hunting*. In both situations, the majority of hunters/anglers found it to be acceptable, while less than half of non-hunters/anglers expressed approval for this technique.

Figure VII.A.4. Percent of hunters/anglers and non-hunters/anglers finding management actions acceptable when bears are getting into trash and pet food containers (situation 1).

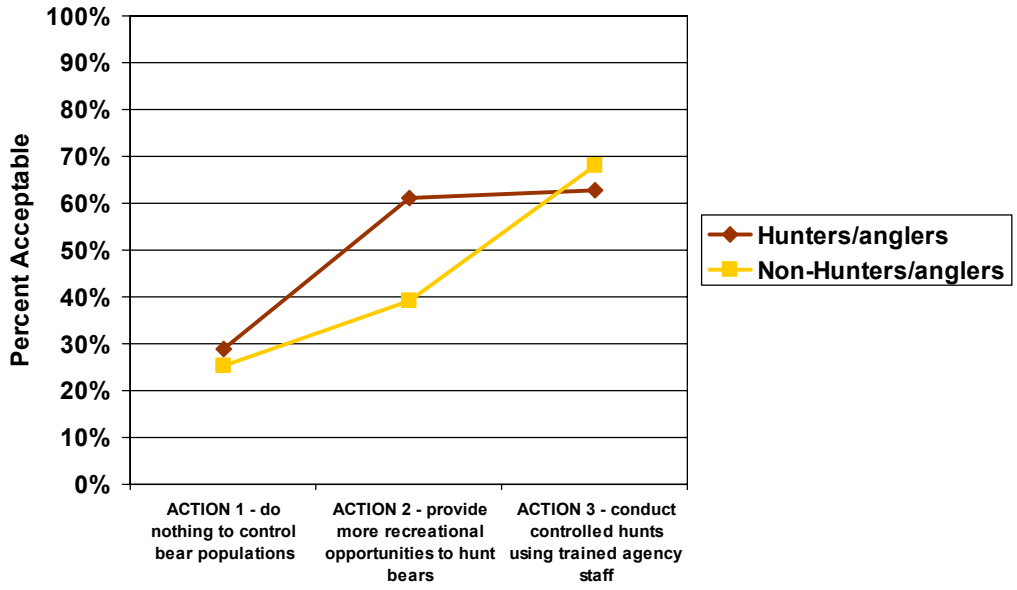
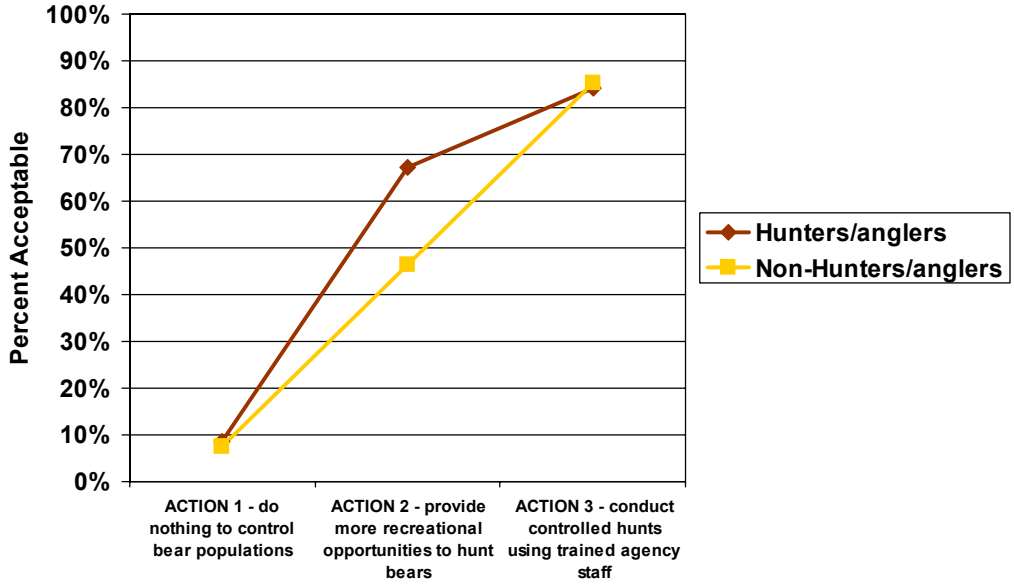


Figure VII.A.5. Percent of hunters/anglers and non-hunters/anglers finding management actions acceptable when human deaths from bear attacks have occurred (situation 2).



B. ACCEPTABILITY OF POPULATION-LEVEL TECHNIQUES TO MANAGE DEER

Respondents were asked to evaluate the acceptability of five management actions for each of two situations concerning deer. Unlike in the bear situations, the second situation posed a threat to domestic animals and livestock, rather than humans. The survey items for these situations are listed below.

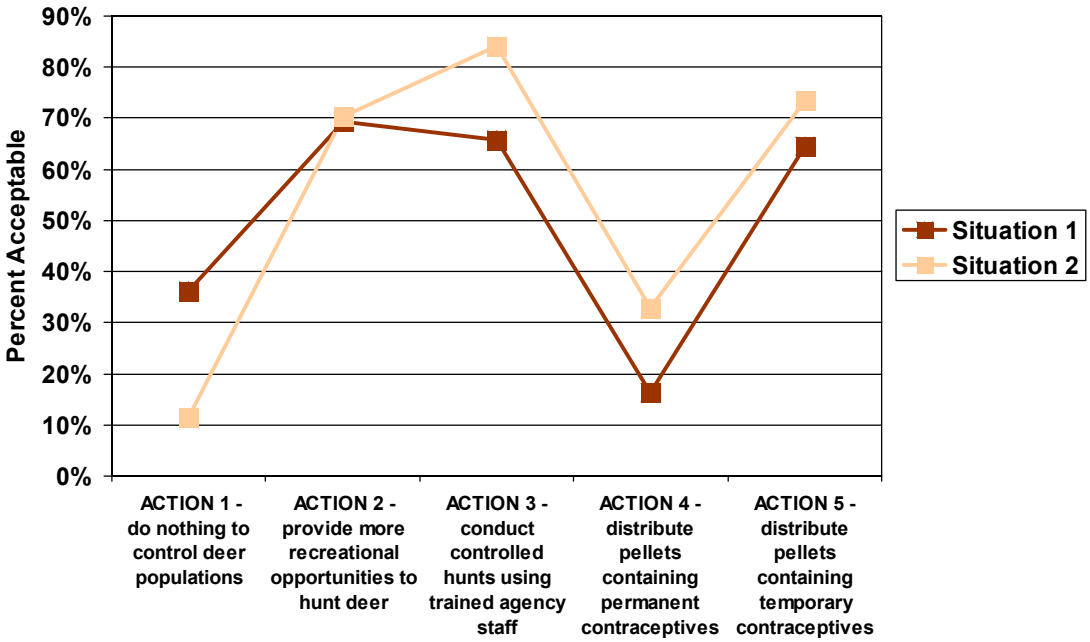
Below are two IMAGINARY situations involving deer. We would like to know how you feel about certain management actions that could be directed at deer populations to address these situations. *Even though it may seem unlikely that these things could occur where you live, we are still interested in your opinions.*

(PLEASE TELL US HOW YOU FEEL ABOUT THE ACTIONS LISTED BELOW FOR EACH SITUATION)

ACTIONS:	SITUATION 1: Deer numbers are increasing. There are complaints about deer entering people's yards and eating shrubs and garden plants.		SITUATION 2: Deer numbers are increasing. Authorities are concerned because deer are carrying a disease that is transmissible to some domestic animals and livestock.	
Is it unacceptable or acceptable to....	Unacceptable	Acceptable	Unacceptable	Acceptable
1. ...do nothing to control deer populations?	❒	❒	❒	❒
2. ... provide more recreational opportunities to hunt deer?	❒	❒	❒	❒
3. ... conduct controlled hunts using trained agency staff?	❒	❒	❒	❒
4. ... distribute pellets containing contraceptives, causing deer to be unable to produce offspring permanently?	❒	❒	❒	❒
5. ... distribute pellets containing contraceptives, causing deer to be unable to produce offspring for only a few breeding seasons?	❒	❒	❒	❒

Summary of results. As Figure VII.B.1 shows, the public generally found it acceptable to *provide more recreational opportunities to hunt deer*, *conduct controlled hunts*, and *distribute pellets containing temporary contraceptives* regardless of the situation. They tended to find it unacceptable to *do nothing* or to *distribute pellets containing permanent contraceptives*. It was less acceptable to *do nothing* when deer carried a transmissible disease than when they were merely a nuisance. There was no difference in acceptability between situations for *providing more recreational hunting opportunities*. *Controlled hunts* and *contraceptive techniques* were more acceptable when deer carried a transmissible disease than when they were a nuisance.

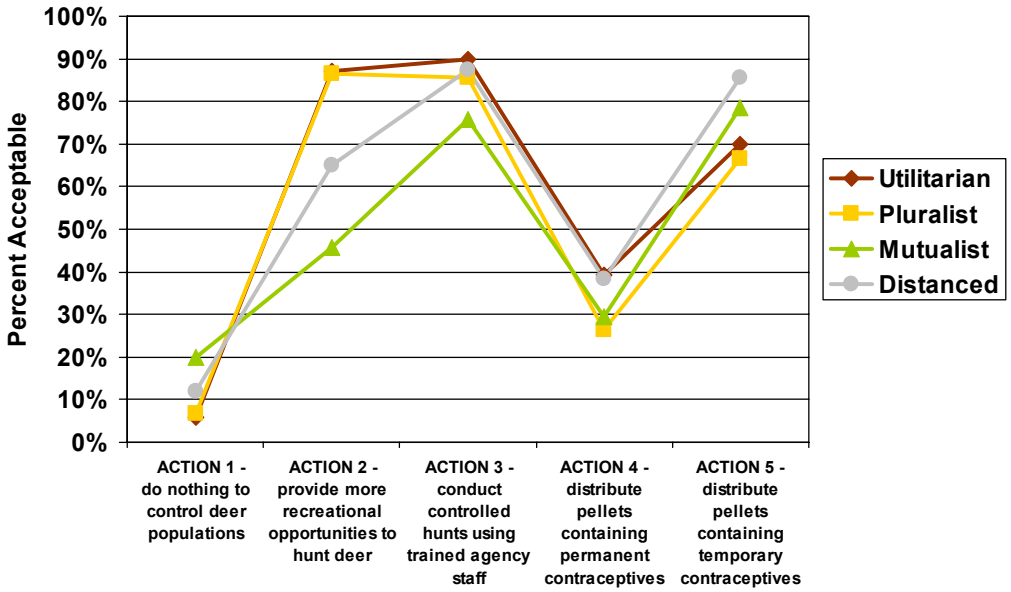
Figure VII.B.1. Percent of respondents finding management actions acceptable when deer are eating shrubs and garden plants (situation 1) and when deer are carrying a disease transmissible to domestic animals and livestock (situation 2).



Results by wildlife value orientation type. As shown in figures VII.B.2 and VII.B.3, with a few exceptions the value orientation types conformed to a similar pattern in their evaluations of management actions across situations. In situation 1, *permanent contraception* was the least acceptable action for all types. Also in situation 1, *doing nothing* was found to be unacceptable for the majority of respondents in all types except Mutualists who, as a group, expressed just over 50% support for this management strategy. While still controversial as indicated by low levels of support (i.e., less than 50%), the acceptability of permanent contraceptives increased across all value orientation types for the situation involving a threat to domestic animals and livestock (situation 2). Alternatively, *doing nothing* garnered less than 25% support in the second situation across all types. *Providing more opportunities for recreational hunting* was the most acceptable action for Pluralists and Utilitarians in situation 1, while Mutualists and Distanced individuals expressed greater preference as a group for *temporary contraception*. In situation 2, the actions preferred most by Utilitarians and Pluralists were the two hunting techniques (i.e., recreational and controlled hunts). Preference for Mutualists and Distanced individuals was split between *controlled hunts* and *use of temporary contraceptives* in this situation.

Figure VII.B.2. Percent of wildlife value orientation type finding management actions acceptable when deer are eating shrubs and garden plants (situation 1).

Figure VII.B.3. Percent of wildlife value orientation type finding management actions acceptable when deer are carrying a disease transmissible to domestic animals and livestock (situation 2).



Results by participation in hunting and fishing. Hunters/anglers and non-hunters/anglers differed very little in their acceptance of management actions in each deer situation (Figures VII.B.4 and VII.B.5). The only notable distinction is in how the two groups evaluated *providing more recreational opportunities to hunt deer*. In both situations, hunters/anglers were more likely than non-hunters/anglers to find this action acceptable

Figure VII.B.4. Percent of hunters/anglers and non-hunters/anglers finding management actions acceptable when deer are eating shrubs and garden plants (situation 1).

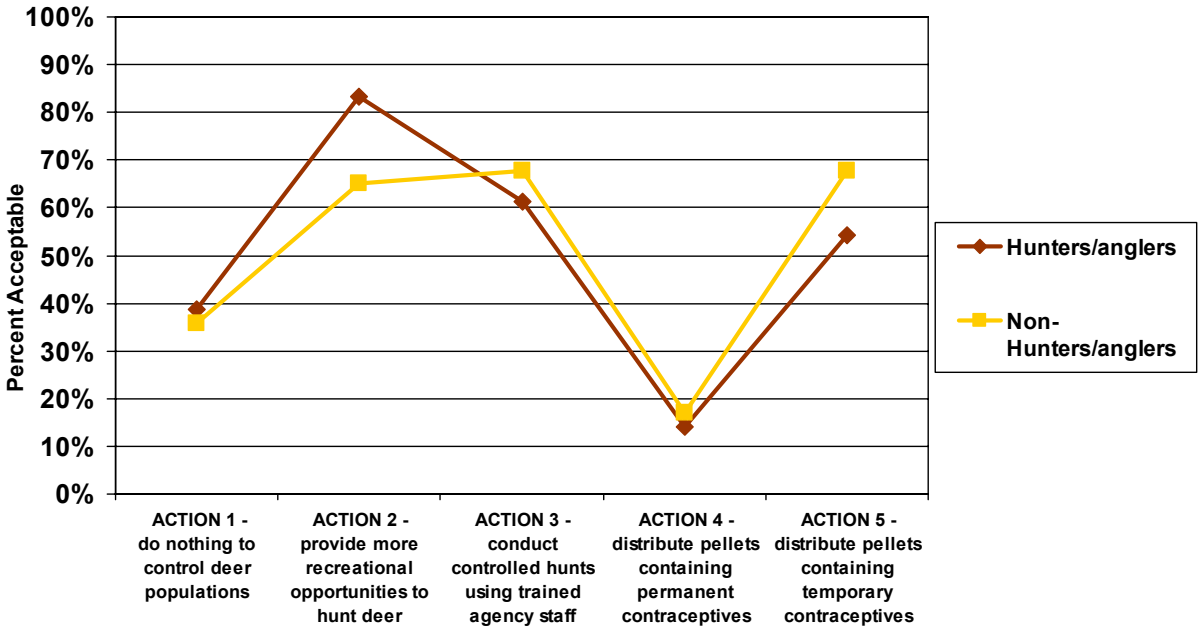
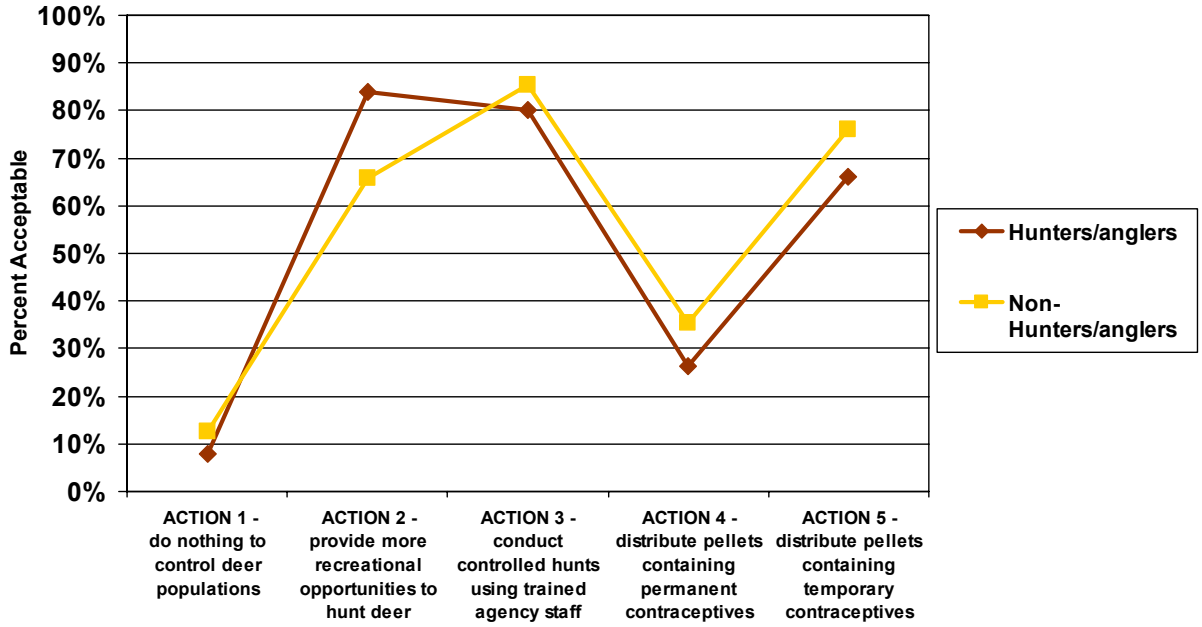


Figure VII.B.5. Percent of hunters/anglers and non-hunters/anglers finding management actions acceptable when deer are carrying a disease transmissible to domestic animals and livestock (situation 2).



SECTION VIII. MANAGING CHRONIC WASTING DISEASE[6]

This section presents results comparing the public's responses to items regarding the management of Chronic Wasting Disease (CWD) with Colorado resident and nonresident deer and elk hunters' responses. Hunters' responses were obtained in a research project of the WAFWA Human Dimensions Committee entitled *Hunters' Responses to Chronic Wasting Disease*. The research was conducted in 2004 by Colorado State University in cooperation with the CDOW along with seven other state fish and wildlife agencies. The items included in the current study to allow for comparison with the hunter study covered four topics:

1. perceptions of CWD;
2. adequacy of CWD information;
3. trust for the agency regarding CWD; and
4. acceptability of CWD management actions.

In the public survey, the section regarding CWD (on the state-specific section of the Colorado survey) was introduced with a general explanation of the disease as shown below. This information was identical to that provided in the hunter survey with the exception of the species of focus. While the public survey focused only on deer, the hunter survey included both deer and elk in the description of the disease. The survey items followed this explanation. Items for the public and for deer hunters asked about CWD in deer, while items for elk hunters focused instead on CWD in elk. For more information on CWD, the development of the items, and the methods for the hunter survey, see Needham, Vaske, and Manfredo (2005).

The next set of questions asks your opinions about Chronic Wasting Disease.
Chronic Wasting Disease (CWD) is a brain disease found in deer. It is believed to be caused by an abnormal protein called a prion. In the early stages of the disease, infected animals may appear healthy. In later stages, infected animals may display one or more symptoms such as weight loss, lack of energy, "droopy" appearance, and excessive salivation. Infected animals always die. The origin and transmission of CWD are not well understood. The following questions ask about your opinions regarding CWD, especially in Colorado.

Tables displaying the exact percent of response by the public to each of the items reported in this section and means and PCI values for the PCI figures can be found in the Appendix (Tables A-92 to A-146).

[6] Text describing CWD topics in this section has been extracted from Dayer, Manfredo, and Teel (2005).

A. COMPARING THE PUBLIC'S AND HUNTERS' PERCEPTIONS OF CWD

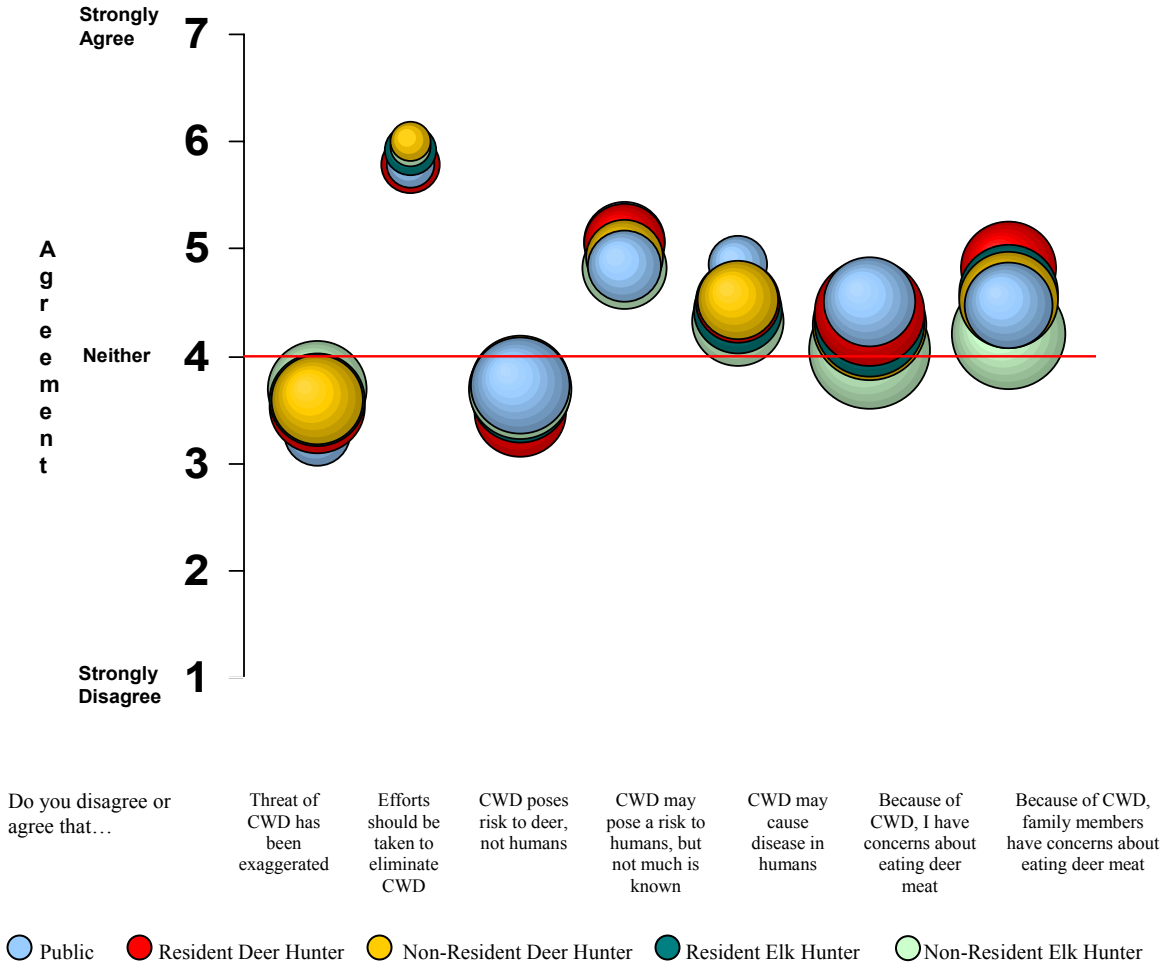
This set of items explores respondents' perceptions of CWD regarding the risks it may pose. Respondents were asked about their level of agreement with seven statements (see below). In the survey for the public, respondents were given the option to select "not applicable" for the two items regarding concerns about eating deer meat.

9. To what extent do you disagree or agree with each of the following statements related to CWD?
Circle one number or "NA" for each statement. NA = not applicable.

Do you disagree or agree that…	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree	
The threat of CWD has been exaggerated.	1	2	3	4	5	6	7	
Efforts should be taken to eliminate CWD from the wild deer population.	1	2	3	4	5	6	7	
CWD poses a risk to deer, but not to humans.	1	2	3	4	5	6	7	
CWD may pose a risk to humans, but not enough is currently known to be sure.	1	2	3	4	5	6	7	
CWD may cause disease in humans if they eat meat from animals infected with CWD.	1	2	3	4	5	6	7	
Because of CWD, I have concerns about eating deer meat.	1	2	3	4	5	6	7	NA
Because of CWD, members of my family (for example: spouse, children) have concerns about eating deer meat.	1	2	3	4	5	6	7	NA

Summary of results. Across the groups, there were similar mean levels of agreement with the statements (Figure VIII.A.1). On average, the public and hunters agreed that *efforts should be taken to eliminate CWD* and *CWD may pose a risk to humans*. In addition, they agreed that *CWD may cause disease in humans* and that *they have concerns about eating deer/elk meat*; however, the groups tended toward a more neutral average response for these statements. The public and hunters disagreed on average that the *threat of CWD was exaggerated* and *CWD poses a risk to deer/elk but not humans*. The public had lower PCIs (i.e., greater consensus) than the hunters for most statements. Nonresident elk hunters had the most variation surrounding their mean levels of agreement for all statements except *efforts should be taken to eliminate CWD* which had relatively small PCI's for all groups.

Figure VIII.A.1. Potential for conflict indices comparing the public's and hunters' (resident and nonresident deer and elk) perceptions of CWD and its implications.[1]



[1]Shortened versions of the statements are provided along the x-axis of the graph. The complete statements are below. Elk hunters were asked about CWD in elk rather than in deer for these statements.

1. "The threat of CWD has been exaggerated."
2. "Efforts should be taken to eliminate CWD from the wild deer population."
3. "CWD poses a risk to deer, but not to humans."
4. "CWD may pose a risk to humans, but not enough is currently known to be sure."
5. "CWD may cause disease in humans if they eat meat from animals infected with CWD."
6. "Because of CWD, I have concerns about eating deer meat."
7. "Because of CWD, members of my family (for example: spouse, children) have concerns about eating deer meat."

Results by wildlife value orientation type. The entire public and all of the value orientation types differed little on their mean levels of agreement with the statements regarding risk of CWD (Figures VIII.A.2 to VIII.A.8). Groups varied slightly in the amount of consensus they had for each statement.

Figure VIII.A.2. Potential for conflict indices for the statement "The threat of CWD has been exaggerated" by wildlife value orientation type.

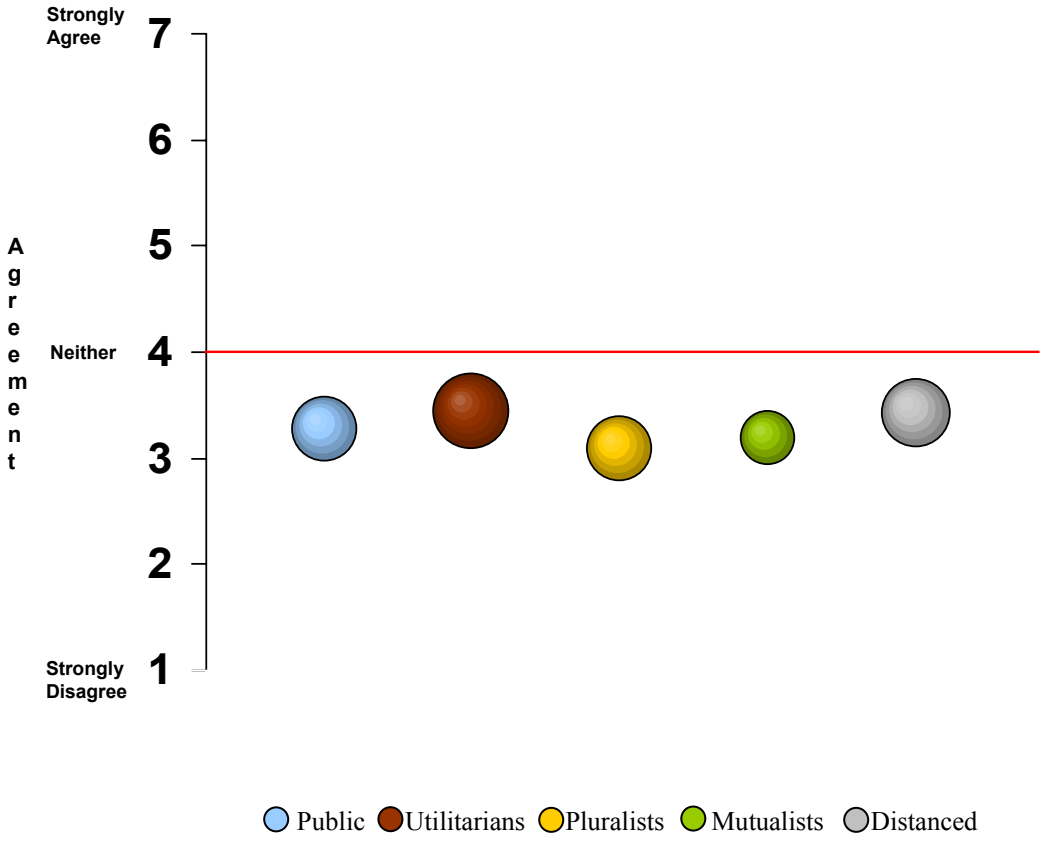


Figure VIII.A.3. Potential for conflict indices for the statement "Efforts should be taken to eliminate CWD from the wild deer population" by wildlife value orientation type.

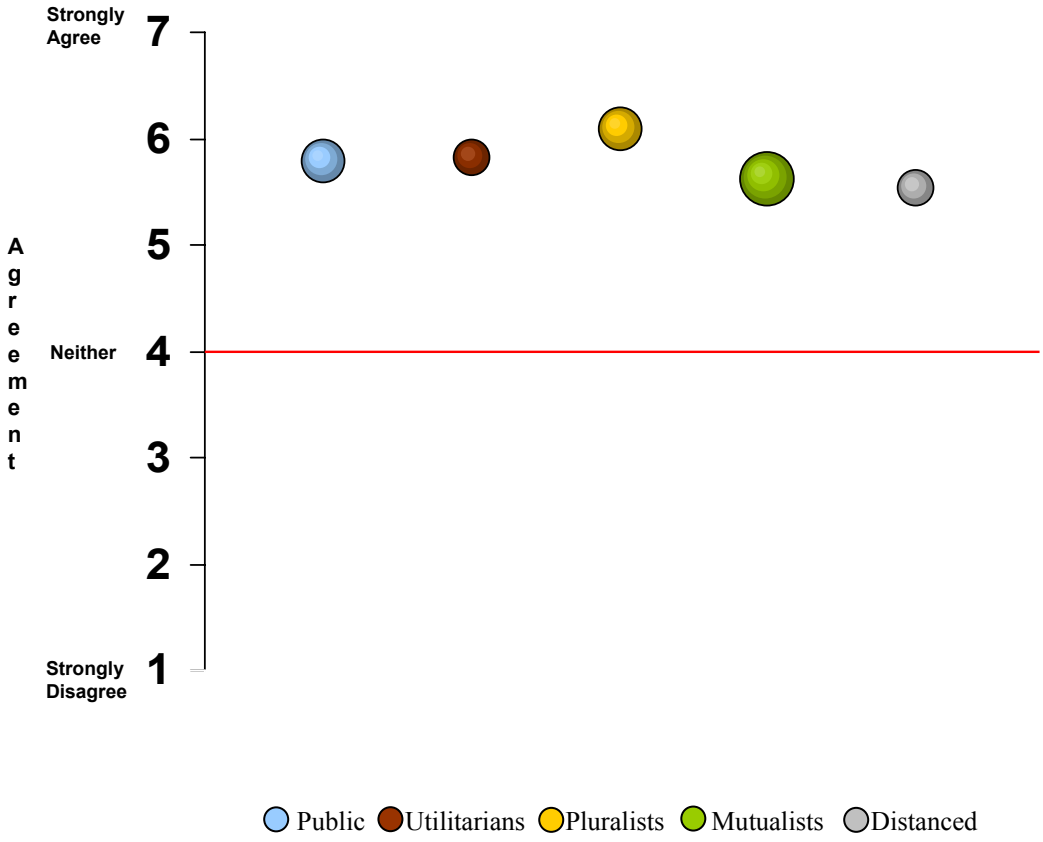


Figure VIII.A.4. Potential for conflict indices for the statement "CWD poses a risk to deer, but not to humans" by wildlife value orientation type.

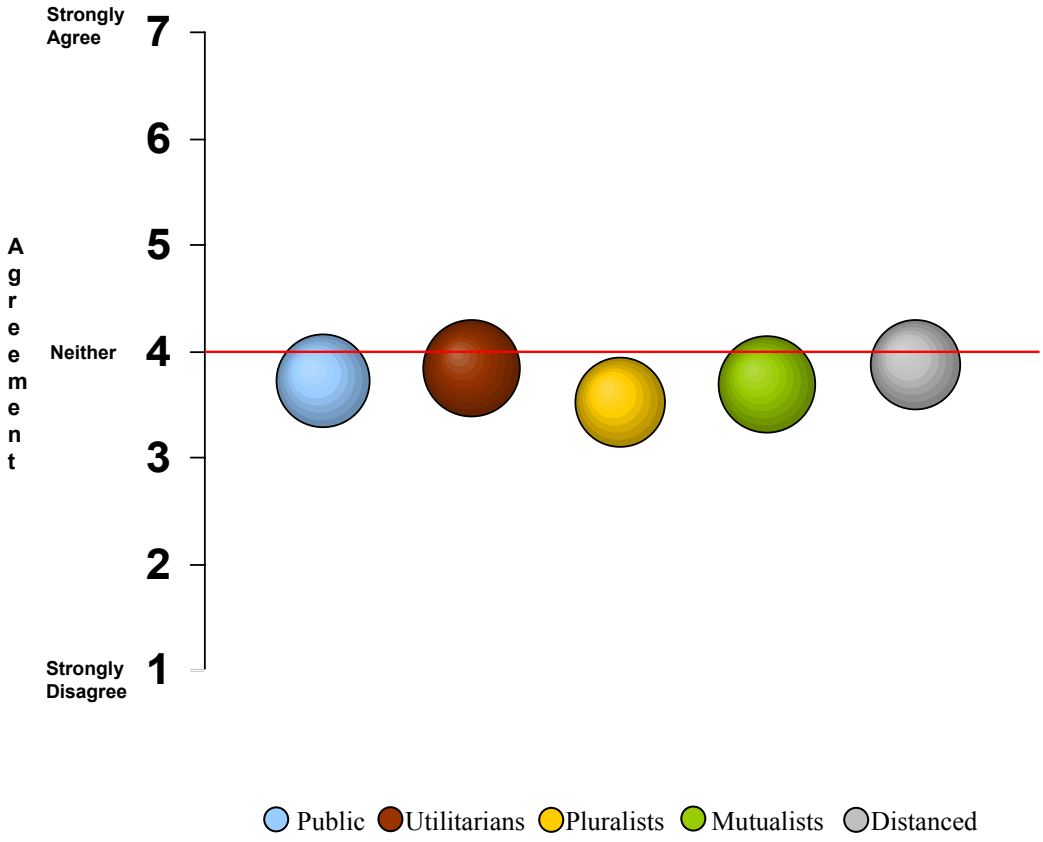


Figure VIII.A.5. Potential for conflict indices for the statement "CWD may pose a risk to humans, but not enough is currently known to be sure" by wildlife value orientation type.

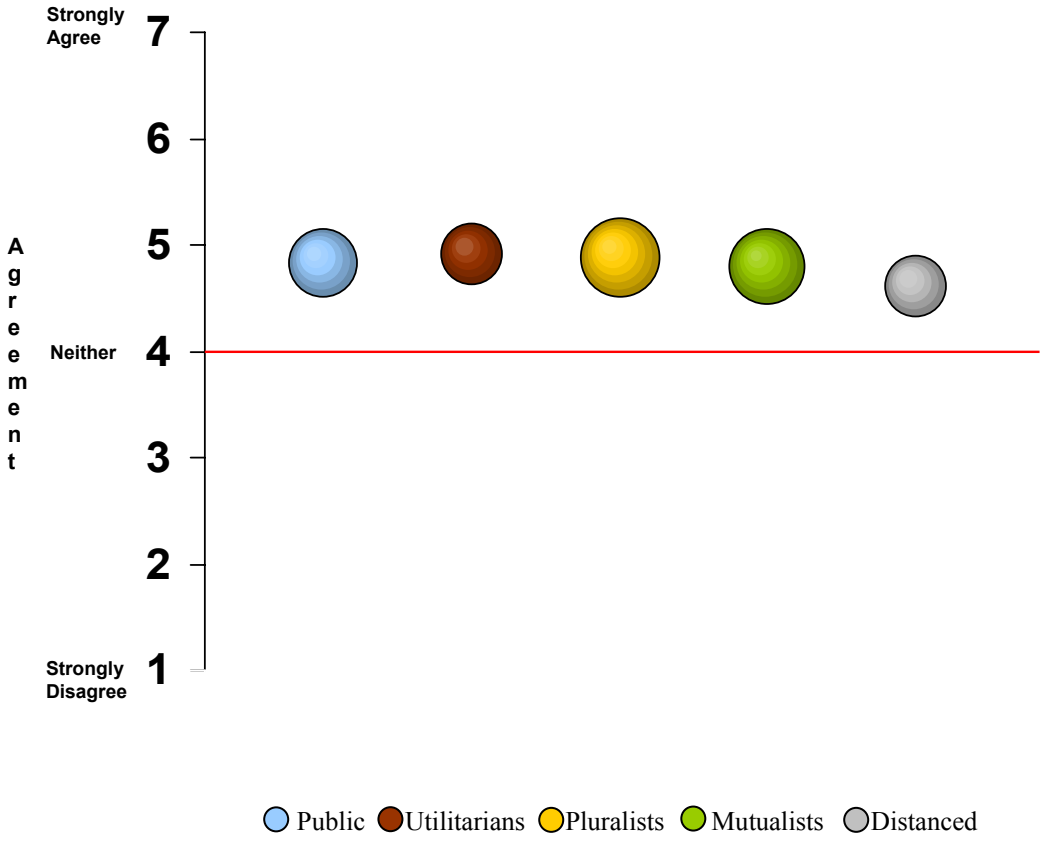


Figure VIII.A.6. Potential for conflict indices for the statement "CWD may cause disease in humans if they eat meat from animals infected with CWD" by wildlife value orientation type.

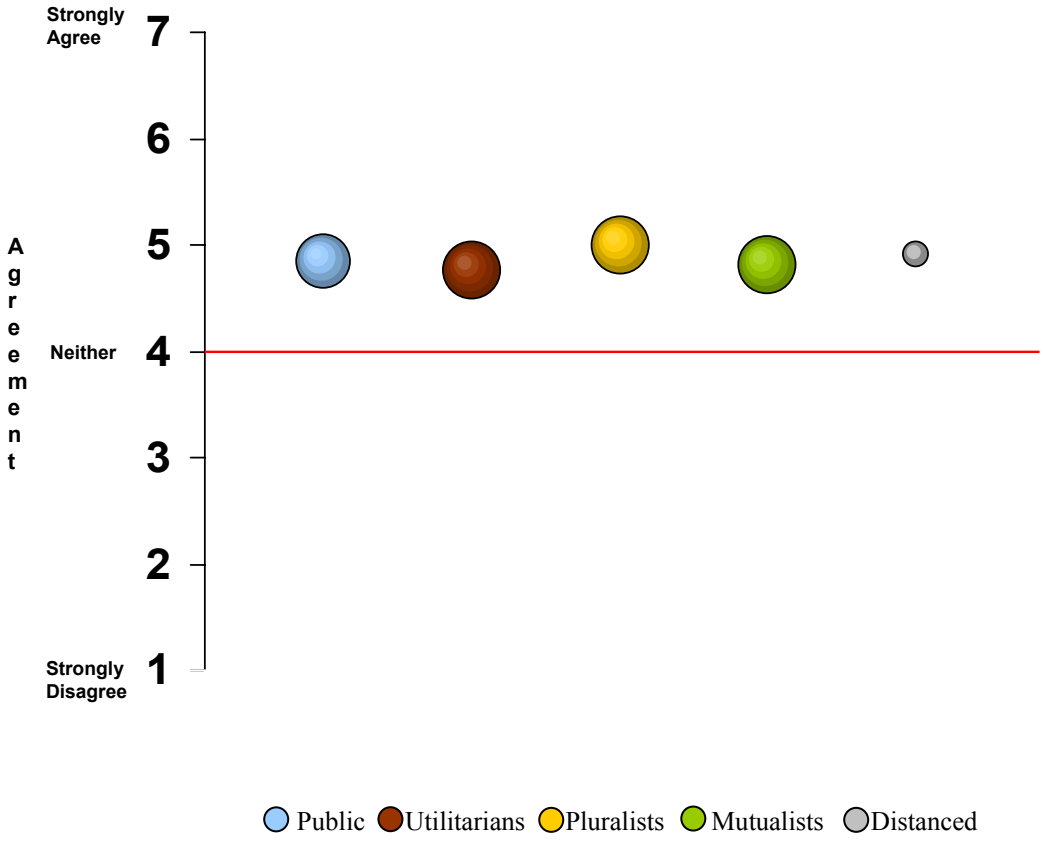


Figure VIII.A.7. Potential for conflict indices for the statement "Because of CWD, I have concerns about eating deer meat" by wildlife value orientation type.

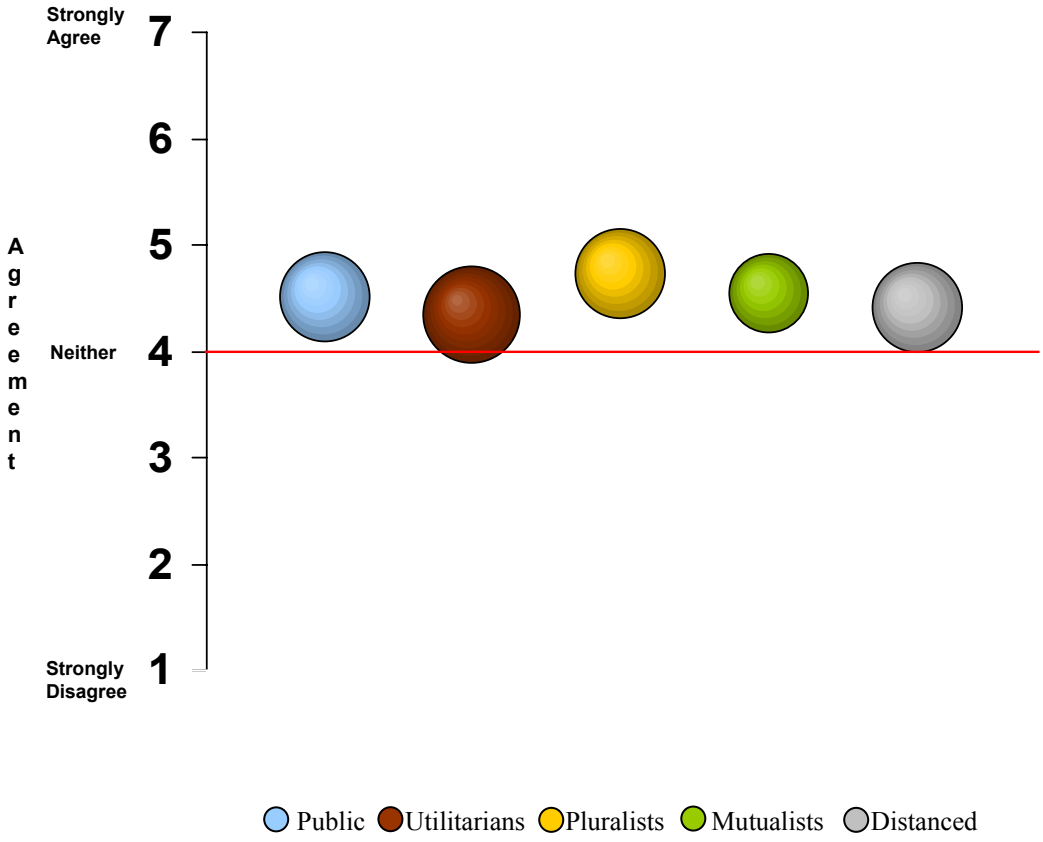
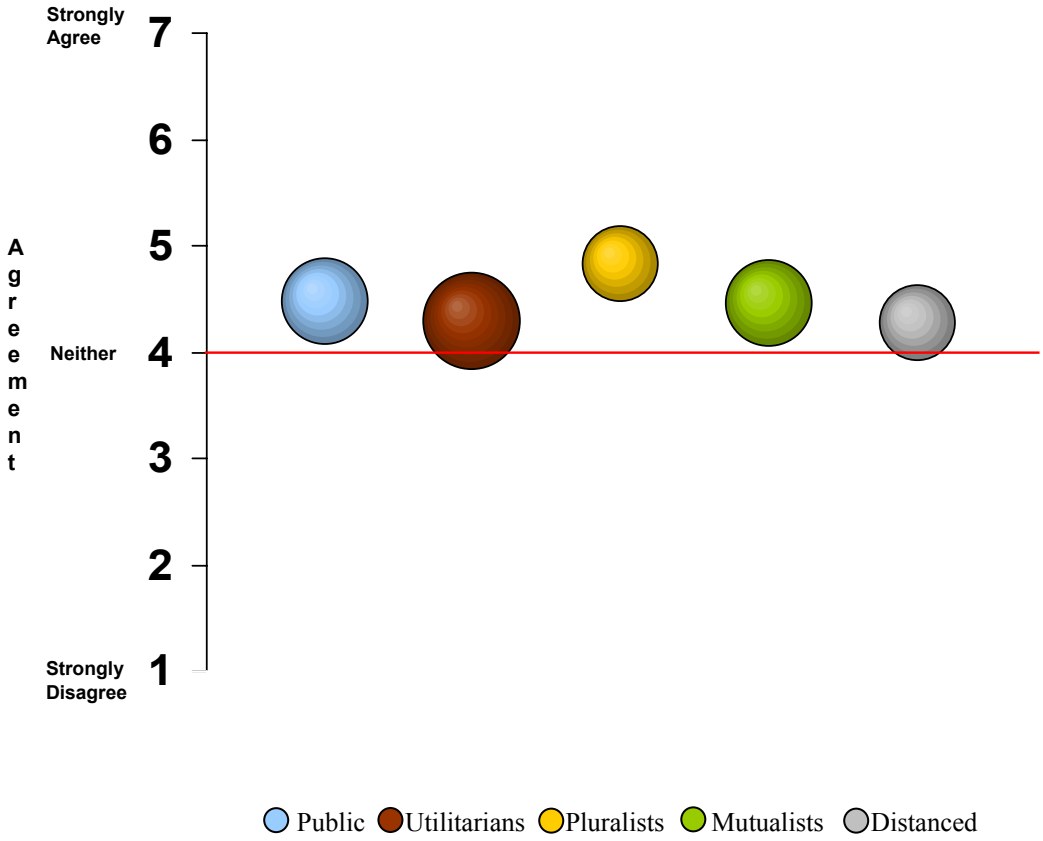


Figure VIII.A.8. Potential for conflict indices for the statement "Because of CWD, members of my family (for example: spouse, children) have concerns about eating deer meat" by wildlife value orientation type.



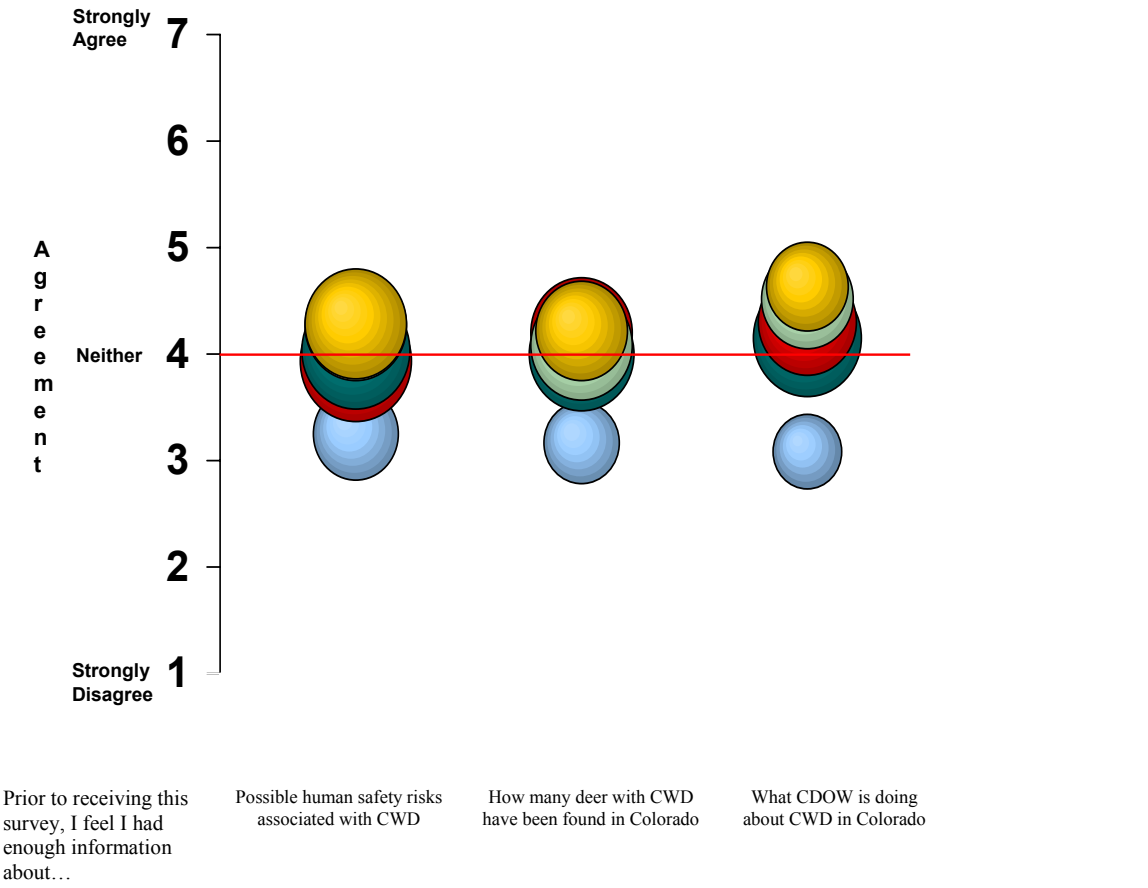
B. COMPARING THE PUBLIC'S AND HUNTERS' ADEQUACY OF CWD INFORMATION

This set of items examines whether respondents believe they possess adequate information about various facets of CWD. Respondents were asked to indicate their level of agreement with the three statements below.

Prior to receiving this survey, I feel I had enough information about…							
…possible human safety risks associated with CWD.	1	2	3	4	5	6	7
…how many deer with CWD have been found in Colorado.	1	2	3	4	5	6	7
…what the CDOW is doing about CWD in Colorado.	1	2	3	4	5	6	7

Summary of results. Across the five groups (i.e., the public, resident deer and elk hunters, and nonresident deer and elk hunters) there were notable differences in the mean level of agreement on all items (Figure VIII.B.1). Members of the public disagreed that they had enough information about CWD, and as a group they were more in consensus with regard to their response. Overall, hunters were more neutral with respect to their agreement with each statement, and they had higher variability in response. Resident hunters had lower levels of agreement than nonresidents regarding adequacy of information on *possible human safety risks* and *what the CDOW is doing about CWD*.

Figure VIII.B.1. Potential for conflict indices comparing the public's and hunters' (resident and nonresident deer and elk) assessment of their adequacy of information on CWD related topics prior to receiving the survey.[1]



[1]Elk hunters were asked about CWD in elk rather than in deer for these statements.

Results by wildlife value orientation type. All value orientation types felt on average that they did not have enough information about CWD (Figures VIII.B.2 to VIII.B.4). Of the types, Distanced individuals were least likely to feel this way. Groups were very similar with respect to the amount of consensus on these statements.

Figure VIII.B.2. Potential for conflict indices for the statement "Prior to receiving this survey, I feel I had enough information about possible human safety risks associated with CWD" by wildlife value orientation type.

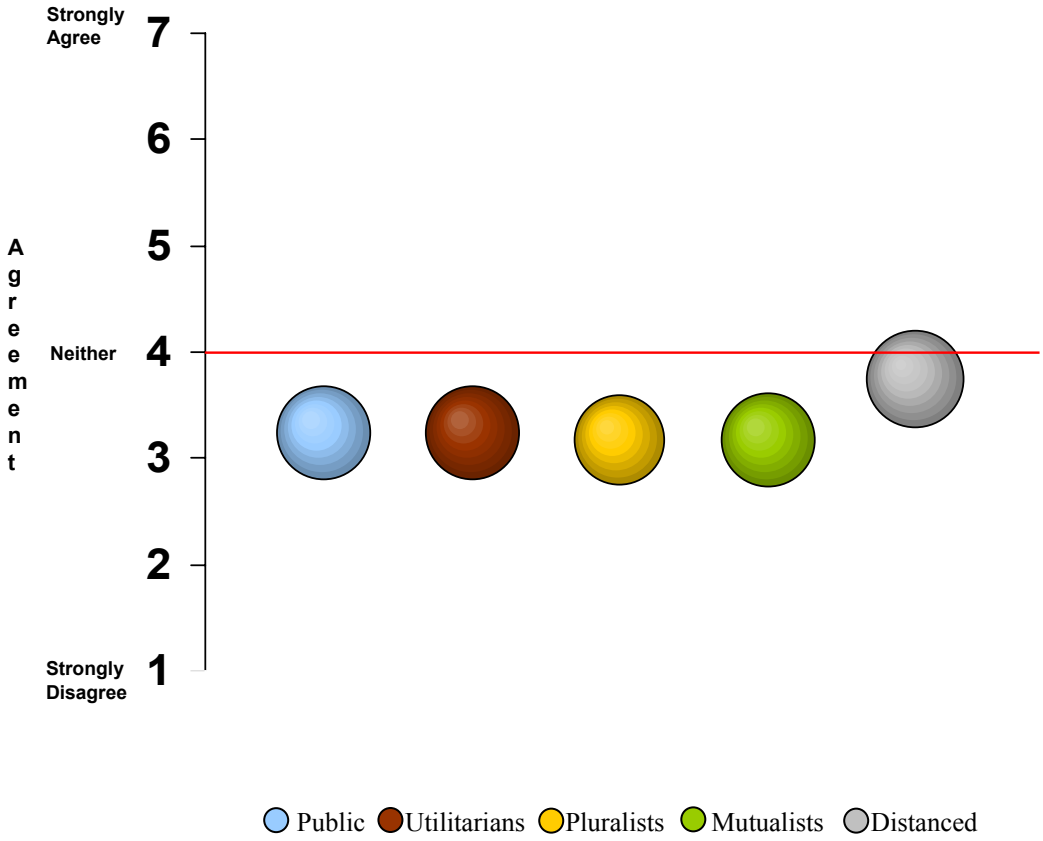


Figure VIII.B.3. Potential for conflict indices for the statement "Prior to receiving this survey, I feel I had enough information about how many deer with CWD have been found in Colorado" by wildlife value orientation type.

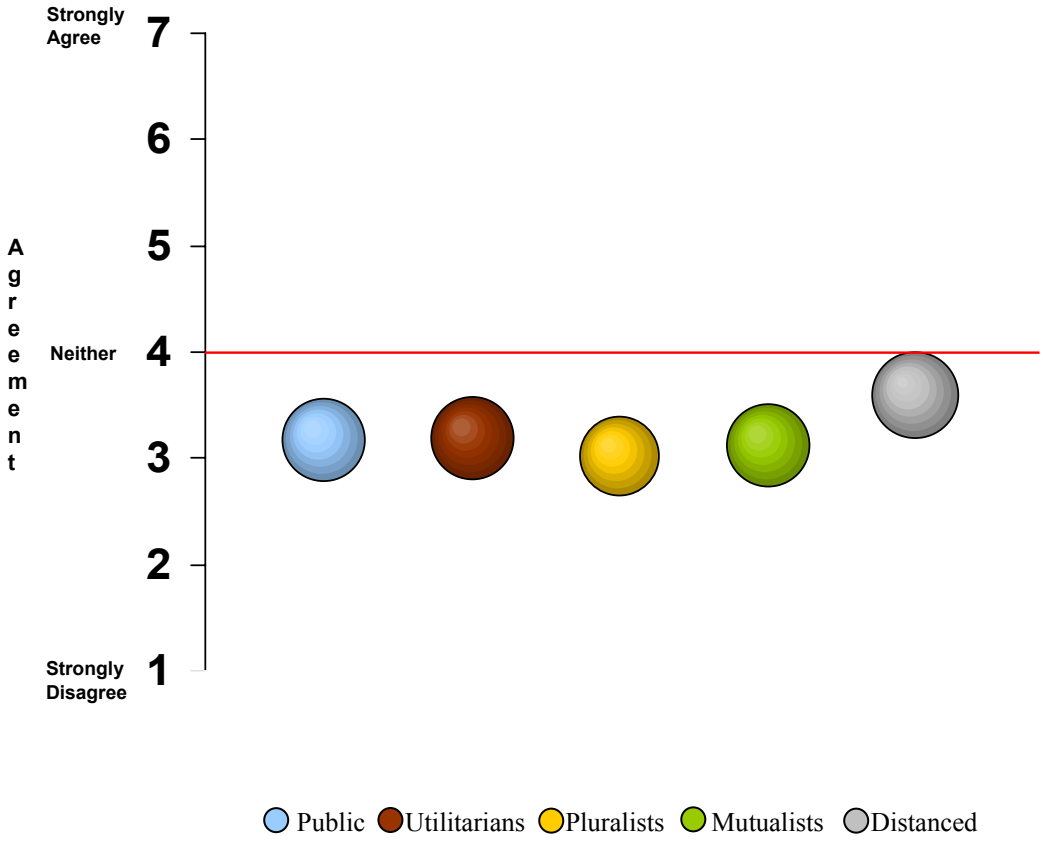
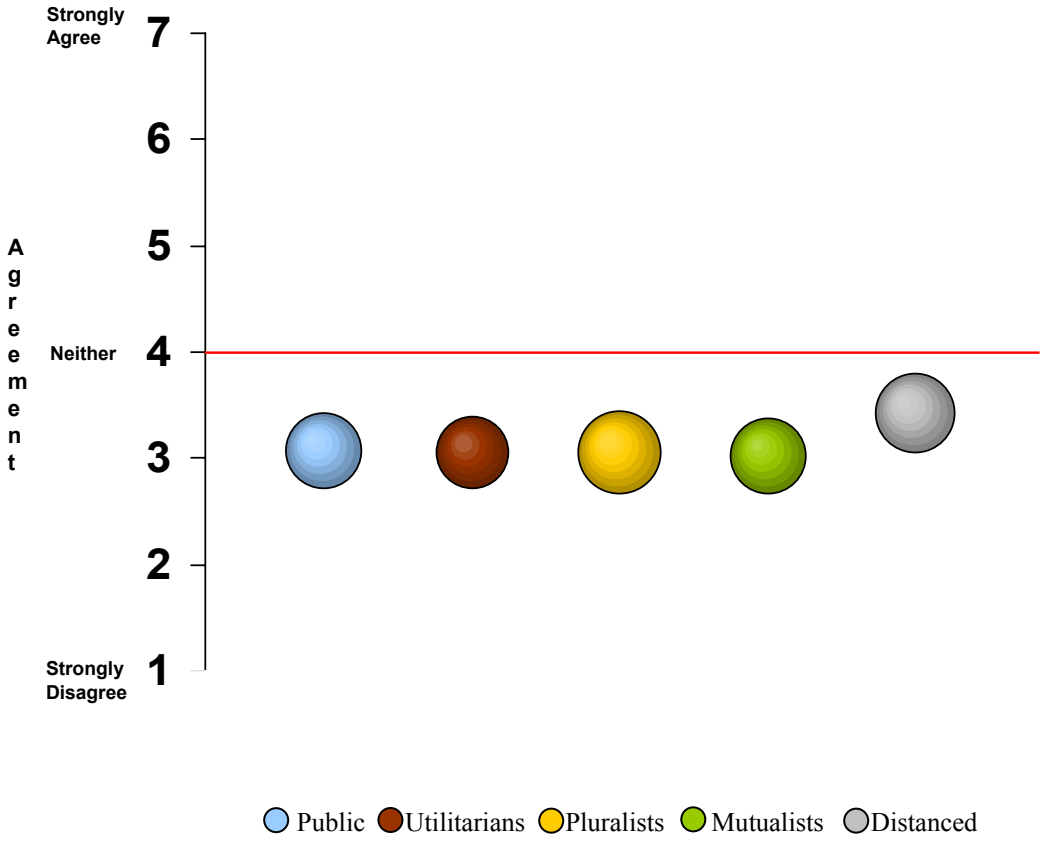


Figure VIII.B.4. Potential for conflict indices for the statement "Prior to receiving this survey, I feel I had enough information about what the CDOW is doing about CWD in Colorado" by wildlife value orientation type.



C. COMPARING THE PUBLIC'S AND HUNTERS' TRUST FOR THE AGENCY REGARDING CWD

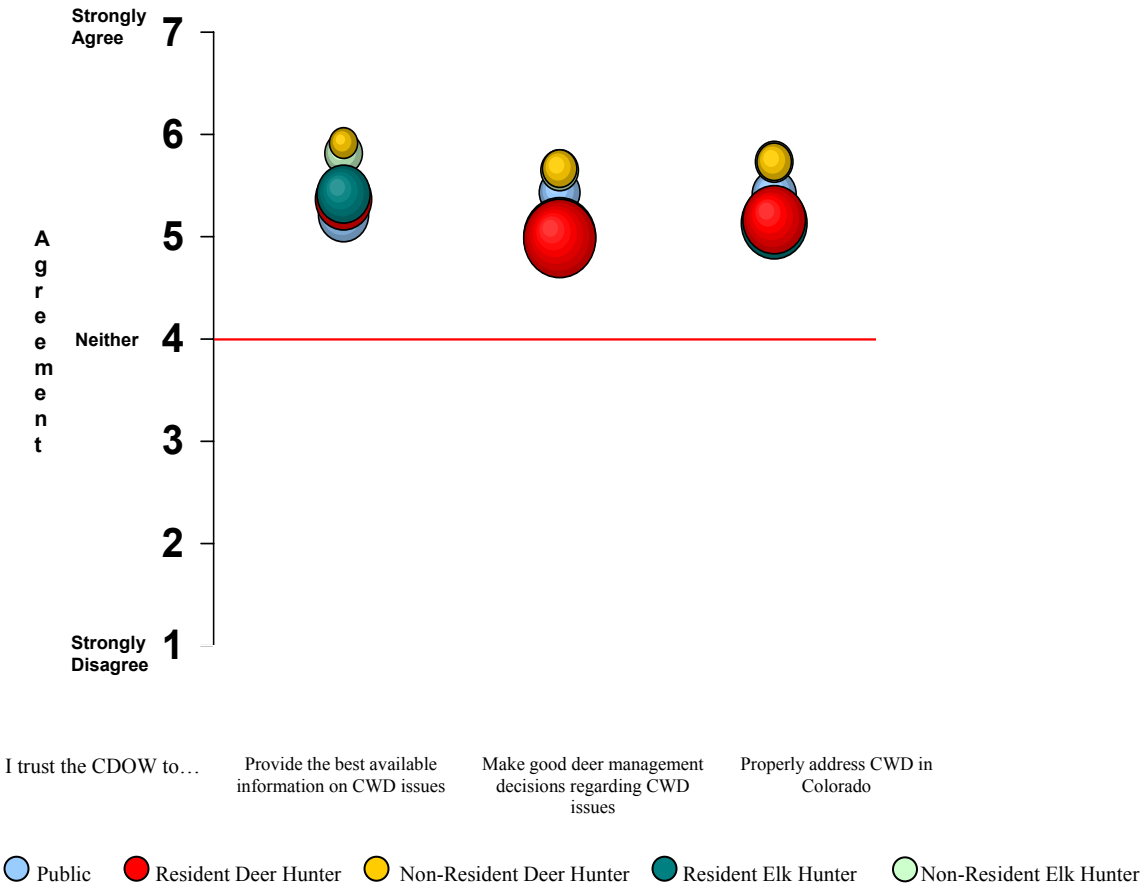
This set of items assesses the extent to which respondents trust the CDOW regarding CWD. Respondents were asked to indicate their level of agreement with the three statements below.

I trust the CDOW to…							
…provide the best available information on CWD issues.	1	2	3	4	5	6	7
…make good deer management decisions regarding CWD issues.	1	2	3	4	5	6	7
…properly address CWD in Colorado.	1	2	3	4	5	6	7

Summary of results. All groups agreed that they trust the agency regarding CWD (Figure VIII.C.1). Nonresident hunters had the highest mean level of agreement and the most consensus. Resident hunters had the least consensus. The public was less likely on average than the other groups to express trust in the CDOW *to provide the best available information on CWD issues*, while resident hunters were the least likely of all groups to express trust in the agency *to make good management decisions regarding CWD* and *to properly address CWD in Colorado*.

Results by wildlife value orientation type. Overall, all of the value orientation types agreed that they trust the CDOW on CWD issues (Figures VIII.C.2 to VIII.C.4). Among the types, Pluralists and Distanced individuals tended to have slightly higher mean levels of agreement (or trust), and Utilitarians and Mutualists tended to have slightly lower mean levels. Groups did not differ much in the amount of consensus they had for each statement.

Figure VIII.C.1. Potential for conflict indices comparing the public's and hunters' (resident and nonresident deer and elk) trust for the agency regarding CWD.[1]



[1]Elk hunters were asked about CWD in elk rather than in deer for these statements.

Figure VIII.C.2. Potential for conflict indices for the statement "I trust the CDOW to provide the best available information on CWD issues" by wildlife value orientation type.

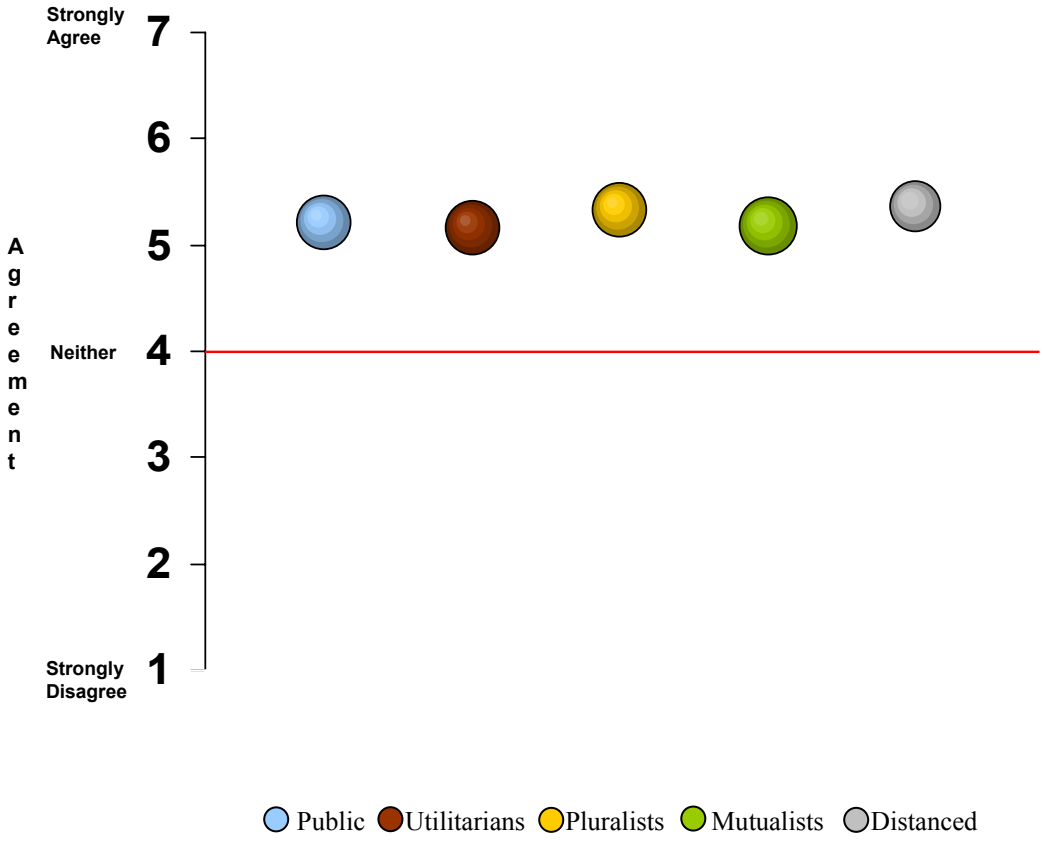


Figure VIII.C.3. Potential for conflict indices for the statement "I trust the CDOW to make good deer management decisions regarding CWD issues" by wildlife value orientation type.

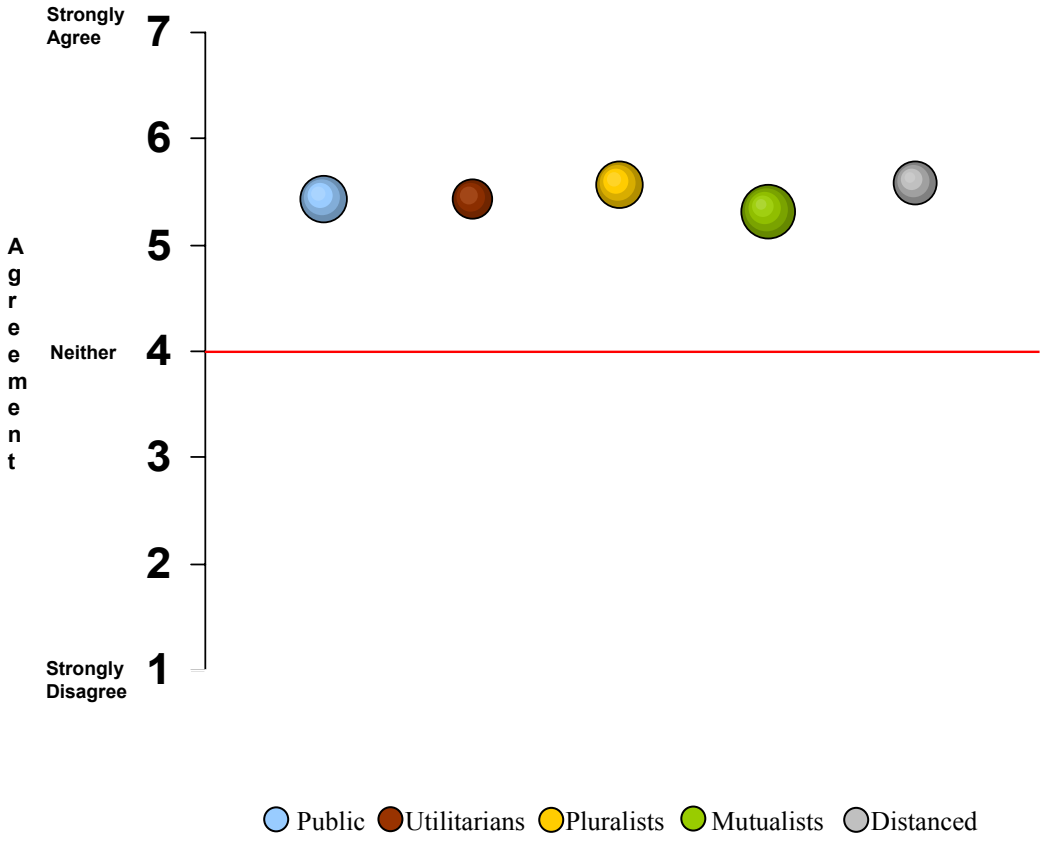
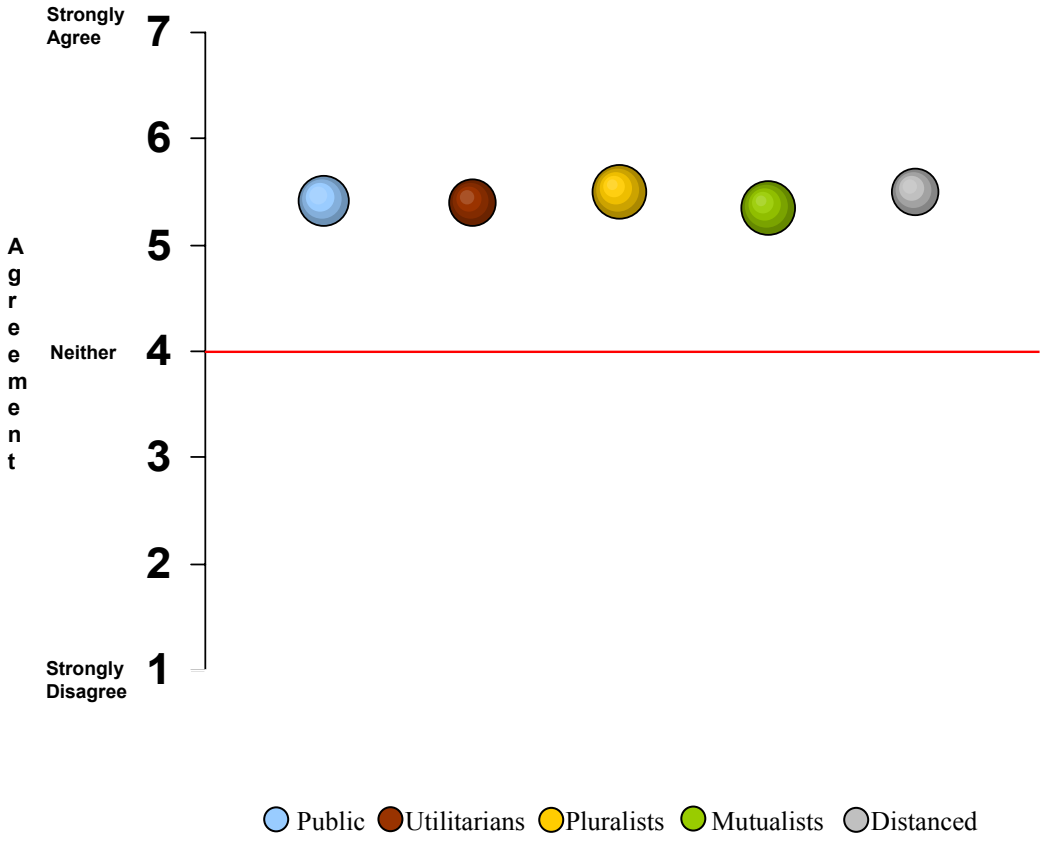


Figure VIII.C.4. Potential for conflict indices for the statement "I trust the CDOW to properly address CWD in Colorado" by wildlife value orientation type.



D. COMPARING THE PUBLIC'S AND HUNTERS' ACCEPTANCE OF CWD MANAGEMENT ACTIONS

This set of items explores how acceptable respondents believe it is for the CDOW to respond to CWD with alternative management actions. It is important to note that the situation assessing acceptability of the management actions was not introduced in precisely the same manner on the hunter survey as on the public survey. Thus, this comparison is only an approximation of how the public differs from hunters. Respondents to the public survey were asked to respond to the items shown below. Respondents to the hunter survey were asked about the acceptability of management actions in six hypothetical situations with increasing CWD prevalence levels and human health risks. The hypothetical situation with the least prevalence of CWD depicted 10% prevalence in one Colorado hunting zone and 0% in the other zones. The results for this hypothetical situation in the hunter survey are compared to the results from the public survey below.

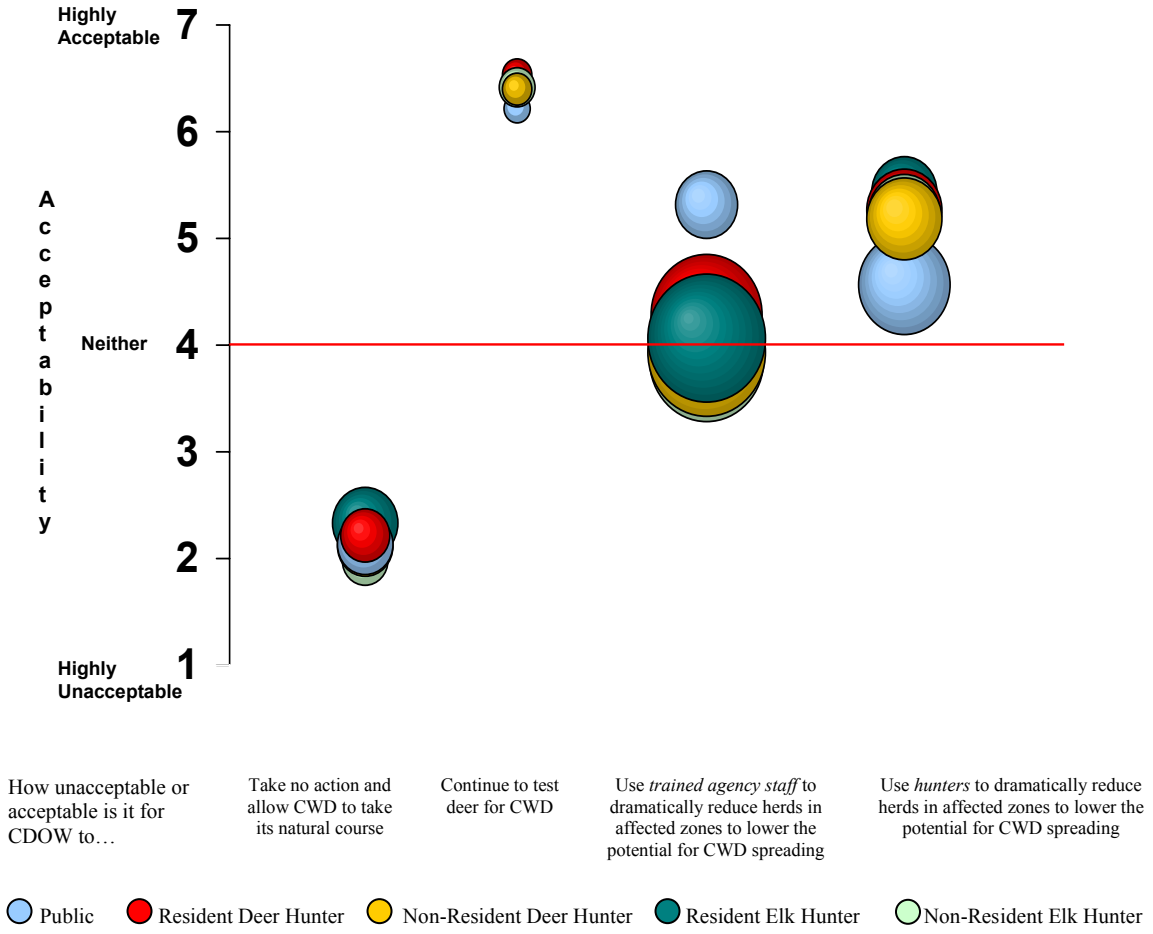
10. Given the uncertainty associated with CWD and its effect on deer populations, the CDOW is currently exploring alternative ways to respond. Please tell us how unacceptable or acceptable you think it would be for the CDOW to take each of the following actions. *Circle one number for each statement that most closely matches your response.*

How unacceptable or acceptable is it for CDOW to…..	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
...take no action and allow CWD to take its natural course?	1	2	3	4	5	6	7
...continue to test deer for CWD?	1	2	3	4	5	6	7
…use *trained agency staff* to dramatically reduce herds in affected zones to lower the potential for CWD spreading?	1	2	3	4	5	6	7
…use *hunters* to dramatically reduce herds in affected zones to lower the potential for CWD spreading?	1	2	3	4	5	6	7

Summary of results. Across all groups, *testing* was highly acceptable and *doing nothing* was unacceptable (Figure VIII.D.1). Mean scores for *dramatically reducing herds* (*using trained agency staff* and *using hunters*) were closer to the neutral line with higher PCIs, indicating the groups were more divided on the acceptability of these actions. Hunters found it more acceptable to use hunters to manage the herds, and the public expressed greater preference for using trained agency staff.

Results by wildlife value orientation type. While c*ontinuing to test deer for CWD* was highly acceptable with high consensus for all groups, the value orientation types differed in acceptability of other actions (Figures VIII.D.2 to VIII.D.5). The greatest difference among types was on the acceptability of *using hunters to dramatically reduce herds*. Utilitarians were accepting of this action and generally in consensus as a group, while Mutualists had greater variability in response and found it overall to be an unacceptable management practice. While all types agreed that *using trained agency staff to dramatically reduce herds* was acceptable, Mutualists were less accepting on average than the other types. Mutualists were also less likely to rate *taking no action* as unacceptable compared to the other three value orientation types.

Figure VIII.D.1. Potential for conflict indices comparing the public's and hunters' (resident and nonresident deer and elk) acceptance of CWD management actions. [1]



[1]Elk hunters were asked about CWD in elk rather than in deer for these statements.

Figure VIII.D.2. Potential for conflict indices for the statement "Take no action and allow CWD to take its natural course" by wildlife value orientation type.

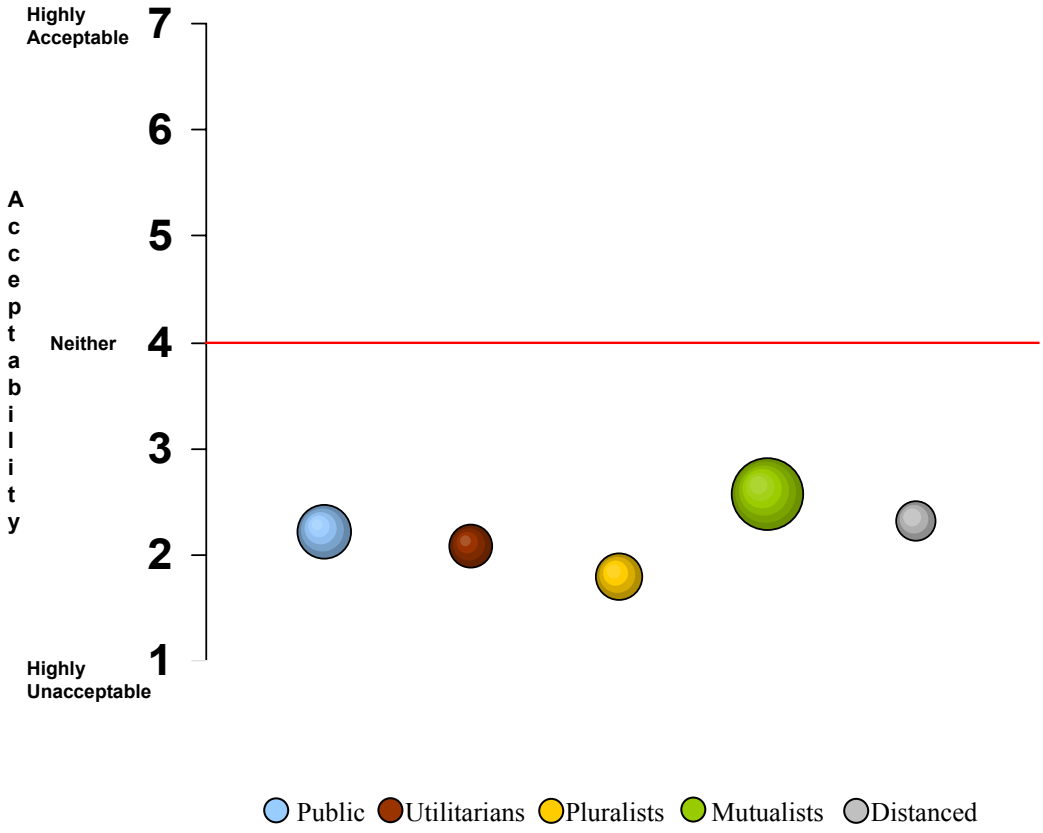
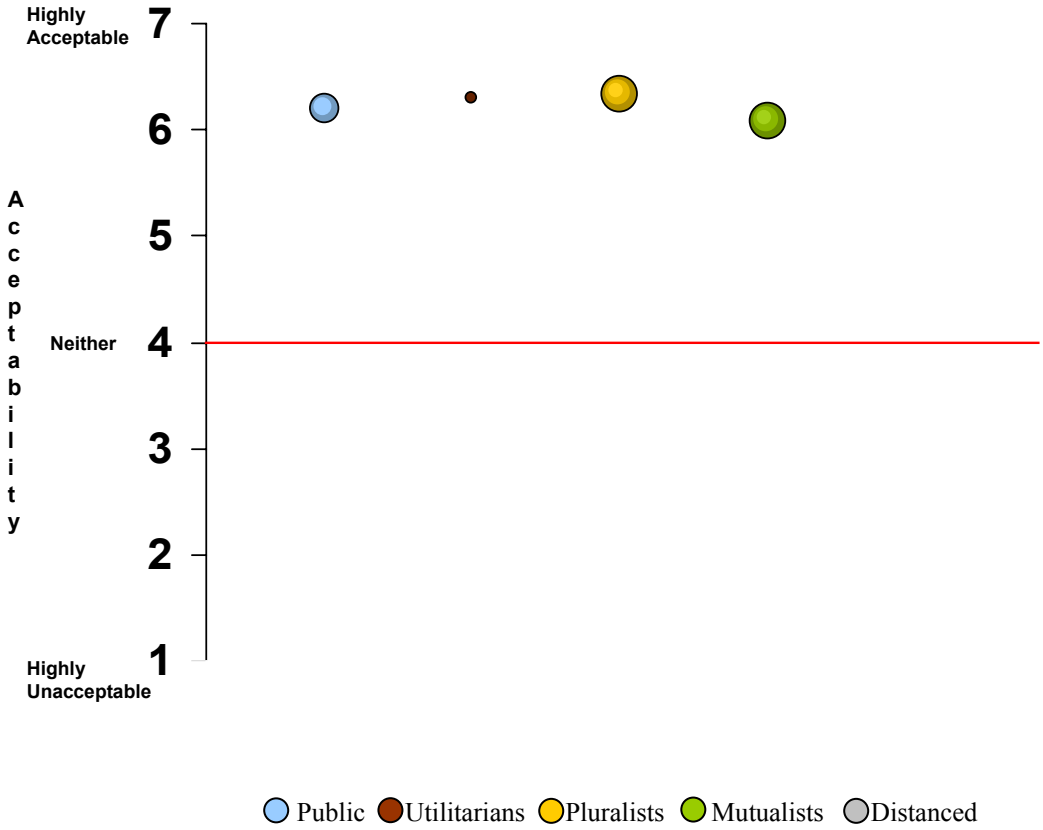


Figure VIII.D.3. Potential for conflict indices for the statement "Continue to test deer for CWD" by wildlife value orientation type. [1]



[1]PCI value for Distanced group is 0.0 (mean = 5.99).

Figure VIII.D.4. Potential for conflict indices for the statement "*Use trained agency staff* to dramatically reduce herds in affected zones to lower the potential for CWD spreading" by wildlife value orientation type.

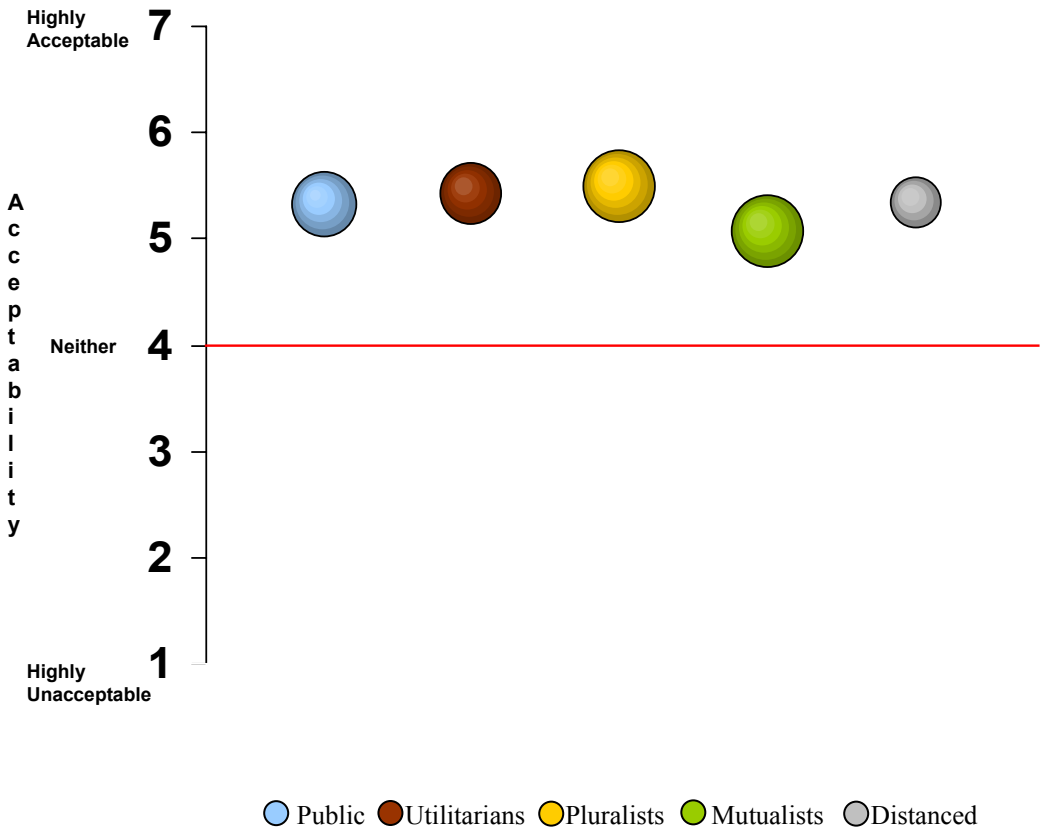
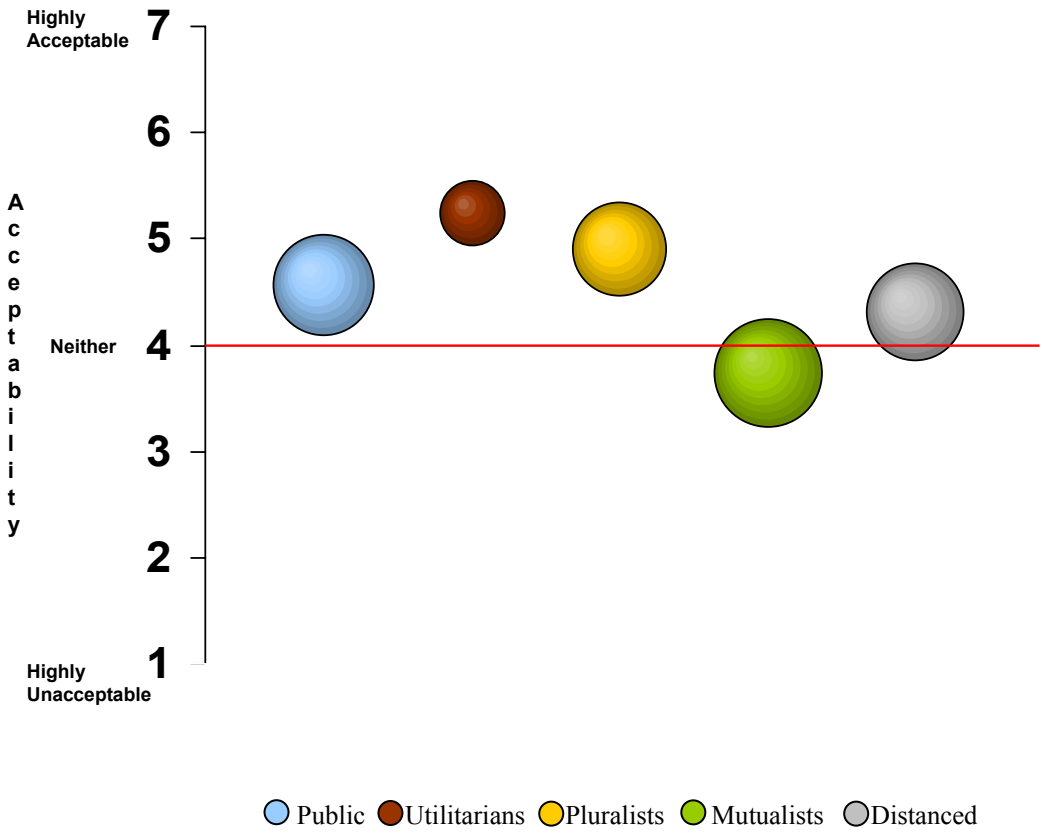


Figure VIII.D.5. Potential for conflict indices for the statement "Use *hunters* to dramatically reduce herds in affected zones to lower the potential for CWD spreading" by wildlife value orientation type.



SECTION IX. CONTRIBUTION OF WILDLIFE TO THE QUALITY OF LIFE IN COLORADO

This section examines the public's perceptions of quality of life in Colorado relative to other places and allows for a determination of how wildlife contributes to these perceptions. The quality of life issue was explored on the state-specific portion of the Colorado survey. Respondents were asked to rate certain "quality of life factors" which included, for example, quality of education opportunities and quality of natural resource- and wildlife-related features such as opportunities to hunt and fish.

In addition, this section compares current ratings of quality of life factors to those provided in a 1993 study entitled *Coloradans' Recreational Uses of and Attitudes toward Wildlife* – research conducted by Colorado State University in cooperation with the CDOW. For more information on the earlier study, including methods and item development, see Fulton, Manfredo, and Sikorowski (1993). Supporting tables for the items discussed in this section are located in Appendix A (Tables A-147 to A-172).

A. CURRENT PERCEPTIONS OF QUALITY OF LIFE IN COLORADO

Respondents were asked to rate life in Colorado overall in addition to 11 "quality of life factors" on a 5-point scale ranging from "much worse" to "much better" compared to other places they would consider living. The survey item containing each of the statements respondents were asked to rate is provided below.

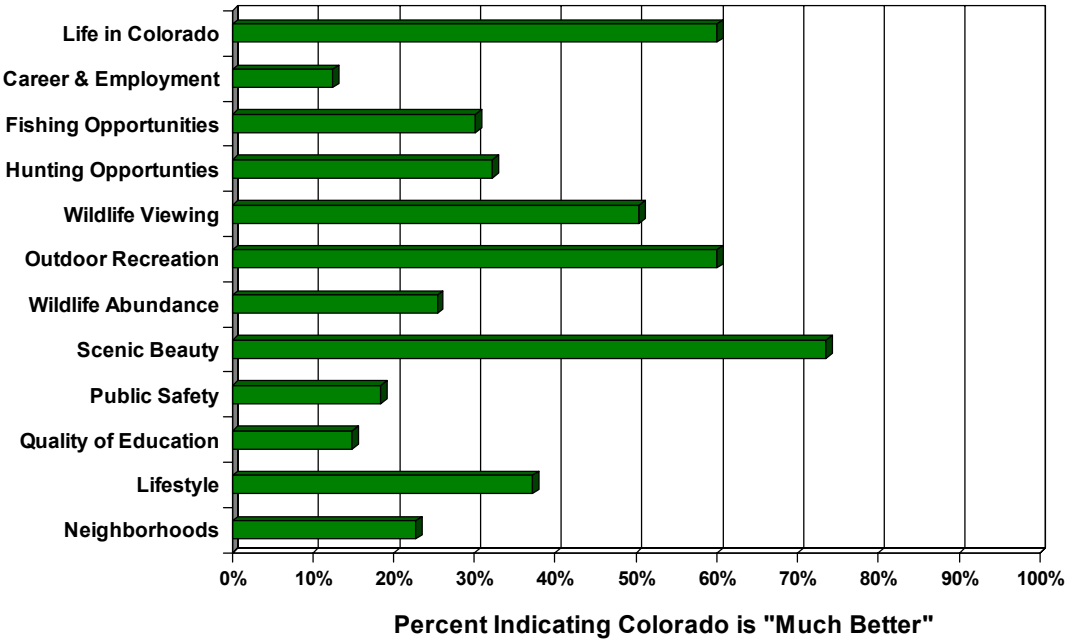
1. We are interested in learning how you feel about living in Colorado. Compared to other places where you might live, how would you rate... (*Please circle one number for each statement*).

	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
…life in Colorado?	1	2	3	4	5
…the career and employment opportunities in Colorado?	1	2	3	4	5
…the opportunities to go fishing in Colorado?	1	2	3	4	5
…the opportunities to go hunting in Colorado?	1	2	3	4	5
…the opportunities to view wildlife in Colorado?	1	2	3	4	5
…the opportunities for outdoor recreation, other than fishing, hunting or wildlife viewing in Colorado?	1	2	3	4	5
…the abundance of fish and wildlife in Colorado?	1	2	3	4	5
…the scenic beauty of Colorado?	1	2	3	4	5
…the level of public safety in Colorado?	1	2	3	4	5
…the quality of education in Colorado?	1	2	3	4	5
…the lifestyle in Colorado?	1	2	3	4	5
…the quality of the neighborhoods in Colorado?	1	2	3	4	5

Summary of results. Figure IX.A.1 shows that approximately 60% of respondents felt that *life in Colorado* was much better compared to other places they might live. The factor that received the highest rating in this context was *scenic beauty* (74%), followed by the *opportunities for outdoor recreation, other than wildlife-related activities* (60%). Wildlife-related factors also achieved high ratings compared to many of the other Colorado-specific features. For example, about 50% of respondents felt that *opportunities to view wildlife* in the state were much better

than in other places they might live, while only 13% felt this way about *career and employment opportunities* and 15% assigned this rating to the *quality of education* in the state.

Figure IX.A.1. Percent of respondents rating each quality of life factor as "much better" in Colorado compared to other places they might live.



Results by wildlife value orientation type. Over 50% of all value orientation types felt that *life in Colorado* was "much better" compared to other places they might live (Figures IX.A.2 to IX.A.3). Mutualists were only slightly less likely than the other types to express this sentiment. Mutualists were also less likely than other groups to think that *career and employment opportunities* and certain wildlife-related features (i.e., *opportunities for hunting and fishing* and *the abundance of fish and wildlife*) in Colorado were much better than those in other places. Compared to the three other value orientation types, greater percentages of Pluralists assigned a high rating to the wildlife-related quality of life factors in addition to the *level of public safety* in the state. While over 60% of all groups felt that the *scenic beauty* of Colorado was much better relative to other places, Utilitarians were most likely to express this view, and Distanced individuals were least likely.

Figure IX.A.2. Percent of wildlife value orientation type rating each *non natural resource-related* quality of life factor as "much better" in Colorado compared to other places they might live.

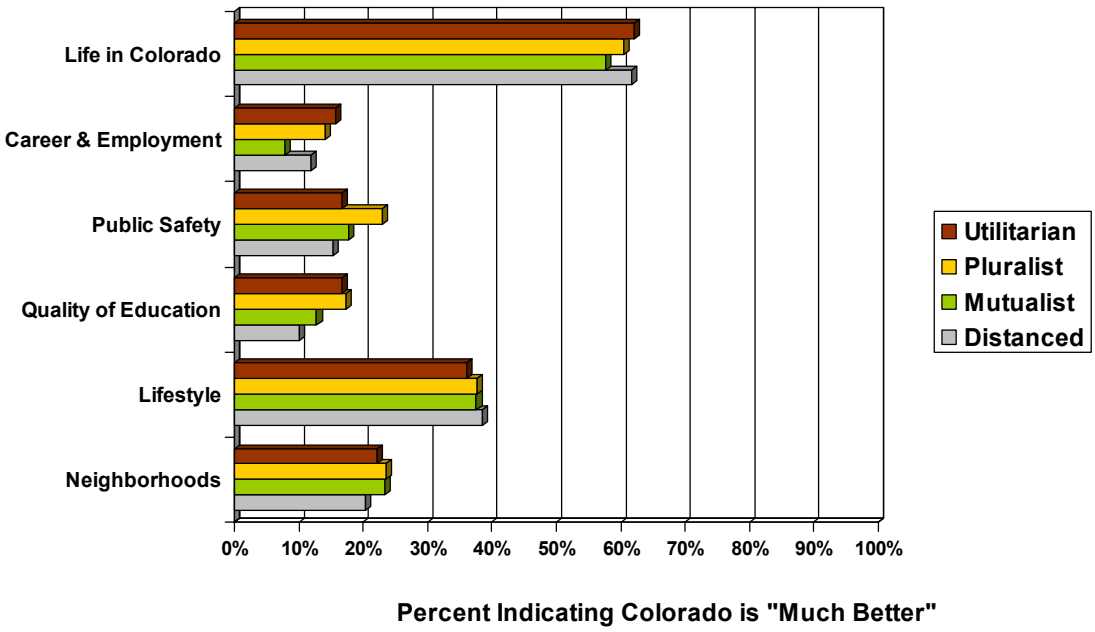
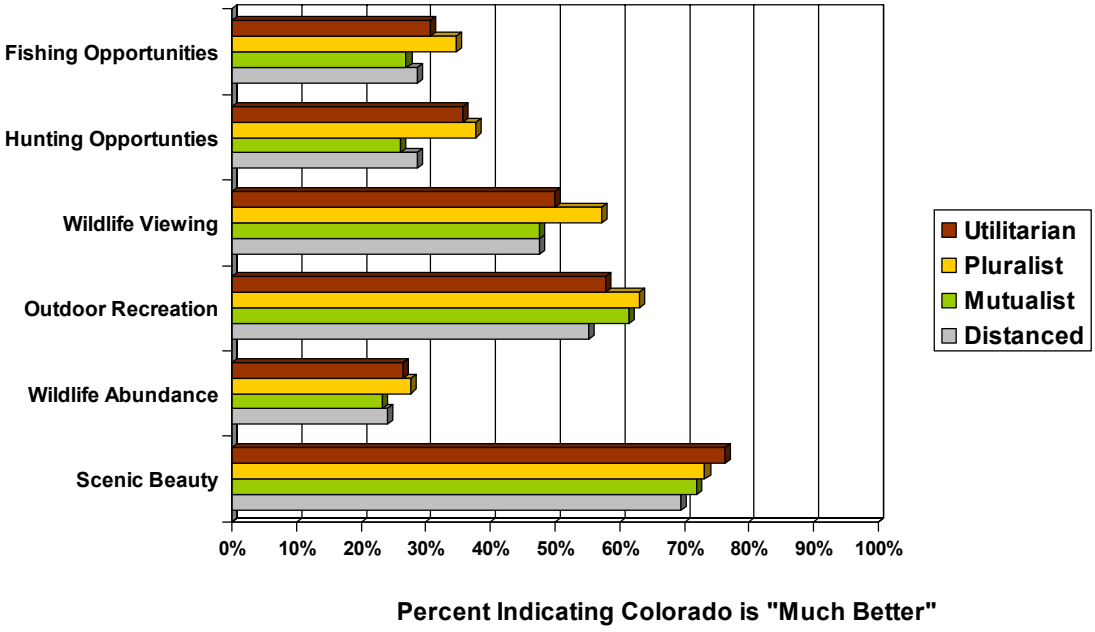
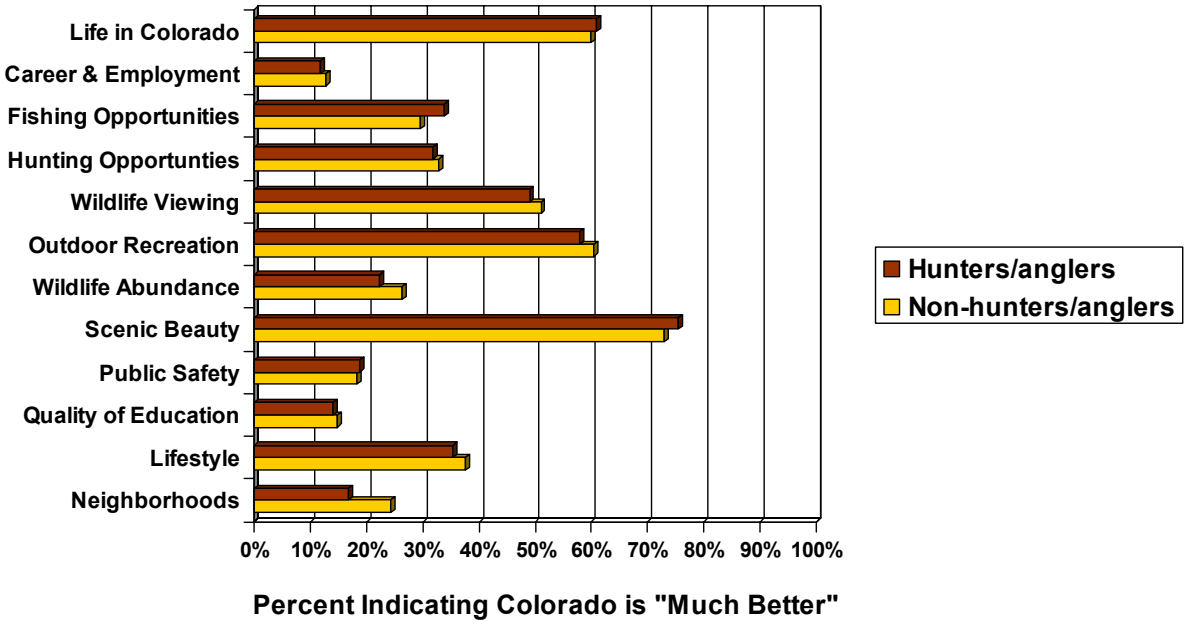


Figure IX.A.3. Percent of wildlife value orientation type rating each *natural resource-related* quality of life factor as "much better" in Colorado compared to other places they might live.



Results by participation in hunting and fishing. Few differences in quality of life ratings existed between hunters/anglers and non-hunters/anglers (Figure IX.A.4). Close to 60% of both groups felt that *life in Colorado* was much better than in other places they might live. Hunters/anglers were slightly more likely than their counterparts to assign this rating to *fishing opportunities* in the state. Non-hunters/anglers on the other hand were slightly more likely than hunters/anglers to assign a high rating to the *quality of the neighborhoods* in the state.

Figure IX.A.4. Percent of hunters/anglers and non-hunters/anglers rating each quality of life factor as "much better" in Colorado compared to other places they might live.

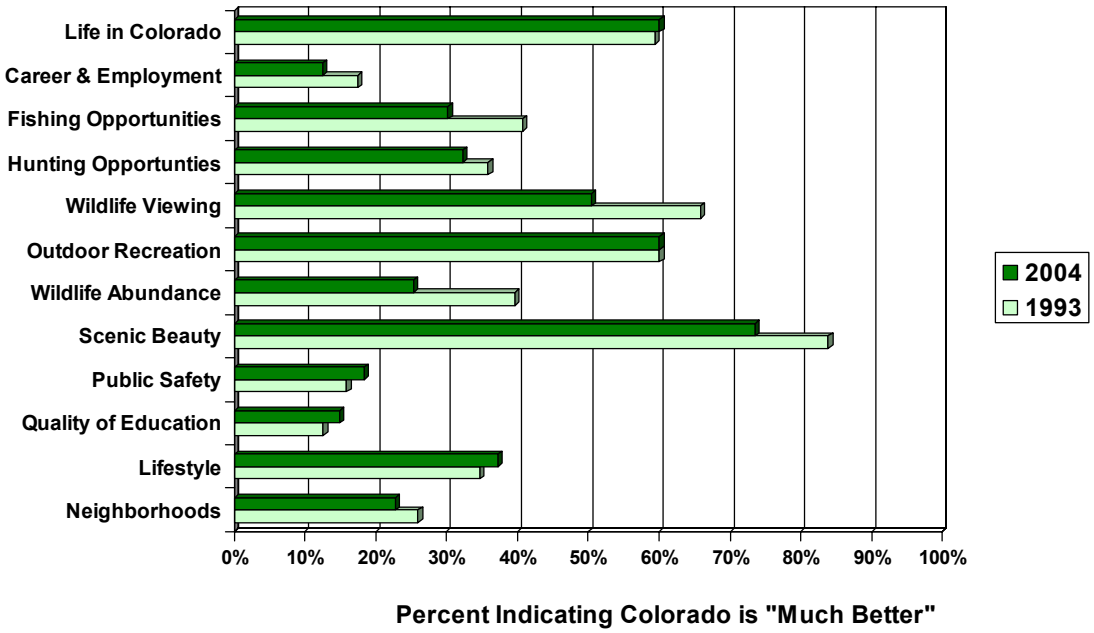


B. COMPARISON OF QUALITY OF LIFE IN COLORADO: 1993 AND 2004

Similar to the approach used in the *Wildlife Values in the West* study, respondents to the 1993 survey were asked to rate a series of quality of life factors on a scale from "much worse" to "much better". It is important to note, however, that an overall difference in survey administration methods exists between the two time periods requiring that results be interpreted with caution. Specifically, the 1993 survey was conducted by telephone (see Fulton et al., 1993 for more details), while the current study utilized a mail survey approach. A few other differences are also worth noting with respect to the actual survey items. Instead of 11 items, 1993 respondents rated 12 features of Colorado in the context of other places they might live. The item, "the type of people who live in Colorado" was not included in the 2004 survey. In addition, the 2004 survey, unlike the 1993 approach, did not include a "no opinion/do not participate" response option for the items associated with recreation opportunities (i.e., fishing, hunting, wildlife viewing, and outdoor recreation excluding wildlife-related activities). Therefore, direct comparisons on these items are somewhat limited and should be interpreted with caution.

Summary of results. Figure IX.B.1 shows that the same percentage (60%) of respondents in both years felt that *life in Colorado* was much better compared to other places they might live. However, differences were noted across years for ratings of certain quality of life factors. Several of them received less favorability in 2004. The largest declines were evident for *opportunities to view wildlife*, *fish and wildlife abundance*, *fishing opportunities*, and *scenic beauty*.

Figure IX.B.1. Percent of respondents in 1993 and 2004 rating each quality of life factor as "much better" in Colorado compared to other places they might live.



SECTION X. IMPORTANCE OF COMPETING USES FOR WATER, INCLUDING WILDLIFE, IN COLORADO

This section examines the public's perceptions of the importance of competing uses for water in Colorado. Among these are specific wildlife-related uses, including threatened and endangered fish populations, water-dependent invertebrates, and healthy fish populations managed to provide fishing opportunities. This issue was examined on the state-specific portion of the Colorado survey. Supporting tables for the items discussed in this section are located in Appendix A (Tables A-173 to A-192).

Respondents were asked to rate on a 1 to 5 scale the importance of six competing uses for the water in Colorado's rivers and lakes. They were then asked to prioritize these uses by selecting the "top three" most important ones to be considered when deciding how water should be distributed. The survey items used to address this issue are provided below.

7. There are many competing uses for the water in Colorado's rivers and lakes that must be considered when deciding how the water should be distributed. We are interested in how important you find the following water uses. *Circle one number for each statement.*

When making water distribution decisions, it is important to consider …	Not at All Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
A. …local irrigation (water for agricultural crops).	1	2	3	4	5
B. …local municipalities (water to cities for people to use).	1	2	3	4	5
C. …local industries (water for use in factories, power plants, manufacturing).	1	2	3	4	5
D. …threatened and endangered fish populations (for example, humpback chub).	1	2	3	4	5
E. …healthy populations of water-dependent invertebrates (for example, mussels, crayfish).	1	2	3	4	5
F. …healthy populations of fish for fishing recreation (for example, walleyes).	1	2	3	4	5

8. What do you consider to be the most important uses of Colorado's water identified in #7 above? Write one letter, A – F, for each:

_____ **1st most important use of Colorado's water**

_____ **2nd most important use of Colorado's water**

_____ **3rd most important use of Colorado's water**

Summary of results. Results from the initial rating exercise in which respondents were asked to rate each water use on a 1 to 5 importance scale showed that all uses were viewed as "extremely important" by over 10% of respondents (Figure X.A.1). Uses with the highest percentages of respondents assigning this rating were *local irrigation* (39%) and *local municipalities* (38%). The wildlife-related use with the greatest amount of support in this context was *threatened and endangered fish populations* (19%) which was viewed as "extremely important" by a higher percentage of people compared to the remaining human use, *local industries* (15%). Overall, the water use with the lowest percentage of respondents assigning a rating of "extremely important" was *healthy populations for fishing recreation* (13%). Results of the follow-up prioritization task in which respondents were asked to select their top three activities revealed a similar pattern (Figure X.A.2). *Local municipalities* (40%) and *local irrigation* (38%) were selected most frequently as the number one use of Colorado's water, followed by *threatened and endangered fish populations* (15%).

Figure X.A.1. Percent of respondents rating each use of water in Colorado as “extremely important”.

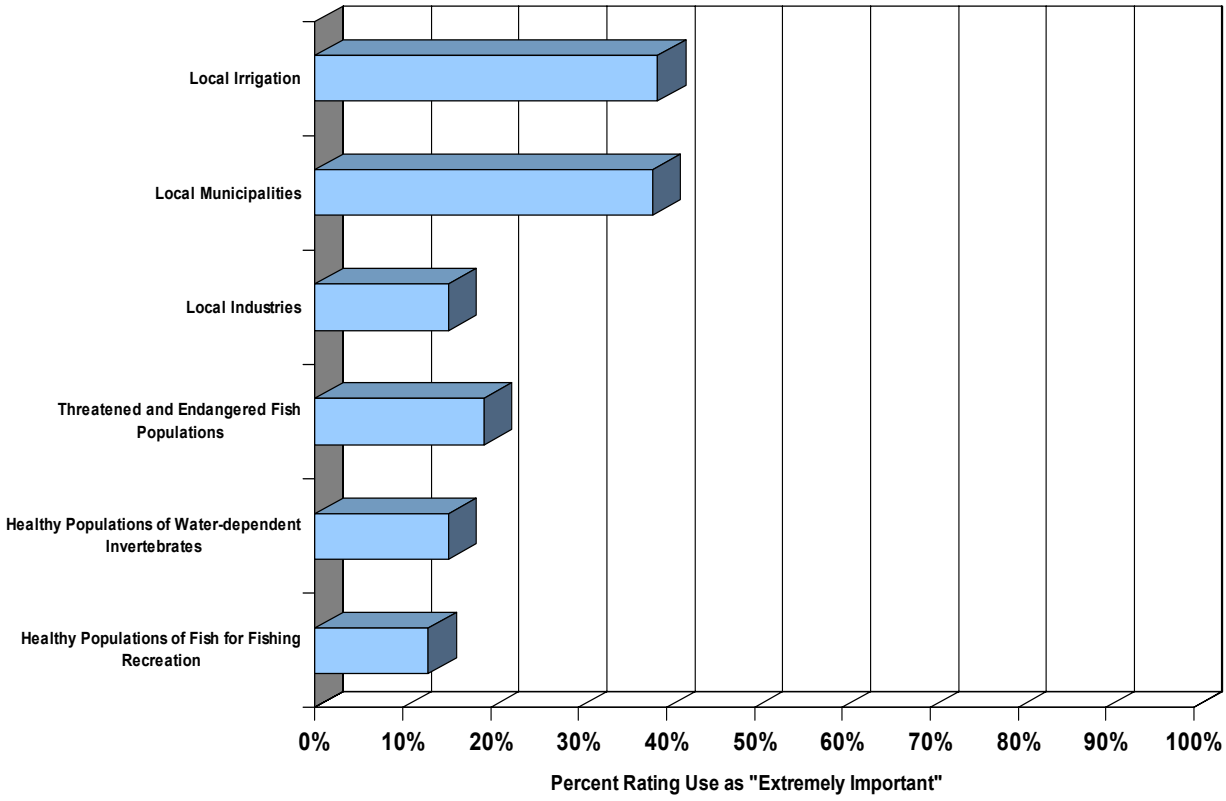
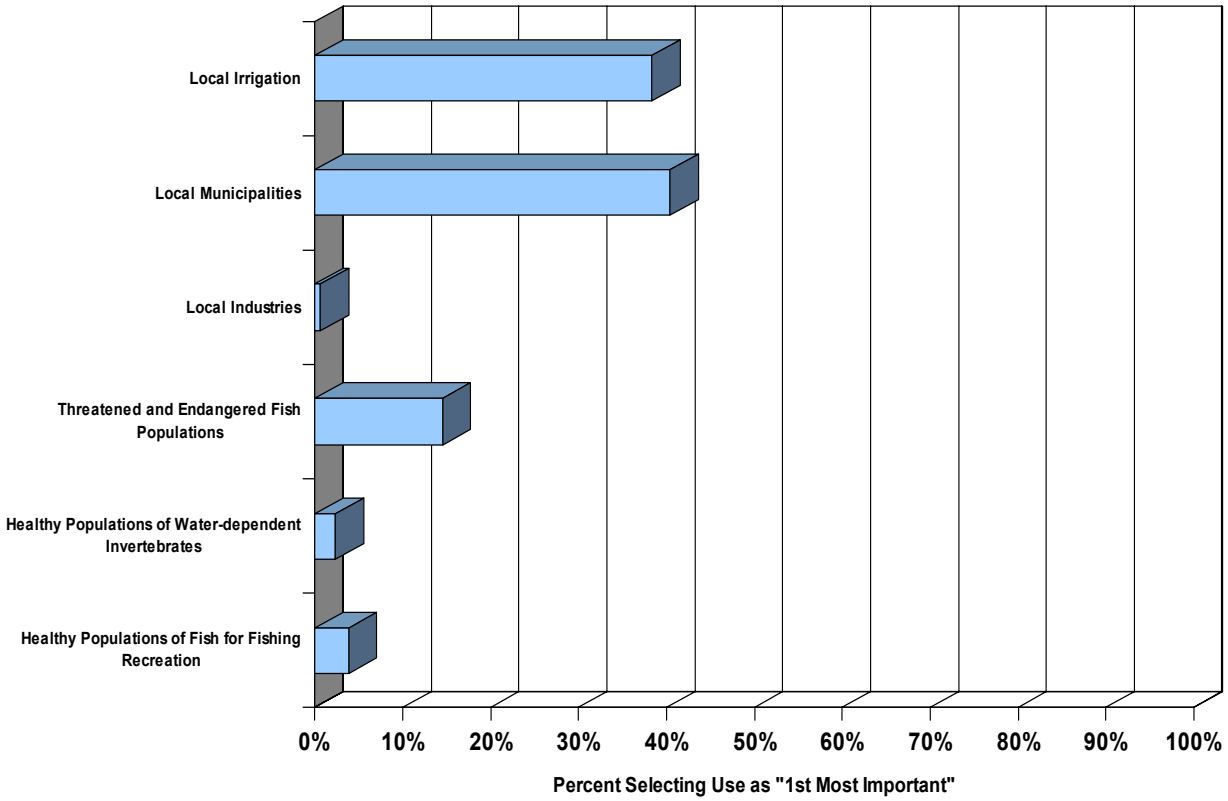
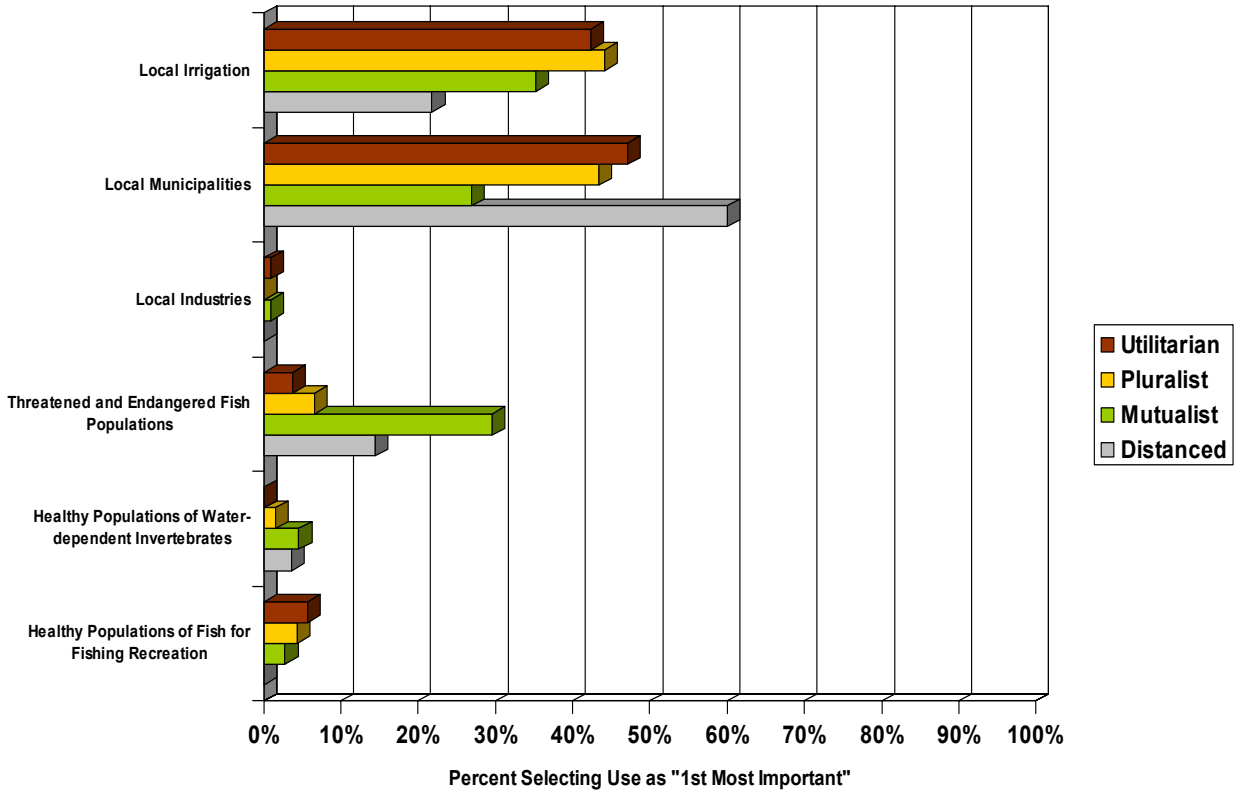


Figure X.A.2. Percent of respondents selecting each water use as the "1st most important use of Colorado's water".



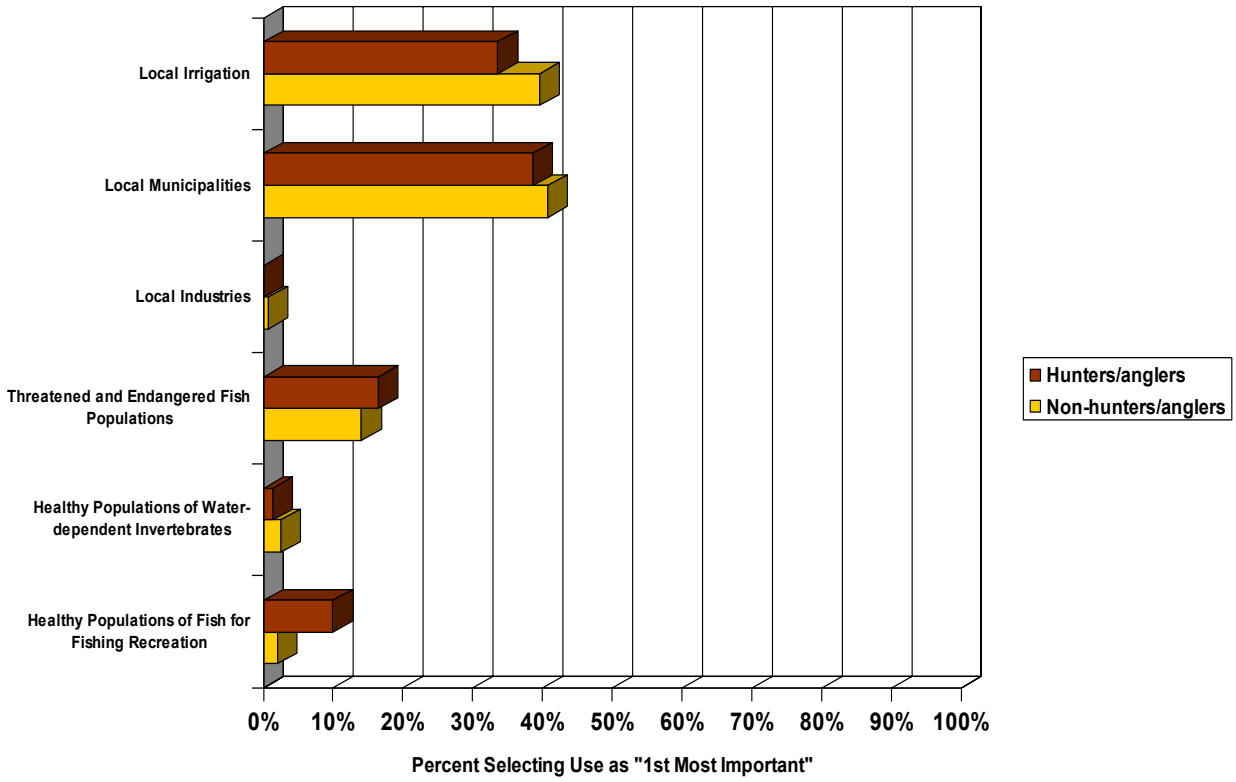
Results by wildlife value orientation type. As shown in Figure X.A.3, the value orientation types differed somewhat in their perceptions of what should be the most important uses of Colorado's water. While over 20% of respondents in all groups felt that *local municipalities* were the single most important water use, Distanced individuals were most likely to place emphasis on this category. Utilitarians and Pluralists were slightly more likely than the other types to prefer *local municipalities*, while Mutualists stood out with respect to their higher levels of support for *threatened and endangered fish populations*.

Figure X.A.3. Percent of wildlife value orientation type selecting each water use as the "1st most important use of Colorado's water".



Results by participation in hunting and fishing. Only slight differences were noted between hunters/anglers and non-hunters/anglers in their perceptions of the most important uses of Colorado's water (Figure X.A.4). Hunters/anglers were slightly more likely than their counterparts to indicate preference for *healthy populations of fish for fishing recreation*, while slightly higher percentages of non-hunters/anglers expressed support for *local irrigation*.

Figure X.A.4. Percent of hunters/anglers and non-hunters/anglers selecting each water use as the "1st most important use of Colorado's water".



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APPENDIX A. SUPPORTING TABLES

Table A-1. Percent scoring "high"[1] on mutualism basic wildlife belief dimension compared to utilitarian basic wildlife belief dimension by respondent characteristics.

Respondent characteristics	High on mutualism belief dimension	High on utilitarian belief dimension
Males	45.6	68.8
Females	67.6	42.6
Hunters/anglers	52.1	70.8
Non-hunters/anglers	58.0	51.1

[1]"High" defined by score of > 4.5 on mean composite belief dimension scale.

Table A-2. Percent scoring "high"[1] on attraction basic wildlife belief dimension compared to concern for safety basic wildlife belief dimension by respondent characteristics.

Respondent characteristics	High on attraction belief dimension	High on concern for safety belief dimension
Utilitarian	75.2	9.3
Pluralist	85.5	10.1
Mutualist	85.7	7.4
Distanced	69.5	6.8
Males	87.1	5.1
Females	74.0	12.2
Hunters/anglers	89.4	4.9
Non-hunters/anglers	78.2	9.6

[1]"High" defined by score of > 4.5 on mean composite belief dimension scale.

Table A-3. Percent of wildlife value orientation type indicating each approach as that which "best resembles *how things are now*" in the state.

Value type	Approach 1	Approach 2	Approach 3	Approach 4
Utilitarian	9.6	18.2	23.7	48.5
Pluralist	11.5	20.0	26.9	41.5
Mutualist	16.5	32.5	14.0	37.0
Distanced	9.3	29.6	13.0	48.1

Table A-4. Percent of wildlife value orientation type indicating each approach as that which "best represents *how things should be*" in the state.

Value type	Approach 1	Approach 2	Approach 3	Approach 4
Utilitarian	9.3	10.7	22.0	58.0
Pluralist	4.5	8.3	14.4	72.7
Mutualist	0.0	3.9	14.0	82.1
Distanced	10.9	3.6	18.2	67.3

Table A-5. Percent of wildlife value orientation type selecting same approach for *how things are now* and for *how things should be* in the state.

Value type	Selecting Same Approach
Utilitarian	62.8
Pluralist	51.1
Mutualist	38.7
Distanced	41.5

Table A-6. Percent of hunters/anglers and non-hunters/anglers indicating each approach as that which "best resembles *how things are now*" in the state.

Participation	Approach 1	Approach 2	Approach 3	Approach 4
Hunters/anglers	15.9	20.3	27.5	36.2
Non-hunters/anglers	11.3	25.7	18.3	44.7

Table A-7. Percent of hunters/anglers and non-hunters/anglers indicating each approach as that which "best represents *how things should be*" in the state.

Participation	Approach 1	Approach 2	Approach 3	Approach 4
Hunters/anglers	8.0	11.7	10.2	70.1
Non-hunters/anglers	4.4	5.7	19.5	70.4

Table A-8. Percent of hunters/anglers and non-hunters/anglers selecting same approach for *how things are now* and for *how things should be* in the state.

Participation	Selecting Same Approach
Hunters/anglers	45.3
Non-hunters/anglers	51.4

Table A-9. Percent of respondents agreeing with the public involvement statements.

Involvement statement[1]	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
My opinions are heard	10.7	10.7	9.6	42.2	16.6	9.0	1.1
My interests are adequately taken into account	8.1	9.6	11.7	37.4	20.7	10.7	1.8
If I provide input, it will make a difference	9.3	10.1	15.5	22.6	28.8	10.3	3.4
My agency makes a good effort to obtain input	7.6	9.1	12.8	27.5	24.2	15.6	3.1
I don't have an interest in providing input	26.3	16.6	21.1	12.2	13.0	7.1	3.7
I trust agency to make good decisions without my input	10.4	12.2	16.1	15.4	23.4	15.3	7.3

[1]Shortened versions of the statements are provided in each row of the table. The complete statements are below:
1. "I feel that *my opinions are heard* by fish and wildlife decision-makers in my state."
2. "I feel that *my interests are adequately taken into account* by fish and wildlife decision makers in my state."
3. "I feel that *if I provide input, it will make a difference* in fish and wildlife decisions in my state."
4. "I feel that my state fish and wildlife agency makes a good effort to obtain *input from the public as a whole*."
5. "*I don't have an interest* in providing input to fish and wildlife decisions in my state."
6. "I trust my state fish and wildlife agency to *make good decisions without my input*."

Table A-10. Percent of wildlife value orientation type agreeing with the statement "I feel that my opinions are heard by fish and wildlife decision-makers in my state."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	8.5	9.0	5.7	46.7	20.8	7.1	2.4
Pluralist	6.8	10.5	10.5	33.8	21.8	16.5	0.0
Mutualist	16.1	12.8	12.3	40.3	11.4	6.6	0.5
Distanced	10.5	8.8	14.0	50.9	8.8	7.0	0.0

Table A-11. Percent of wildlife value orientation type agreeing with the statement "I feel that my interests are adequately taken into account by fish and wildlife decision-makers in my state."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	4.3	7.1	8.1	43.1	20.9	13.7	2.8
Pluralist	3.7	9.0	10.4	35.8	26.1	11.9	3.0
Mutualist	13.7	13.7	17.0	32.1	17.0	6.1	0.5
Distanced	10.3	5.2	8.6	39.7	22.4	13.8	0.0

Table A-12. Percent of wildlife value orientation type agreeing with the statement "I feel that if I provide input, it will make a difference in fish and wildlife decisions in my state."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	6.2	7.6	18.5	20.9	33.2	10.4	3.3
Pluralist	7.4	12.6	9.6	20.0	27.4	15.6	7.4
Mutualist	14.8	11.4	16.2	23.3	24.3	8.6	1.4
Distanced	5.4	7.1	16.1	32.1	33.9	5.4	0.0

Table A-13. Percent of wildlife value orientation type agreeing with the statement "I feel that my state fish and wildlife agency makes a good effort to obtain input from the public as a whole."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	4.7	9.5	11.4	23.7	29.9	18.0	2.8
Pluralist	5.1	10.3	17.6	22.8	16.9	21.3	5.9
Mutualist	12.3	8.5	12.3	31.8	21.8	10.9	2.4
Distanced	7.0	7.0	8.8	38.6	29.8	8.8	0.0

Table A-14. Percent of wildlife value orientation type agreeing with the statement "I don't have an interest in providing input to fish and wildlife decisions in my state."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	16.0	14.6	23.1	12.3	15.6	11.3	7.1
Pluralist	36.0	17.6	15.4	8.8	14.0	6.6	1.5
Mutualist	34.4	20.3	20.8	12.7	7.1	2.8	1.9
Distanced	10.5	8.8	28.1	17.5	21.1	8.8	5.3

Table A-15. Percent of wildlife value orientation type agreeing with the statement "I trust my state fish and wildlife agency to make good decisions without my input."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	5.7	9.0	13.7	15.6	26.4	19.8	9.9
Pluralist	8.1	11.8	19.1	11.0	23.5	16.9	9.6
Mutualist	17.5	15.2	17.5	18.0	18.5	10.0	3.3
Distanced	6.8	13.6	11.9	16.9	28.8	13.6	8.5

Table A-16. PCI means and values for the statement "I feel that my opinions are heard by fish and wildlife decision-makers in my state" by wildlife value orientation type.

Value type	Mean	PCI value
Public	3.74	0.25
Utilitarian	3.94	0.28
Pluralist	4.03	0.35
Mutualist	3.40	0.17
Distanced	3.61	0.15

Table A-17. PCI means and values for the statement "I feel that my interests are adequately taken into account by fish and wildlife decision makers in my state" by wildlife value orientation type.

Value type	Mean	PCI value
Public	3.92	0.32
Utilitarian	4.21	0.23
Pluralist	4.17	0.26
Mutualist	3.45	0.20
Distanced	4.02	0.33

Table A-18. PCI means and values for the statement "I feel that if I provide input, it will make a difference in fish and wildlife decisions in my state" by wildlife value orientation type.

Value type	Mean	PCI value
Public	3.95	0.40
Utilitarian	4.12	0.35
Pluralist	4.24	0.38
Mutualist	3.62	0.30
Distanced	4.01	0.30

Table A-19. PCI means and values for the statement "I feel that my state fish and wildlife agency makes a good effort to obtain input from the public as a whole" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.11	0.36
Utilitarian	4.30	0.30
Pluralist	4.25	0.36
Mutualist	3.84	0.34
Distanced	4.07	0.29

Table A-20. PCI means and values for the statement "I don't have an interest in providing input to fish and wildlife decisions in my state" by wildlife value orientation type.

Value type	Mean	PCI value
Public	3.06	0.26
Utilitarian	3.60	0.40
Pluralist	2.73	0.21
Mutualist	2.53	0.12
Distanced	3.79	0.36

Table A-21. PCI means and values for the statement "I trust my state fish and wildlife agency to make good decisions without my input" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.04	0.44
Utilitarian	4.47	0.32
Pluralist	4.19	0.45
Mutualist	3.45	0.32
Distanced	4.22	0.40

Table A-22. Percent of hunters/anglers and non-hunters/anglers agreeing with the statement "I feel that my opinions are heard by fish and wildlife decision-makers in my state."

Participation	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	13.6	12.1	13.6	27.1	22.1	9.3	2.1
Non-Hunters/anglers	10.0	10.5	8.3	46.6	15.0	9.0	0.6

Table A-23. Percent of hunters/anglers and non-hunters/anglers agreeing with the statement "I feel that my interests are adequately taken into account by fish and wildlife decision-makers in my state."

Participation	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	11.6	11.6	15.9	23.2	23.9	10.9	2.9
Non-Hunters/anglers	7.0	9.2	10.7	41.2	19.8	10.7	1.5

Table A-24. Percent of hunters/anglers and non-hunters/anglers agreeing with the statement "I feel that if I provide input, it will make a difference in fish and wildlife decisions in my state."

Participation	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	10.1	15.8	15.8	10.8	32.4	12.2	2.9
Non-Hunters/anglers	9.2	8.6	15.6	25.7	28.1	9.4	3.4

Table A-25. Percent of hunters/anglers and non-hunters/anglers agreeing with the statement "I feel that my state fish and wildlife agency makes a good effort to obtain input from the public as a whole."

Participation	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	7.1	9.3	17.9	19.3	24.3	18.6	3.6
Non-Hunters/anglers	7.9	9.2	11.5	29.9	24.1	14.5	3.0

Table A-26. Percent of hunters/anglers and non-hunters/anglers agreeing with the statement "I don't have an interest in providing input to fish and wildlife decisions in my state."

Participation	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	39.6	21.6	22.3	6.5	4.3	5.0	0.7
Non-Hunters/anglers	22.8	15.1	20.6	13.8	15.5	7.9	4.3

Table A-27. Percent of hunters/anglers and non-hunters/anglers agreeing with the statement "I trust my state fish and wildlife agency to make good decisions without my input."

Participation	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	14.9	15.6	19.1	7.8	24.1	16.3	2.1
Non-Hunters/anglers	9.2	11.3	15.1	17.5	23.2	14.7	9.0

Table A-28. PCI means and values for the statement "I feel that my opinions are heard by fish and wildlife decision-makers in my state" by participation in hunting and fishing.

Participation	Mean	PCI value
Hunters/anglers	3.67	0.31
Non-hunters/anglers	3.76	0.23

Table A-29. PCI means and values for the statement "I feel that my interests are adequately taken into account by fish and wildlife decision makers in my state" by participation in hunting and fishing.

Participation	Mean	PCI value
Hunters/anglers	3.80	0.36
Non-hunters/anglers	3.95	0.30

Table A-30. PCI means and values for the statement "I feel that if I provide input, it will make a difference in fish and wildlife decisions in my state" by participation in hunting and fishing.

Participation	Mean	PCI value
Hunters/anglers	3.89	0.44
Non-hunters/anglers	3.97	0.38

Table A-31. PCI means and values for the statement "I feel that my state fish and wildlife agency makes a good effort to obtain input from the public as a whole" by participation in hunting and fishing.

Participation	Mean	PCI value
Hunters/anglers	4.15	0.39
Non-hunters/anglers	4.09	0.36

Table A-32. PCI means and values for the statement "I don't have an interest in providing input to fish and wildlife decisions in my state" by participation in hunting and fishing.

Participation	Mean	PCI value
Hunters/anglers	2.34	0.11
Non-hunters/anglers	3.25	0.29

Table A-33. PCI means and values for the statement "I trust my state fish and wildlife agency to make good decisions without my input" by participation in hunting and fishing.

Participation	Mean	PCI value
Hunters/anglers	3.69	0.42
Non-hunters/anglers	4.14	0.43

Table A-34. Percent of respondents that trust their government to do what is right.

Type	Almost never	Only some of the time	Most of the time	Almost always
Federal government	11.6	49.4	33.5	5.6
State government	6.4	44.8	44.0	4.8
Colorado Division of Wildlife	2.2	26.5	61.7	9.6

Table A-35. Percent of wildlife value orientation type that trusts their federal government to do what is right for the country.

Value type	Almost never	Only some of the time	Most of the time	Almost always
Utilitarian	4.7	43.3	43.3	8.8
Pluralist	10.2	46.7	37.2	5.8
Mutualist	20.2	59.2	18.3	2.3
Distanced	6.8	42.4	45.8	5.1

Table A-36. Percent of wildlife value orientation type that trusts their state government to do what is right for Colorado.

Value type	Almost never	Only some of the time	Most of the time	Almost always
Utilitarian	2.8	37.9	50.9	8.4
Pluralist	7.4	47.1	42.6	2.9
Mutualist	9.3	53.7	34.7	2.3
Distanced	3.4	34.5	58.6	3.4

Table A-37. Percent of wildlife value orientation type that trusts the Colorado Division of Wildlife to do what is right for fish and wildlife management.

Value type	Almost never	Only some of the time	Most of the time	Almost always
Utilitarian	1.4	18.2	68.2	12.1
Pluralist	0.7	27.9	62.5	8.8
Mutualist	4.2	35.3	52.1	8.4
Distanced	0.0	20.7	70.7	8.6

Table A-38. Percent of hunters/anglers and non-hunters/anglers that trusts their federal government to do what is right for the country.

Participation	Almost never	Only some of the time	Most of the time	Almost always
Hunters/anglers	13.4	45.8	34.5	6.3
Non-Hunters/anglers	11.0	50.4	33.2	5.4

Table A-39. Percent of hunters/anglers and non-hunters/anglers that trusts their state government to do what is right for Colorado.

Participation	Almost never	Only some of the time	Most of the time	Almost always
Hunters/anglers	5.6	48.6	42.3	3.5
Non-Hunters/anglers	6.5	43.8	44.7	5.0

Table A-40. Percent of hunters/anglers and non-hunters/anglers that trusts the Colorado Division of Wildlife to do what is right for fish and wildlife management.

Participation	Almost never	Only some of the time	Most of the time	Almost always
Hunters/anglers	2.1	26.8	62.0	9.2
Non-Hunters/anglers	2.3	26.7	61.2	9.8

Table A-41. Percent of respondents rating the overall performance of the CDOW.

Rating	Percent of respondents
Poor	0.8
Fair	18.8
Good	69.7
Excellent	10.7

Table A-42. Percent of wildlife value orientation type rating the overall performance of the CDOW.

Value type	Poor	Fair	Good	Excellent
Utilitarian	1.0	16.6	68.8	13.7
Pluralist	0.8	11.4	76.5	11.4
Mutualist	0.9	26.3	64.3	8.5
Distanced	0.0	14.3	78.6	7.1

Table A-43. Percent of hunters/anglers and non-hunters/anglers rating the overall performance of the CDOW.

Participation	Poor	Fair	Good	Excellent
Hunters/anglers	1.4	20.7	65.7	12.1
Non-hunters/anglers	0.6	18.4	71.3	9.7

Table A-44. Percent of respondents indicating the importance of each activity.

Activity	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Researching and eliminating, where possible, diseases in wildlife.	2.4	2.0	1.8	2.0	17.0	29.3	45.5
Managing mule deer populations to reach goals for population size and ratios of males to females.	2.0	3.4	7.6	11.2	36.3	28.3	11.2
Protecting high priority habitats to support many different types of fish and wildlife populations.	1.5	1.4	2.0	2.6	14.2	32.5	45.9
Providing responsive customer service.	1.1	3.0	6.9	17.0	31.6	25.9	14.5
Providing enough fish to allow for good fishing opportunities.	3.0	5.4	9.3	11.3	28.9	25.3	16.9
Protecting fish and their habitats from the whirling disease parasite.	2.0	0.9	1.4	3.4	18.4	30.9	43.1
Expanding partnerships with private landowners to protect fish and wildlife on private lands.	2.7	3.2	3.4	8.4	22.0	33.3	27.1
Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered.	1.7	0.4	1.2	2.3	13.8	32.3	48.3
Implementing recovery plans for fish and wildlife that are already listed as endangered.	1.8	0.7	2.6	2.9	14.1	29.3	48.7
Increasing the number of Colorado students who learn about fish and wildlife.	1.5	1.5	3.8	8.3	23.5	31.5	29.8

Table A-45. Percent of respondents identifying each activity as one of the three most important activities.

Activity	Identified as one of Top Three	1st most important	2nd most important	3rd most important
Researching and eliminating, where possible, diseases in wildlife.	50.4	26.5	11.8	12.2
Managing mule deer populations to reach goals for population size and ratios of males to females.	6.3	0.9	2.9	2.4
Protecting high priority habitats to support many different types of fish and wildlife populations.	55.6	27.4	11.1	17.3
Providing responsive customer service.	5.5	1.1	1.9	2.5
Providing enough fish to allow for good fishing opportunities.	12.8	5.3	3.7	3.8
Protecting fish and their habitats from the whirling disease parasite.	20.4	3.5	11.2	5.7
Expanding partnerships with private landowners to protect fish and wildlife on private lands.	20.3	2.2	9.1	9.0
Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered.	54.9	13.2	26.6	15.2
Implementing recovery plans for fish and wildlife that are already listed as endangered.	49.2	14.6	16.1	18.9
Increasing the number of Colorado students who learn about fish and wildlife.	23.5	5.2	5.4	13.0

Table A-46. Percent of wildlife value orientation type indicating the importance of "researching and eliminating, where possible, diseases in wildlife."

Value type	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Utilitarian	1.4	2.3	3.2	2.8	17.6	24.1	48.6
Pluralist	2.9	2.2	0.0	1.4	8.0	30.4	55.1
Mutualist	3.2	1.8	0.9	1.8	16.4	34.7	41.1
Distanced	3.4	0.0	3.4	0.0	37.3	27.1	28.8

Table A-47. Percent of wildlife value orientation type indicating the importance of "managing mule deer populations to reach goals for population size and ratios of males to females."

Value type	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Utilitarian	0.9	5.1	3.7	14.9	37.2	26.0	12.1
Pluralist	2.2	3.6	3.6	8.0	32.1	32.8	17.5
Mutualist	3.6	1.8	11.8	9.1	36.8	29.1	7.7
Distanced	0.0	1.7	16.9	13.6	40.7	22.0	5.1

Table A-48. Percent of wildlife value orientation type indicating the importance of "protecting high priority habitats to support many different types of fish and wildlife populations."

Value type	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Utilitarian	0.9	1.4	4.6	5.1	22.1	35.9	30.0
Pluralist	2.2	1.5	0.7	2.2	5.1	37.2	51.1
Mutualist	1.8	0.9	0.5	0.0	8.7	27.1	61.0
Distanced	0.0	3.4	1.7	3.4	27.1	28.8	35.6

Table A-49. Percent of wildlife value orientation type indicating the importance of "providing responsive customer service."

Value type	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Utilitarian	0.9	1.4	6.5	19.1	29.8	26.5	15.8
Pluralist	2.2	1.4	5.1	11.6	32.6	27.5	19.6
Mutualist	0.9	4.5	8.6	19.5	33.0	22.6	10.9
Distanced	0.0	6.7	6.7	13.3	30.0	31.7	11.7

Table A-50. Percent of wildlife value orientation type indicating the importance of "providing enough fish to allow for good fishing opportunities."

Value type	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Utilitarian	0.0	2.8	5.1	11.1	26.9	30.1	24.1
Pluralist	2.9	1.4	2.9	7.2	26.6	32.4	26.6
Mutualist	6.4	9.2	18.3	13.3	30.3	16.5	6.0
Distanced	1.7	10.3	6.9	13.8	34.5	24.1	8.6

Table A-51. Percent of wildlife value orientation type indicating the importance of "protecting fish and their habitats from the whirling disease parasite."

Value type	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Utilitarian	0.9	1.4	2.3	3.2	16.6	34.1	41.5
Pluralist	2.9	0.7	0.0	0.7	10.1	29.0	56.5
Mutualist	2.3	0.9	0.9	4.1	24.8	26.6	40.4
Distanced	3.4	0.0	1.7	6.9	20.7	39.7	27.6

Table A-52. Percent of wildlife value orientation type indicating the importance of "expanding partnerships with private landowners to protect fish and wildlife on private lands."

Value type	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Utilitarian	2.3	3.7	3.3	14.0	27.9	30.2	18.6
Pluralist	5.1	5.1	2.2	4.3	17.4	29.0	37.0
Mutualist	1.8	2.3	1.8	5.5	19.4	35.9	33.2
Distanced	0.0	0.0	10.3	6.9	22.4	46.6	13.8

Table A-53. Percent of wildlife value orientation type indicating the importance of "protecting and enhancing fish and wildlife that are currently at risk of becoming endangered."

Value type	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Utilitarian	1.4	0.5	2.3	4.1	24.0	36.9	30.9
Pluralist	2.2	0.7	0.7	1.4	10.8	29.5	54.7
Mutualist	2.7	0.0	0.0	1.4	4.1	28.5	63.3
Distanced	0.0	0.0	3.4	1.7	20.3	33.9	40.7

Table A-54. Percent of wildlife value orientation type indicating the importance of "implementing recovery plans for fish and wildlife that are already listed as endangered."

Value type	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Utilitarian	1.4	1.9	4.2	4.2	22.4	34.6	31.3
Pluralist	2.2	0.0	2.2	2.2	13.0	31.9	48.6
Mutualist	2.7	0.0	0.5	2.3	5.0	22.3	67.3
Distanced	0.0	0.0	5.2	3.4	19.0	29.3	43.1

Table A-55. Percent of wildlife value orientation type indicating the importance of "increasing the number of Colorado students who learn about fish and wildlife."

Value type	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Utilitarian	1.4	1.9	4.6	13.0	31.0	28.7	19.4
Pluralist	2.9	0.7	2.9	5.1	20.3	31.9	36.2
Mutualist	1.4	1.4	1.8	6.8	17.8	29.7	41.1
Distanced	0.0	1.7	11.9	3.4	22.0	49.2	11.9

Table A-56. Percent of wildlife value orientation type identifying each activity as one of the three most important activities.

Activity	Utilitarian	Pluralist	Mutualist	Distanced
Researching and eliminating, where possible, diseases in wildlife.	55.9	59.6	40.6	47.4
Managing mule deer populations to reach goals for population size and ratios of males to females.	11.3	7.4	1.8	1.8
Protecting high priority habitats to support many different types of fish and wildlife populations.	46.5	56.6	63.0	56.1
Providing responsive customer service.	6.6	5.9	3.2	8.9
Providing enough fish to allow for good fishing opportunities.	25.8	10.3	2.8	8.8
Protecting fish and their habitats from the whirling disease parasite.	32.4	21.5	7.3	22.8
Expanding partnerships with private landowners to protect fish and wildlife on private lands.	20.2	22.8	18.3	21.1
Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered.	43.9	49.3	67.9	59.6
Implementing recovery plans for fish and wildlife that are already listed as endangered.	37.1	40.4	66.5	50.0
Increasing the number of Colorado students who learn about fish and wildlife.	19.2	25.7	26.1	24.6

Table A-57. Percent of wildlife value orientation type identifying each activity as the first most important.

Activity	Utilitarian	Pluralist	Mutualist	Distanced
Researching and eliminating, where possible, diseases in wildlife.	32.4	36.5	15.9	23.2
Managing mule deer populations to reach goals for population size and ratios of males to females.	1.9	0.0	0.5	0.0
Protecting high priority habitats to support many different types of fish and wildlife populations.	21.0	32.8	29.5	26.8
Providing responsive customer service.	1.0	0.7	0.9	3.6
Providing enough fish to allow for good fishing opportunities.	10.5	2.9	2.3	1.8
Protecting fish and their habitats from the whirling disease parasite.	5.7	2.9	1.4	7.1
Expanding partnerships with private landowners to protect fish and wildlife on private lands.	2.9	1.5	2.7	0.0
Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered.	9.5	8.8	19.5	14.3
Implementing recovery plans for fish and wildlife that are already listed as endangered.	11.4	8.0	20.9	17.9
Increasing the number of Colorado students who learn about fish and wildlife.	3.8	5.8	6.4	5.4

Table A-58. Percent of wildlife value orientation type identifying each activity as the second most important.

Activity	Utilitarian	Pluralist	Mutualist	Distanced
Researching and eliminating, where possible, diseases in wildlife.	16.0	11.0	7.8	12.3
Managing mule deer populations to reach goals for population size and ratios of males to females.	5.6	3.7	0.5	0.0
Protecting high priority habitats to support many different types of fish and wildlife populations.	8.0	10.3	12.4	19.3
Providing responsive customer service.	2.3	2.9	1.4	0.0
Providing enough fish to allow for good fishing opportunities.	8.5	2.2	0.5	1.8
Protecting fish and their habitats from the whirling disease parasite.	16.4	14.7	5.1	8.8
Expanding partnerships with private landowners to protect fish and wildlife on private lands.	8.0	11.8	7.4	12.3
Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered.	20.7	24.3	34.1	28.1
Implementing recovery plans for fish and wildlife that are already listed as endangered.	10.8	16.9	22.1	12.3
Increasing the number of Colorado students who learn about fish and wildlife.	3.8	2.2	8.8	5.3

Table A-59. Percent of wildlife value orientation type identifying each activity as the third most important.

Activity	Utilitarian	Pluralist	Mutualist	Distanced
Researching and eliminating, where possible, diseases in wildlife.	7.9	10.9	17.1	12.1
Managing mule deer populations to reach goals for population size and ratios of males to females.	3.7	3.6	0.9	1.7
Protecting high priority habitats to support many different types of fish and wildlife populations.	17.8	13.9	21.3	10.3
Providing responsive customer service.	3.3	2.9	0.9	5.2
Providing enough fish to allow for good fishing opportunities.	7.0	5.1	0.0	5.2
Protecting fish and their habitats from the whirling disease parasite.	10.3	4.4	0.9	8.6
Expanding partnerships with private landowners to protect fish and wildlife on private lands.	9.3	9.5	8.8	8.6
Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered.	14.0	16.8	14.8	15.5
Implementing recovery plans for fish and wildlife that are already listed as endangered.	15.0	15.3	24.1	20.7
Increasing the number of Colorado students who learn about fish and wildlife.	11.7	17.5	11.1	12.1

Table A-60. Percent of hunters/anglers and non-hunters/anglers indicating the importance of "researching and eliminating, where possible, diseases in wildlife."

Participation	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Hunters/anglers	4.2	2.1	2.1	2.1	14.8	30.3	44.4
Non-Hunters/anglers	1.8	1.8	1.8	1.8	17.9	29.0	45.8

Table A-61. Percent of hunters/anglers and non-hunters/anglers indicating the importance of "managing mule deer populations to reach goals for population size and ratios of males to females."

Participation	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Hunters/anglers	2.1	5.0	3.5	9.9	35.5	31.2	12.8
Non-Hunters/anglers	1.9	3.1	8.9	11.8	36.3	27.4	10.7

Table A-62. Percent of hunters/anglers and non-hunters/anglers indicating the importance of "protecting high priority habitats to support many different types of fish and wildlife populations."

Participation	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Hunters/anglers	3.5	2.1	0.7	1.4	11.3	30.3	50.7
Non-Hunters/anglers	1.0	1.0	2.3	2.9	15.0	32.9	44.9

Table A-63. Percent of hunters/anglers and non-hunters/anglers indicating the importance of "providing responsive customer service."

Participation	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Hunters/anglers	2.1	1.4	6.4	11.3	33.3	27.0	18.4
Non-Hunters/anglers	0.8	3.3	7.0	18.7	31.3	25.3	13.6

Table A-64. Percent of hunters/anglers and non-hunters/anglers indicating the importance of "providing enough fish to allow for good fishing opportunities."

Participation	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Hunters/anglers	2.1	4.3	2.1	9.9	24.1	30.5	27.0
Non-Hunters/anglers	3.3	5.9	11.5	11.7	29.9	23.8	13.9

Table A-65. Percent of hunters/anglers and non-hunters/anglers indicating the importance of "protecting fish and their habitats from the whirling disease parasite."

Participation	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Hunters/anglers	4.2	2.1	0.0	2.8	10.5	29.4	51.0
Non-Hunters/anglers	1.4	0.6	1.8	3.7	20.5	31.0	40.9

Table A-66. Percent of hunters/anglers and non-hunters/anglers indicating the importance of "expanding partnerships with private landowners to protect fish and wildlife on private lands."

Participation	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Hunters/anglers	5.6	4.2	7.0	7.0	22.4	28.0	25.9
Non-Hunters/anglers	2.1	2.9	2.3	8.8	21.8	34.7	27.5

Table A-67. Percent of hunters/anglers and non-hunters/anglers indicating the importance of "protecting and enhancing fish and wildlife that are currently at risk of becoming endangered."

Participation	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Hunters/anglers	2.8	1.4	2.1	4.9	15.5	31.0	42.3
Non-Hunters/anglers	1.4	0.0	0.8	1.6	13.1	32.7	50.3

Table A-68. Percent of hunters/anglers and non-hunters/anglers indicating the importance of "implementing recovery plans for fish and wildlife that are already listed as endangered."

Participation	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Hunters/anglers	2.8	1.4	6.4	3.5	17.0	28.4	40.4
Non-Hunters/anglers	1.4	0.4	1.4	2.9	13.0	29.4	51.4

Table A-69. Percent of hunters/anglers and non-hunters/anglers indicating the importance of "increasing the number of Colorado students who learn about fish and wildlife."

Participation	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
Hunters/anglers	4.2	3.5	4.9	9.2	25.4	26.8	26.1
Non-Hunters/anglers	0.6	1.0	3.5	8.0	22.7	33.0	31.1

Table A-70. Percent of hunters/anglers and non-hunters/anglers identifying each activity as one of the three most important activities.

Activity	Hunters/anglers	Non-hunters/anglers
Researching and eliminating, where possible, diseases in wildlife.	49.6	51.0
Managing mule deer populations to reach goals for population size and ratios of males to females.	12.7	4.4
Protecting high priority habitats to support many different types of fish and wildlife populations.	55.4	55.6
Providing responsive customer service.	5.7	5.4
Providing enough fish to allow for good fishing opportunities.	22.7	10.0
Protecting fish and their habitats from the whirling disease parasite.	26.8	18.8
Expanding partnerships with private landowners to protect fish and wildlife on private lands.	18.4	21.1
Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered.	47.3	57.1
Implementing recovery plans for fish and wildlife that are already listed as endangered.	40.3	52.2
Increasing the number of Colorado students who learn about fish and wildlife.	21.2	24.4

Table A-71. Percent of hunters/anglers and non-hunters/anglers identifying each activity as the first most important.

Activity	Hunters/anglers	Non-hunters/anglers
Researching and eliminating, where possible, diseases in wildlife.	22.9	27.8
Managing mule deer populations to reach goals for population size and ratios of males to females.	2.9	0.4
Protecting high priority habitats to support many different types of fish and wildlife populations.	30.0	26.7
Providing responsive customer service.	1.4	0.8
Providing enough fish to allow for good fishing opportunities.	7.9	4.6
Protecting fish and their habitats from the whirling disease parasite.	5.7	2.9
Expanding partnerships with private landowners to protect fish and wildlife on private lands.	2.9	2.1
Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered.	15.0	12.9
Implementing recovery plans for fish and wildlife that are already listed as endangered.	7.1	16.3
Increasing the number of Colorado students who learn about fish and wildlife.	4.3	5.4

Table A-72. Percent of hunters/anglers and non-hunters/anglers identifying each activity as the second most important.

Activity	Hunters/anglers	Non-hunters/anglers
Researching and eliminating, where possible, diseases in wildlife.	14.0	11.3
Managing mule deer populations to reach goals for population size and ratios of males to females.	4.9	2.3
Protecting high priority habitats to support many different types of fish and wildlife populations.	11.9	10.9
Providing responsive customer service.	2.1	1.9
Providing enough fish to allow for good fishing opportunities.	7.0	2.9
Protecting fish and their habitats from the whirling disease parasite.	14.7	10.3
Expanding partnerships with private landowners to protect fish and wildlife on private lands.	7.0	9.6
Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered.	20.3	28.0
Implementing recovery plans for fish and wildlife that are already listed as endangered.	12.6	17.4
Increasing the number of Colorado students who learn about fish and wildlife.	5.6	5.4

Table A-73. Percent of hunters/anglers and non-hunters/anglers identifying each activity as the third most important.

Activity	Hunters/anglers	Non-hunters/anglers
Researching and eliminating, where possible, diseases in wildlife.	12.8	11.9
Managing mule deer populations to reach goals for population size and ratios of males to females.	5.0	1.7
Protecting high priority habitats to support many different types of fish and wildlife populations.	13.5	18.0
Providing responsive customer service.	2.1	2.7
Providing enough fish to allow for good fishing opportunities.	7.8	2.5
Protecting fish and their habitats from the whirling disease parasite.	6.4	5.6
Expanding partnerships with private landowners to protect fish and wildlife on private lands.	8.5	9.4
Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered.	12.1	16.1
Implementing recovery plans for fish and wildlife that are already listed as endangered.	20.6	18.6
Increasing the number of Colorado students who learn about fish and wildlife.	11.3	13.6

Table A-74. Biodiversity stated choice results for Colorado.

Attribute (variable)	Tier of Importance[2]	Average Importance[3]	Coefficient (Utility Score)[1,4]	p-value	Odds Ratio[5]
Status	3	22.5			
Common			-.38	-	-
Declining/Endangered			.34	< .001	1.41
Extirpated			.04	.322	1.04
Origin	1	42.0			
Native			.71	< .001	2.04
Non-Native			-.71	-	-
Use	2	35.5			
Game			.60	< .001	1.83
Non-Game			-.60	-	-
Proportion of choices correctly predicted	75.9				

[1] Estimated coefficients represent the utility associated with the corresponding level of the attribute. They are represented by the unstandardized regression coefficients calculated in a logistic regression in which respondent choice (species A = 1, or species B = 0) is the dependent variable, and the independent variables are the vector of differences between each attribute of the adjacent paired comparison. The absolute magnitude of the coefficients reflects the relative importance of the corresponding level of the attribute to respondents' choices. A large positive score indicates that the level substantially *increases* respondents' utility (i.e., preference) associated with the choice. A large negative coefficient indicates that the level substantially *detracts* from the overall utility of respondents.

[2]Tier of importance determined by the magnitude of the range in coefficients across levels of the attribute (e.g., -.71 to .71 for origin).

[3] Averaged importance is computed by dividing the range for each attribute by the total ranges of the 3 attributes (e.g., .76 / (.76 + 1.42 + 1.20) for status. The averaged importance for the 3 attributes will total 100.

[4]To prevent the model from being underestimated, each attribute was represented by a number of variables equal to one less than the number of levels for the attribute (utilizing a procedure known as effects coding, similar to dummy coding for categorical variables). Coefficients for the excluded level of the attribute were not estimated by the statistical model. They were calculated as the negative sum of the coefficients on the other levels of the corresponding attribute.

[5]Odds ratio, defining the factor by which the odds of selecting the species (A = 1) increases with a one-unit increase in the attribute level. An odds ratio score less than one indicates a negative relationship (odds decrease), while a score greater than one indicates a positive relationship (odds increase).

Table A-75. Biodiversity stated choice results for subregion 4 (Arizona, Colorado, New Mexico, Nevada, Utah).

Attribute (variable)	Tier of Importance[2]	Average Importance[3]	Coefficient (Utility Score)[1,4]	p-value	Odds Ratio[5]
Status	3	22.4			
Common			-.34	-	-
Declining/Endangered			.33	< .001	1.39
Extirpated			.01	.416	1.01
Origin	1	40.1			
Native			.61	< .001	1.83
Non-Native			-.61	-	-
Use	2	37.5			
Game			.57	< .001	1.77
Non-Game			-.57	-	-
Proportion of choices correctly predicted	75.5				

[1] Estimated coefficients represent the utility associated with the corresponding level of the attribute. They are represented by the unstandardized regression coefficients calculated in a logistic regression in which respondent choice (species A = 1, or species B = 0) is the dependent variable, and the independent variables are the vector of differences between each attribute of the adjacent paired comparison. The absolute magnitude of the coefficients reflects the relative importance of the corresponding level of the attribute to respondents' choices. A large positive score indicates that the level substantially *increases* respondents' utility (i.e., preference) associated with the choice. A large negative coefficient indicates that the level substantially *detracts* from the overall utility of respondents.

[2]Tier of importance determined by the magnitude of the range in coefficients across levels of the attribute (e.g., -.61 to .61 for origin).

[3] Averaged importance is computed by dividing the range for each attribute by the total ranges of the 3 attributes (e.g., .68 / (.68 + 1.22 + 1.14) for status. The averaged importance for the 3 attributes will total 100.

[4]To prevent the model from being underestimated, each attribute was represented by a number of variables equal to one less than the number of levels for the attribute (utilizing a procedure known as effects coding, similar to dummy coding for categorical variables). Coefficients for the excluded level of the attribute were not estimated by the statistical model. They were calculated as the negative sum of the coefficients on the other levels of the corresponding attribute.

[5]Odds ratio, defining the factor by which the odds of selecting the species (A = 1) increases with a one-unit increase in the attribute level. An odds ratio score less than one indicates a negative relationship (odds decrease), while a score greater than one indicates a positive relationship (odds increase).

Table A-76. Percent of respondents indicating which type of fish and wildlife populations that are not hunted or fished should get the most attention.

Population type	Percent of respondents
Stable	6.2
Declining	27.0
Endangered	63.9
Extirpated	2.9

Table A-77. Percent of wildlife value orientation type indicating which type of fish and wildlife populations that are not hunted or fished should get the most attention.

Value type	Stable	Declining	Endangered	Extirpated
Utilitarian	11.3	34.3	53.9	0.5
Pluralist	6.2	30.2	60.5	3.1
Mutualist	1.9	18.1	75.2	4.8
Distanced	5.3	26.3	66.7	1.8

Table A-78. Percent of hunters/anglers and non-hunters/anglers indicating which type of fish and wildlife populations that are not hunted or fished should get the most attention.

Participation	Stable	Declining	Endangered	Extirpated
Hunters/anglers	5.9	39.7	51.5	2.9
Non-hunters/anglers	6.1	23.4	67.5	3.0

Table A-79. Percent of respondents selecting the statement that comes closest to their views about hunting.

Statement	Selection
I do *not* believe in hunting wild animals and feel it should *not* be allowed.	4.8
I believe hunting wild animals should be done *only* by wildlife professionals supervised by the state to reduce animal overpopulation.	5.3
I believe people who buy licenses and who follow hunting regulations should be allowed to hunt wild animals as a means of helping manage animal populations.	67.6
I believe legal hunting of wild animals is a basic right and should be limited only when necessary for the protection of wildlife populations.	22.3

Table A-80. Percent of wildlife value orientation type selecting the statement that comes closest to their views about hunting.

Statement	Utilitarian	Pluralist	Mutualist	Distanced
I do *not* believe in hunting wild animals and feel it should *not* be allowed.	0.0	0.0	11.3	10.5
I believe hunting wild animals should be done *only* by wildlife professionals supervised by the state to reduce animal overpopulation.	0.0	0.7	13.5	3.5
I believe people who buy licenses and who follow hunting regulations should be allowed to hunt wild animals as a means of helping manage animal populations.	58.8	75.7	68.9	75.4
I believe legal hunting of wild animals is a basic right and should be limited only when necessary for the protection of wildlife populations.	41.2	23.5	6.3	10.5

Table A-81. Percent of hunters/anglers and non-hunters/anglers selecting the statement that comes closest to their views about hunting.

Statement	Hunters/anglers	Non-hunters/anglers
I do *not* believe in hunting wild animals and feel it should *not* be allowed.	2.1	5.8
I believe hunting wild animals should be done *only* by wildlife professionals supervised by the state to reduce animal overpopulation.	3.5	5.8
I believe people who buy licenses and who follow hunting regulations should be allowed to hunt wild animals as a means of helping manage animal populations.	67.4	67.9
I believe legal hunting of wild animals is a basic right and should be limited only when necessary for the protection of wildlife populations.	27.0	20.6

Table A-82. Percent of respondents finding actions acceptable to address bear situations.

Bear situation[1]	Do nothing	Provide more hunting	Conduct controlled hunts
Getting into trash and pet food containers	25.9	44.1	66.5
Human deaths from bear attacks occurred	7.9	51.2	84.8

[1]Shortened versions of the statements are provided in each row of the table. The complete statements are below:
1. Bears are wandering into areas where humans live in search of food. Bears are *getting into trash and pet food containers*.
2. Bears are wandering into areas where humans live in search of food. *Human deaths from bear attacks* have occurred.

Table A-83. Percent of wildlife value orientation type finding actions acceptable to address bear situation 1[1].

Value type	Do nothing	Provide more hunting	Conduct controlled hunts
Utilitarian	15.6	71.2	82.2
Pluralist	16.9	52.6	72.8
Mutualist	43.8	16.6	43.3
Distanced	19.0	28.8	79.3

[1]Bears are wandering into areas where humans live in search of food. Bears are *getting into trash and pet food containers*.

Table A-84. Percent of wildlife value orientation type finding actions acceptable to address bear situation 2[1].

Value type	Do nothing	Provide more hunting	Conduct controlled hunts
Utilitarian	3.3	74.3	91.9
Pluralist	3.7	62.1	89.4
Mutualist	14.4	24.3	74.8
Distanced	10.3	41.4	86.2

[1]Bears are wandering into areas where humans live in search of food. *Human deaths from bear attacks* have occurred.

Table A-85. Percent of hunters/anglers and non-hunters/anglers finding actions acceptable to address bear situation 1[1].

Participation	Do nothing	Provide more hunting	Conduct controlled hunts
Hunters/anglers	28.9	61.0	62.7
Non-hunters/anglers	25.3	39.2	68.0

[1]Bears are wandering into areas where humans live in search of food. Bears are *getting into trash and pet food containers*.

Table A-86. Percent of hunters/anglers and non-hunters/anglers finding actions acceptable to address bear situation 2[1].

Participation	Do nothing	Provide more hunting	Conduct controlled hunts
Hunters/anglers	8.5	67.1	84.3
Non-hunters/anglers	7.6	46.4	85.2

[1]Bears are wandering into areas where humans live in search of food. *Human deaths from bear attacks* have occurred.

Table A-87. Percent of respondents finding actions acceptable to address deer situations.

Deer situation[1]	Do nothing	Provide more hunting	Conduct controlled hunts	Permanent contraceptives	Short-term contraceptives
Eating shrubs and garden plants	36.2	69.3	65.9	16.2	64.6
Carrying transmissible disease	11.4	70.3	84.1	32.8	73.5

[1]Shortened versions of the statements are provided in each row of the table. The complete statements are below:
1. Deer numbers are increasing. There are complaints about deer entering people's yards and *eating shrubs and garden plants*.
2. Deer numbers are increasing. Authorities are concerned because deer are *carrying a disease that is transmissible to some domestic animals and livestock.*

Table A-88. Percent of wildlife value orientation type finding actions acceptable to address deer situation 1[1].

Value type	Do nothing	Provide more hunting	Conduct controlled hunts	Permanent contraceptives	Short-term contraceptives
Utilitarian	26.3	90.1	72.7	21.4	58.6
Pluralist	26.3	86.0	72.6	12.7	56.3
Mutualist	52.3	41.1	50.9	12.6	70.5
Distanced	37.9	59.6	82.1	19.0	84.2

[1]Deer numbers are increasing. There are complaints about deer entering people's yards and *eating shrubs and garden plants*.

Table A-89. Percent of wildlife value orientation type finding actions acceptable to address deer situation 2[1].

Value type	Do nothing	Provide more hunting	Conduct controlled hunts	Permanent contraceptives	Short-term contraceptives
Utilitarian	5.7	87.1	90.0	39.4	69.8
Pluralist	6.6	86.4	85.6	26.5	66.7
Mutualist	19.9	45.6	75.9	29.4	78.4
Distanced	12.1	64.9	87.5	38.2	85.5

[1]Deer numbers are increasing. Authorities are concerned because deer are *carrying a disease that is transmissible to some domestic animals and livestock.*

Table A-90. Percent of hunters/anglers and non-hunters/anglers finding actions acceptable to address deer situation 1[1].

Participation	Do nothing	Provide more hunting	Conduct controlled hunts	Permanent contra-ceptives	Short-term contra-ceptives
Hunters/anglers	38.7	83.2	61.3	14.2	54.2
Non-hunters/anglers	35.9	65.1	67.6	17.0	67.7

[1]Deer numbers are increasing. There are complaints about deer entering people's yards and *eating shrubs and garden plants*.

Table A-91. Percent hunters/anglers and non-hunters/anglers finding actions acceptable to address deer situation 2[1].

Participation	Do nothing	Provide more hunting	Conduct controlled hunts	Permanent contra-ceptives	Short-term contra-ceptives
Hunters/anglers	7.8	83.9	80.1	26.4	66.0
Non-hunters/anglers	12.6	65.9	85.4	35.3	75.9

[1]Deer numbers are increasing. Authorities are concerned because deer are *carrying a disease that is transmissible to some domestic animals and livestock.*

Table A-92. Percent of respondents agreeing with each of the following statements related to CWD.

Statement	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree	Not Applicable
The threat of CWD has been exaggerated.	15.9	17.1	14.7	35.1	11.6	3.8	1.8	-
Efforts should be taken to eliminate CWD from the wild deer population.	2.6	0.5	3.2	6.2	21.3	29.4	36.8	-
CWD poses a risk to deer, but not to humans.	9.2	16.4	18.1	26.6	13.8	11.4	4.7	-
CWD may pose a risk to humans, but not enough is currently known to be sure.	3.6	5.5	6.5	22.2	26.5	21.1	14.6	-
CWD may cause disease in humans if they eat meat from animals with CWD.	2.2	2.8	5.6	32.3	25.5	17.6	13.9	-
Because of CWD, I have concerns about eating deer meat.	5.1	7.5	8.7	20.3	18.5	15.6	11.1	13.2
Because of CWD, members of my family have concerns about eating deer meat.	6.3	5.2	5.5	26.4	14.0	14.5	10.4	17.6

Table A-93. PCI means and values for the statement "the threat of CWD has been exaggerated" by resident hunters, nonresident hunters and the public.

	Mean	PCI value
Resident Deer Hunters	3.53	0.33
Nonresident Deer Hunters	3.60	0.31
Resident Elk Hunters	3.60	0.33
Nonresident Elk Hunters	3.69	0.36
Public	3.28	0.16

Table A-94. PCI means and values for the statement "efforts should be taken to eliminate CWD from the wild deer population" by resident hunters, nonresident hunters and the public.[1]

	Mean	PCI value
Resident Deer Hunters	5.78	0.13
Nonresident Deer Hunters	6.00	0.06
Resident Elk Hunters	5.92	0.10
Nonresident Elk Hunters	5.96	0.06
Public	5.79	0.08

[1]Elk hunters were asked about CWD in elk rather than in deer.

Table A-95. PCI means and values for the statement "CWD poses a risk to deer, but not to humans" by resident hunters, nonresident hunters and the public. [1]

	Mean	PCI value
Resident Deer Hunters	3.47	0.29
Nonresident Deer Hunters	3.74	0.36
Resident Elk Hunters	3.64	0.34
Nonresident Elk Hunters	3.69	0.37
Public	3.72	0.34

[1]Elk hunters were asked about CWD in elk rather than in deer.

Table A-96. PCI means and values for the statement "CWD may pose a risk to humans, but not enough is currently known to be sure" by resident hunters, nonresident hunters and the public.

	Mean	PCI value
Resident Deer Hunters	5.06	0.24
Nonresident Deer Hunters	4.92	0.22
Resident Elk Hunters	5.08	0.23
Nonresident Elk Hunters	4.82	0.25
Public	4.84	0.19

Table A-97. PCI means and values for the statement "CWD may cause disease in humans if they eat meat from animals infected with CWD" by resident hunters, nonresident hunters and the public.

	Mean	PCI value
Resident Deer Hunters	4.50	0.25
Nonresident Deer Hunters	4.52	0.23
Resident Elk Hunters	4.43	0.28
Nonresident Elk Hunters	4.32	0.30
Public	4.85	0.12

Table A-98. PCI means and values for the statement "because of CWD, I have concerns about eating deer meat" by resident hunters, nonresident hunters and the public. [1]

	Mean	PCI value
Resident Deer Hunters	4.40	0.43
Nonresident Deer Hunters	4.29	0.45
Resident Elk Hunters	4.30	0.44
Nonresident Elk Hunters	4.05	0.52
Public	4.51	0.30

[1]Elk hunters were asked about CWD in elk rather than in deer.

Table A-99. PCI means and values for the statement "because of CWD, members of my family have concerns about eating deer meat" by resident hunters, nonresident hunters and the public. [1]

	Mean	PCI value
Resident Deer Hunters	4.82	0.31
Nonresident Deer Hunters	4.52	0.36
Resident Elk Hunters	4.59	0.35
Nonresident Elk Hunters	4.21	0.45
Public	4.48	0.28

[1]Elk hunters were asked about CWD in elk rather than in deer.

Table A-100. Percent of wildlife value orientation type agreeing with the statement "the threat of CWD has been exaggerated."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	14.4	15.8	12.1	36.3	14.4	3.7	3.3
Pluralist	15.6	25.2	17.8	24.4	11.1	5.2	0.7
Mutualist	19.4	12.9	15.2	40.1	8.3	2.8	1.4
Distanced	9.1	20.0	16.4	34.5	14.5	5.5	0.0

Table A-101. PCI means and values for the statement "the threat of CWD has been exaggerated" by wildlife value orientation type.

Value type	Mean	PCI value
Public	3.28	0.16
Utilitarian	3.44	0.21
Pluralist	3.09	0.16
Mutualist	3.20	0.12
Distanced	3.43	0.17

Table A-102. Percent of wildlife value orientation type agreeing with the statement "efforts should be taken to eliminate CWD from the wild deer population."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	1.4	0.5	2.3	6.9	23.1	30.1	35.6
Pluralist	3.0	0.0	2.2	2.2	14.1	28.9	49.6
Mutualist	4.1	0.5	4.1	6.9	21.7	28.6	34.1
Distanced	0.0	1.8	3.6	8.9	32.1	30.4	23.2

Table A-103. PCI means and values for the statement "efforts should be taken to eliminate CWD from the wild deer population" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.79	0.08
Utilitarian	5.83	0.05
Pluralist	6.10	0.07
Mutualist	5.62	0.12
Distanced	5.54	0.05

Table A-104. Percent of wildlife value orientation type agreeing with the statement "CWD poses a risk to deer, but not to humans."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	8.5	14.6	14.6	28.8	18.4	10.4	4.7
Pluralist	14.2	17.2	17.9	26.1	7.5	11.2	6.0
Mutualist	7.9	17.8	22.9	21.0	13.1	12.6	4.7
Distanced	3.7	16.7	13.0	38.9	13.0	11.1	3.7

Table A-105. PCI means and values for the statement "CWD poses a risk to deer, but not to humans" by wildlife value orientation type.

Value type	Mean	PCI value
Public	3.72	0.34
Utilitarian	3.84	0.36
Pluralist	3.52	0.32
Mutualist	3.69	0.35
Distanced	3.87	0.31

Table A-106. Percent of wildlife value orientation type agreeing with the statement "CWD may pose a risk to humans, but not enough is currently known to be sure."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	2.3	3.8	8.0	21.1	30.5	18.8	15.5
Pluralist	5.2	7.4	6.7	16.3	23.0	23.0	18.5
Mutualist	4.6	6.0	5.5	23.0	26.3	20.7	13.8
Distanced	1.8	5.3	5.3	36.8	22.8	24.6	3.5

Table A-107. PCI means and values for the statement "CWD may pose a risk to humans, but not enough is currently known to be sure" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.84	0.19
Utilitarian	4.92	0.15
Pluralist	4.89	0.25
Mutualist	4.80	0.21
Distanced	4.61	0.14

Table A-108. Percent of wildlife value orientation type agreeing with the statement "CWD may cause disease in humans if they eat meat from animals infected with CWD."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	1.9	3.8	6.6	30.5	29.1	17.4	10.8
Pluralist	2.2	5.2	3.0	26.1	23.9	20.9	18.7
Mutualist	3.3	0.9	6.5	34.0	25.6	14.9	14.9
Distanced	0.0	0.0	3.6	47.3	16.4	20.0	12.7

Table A-109. PCI means and values for the statement "CWD may cause disease in humans if they eat meat from animals infected with CWD" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.85	0.12
Utilitarian	4.77	0.13
Pluralist	5.00	0.13
Mutualist	4.82	0.12
Distanced	4.91	0.02

Table A-110. Percent of wildlife value orientation type agreeing with the statement "because of CWD, I have concerns about eating deer meat."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree	Not Applicable
Utilitarian	5.6	11.3	8.0	21.1	23.5	12.7	9.4	8.5
Pluralist	4.5	9.7	11.2	11.9	19.4	20.9	17.9	4.5
Mutualist	4.7	3.3	7.0	23.9	14.1	14.6	9.4	23.0
Distanced	5.4	5.4	10.7	21.4	14.3	17.9	8.9	16.1

Table A-111. PCI means and values for the statement "because of CWD, I have concerns about eating deer meat" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.51	0.30
Utilitarian	4.34	0.35
Pluralist	4.73	0.31
Mutualist	4.55	0.24
Distanced	4.42	0.30

Table A-112. Percent of wildlife value orientation type agreeing with the statement "because of CWD, members of my family have concerns about eating deer meat."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree	Not Applicable
Utilitarian	8.4	7.9	5.1	26.5	17.2	13.0	10.2	11.6
Pluralist	3.7	6.6	6.6	19.9	17.6	22.8	14.7	8.1
Mutualist	6.5	2.3	5.1	25.9	10.2	12.0	8.8	29.2
Distanced	5.6	1.9	5.6	42.6	7.4	9.3	7.4	20.4

Table A-113. PCI means and values for the statement "because of CWD, members of my family have concerns about eating deer meat" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.48	0.28
Utilitarian	4.30	0.35
Pluralist	4.83	0.22
Mutualist	4.46	0.27
Distanced	4.27	0.22

Table A-114. Percent of respondents agreeing that they "had enough information about each of the following CWD-related topics *prior to receiving this survey*."

Topic	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Possible human safety risks associated with CWD.	21.4	22.2	15.7	13.1	11.0	11.7	5.0
How many deer with CWD have been found in Colorado.	20.8	20.6	17.4	17.1	13.1	8.0	3.0
What the CDOW is doing about CWD in Colorado.	20.9	22.3	18.7	17.4	11.2	6.2	3.4

Table A-115. PCI means and values for the statement "I feel I had enough information about possible human safety risks associated with CWD" by resident hunters, nonresident hunters and the public.

	Mean	PCI value
Resident Deer Hunters	3.93	0.54
Nonresident Deer Hunters	4.28	0.45
Resident Elk Hunters	4.04	0.52
Nonresident Elk Hunters	4.26	0.45
Public	3.25	0.33

Table A-116. PCI means and values for the statement "I feel I had enough information about how many deer with CWD have been found in Colorado" by resident hunters, nonresident hunters and the public.[1]

	Mean	PCI value
Resident Deer Hunters	4.20	0.45
Nonresident Deer Hunters	4.21	0.38
Resident Elk Hunters	4.00	0.49
Nonresident Elk Hunters	4.09	0.46
Public	3.17	0.25

[1]Elk hunters were asked about CWD in elk rather than in deer.

Table A-117. PCI means and values for the statement "I feel I had enough information about what the CDOW is doing about CWD in Colorado" by resident hunters, nonresident hunters and the public.

	Mean	PCI value
Resident Deer Hunters	4.30	0.44
Nonresident Deer Hunters	4.63	0.30
Resident Elk Hunters	4.15	0.51
Nonresident Elk Hunters	4.51	0.38
Public	3.08	0.22

Table A-118. Percent of wildlife value orientation type agreeing with the statement "Prior to receiving this survey, I feel I had enough information about possible human safety risks associated with CWD."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	19.1	25.1	18.1	10.2	8.4	15.3	3.7
Pluralist	22.4	26.1	12.7	11.2	11.9	11.2	4.5
Mutualist	24.5	20.5	14.5	12.3	13.2	9.5	5.5
Distanced	14.3	7.1	19.6	30.4	10.7	8.9	8.9

Table A-119. PCI means and values for the statement "Prior to receiving this survey, I feel I had enough information about possible human safety risks associated with CWD" by wildlife value orientation type.

Value type	Mean	PCI value
Public	3.25	0.33
Utilitarian	3.24	0.33
Pluralist	3.17	0.32
Mutualist	3.18	0.32
Distanced	3.75	0.37

Table A-120. Percent of wildlife value orientation type agreeing with the statement "Prior to receiving this survey, I feel I had enough information about how many deer with CWD have been found in Colorado."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	19.2	23.0	16.4	15.0	16.0	7.5	2.8
Pluralist	23.9	22.4	17.2	14.2	11.9	7.5	3.0
Mutualist	22.6	19.8	17.5	17.1	10.6	9.2	3.2
Distanced	10.7	10.7	21.4	30.4	16.1	7.1	3.6

Table A-121. PCI means and values for the statement "Prior to receiving this survey, I feel I had enough information about how many deer with CWD have been found in Colorado" by wildlife value orientation type.

Value type	Mean	PCI value
Public	3.17	0.25
Utilitarian	3.19	0.26
Pluralist	3.02	0.24
Mutualist	3.13	0.26
Distanced	3.59	0.27

Table A-122. Percent of wildlife value orientation type agreeing with the statement "Prior to receiving this survey, I feel I had enough information about what the CDOW is doing about CWD in Colorado."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	18.6	24.7	19.1	17.2	12.6	5.1	2.8
Pluralist	22.8	25.7	15.4	12.5	11.8	8.1	3.7
Mutualist	23.0	19.8	21.2	17.1	9.7	5.5	3.7
Distanced	16.4	14.5	16.4	30.9	10.9	7.3	3.6

Table A-123. PCI means and values for the statement "Prior to receiving this survey, I feel I had enough information about what the CDOW is doing about CWD in Colorado" by wildlife value orientation type.

Value type	Mean	PCI value
Public	3.08	0.22
Utilitarian	3.05	0.21
Pluralist	3.05	0.26
Mutualist	3.02	0.21
Distanced	3.42	0.24

Table A-124. Percent of respondents that "trust the CDOW to" manage CWD.

Statement	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Provide the best available information on CWD issues.	2.4	2.5	6.0	11.8	31.4	29.0	16.9
Make good deer management decisions regarding CWD issues.	1.1	2.3	4.9	8.4	30.2	33.4	19.7
Properly address CWD in Colorado.	1.3	3.2	4.7	7.8	29.7	33.3	20.0

Table A-125. PCI means and values for the statement "I trust the CDOW to provide the best available information on CWD issues" by resident hunters, nonresident hunters and the public.

	Mean	PCI value
Resident Deer Hunters	5.36	0.17
Nonresident Deer Hunters	5.92	0.04
Resident Elk Hunters	5.42	0.14
Nonresident Elk Hunters	5.81	0.07
Public	5.22	0.12

Table A-126. PCI means and values for the statement "I trust the CDOW to make good deer management decisions regarding CWD issues" by resident hunters, nonresident hunters and the public. [1]

	Mean	PCI value
Resident Deer Hunters	4.99	0.25
Nonresident Deer Hunters	5.66	0.06
Resident Elk Hunters	5.00	0.26
Nonresident Elk Hunters	5.65	0.08
Public	5.43	0.09

[1]Elk hunters were asked about CWD in elk rather than in deer.

Table A-127. PCI means and values for the statement "I trust the CDOW to properly address CWD in Colorado" by resident hunters, nonresident hunters and the public.

	Mean	PCI value
Resident Deer Hunters	5.16	0.20
Nonresident Deer Hunters	5.74	0.06
Resident Elk Hunters	5.14	0.22
Nonresident Elk Hunters	5.74	0.07
Public	5.41	0.10

Table A-128. Percent of wildlife value orientation type agreeing with the statement "I trust the CDOW to provide the best available information on CWD issues."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	2.8	1.9	5.1	13.1	33.2	31.3	12.6
Pluralist	1.4	2.2	8.0	10.9	26.8	29.7	21.0
Mutualist	2.3	3.6	6.4	10.5	33.2	26.8	17.3
Distanced	3.6	0.0	3.6	14.5	27.3	27.3	23.6

Table A-129. PCI means and values for the statement "I trust the CDOW to provide the best available information on CWD issues" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.22	0.12
Utilitarian	5.16	0.12
Pluralist	5.33	0.11
Mutualist	5.18	0.14
Distanced	5.36	0.10

Table A-130. Percent of wildlife value orientation type agreeing with the statement "I trust the CDOW to make good deer management decisions regarding CWD issues."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	0.9	1.4	3.7	6.9	35.6	35.2	16.2
Pluralist	0.7	3.6	4.3	8.0	24.6	31.9	26.8
Mutualist	1.8	2.3	6.3	9.5	30.8	31.2	18.1
Distanced	0.0	1.8	7.1	8.9	19.6	39.3	23.2

Table A-131. PCI means and values for the statement "I trust the CDOW to make good deer management decisions regarding CWD issues" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.43	0.09
Utilitarian	5.44	0.06
Pluralist	5.56	0.09
Mutualist	5.32	0.11
Distanced	5.58	0.07

Table A-132. Percent of wildlife value orientation type agreeing with the statement "I trust the CDOW to properly address CWD in Colorado."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	0.9	3.2	4.2	7.9	31.9	33.3	18.5
Pluralist	1.5	3.7	4.4	8.1	25.0	29.4	27.9
Mutualist	1.8	3.2	4.5	7.3	32.7	32.7	17.7
Distanced	0.0	1.8	8.9	7.1	19.6	44.6	17.9

Table A-133. PCI means and values for the statement "I trust the CDOW to properly address CWD in Colorado" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.41	0.10
Utilitarian	5.40	0.09
Pluralist	5.50	0.11
Mutualist	5.35	0.11
Distanced	5.50	0.08

Table A-134. Percent of respondents finding actions acceptable for the CDOW to respond to CWD.

Statement	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Take no action and allow CWD to take its natural course.	43.1	26.7	13.8	4.5	7.4	3.0	1.5
Continue to test deer for CWD.	1.1	0.7	0.4	3.0	14.6	29.5	50.8
Use trained agency staff to dramatically reduce herds.	2.8	5.0	7.1	7.9	23.0	28.4	25.8
Use hunters to dramatically reduce herds.	11.0	8.0	8.0	11.5	26.1	18.7	16.6

Table A-135. PCI means and values for the statement "take no action and allow CWD to take its natural course" by resident hunters, nonresident hunters and the public.

	Mean	PCI value
Resident Deer Hunters	2.14	0.15
Nonresident Deer Hunters	2.11	0.15
Resident Elk Hunters	2.34	0.20
Nonresident Elk Hunters	1.98	0.10
Public	2.21	0.12

Table A-136. PCI means and values for the statement "continue to test deer for CWD" by resident hunters, nonresident hunters and the public. [1]

	Mean	PCI value
Resident Deer Hunters	6.53	0.04
Nonresident Deer Hunters	6.40	0.04
Resident Elk Hunters	6.41	0.05
Nonresident Elk Hunters	6.42	0.06
Public	6.21	0.03

[1]Elk hunters were asked about CWD in elk rather than in deer.

Table A-137. PCI means and values for the statement "use *trained agency staff* to dramatically reduce herds in affected zones to lower the potential for CWD spreading" by resident hunters, nonresident hunters and the public.

	Mean	PCI value
Resident Deer Hunters	4.28	0.55
Nonresident Deer Hunters	3.94	0.60
Resident Elk Hunters	4.07	0.62
Nonresident Elk Hunters	3.86	0.57
Public	5.32	0.17

Table A-138. PCI means and values for the statement "use *hunters* to dramatically reduce herds in affected zones to lower the potential for CWD spreading" by resident hunters, nonresident hunters and the public.

	Mean	PCI value
Resident Deer Hunters	5.27	0.27
Nonresident Deer Hunters	5.18	0.26
Resident Elk Hunters	5.43	0.19
Nonresident Elk Hunters	5.23	0.23
Public	4.57	0.38

Table A-139. Percent of wildlife value orientation type finding it acceptable for the CDOW to "…take no action and allow CWD to take its natural course."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	44.2	28.8	13.0	6.0	5.6	1.9	0.5
Pluralist	58.6	24.1	9.0	2.3	1.5	2.3	2.3
Mutualist	34.7	25.6	16.4	4.1	11.9	5.0	2.3
Distanced	32.7	30.9	20.0	7.3	9.1	0.0	0.0

Table A-140. PCI means and values for the acceptability of the CDOW to "…take no action and allow CWD to take its natural course" by wildlife value orientation type.

Value type	Mean	PCI value
Public	2.21	0.12
Utilitarian	2.08	0.07
Pluralist	1.79	0.09
Mutualist	2.58	0.19
Distanced	2.32	0.06

Table A-141. Percent of wildlife value orientation type finding it acceptable for the CDOW to "…continue to test deer for CWD."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	0.0	0.5	0.0	3.7	14.4	27.3	54.2
Pluralist	1.5	1.5	0.0	0.8	9.8	25.6	60.9
Mutualist	1.8	0.5	0.9	2.7	16.4	32.7	45.0
Distanced	0.0	0.0	0.0	7.3	20.0	36.4	36.4

Table A-142. PCI means and values for the acceptability of the CDOW to "…continue to test deer for CWD" by wildlife value orientation type.

Value type	Mean	PCI value
Public	6.21	0.03
Utilitarian	6.31	0.01
Pluralist	6.34	0.05
Mutualist	6.09	0.05
Distanced	5.99	0.00

Table A-143. Percent of wildlife value orientation type finding it acceptable for the CDOW to "…use trained agency staff to dramatically reduce herds in affected zones to lower the potential for CWD spreading."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	2.8	4.6	4.2	10.6	20.4	27.3	30.1
Pluralist	3.0	8.1	5.2	4.4	15.6	26.7	37.0
Mutualist	2.8	4.6	11.5	6.9	30.3	26.1	17.9
Distanced	1.8	1.8	7.0	10.5	22.8	43.9	12.3

Table A-144. PCI means and values for the acceptability of the CDOW to "…use trained agency staff to dramatically reduce herds in affected zones to lower the potential for CWD spreading" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.32	0.17
Utilitarian	5.43	0.15
Pluralist	5.50	0.20
Mutualist	5.07	0.19
Distanced	5.35	0.11

Table A-145. Percent of wildlife value orientation type finding it acceptable for the CDOW to "…use hunters to dramatically reduce herds in affected zones to lower the potential for CWD spreading."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	4.2	2.8	5.6	11.2	27.9	23.3	25.1
Pluralist	8.0	10.2	5.1	7.3	24.8	19.7	24.8
Mutualist	20.2	11.5	11.5	12.4	26.6	11.9	6.0
Distanced	9.1	9.1	9.1	20.0	21.8	27.3	3.6

Table A-146. PCI means and values for the acceptability of the CDOW to "…use hunters to dramatically reduce herds in affected zones to lower the potential for CWD spreading" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.57	0.38
Utilitarian	5.25	0.16
Pluralist	4.90	0.33
Mutualist	3.73	0.46
Distanced	4.32	0.36

Table A-147. Percent of respondents indicating how they rate each statement compared to other places they might live.

Statement	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Life in Colorado.	0.4	5.5	8.2	25.9	60.1
The career and employment opportunities in Colorado.	4.2	21.5	33.5	28.2	12.5
The opportunities to go fishing in Colorado.	2.0	8.2	25.4	34.2	30.2
The opportunities to go hunting in Colorado.	2.2	4.8	26.4	34.3	32.3
The opportunities to view wildlife in Colorado.	0.6	3.7	11.8	33.5	50.4
The opportunities for outdoor recreation, other than fishing, hunting or wildlife viewing in Colorado.	0.1	2.6	9.1	28.1	60.1
The abundance of fish and wildlife in Colorado.	0.6	7.6	25.0	41.4	25.4
The scenic beauty of Colorado.	0.5	3.2	9.7	13.2	73.5
The level of public safety in Colorado.	2.0	5.5	40.7	33.4	18.4
The quality of education in Colorado.	3.7	18.0	38.0	25.5	14.9
The lifestyle in Colorado.	0.8	5.3	17.0	39.7	37.2
The quality of the neighborhoods in Colorado.	1.0	8.9	34.8	32.6	22.8

Table A-148. Percent of wildlife value orientation type indicating how they feel about "…life in Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	0.0	5.1	10.7	22.0	62.1
Pluralist	0.7	1.4	10.8	26.6	60.4
Mutualist	0.5	8.3	4.6	29.0	57.6
Distanced	0.0	5.0	5.0	28.3	61.7

Table A-149. Percent of wildlife value orientation type indicating how they feel about "…the career and employment opportunities in Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	0.9	16.7	39.4	27.3	15.7
Pluralist	0.7	24.4	25.9	34.8	14.1
Mutualist	9.2	24.4	31.3	27.2	7.8
Distanced	6.8	22.0	39.0	20.3	11.9

Table A-150. Percent of wildlife value orientation type indicating how they feel about "…the opportunities to go fishing in Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	1.4	12.1	23.4	32.2	30.8
Pluralist	2.9	10.9	22.5	29.0	34.8
Mutualist	1.4	3.7	30.7	37.2	27.0
Distanced	3.4	3.4	20.3	44.1	28.8

Table A-151. Percent of wildlife value orientation type indicating how they feel about "…the opportunities to go hunting in Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	2.3	5.6	25.6	30.7	35.8
Pluralist	2.9	8.0	16.7	34.8	37.7
Mutualist	1.9	2.4	32.7	37.0	26.1
Distanced	0.0	3.4	30.5	37.3	28.8

Table A-152. Percent of wildlife value orientation type indicating how they feel about "…the opportunities to view wildlife in Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	0.5	2.8	15.4	31.3	50.0
Pluralist	0.7	4.3	10.1	27.5	57.2
Mutualist	0.9	4.6	7.8	39.3	47.5
Distanced	0.0	0.0	16.9	35.6	47.5

Table A-153. Percent of wildlife value orientation type indicating how they feel about "…the opportunities for outdoor recreation, other than fishing, hunting or wildlife viewing in Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	0.0	2.3	11.2	28.5	57.9
Pluralist	0.7	2.2	7.2	26.8	63.0
Mutualist	0.0	2.8	9.6	26.1	61.5
Distanced	0.0	5.2	3.4	36.2	55.2

Table A-154. Percent of wildlife value orientation type indicating how they feel about "…the abundance of fish and wildlife in Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	0.5	8.1	24.2	40.8	26.5
Pluralist	0.7	10.2	21.2	40.1	27.7
Mutualist	0.9	5.0	26.4	44.5	23.2
Distanced	0.0	10.3	29.3	36.2	24.1

Table A-155. Percent of wildlife value orientation type indicating how they feel about "…the scenic beauty of Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	0.0	3.2	6.0	14.4	76.4
Pluralist	1.4	0.0	14.5	10.9	73.2
Mutualist	0.5	4.1	10.0	13.6	71.8
Distanced	0.0	6.8	10.2	13.6	69.5

Table A-156. Percent of wildlife value orientation type indicating how they feel about "…the level of public safety in Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	2.8	2.8	44.7	33.0	16.7
Pluralist	0.0	5.8	41.7	29.5	23.0
Mutualist	3.2	7.8	38.8	32.4	17.8
Distanced	0.0	6.8	30.5	47.5	15.3

Table A-157. Percent of wildlife value orientation type indicating how they feel about "…the quality of education in Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	2.8	15.0	36.4	29.0	16.8
Pluralist	1.4	25.2	33.8	22.3	17.3
Mutualist	6.8	17.4	37.9	25.1	12.8
Distanced	1.7	13.3	51.7	23.3	10.0

Table A-158. Percent of wildlife value orientation type indicating how they feel about "…the lifestyle in Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	0.5	3.7	20.4	39.4	36.1
Pluralist	1.4	2.2	23.2	35.5	37.7
Mutualist	0.9	7.8	13.3	40.4	37.6
Distanced	0.0	8.8	3.5	49.1	38.6

Table A-159. Percent of wildlife value orientation type indicating how they feel about "…the quality of the neighborhoods in Colorado" compared to other places they might live.

Value type	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Utilitarian	1.4	6.0	31.0	39.4	22.2
Pluralist	0.7	10.0	39.3	26.4	23.6
Mutualist	1.4	11.9	34.7	28.8	23.3
Distanced	0.0	5.1	39.0	35.6	20.3

Table A-160. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…life in Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	1.4	6.3	4.2	27.3	60.8
Non-Hunters/anglers	0.0	5.4	9.3	25.5	59.8

Table A-161. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…the career and employment opportunities in Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	4.2	23.1	33.6	27.3	11.9
Non-Hunters/anglers	4.4	21.2	33.8	28.0	12.7

Table A-162. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…the opportunities to go fishing in Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	2.8	10.6	19.7	33.1	33.8
Non-Hunters/anglers	1.9	7.3	27.2	34.1	29.5

Table A-163. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…the opportunities to go hunting in Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	3.5	8.5	26.2	29.8	31.9
Non-Hunters/anglers	1.9	3.5	26.5	35.3	32.8

Table A-164. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…the opportunities to view wildlife in Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	1.4	1.4	15.4	32.9	49.0
Non-Hunters/anglers	0.2	4.4	10.8	33.6	51.0

Table A-165. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…the opportunities for outdoor recreation, other than fishing, hunting or wildlife viewing in Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	0.7	3.5	11.2	26.6	58.0
Non-Hunters/anglers	0.0	2.5	8.3	28.7	60.5

Table A-166. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…the abundance of fish and wildlife in Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	2.1	9.7	23.6	42.4	22.2
Non-Hunters/anglers	0.2	6.9	25.7	40.8	26.4

Table A-167. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…the scenic beauty of Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	0.7	2.1	8.4	13.3	75.5
Non-Hunters/anglers	0.4	3.5	9.9	13.2	73.0

Table A-168. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…the level of public safety in Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	1.4	6.3	40.6	32.9	18.9
Non-Hunters/anglers	2.1	5.2	40.9	33.7	18.2

Table A-169. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…the quality of education in Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	5.6	14.7	41.3	24.5	14.0
Non-Hunters/anglers	3.3	19.2	37.1	25.6	14.8

Table A-170. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…the lifestyle in Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	2.1	5.6	16.7	40.3	35.4
Non-Hunters/anglers	0.4	5.2	17.3	39.5	37.6

Table A-171. Percent of hunters/anglers and non-hunters/anglers indicating how they feel about "…the quality of the neighborhoods in Colorado" compared to other places they might live.

Participation	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
Hunters/anglers	1.4	11.2	35.7	35.0	16.8
Non-Hunters/anglers	0.8	8.4	34.6	31.9	24.3

Table A-172. Percent of respondents from the "Coloradans' Recreational Uses of and Attitudes toward Wildlife" report[1] indicating how they rate each statement compared to other places they might live.

Statement	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better	No Opinion
Life in Colorado.	1.7	3.3	9.9	25.6	59.5	-
The career and employment opportunities in Colorado.	7.2	19.6	30.0	25.8	17.5	-
The opportunities to go fishing in Colorado.	2.7	7.3	8.6	21.0	40.8	19.7
The opportunities to go hunting in Colorado.	2.1	3.9	5.5	15.9	35.9	36.6
The opportunities to view wildlife in Colorado.	1.0	1.9	8.2	21.8	65.9	1.2
The opportunities for outdoor recreation, other than fishing, hunting or wildlife viewing in Colorado.	1.2	3.2	13.0	20.6	60.1	1.8
The abundance of fish and wildlife in Colorado.	1.6	4.7	15.2	38.8	39.6	-
The scenic beauty of Colorado.	0.6	0.5	4.2	10.8	83.9	-
The level of public safety in Colorado.	4.3	10.6	34.1	35.1	15.9	-
The quality of education in Colorado.	2.9	16.2	36.0	32.3	12.6	-
The lifestyle in Colorado.	1.5	5.4	18.4	39.9	34.7	-
The quality of the neighborhoods in Colorado.	2.0	6.8	29.0	36.2	26.0	-
Types of people who live in Colorado.	3.0	3.7	31.5	31.9	29.9	-

[1]Respondent information based on "Coloradans' Recreational Uses of and Attitudes toward Wildlife" (Fulton et al., 1993).

Table A-173. Percent of respondents indicating the importance of each water use.

Use	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Local irrigation	1.1	3.1	12.5	44.3	39.0
Local municipalities	0.7	4.7	16.4	39.8	38.4
Local industries	1.3	15.3	27.5	40.7	15.2
Threatened and endangered fish populations	2.8	10.9	30.7	36.4	19.2
Healthy populations of water-dependent invertebrates	3.4	17.5	31.1	32.9	15.2
Healthy populations of fish for fishing recreation	3.7	19.0	32.2	32.3	12.9

Table A-174. Percent of respondents identifying each use as one of the three most important uses of water.

Use	1st most important	2nd most important	3rd most important
Local irrigation	38.3	35.0	14.0
Local municipalities	40.4	30.0	12.9
Local industries	0.6	8.4	32.1
Threatened and endangered fish populations	14.5	10.0	15.0
Healthy populations of water-dependent invertebrates	2.3	10.5	7.4
Healthy populations of fish for fishing recreation	3.8	6.1	18.6

Table A-175. Percent of wildlife value orientation type indicating the importance of considering "local irrigation" when making water distribution decisions.

Value type	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Utilitarian	0.9	3.7	11.2	36.7	47.4
Pluralist	0.7	0.0	8.7	42.8	47.8
Mutualist	1.8	5.0	13.2	50.0	30.0
Distanced	0.0	1.7	23.3	51.7	23.3

Table A-176. Percent of wildlife value orientation type indicating the importance of considering "local municipalities" when making water distribution decisions.

Value type	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Utilitarian	0.5	3.3	11.2	40.9	44.2
Pluralist	0.7	3.6	9.4	39.9	46.4
Mutualist	1.4	7.2	25.3	38.0	28.1
Distanced	0.0	3.4	19.0	41.4	36.2

Table A-177. Percent of wildlife value orientation type indicating the importance of considering "local industries" when making water distribution decisions.

Value type	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Utilitarian	0.5	10.6	25.5	44.9	18.5
Pluralist	0.7	7.4	31.6	40.4	19.9
Mutualist	2.7	24.4	29.0	33.0	10.9
Distanced	0.0	18.6	18.6	54.2	8.5

Table A-178. Percent of wildlife value orientation type indicating the importance of considering "threatened and endangered fish populations" when making water distribution decisions.

Value type	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Utilitarian	6.5	20.4	43.5	25.9	3.7
Pluralist	2.9	7.2	30.2	36.0	23.7
Mutualist	0.0	3.2	16.0	49.3	31.5
Distanced	0.0	15.3	37.3	28.8	18.6

Table A-179. Percent of wildlife value orientation type indicating the importance of considering "healthy populations of water-dependent invertebrates" when making water distribution decisions.

Value type	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Utilitarian	5.1	31.3	36.4	23.4	3.7
Pluralist	4.3	9.4	28.3	39.1	18.8
Mutualist	2.3	6.8	26.9	37.4	26.5
Distanced	0.0	25.9	32.8	36.2	5.2

Table A-180. Percent of wildlife value orientation type indicating the importance of considering "healthy populations of fish for fishing recreation" when making water distribution decisions.

Value type	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Utilitarian	0.0	21.6	33.8	34.3	10.3
Pluralist	1.4	6.5	33.3	37.7	21.0
Mutualist	7.3	22.4	29.7	29.7	11.0
Distanced	8.3	26.7	31.7	23.3	10.0

Table A-181. Percent of wildlife value orientation type identifying each use as the first most important use of water.

Use	Utilitarian	Pluralist	Mutualist	Distanced
Local irrigation	42.4	44.1	35.2	21.8
Local municipalities	47.1	43.4	26.9	60.0
Local industries	1.0	0.0	0.9	0.0
Threatened and endangered fish populations	3.8	6.6	29.6	14.5
Healthy populations of water-dependent invertebrates	0.0	1.5	4.6	3.6
Healthy populations of fish for fishing recreation	5.7	4.4	2.8	0.0

Table A-182. Percent of wildlife value orientation type identifying each use as the second most important use of water.

Use	Utilitarian	Pluralist	Mutualist	Distanced
Local irrigation	39.2	33.6	29.4	42.9
Local municipalities	37.3	29.2	27.1	16.1
Local industries	11.5	6.6	5.1	12.5
Threatened and endangered fish populations	1.4	14.6	15.0	12.5
Healthy populations of water-dependent invertebrates	1.9	6.6	22.0	8.9
Healthy populations of fish for fishing recreation	8.6	9.5	1.4	7.1

Table A-183. Percent of wildlife value orientation type identifying each use as the third most important use of water.

Use	Utilitarian	Pluralist	Mutualist	Distanced
Local irrigation	11.4	15.4	13.6	21.1
Local municipalities	7.6	12.5	17.8	15.8
Local industries	48.6	33.1	16.4	28.1
Threatened and endangered fish populations	8.1	12.5	22.4	17.5
Healthy populations of water-dependent invertebrates	7.1	5.9	9.3	3.5
Healthy populations of fish for fishing recreation	17.1	20.6	20.6	14.0

Table A-184. Percent of hunters/anglers and non-hunters/anglers indicating the importance of considering "local irrigation" when making water distribution decisions.

Participation	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Hunters/anglers	2.8	1.4	14.7	42.0	39.2
Non-hunters/anglers	0.8	3.5	11.9	45.1	38.7

Table A-185. Percent of hunters/anglers and non-hunters/anglers indicating the importance of considering "local municipalities" when making water distribution decisions.

Participation	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Hunters/anglers	1.4	6.3	20.3	38.5	33.6
Non-hunters/anglers	0.4	4.3	15.4	40.3	39.5

Table A-186. Percent of hunters/anglers and non-hunters/anglers indicating the importance of considering "local industries" when making water distribution decisions.

Participation	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Hunters/anglers	2.8	14.2	31.9	37.6	13.5
Non-hunters/anglers	1.0	15.8	26.5	41.3	15.4

Table A-187. Percent of hunters/anglers and non-hunters/anglers indicating the importance of considering "threatened and endangered fish populations" when making water distribution decisions.

Participation	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Hunters/anglers	4.2	15.5	26.1	33.1	21.1
Non-hunters/anglers	2.1	9.5	32.1	37.9	18.5

Table A-188. Percent of hunters/anglers and non-hunters/anglers indicating the importance of considering "healthy populations of water-dependent invertebrates" when making water distribution decisions.

Participation	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Hunters/anglers	1.4	19.6	32.9	31.5	14.7
Non-hunters/anglers	3.9	16.7	30.7	33.3	15.4

Table A-189. Percent of hunters/anglers and non-hunters/anglers indicating the importance of considering "healthy populations of fish for fishing recreation" when making water distribution decisions.

Participation	Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
Hunters/anglers	1.4	12.6	25.2	40.6	20.3
Non-hunters/anglers	4.5	20.8	34.2	29.6	10.9

Table A-190. Percent of hunters/anglers and non-hunters/anglers identifying each use as the first most important use of water.

Use	Hunters/anglers	Non-hunters/anglers
Local irrigation	33.6	39.6
Local municipalities	38.6	40.8
Local industries	0.0	0.8
Threatened and endangered fish populations	16.4	14.1
Healthy populations of water-dependent invertebrates	1.4	2.5
Healthy populations of fish for fishing recreation	10.0	2.1

Table A-191. Percent of hunters/anglers and non-hunters/anglers identifying each use as the second most important use of water.

Use	Hunters/anglers	Non-hunters/anglers
Local irrigation	32.6	35.8
Local municipalities	27.7	30.7
Local industries	7.8	8.3
Threatened and endangered fish populations	9.2	10.4
Healthy populations of water-dependent invertebrates	8.5	11.0
Healthy populations of fish for fishing recreation	14.2	3.8

Table A-192. Percent of hunters/anglers and non-hunters/anglers identifying each use as the third most important use of water.

Use	Hunters/anglers	Non-hunters/anglers
Local irrigation	17.6	12.7
Local municipalities	10.6	13.7
Local industries	26.1	34.0
Threatened and endangered fish populations	12.7	15.6
Healthy populations of water-dependent invertebrates	10.6	6.6
Healthy populations of fish for fishing recreation	22.5	17.3

APPENDIX B. METHODS

A full reporting of the project background and methods for *Wildlife Values in the West* is reported in the regional report (Teel, Dayer, Manfredo, & Bright, 2005). Methods specifically relevant to Colorado are presented below.

The Survey

Data reported here were collected via mail-back surveys administered by Colorado State University (CSU) in the Fall of 2004. This final survey administration followed a pretest of the survey instrument and methodology in the Summer of 2004 (see Teel et al., 2005).

The survey instrument for this project was divided into two parts: 1) a regional section, and 2) a state-specific section. The focus of this report is on providing results specific to Colorado from both sections of the survey. Findings related to the responses of all states' samples to the regional section are found in the regional report (Teel et al., 2005).

Regional Section

The purpose of the regional section of the survey, which was the same across all states, was to measure public values and wildlife value orientations, socio-demographic characteristics, and participation in wildlife-related recreation activities among residents of each state. The regional section also contained questions addressing public reactions to key "regional" wildlife management issues deemed important across a majority of participating states. Criteria for issue selection were not geared toward development of a comprehensive list of regional issues but rather were based more on an intention to provide meaningful information in the context of broad study goals. Issues were selected largely on the basis of their ability to provide information about how changes in public values could affect responses to management issues and decisions. Thus, while not all issues were expected to have immediate and direct relevance to every state, they were intended to allow for generalizations to be made about how different publics might react to wildlife management strategies. Questions appearing in the regional section were developed by CSU in cooperation with participating state agency representatives.

State-Specific Section

The state-specific section provided an opportunity to gather information about key, timely management issues affecting Colorado. The questions appearing in this part of the survey were developed by the Colorado Division of Wildlife (CDOW), with input and suggestions from CSU and other members of the project work group.

Sampling

A sample of 3001 people from Colorado was purchased from Survey Sampling, Inc. Information about response rates obtained from the pretest (see Teel et al., 2005) allowed a determination of this sampling size on the basis of approximately how many surveys would need to be mailed out

to target for a minimum of 400 completed surveys per state. This number of surveys allows for population estimates within + or - 5% at the 95% confidence level.

As was the case for the pretest, samples were stratified on the basis of age (3 age groups: 18-34, 35-54, 55+) to ensure adequate representation of population subgroups as compared to state census information. Based on pretest findings (see Teel et al., 2005) regarding the underrepresentation of younger age groups, the decision was made to oversample in the 18-34 age category by 5% (i.e., increase the sample of the 18-34 age category by 5% of the total sample) and to undersample in the 55+ group by this amount. Information to identify representation of age groups was based on U.S. Census 2000 (U.S. Census Bureau, 2002) projections to the year 2003 that were formulated by Scan/US, Inc. and provided to Survey Sampling, Inc.

Timing and Methods of Data Collection

Data collection occurred via administration of a mail-back survey to a sample of Colorado residents in October-November 2004. All survey administration, including preparation of mailings (e.g., addressing and envelope stuffing), occurred from CSU. A modified Dillman (2000) approach, consisting of multiple mailings (i.e., survey and cover letter followed by postcard reminder and then a 2nd copy of the survey and cover letter), was used to maximize response to the mail survey.

The survey and cover letter were designed to portray the project as a joint effort among the Western Association of Fish and Wildlife Agencies (WAFWA), the CDOW, and CSU. To attempt to ensure relatively equal representation across gender, half of the first mailing cover letters sent to residents in each state requested participation by a female in the household, and half requested participation by a male in the household. An attempt was also made to encourage those who do not participate in wildlife-related recreation and/or who are not actively involved in wildlife-related issues to complete the survey. Specifically, we attached a yellow "post-it" note to the front of each survey containing the following message: "Even if you know little about wildlife, your opinions are needed." This message was re-stated on the cover of the survey and prefaced with the statement, "this survey is for all citizens of your state." Cover letters also emphasized the desire to involve non-participants by stating that even if a potential respondent did not hunt or fish, his or her input was still important to us.

Surveys were returned to CSU where data were then entered into Microsoft Excel files which were in turn converted for analysis and reporting into SPSS® 13.0 (SPSS, Inc., 2004) files. In total, 641 completed surveys were received from Colorado residents. The response rate for Colorado was 24%.

Nonresponse Check via Telephone Survey

A sample of Colorado residents who did not respond to the mail survey was contacted by phone following data collection. Calls were made by PhoneBase Research, Inc. (a telephone interviewing firm in Fort Collins, Colorado) in December, 2004 and January, 2005, with a break to account for holidays. The purpose of this effort was to obtain responses to a few key

questions from the mail survey, including selected items designed to assess basic beliefs about wildlife, recent participation in wildlife-related recreation, and socio-demographic characteristics. The phone survey allowed for comparisons to determine if differences existed between respondents and nonrespondents to the mail survey on key variables of interest to the study. The phone survey also provided information useful to developing an in-depth understanding of nonrespondent characteristics and factors affecting nonresponse to the mail survey.

In the context of certain comparisons between respondents and nonrespondents to the mail survey, differences in age and participation were noted and were addressed through weighting procedures described in the regional report (Teel et al., 2005). More detailed information regarding the phone survey (e.g., response rates), findings from respondent-nonrespondent comparisons, and representativeness of the data can also be found in the regional report.

References

Dillman, D. A. (2000). *Mail and internet surveys: The Tailored Design Method*, 2nd Edition. New York, NY: John Wiley & Sons.

SPSS, Inc. (2004). *SPSS Base 13.0 for Windows User's Guide*. Chicago, IL: SPSS, Inc.

Teel, T. L., Dayer, A.A., Manfredo, M. J, & Bright, A. D. (2005). Regional results from the research project entitled *"Wildlife Values in the West."* (Project Rep. No. 58). Project Report for the Western Association of Fish and Wildlife Agencies. Fort Collins, CO: Colorado State University, Human Dimensions in Natural Resources Unit.

U.S. Census Bureau. (2002). *2000 Census of Population and Housing.* Washington, DC: U.S. Census Bureau.

APPENDIX C. MAIL SURVEY INSTRUMENT

Management of Fish and Wildlife in the West

A study conducted cooperatively by:

Colorado State University

Knowledge to Go Places

COLORADO DIVISION OF WILDLIFE

WESTERN ASSOCIATION OF FISH AND WILDLIFE AGENCIES

This survey is for <u>all</u> citizens of your state!
Even if you know little about wildlife,
your opinions are needed!

Fall 2004

PLEASE READ BEFORE COMPLETING THIS SURVEY:

This survey is being sent to people residing in states throughout the West. Please note that, while some of the questions in this survey may not be relevant to your state specifically, we are still interested in your opinions because they are relevant to other states in the western region.

Section I.

We begin this survey by asking you about the goals for our country. Below are 3 groups of goals that people might prioritize differently. *For each group, rank the 4 goals in order of importance to you*. That is:

1 = the goal most important to YOU
2 = the 2nd most important goal
3 = the 3rd most important goal
4 = the least important goal

Group 1. Rank these 4 goals from most important (1) to least important (4). Please no ties (meaning, DO NOT GIVE ANY OF THESE ITEMS THE SAME RANK). Group 1 Rank

- Maintain a high level of economic growth. _____
- See that people have more to say about how things are done at their jobs and in their communities. _____
- Make sure this country has strong defense forces. _____
- Try to make our cities and countryside more beautiful. _____

Group 2. Repeat now for this next set of goals (1=most important, 4=least important). Please no ties (meaning, DO NOT GIVE ANY OF THESE ITEMS THE SAME RANK). Group 2 Rank

- Maintain order in the nation. _____
- Give people more to say in important government decisions. _____
- Fight rising prices. _____
- Protect freedom of speech. _____

Group 3. Repeat again for this final set of goals (1=most important, 4=least important). Please no ties (meaning, DO NOT GIVE ANY OF THESE ITEMS THE SAME RANK). Group 3 Rank

- Maintain a stable economy. _____
- Progress toward a less impersonal and more humane society. _____
- Fight crime. _____
- Progress toward a society in which ideas count more than money. _____

Below are statements that represent a variety of ways people feel about fish and wildlife and the natural environment. Please indicate the extent to which you disagree or agree with each statement. *Circle one number for each statement.*

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
1.	Humans should manage fish and wildlife populations so that humans benefit.	1	2	3	4	5	6	7
2.	We should strive for a world where humans and fish and wildlife can live side by side without fear.	1	2	3	4	5	6	7
3.	We should strive for a world where there's an abundance of fish and wildlife for hunting and fishing.	1	2	3	4	5	6	7
4.	The needs of humans should take priority over fish and wildlife protection.	1	2	3	4	5	6	7
5.	I view all living things as part of one big family.	1	2	3	4	5	6	7
6.	Animals should have rights similar to the rights of humans.	1	2	3	4	5	6	7
7.	Wildlife are like my family and I want to protect them.	1	2	3	4	5	6	7
8.	People should never be allowed to use any fish or wildlife for any reason.	1	2	3	4	5	6	7

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
9. It is acceptable for people to kill wildlife if they think it poses a threat to their life.	1	2	3	4	5	6	7
10. It is acceptable for people to kill wildlife if they think it poses a threat to their property.	1	2	3	4	5	6	7
11. If I had to walk in the outdoors, I would be worried about encountering a wild animal.	1	2	3	4	5	6	7
12. It is acceptable to use fish and wildlife in research even if it may harm or kill some animals.	1	2	3	4	5	6	7
13. Fish and wildlife are on earth primarily for people to use.	1	2	3	4	5	6	7
14. If I were around wildlife in the outdoors I would be uncomfortable.	1	2	3	4	5	6	7
15. Hunting is cruel and inhumane to the animals.	1	2	3	4	5	6	7
16. I have concerns about being around wildlife because they may carry a disease.	1	2	3	4	5	6	7
17. I am not interested in knowing anything more about fish and wildlife.	1	2	3	4	5	6	7
18. It would be more rewarding to me to help animals rather than people.	1	2	3	4	5	6	7
19. I have concerns about being around wildlife because they may hurt me.	1	2	3	4	5	6	7
20. I am really not that interested in fish and wildlife.	1	2	3	4	5	6	7
21. Advances in technology will eventually provide a solution to our environmental problems.	1	2	3	4	5	6	7
22. I care about animals as much as I do other people.	1	2	3	4	5	6	7
23. People who want to hunt should be provided the opportunity to do so.	1	2	3	4	5	6	7
24. I take great comfort in the relationships I have with animals.	1	2	3	4	5	6	7
25. I value the sense of companionship I receive from animals.	1	2	3	4	5	6	7
26. The natural environment should be protected for its own sake rather than simply to meet our needs.	1	2	3	4	5	6	7
27. Hunting does not respect the lives of animals.	1	2	3	4	5	6	7
28. I feel a strong emotional bond with animals.	1	2	3	4	5	6	7
29. We should strive for a society that emphasizes environmental protection over economic growth.	1	2	3	4	5	6	7
30. Science can provide answers to any problems that we encounter in nature.	1	2	3	4	5	6	7
31. Protecting the natural environment should be this country's top priority.	1	2	3	4	5	6	7
32. We can find solutions to environmental problems through science and technology.	1	2	3	4	5	6	7

Section II.

This section asks your opinion about key regional issues that are important in one or more western states. Some of these issues may not be present in your state specifically. However, your opinion is still important to us. ***For each set of questions, please follow the directions that are provided.***

State fish and wildlife agencies hear from many different groups of people about their interests, making decisions and priorities difficult. Below is a series of hypothetical approaches that describe how priorities *could* be directed. ***Please read about each approach. Then tell us how you think things are now and how they should be in your state based on these approaches by answering the 2 questions that follow.***

APPROACH 1
- State agencies develop programs that meet the needs primarily of those who hunt and/or fish.
- Fish and wildlife management is **almost entirely funded by hunting and fishing license dollars**.

APPROACH 2
- State agencies develop programs that meet the needs primarily of those who hunt and/or fish.
- Fish and wildlife management is **substantially funded by both hunting and fishing license dollars *and* public taxes**.

APPROACH 3
- State agencies develop programs that meet the needs of all members of the public regardless of their level of interest in wildlife.
- Fish and wildlife management is **almost entirely funded by hunting and fishing license dollars**.

APPROACH 4
- State agencies develop programs that meet the needs of all members of the public regardless of their level of interest in wildlife.
- Fish and wildlife management is **substantially funded by both hunting and fishing license dollars *and* public taxes**.

1. Of the above approaches, which approach do you think best resembles how things are now in your state? *Check only one (☑).*

❒ **Approach 1** ❒ **Approach 2** ❒ **Approach 3** ❒ **Approach 4**

2. Which approach best represents your opinion of how things should be in your state? *Check only one (☑).*

❒ **Approach 1** ❒ **Approach 2** ❒ **Approach 3** ❒ **Approach 4**

We would like to know how you feel about the extent to which your state fish and wildlife agency listens to and considers your opinions in fish and wildlife decision-making. Please indicate how strongly you disagree or agree with each of the following statements. ***Circle one number for each statement.***

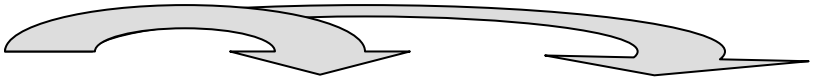
	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
1. I feel that my opinions are heard by fish and wildlife decision-makers in my state.	1	2	3	4	5	6	7
2. I feel that my interests are adequately taken into account by fish and wildlife decision-makers in my state.	1	2	3	4	5	6	7
3. I feel that if I provide input, it will make a difference in fish and wildlife decisions in my state.	1	2	3	4	5	6	7
4. I feel that my state fish and wildlife agency makes a good effort to obtain input from the public as a whole.	1	2	3	4	5	6	7
5. I don't have an interest in providing input to fish and wildlife decisions in my state.	1	2	3	4	5	6	7
6. I trust my state fish and wildlife agency to make good decisions without my input.	1	2	3	4	5	6	7

Please respond to the following questions about the extent to which you trust certain forms of government. ***Circle one number for each statement.***

Overall, to what extent do you trust…	**Almost Never**	**Only Some of the Time**	**Most of the Time**	**Almost Always**
1. …your federal government to do what is right for your country?	1	2	3	4
2. …your state government to do what is right for your state?	1	2	3	4
3. …your state fish and wildlife agency to do what is right for fish and wildlife management in your state?	1	2	3	4

Fish and wildlife agencies want to know how the public thinks the agencies should respond to human-wildlife conflict situations. Below are two IMAGINARY situations involving black bears. We would like to know how you feel about certain management actions that could be directed at bear populations to address these situations. ***Even though it may seem unlikely that these things could occur where you live, we are still interested in your opinions.***

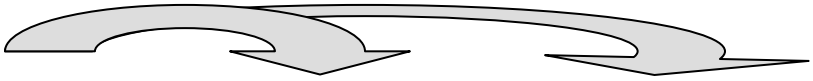
(PLEASE TELL US HOW YOU FEEL ABOUT THE ACTIONS LISTED BELOW FOR EACH SITUATION)



ACTIONS:	**SITUATION 1** Bears are wandering into areas where humans live in search of food. Bears are getting into trash and pet food containers.		**SITUATION 2** Bears are wandering into areas where humans live in search of food. Human deaths from bear attacks have occurred.	
Is it unacceptable or acceptable to….	**Unacceptable**	**Acceptable**	**Unacceptable**	**Acceptable**
1. ...do nothing to control bear populations?	❒	❒	❒	❒
2. …provide more recreational opportunities to hunt bears?	❒	❒	❒	❒
3. …conduct controlled hunts using trained agency staff?	❒	❒	❒	❒

Below are two IMAGINARY situations involving deer. We would like to know how you feel about certain management actions that could be directed at deer populations to address these situations. ***Even though it may seem unlikely that these things could occur where you live, we are still interested in your opinions.***

(PLEASE TELL US HOW YOU FEEL ABOUT THE ACTIONS LISTED BELOW FOR EACH SITUATION)

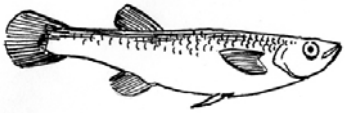


ACTIONS:	**SITUATION 1** Deer numbers are increasing. There are complaints about deer entering people's yards and eating shrubs and garden plants.		**SITUATION 2** Deer numbers are increasing. Authorities are concerned because deer are carrying a disease that is transmissible to some domestic animals and livestock.	
Is it unacceptable or acceptable to….	**Unacceptable**	**Acceptable**	**Unacceptable**	**Acceptable**
1. ...do nothing to control deer populations?	❒	❒	❒	❒
2. …provide more recreational opportunities to hunt deer?	❒	❒	❒	❒
3. …conduct controlled hunts using trained agency staff?	❒	❒	❒	❒
4. …distribute pellets containing contraceptives, causing deer to be unable to produce offspring permanently?	❒	❒	❒	❒
5. …distribute pellets containing contraceptives, causing deer to be unable to produce offspring for only a few breeding seasons?	❒	❒	❒	❒

A fish and wildlife agency manager of a particular area may have limited funds to spend on conservation programs for fish and wildlife. As a result, difficult choices must be made about what type of fish or wildlife deserves the greatest priority. This often involves evaluating different combinations of characteristics of the fish or wildlife. Below is a series of hypothetical comparisons that illustrate the kinds of choices that might be made for an area. ***For each comparison please select the choice with the characteristics you think the manager should spend funds on to maintain or enhance the fish or wildlife population.***

These are hypothetical comparisons. *Even though some of these fish or wildlife may not be present where you live, we are still interested in your opinions.*

1. Which should the manager spend funds on? *(Check one ☑.)*

❒ **CHOICE A**	⇔ ***OR***	❒ **CHOICE B**
➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Common in the area, and numbers are stable. ➢ Not a hunted/fished species. **Example: Mosquitofish** 		➢ This species naturally occurs in the area. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Hunted/fished species. **Example: Cutthroat Trout** 

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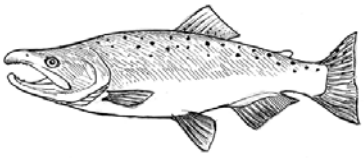
2. Which should the manager spend funds on? *(Check one ☑.)*

❒ **CHOICE A**	⇔ ***OR***	❒ **CHOICE B**
➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Even though it did exist here at one time, it is no longer present in the area under consideration. ➢ Hunted/fished species. **Example: Coho Salmon**  Survey illustrations © Ram Papish		➢ This species naturally occurs in the area. ➢ Common in the area, and numbers are stable. ➢ Not a hunted/fished species. **Example: Black-chinned Hummingbird** 

3. Which should the manager spend funds on? *(Check one ☑.)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species naturally occurs in the area. ➢ Even though it did exist here at one time, it is no longer present in the area under consideration. ➢ Not a hunted/fished species. **Example: Roundtail Chub** 		➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Common in the area, and numbers are stable. ➢ Hunted/fished species. **Example: Brown Trout** 

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4. Which should the manager spend funds on? *(Check one ☑.)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species naturally occurs in the area. ➢ Common in the area, and numbers are stable. ➢ Hunted/fished species. **Example: Gambel's Quail** 		➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Not a hunted/fished species. **Example: European Ferret** 

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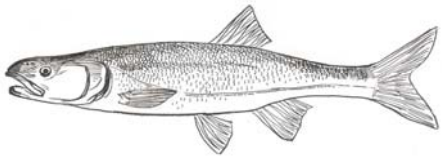
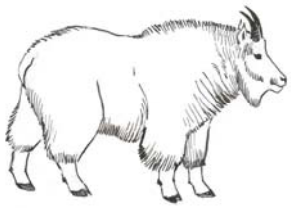
5. Which should the manager spend funds on? *(Check one ☑.)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species naturally occurs in the area. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Hunted/fished species. **Example: Blue Grouse** 		➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Even though it did exist here at one time, it is no longer present in the area under consideration. ➢ Not a hunted/fished species. **Example: Monk Parakeet** 

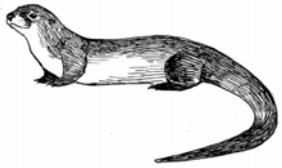
6. Which should the manager spend funds on? *(Check one ☑.)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Not a hunted/fished species. **Example: Black Tetra** 		➢ This species naturally occurs in the area. ➢ Even though it did exist here at one time, it is no longer present in the area under consideration. ➢ Hunted/fished species. **Example: Colorado Pikeminnow** 

7. Which should the manager spend funds on? *(Check one ☑.)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species naturally occurs in the area. ➢ Common in the area, and numbers are stable. ➢ Not a hunted/fished species. **Example: Great Horned Owl** 		➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Hunted/fished species. **Example: Mountain Goat** 

8. Which should the manager spend funds on? *(Check one ☑.)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species does not naturally occur in the area. It was introduced by humans. ➢ Common in the area, and numbers are stable. ➢ Hunted/fished species. **Example: Rainbow Trout** 		➢ This species naturally occurs in the area. ➢ Numbers are low, which means you don't see this species very often anymore. ➢ Not a hunted/fished species. **Example: River Otter** 

Section III.

Next, we would like your input on fish and wildlife management in Colorado. The information you provide will help the Colorado Division of Wildlife (CDOW) understand how Coloradans feel about these issues and improve their ability to manage fish and wildlife populations and habitats in Colorado. ***Please respond to each of the following questions according to the directions provided.***

1. We are interested in learning how you feel about living in Colorado. Compared to other places where you might live, how would you rate... (*Please circle one number for each statement*).

	Much Worse	Slightly Worse	About the Same	Slightly Better	Much Better
…life in Colorado?	1	2	3	4	5
…the career and employment opportunities in Colorado?	1	2	3	4	5
…the opportunities to go fishing in Colorado?	1	2	3	4	5
…the opportunities to go hunting in Colorado?	1	2	3	4	5
…the opportunities to view wildlife in Colorado?	1	2	3	4	5
…the opportunities for outdoor recreation, other than fishing, hunting or wildlife viewing in Colorado?	1	2	3	4	5
…the abundance of fish and wildlife in Colorado?	1	2	3	4	5
…the scenic beauty of Colorado?	1	2	3	4	5
…the level of public safety in Colorado?	1	2	3	4	5
…the quality of education in Colorado?	1	2	3	4	5
…the lifestyle in Colorado?	1	2	3	4	5
…the quality of the neighborhoods in Colorado?	1	2	3	4	5

2. How would you rate the overall performance of the CDOW? (*Please circle one number for your response*).

Poor	Fair	Good	Excellent
1	2	3	4

3. CDOW is responsible for the management of many types of fish and wildlife populations in Colorado. For the money that is available to manage populations that are NOT hunted or fished, we're interested in knowing where you think the majority of funds should be spent. We want you to do this by telling us which of the following "types" of fish and wildlife populations should get the most attention. (*Please circle only one number for your response*).

"Stable"	"Declining"	"Endangered"	"Extirpated"
1	**2**	**3**	**4**
Populations are neither increasing nor decreasing in Colorado	Populations are declining in Colorado	Population numbers are so small that they are in danger of no longer existing in Colorado	Populations no longer exist in the Colorado, but are found in other places

4. Below are four statements that represent how different people feel about hunting. Please read each of the statements and then answer the question below.

A. I do not believe in hunting wild animals and feel it should not be allowed.

B. I believe hunting wild animals should be done only by wildlife professionals supervised by the state to reduce animal overpopulation.

C. I believe people who buy licenses and who follow hunting regulations should be allowed to hunt wild animals as a means of helping manage animal populations.

D. I believe legal hunting of wild animals is a basic right and should be limited only when necessary for the protection of wildlife populations

Which of the statements above comes closest to your views about hunting? ***Check one box (☑).***

❒ Statement A **❒ Statement B** **❒ Statement C** **❒ Statement D**

5. Listed below are 10 activities that the CDOW would like to focus on in the coming years. Please indicate how important each activity is to you and your interests. *(Please circle the number for each statement that best represents your response).*

		Very Unimportant	Moderately Unimportant	Slightly Unimportant	Neither	Slightly Important	Moderately Important	Very Important
A.	Researching and eliminating, where possible, diseases in wildlife	1	2	3	4	5	6	7
B.	Managing mule deer populations to reach goals for population size and ratios of male to females	1	2	3	4	5	6	7
C.	Protecting high priority habitats to support many different types of fish and wildlife populations	1	2	3	4	5	6	7
D.	Providing responsive customer service	1	2	3	4	5	6	7
E.	Providing enough fish to allow for good fishing opportunities	1	2	3	4	5	6	7
F.	Protecting fish and their habitats from the whirling disease parasite	1	2	3	4	5	6	7
G.	Expanding partnerships with private landowners to protect fish and wildlife on private lands	1	2	3	4	5	6	7
H.	Protecting and enhancing fish and wildlife that are currently at risk of becoming endangered	1	2	3	4	5	6	7
I.	Implementing recovery plans for fish and wildlife that are already listed as endangered	1	2	3	4	5	6	7
J.	Increasing the number of Colorado students who learn about fish and wildlife	1	2	3	4	5	6	7

6. What do you consider to be the most important activities identified in #5 above? Write one letter, A – J, for each:

_____ 1st most important activity
_____ 2nd most important activity
_____ 3rd most important activity

7. There are many competing uses for the water in Colorado's rivers and lakes that must be considered when deciding how the water should be distributed. We are interested in how important you find the following water uses. *Circle one number for each statement.*

When making water distribution decisions, it is important to consider …	Not at All Important	Slightly Important	Moderately Important	Quite Important	Extremely Important
A. …local irrigation (water for agricultural crops).	1	2	3	4	5
B. …local municipalities (water to cities for people to use).	1	2	3	4	5
C. …local industries (water for use in factories, power plants, manufacturing).	1	2	3	4	5
D. …threatened and endangered fish populations (for example, humpback chub).	1	2	3	4	5
E. …healthy populations of water-dependent invertebrates (for example, mussels, crayfish).	1	2	3	4	5
F. …healthy populations of fish for fishing recreation (for example, walleyes).	1	2	3	4	5

8. What do you consider to be the most important uses of Colorado's water identified in #7 above? Write one letter, A – F, for each:

_____ 1st most important use of Colorado's water
_____ 2nd most important use of Colorado's water
_____ 3rd most important use of Colorado's water

The next set of questions asks your opinions about Chronic Wasting Disease.
Chronic Wasting Disease (CWD) is a brain disease found in deer. It is believed to be caused by an abnormal protein called a prion. In the early stages of the disease, infected animals may appear healthy. In later stages, infected animals may display one or more symptoms such as weight loss, lack of energy, "droopy" appearance, and excessive salivation. Infected animals always die. The origin and transmission of CWD are not well understood. The following questions ask about your opinions regarding CWD, especially in Colorado.

9. To what extent do you disagree or agree with each of the following statements related to CWD?
Circle one number or "NA" for each statement. NA = not applicable.

Do you disagree or agree that…	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neither**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**	
The threat of CWD has been exaggerated.	1	2	3	4	5	6	7	
Efforts should be taken to eliminate CWD from the wild deer population.	1	2	3	4	5	6	7	
CWD poses a risk to deer, but not to humans.	1	2	3	4	5	6	7	
CWD may pose a risk to humans, but not enough is currently known to be sure.	1	2	3	4	5	6	7	
CWD may cause disease in humans if they eat meat from animals infected with CWD.	1	2	3	4	5	6	7	
Because of CWD, I have concerns about eating deer meat.	1	2	3	4	5	6	7	NA
Because of CWD, members of my family (for example: spouse, children) have concerns about eating deer meat.	1	2	3	4	5	6	7	NA
Prior to receiving this survey, I feel I had enough information about…								
…possible human safety risks associated with CWD.	1	2	3	4	5	6	7	
…how many deer with CWD have been found in Colorado.	1	2	3	4	5	6	7	
…what the CDOW is doing about CWD in Colorado.	1	2	3	4	5	6	7	
I trust the CDOW to…								
…provide the best available information on CWD issues.	1	2	3	4	5	6	7	
…make good deer management decisions regarding CWD issues.	1	2	3	4	5	6	7	
…properly address CWD in Colorado.	1	2	3	4	5	6	7	

10. Given the uncertainty associated with CWD and its effect on deer populations, the CDOW is currently exploring alternative ways to respond. Please tell us how unacceptable or acceptable you think it would be for the CDOW to take each of the following actions. *Circle one number for each statement that most closely matches your response.*

How unacceptable or acceptable is it for CDOW to…..	**Highly Unacceptable**	**Moderately Unacceptable**	**Slightly Unacceptable**	**Neither**	**Slightly Acceptable**	**Moderately Acceptable**	**Highly Acceptable**
...take no action and allow CWD to take its natural course?	1	2	3	4	5	6	7
...continue to test deer for CWD?	1	2	3	4	5	6	7
…use *trained agency staff* to dramatically reduce herds in affected zones to lower the potential for CWD spreading?	1	2	3	4	5	6	7
…use *hunters* to dramatically reduce herds in affected zones to lower the potential for CWD spreading?	1	2	3	4	5	6	7

Section IV.

We would like to learn about your fish- and wildlife-related recreation activities. *Please check your response (☑).*

1.	Have you ever participated in recreational (non-commercial) fishing?	❒ Yes	❒ No
2.	Did you participate in recreational (non-commercial) fishing during the past 12 months (1 year)?	❒ Yes	❒ No
3.	Have you ever participated in recreational (non-commercial) hunting?	❒ Yes	❒ No
4.	Did you participate in recreational (non-commercial) hunting during the past 12 months (1 year)?	❒ Yes	❒ No
5.	Have you ever taken any recreational trips for which fish or wildlife viewing was the primary purpose of the trip?	❒ Yes	❒ No
6.	Did you take any recreational trips in the past 12 months (1 year) for which fish or wildlife viewing was the primary purpose of the trip?	❒ Yes	❒ No

Please respond to the following 3 questions about your interest in participating in fish- and wildlife-related recreation in the future. *Circle one number for each statement.*

		Not at all Interested	Slightly Interested	Moderately Interested	Strongly Interested
1.	How interested are you in taking recreational fishing trips in the future?	1	2	3	4
2.	How interested are you in taking recreational hunting trips in the future?	1	2	3	4
3.	How interested are you in taking recreational trips in the future for which fish or wildlife viewing is the primary purpose of the trip?	1	2	3	4

Now we would like to know more about your interest in taking specific trips to view wildlife.

How likely is it that you would consider taking one of the following trips in the future? *Circle one number for each statement.*

		Not at all Likely	Slightly Likely	Moderately Likely	Extremely Likely
1.	…a trip to Africa to go on a safari to view wildlife?	1	2	3	4
2.	…a trip to a remote area of Alaska to view wildlife?	1	2	3	4

The following demographic information will be used to help make general conclusions about the residents of this state. Your responses will remain completely confidential.

1. Are you…? ❒ Male ❒ Female

2. What is your age? (*Write response.*) _____ Years

3. How many people under 18 years of age are currently living in your household? (*Write response.*) _____ Person(s)

4. What is the highest level of education that you have achieved? (*Check only one ☑.*)
   - ❒ Less than high school diploma
   - ❒ High school diploma or equivalent (for example, GED)
   - ❒ 2-year associates degree or trade school
   - ❒ 4-year college degree
   - ❒ Advanced degree beyond 4-year college degree

5. What is your approximate annual household income before taxes? (*Check one ☑.*)

- ❒ Less than $10,000
- ❒ $10,000 - $29,999
- ❒ $30,000 - $49,999
- ❒ $50,000 - $69,999
- ❒ $70,000 - $89,999
- ❒ $90,000 - $109,999
- ❒ $110,000 - $129,999
- ❒ $130,000 - $149,999
- ❒ $150,000 or more

6. About how long have you lived in Colorado? (*Write response or check box☑ indicating less than one year.*) _____ Years, OR ❒ Less than one year.

7. How would you describe your current residence or community? (*Check one ☑.*)

- ❒ Large city with 250,000 or more people
- ❒ City with 100,000 to 249,999 people
- ❒ City with 50,000 to 99,999 people
- ❒ Small city with 25,000 to 49,999 people
- ❒ Town with 10,000 to 24,999 people
- ❒ Town with 5,000 to 9,999 people
- ❒ Small town / village with less than 5,000 people
- ❒ A farm or rural area

8. Would you consider your current residence a **suburb** of a larger city or metropolitan area? (*Check one ☑.)* ❒ Yes ❒ No

9. How would you describe the community in which you were raised? (*Check one ☑.*) If more than one area, check the place where you lived the longest.

- ❒ Large city with 250,000 or more people
- ❒ City with 100,000 to 249,999 people
- ❒ City with 50,000 to 99,999 people
- ❒ Small city with 25,000 to 49,999 people
- ❒ Town with 10,000 to 24,999 people
- ❒ Town with 5,000 to 9,999 people
- ❒ Small town / village with less than 5,000 people
- ❒ A farm or rural area

10. Would you consider the community in which you were raised a **suburb** of a larger city or metropolitan area? (*Check one ☑.)* ❒ Yes ❒ No

11. Are you…? (*Check one or more categories to indicate what you consider yourself to be.)*

- ❒ White, NOT of Hispanic origin
- ❒ Black or African American, NOT of Hispanic origin
- ❒ Spanish, Hispanic, or Latino
- ❒ Native American or Alaska Native
- ❒ Asian
- ❒ Native Hawaiian
- ❒ Other Pacific Islander
- ❒ Other (*Please print on line below.*)

_____

12. While many people in America view themselves as "Americans", we are interested in finding out more about how you would define your ethnic background. What is **the primary ethnic origin with which you identify yourself**? (*for example, Italian, Jamaican, Norwegian, Dominican, Korean, Mexican, Taiwanese, Ukrainian, and so on*)

(*Please write your ethnic origin.*) _____

Thank you for participating in this study. Your input is very important!

Please return the completed survey as soon as possible in the enclosed addressed and postage-paid envelope.