State Report for Wyoming

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
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Knowledge to Go Places

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EXECUTIVE SUMMARY

This report documents results of a study that assessed the Wyoming 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 Wyoming. Eight hundred and twenty-eight completed surveys were returned, and the response rate for the mail-back survey was 31%. 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 Wyoming.*

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 Wyoming is: Utilitarian (44%), Pluralist (31%), Mutualist (18%), and Distanced (7%).

- *The public differed on its perception of the current funding and programming approach of Wyoming Game and Fish Department (WGFD) and its preferred approach.*

The public was divided almost evenly in choosing the perceived current approach among four choices. In contrast, two-thirds of the public desired the approach which benefited all members of the public and was funded by both hunting and fishing licenses *and* taxes. Overall, more than half the respondents thought the current approach did not match their desired approach.

- *The public was generally accepting of new taxes to fund fish and wildlife management activities and programs.*

Over half of the public felt the creation of new taxes was acceptable for all of the suggested programs, except one which involved "paying landowners to not develop their land." The programs which the most respondents found acceptable were those for "expanding information and education activities," "buying private land to protect fish and wildlife habitat," and "buying water rights to protect fish and wildlife habitat."

- *The majority of the public did not believe their opinions, interests, and input were heard and adequately considered in fish and wildlife management decisions.*

Less than half of all respondents expressed agreement that fish and wildlife decision-makers in Wyoming were taking their opinions, interests, and input into account. However, more than half agreed that their state agency "makes a good effort to obtain input from the public" and almost half expressed trust in the agency to "make decisions without their input."

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

Over 70% of the public indicated that they trust WGFD to do what is right for fish and wildlife management in the state. In contrast, 63% indicated that they trust the state government and 44% indicated they trust the federal government to do what is right for the state and the country respectively.

- *The public generally believed that the WGFD performed well in managing fish and wildlife and agreed with the WGFD being involved in the suggested activities.*

A majority of the public felt the WGFD represented their views and made acceptable decisions about fish and wildlife management, as well as effectively managed fish and wildlife. They further agreed that the WGFD provided them with accurate and adequate amounts of timely information. Most respondents also agreed that the agency should be a strong advocate for fish and wildlife, even if that means opposing development, and that they should encourage more young people to hunt and fish. Finally, the public believed that Wyoming's fish and wildlife and their habitats were healthy.

- *Over 80% of the public participated in some form of fish and wildlife decision-making in the last year.*

More than half of the public participated in fish and wildlife decision-making using one to three methods of public involvement and a fifth participated using four or more methods. Around 40% participated in an active manner which required interaction with the agency, while 35% participated using only passive methods.

- *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 85%) found "doing nothing" to be unacceptable in situations when bears are a nuisance and when bears are a safety threat. More than half of the public supported "providing more recreational opportunities to hunt bears" in these situations. "Conducting controlled hunts using trained agency staff" was acceptable to 70% of the public in a nuisance situation and more than 80% in a safety threat situation.

- *In deer-human conflict situations, the public was 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 70%) did not accept "doing nothing" or "distributing pellets with permanent contraceptives" but more than half did accept "providing more recreational hunting opportunities," "conducting controlled hunts using trained agency staff," and "distributing pellets with short-term contraceptives." The public was more accepting of "conducting controlled hunts" and "distributing pellets with contraceptives" in a disease situation as compared to a nuisance situation.

- *Given limited funds to allocate to conservation, the public favors native, game, and declining species.*

In public preference for conservation funding, species status (i.e., whether a species is common, declining, or extirpated) was more important than species use (i.e., whether a species is considered a game species or not) or species origin (i.e., whether a species is native or not). Native species tended to be prioritized over nonnative species, and game species tended to be prioritized over nongame species. Declining species were more likely to be prioritized over common species as were extirpated species.

- *The public generally felt ORV users were responsible, but agreed ORV use can cause damage to habitat and conflicts with other users.*

Just over half the public believed ORV users stay on authorized trails, but around 80% also agreed that ORV use can cause damage to fish and wildlife habitat and conflicts with other recreationists. Slightly less than half the public agreed that most complaints about ORVs are from people who want to restrict others' use of public land.

- *The public agreed that ORV regulations should be enforced by the WGFD and were accepting of limitations on ORV use.*

Only a third of the public agreed that rules related to ORV use are sufficiently enforced and 70% or more agreed that the "WGFD should help enforce regulations on both state and federal land." Over 75% of the public agreed that "ORV use should be limited on public land when it harms fish and wildlife habitat" and "when it causes conflicts with other recreationists."

- *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: their interest in providing input to fish and wildlife decisions; whether the WGFD should encourage more young people to hunt and fish; and participation in decision-making activities, both in the number of methods used and the activeness of the methods.

- *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 attitudes of the public, especially regarding the acceptability of new taxes for fish and wildlife programs and activities; public involvement in fish and wildlife management; whether the WGFD should encourage young people to hunt and fish; participation in fish and wildlife decision-making; and management of bears involving lethal means. Typically, Mutualists and Utilitarians differed the most on these issues, with Pluralists and Distanced individuals sometimes expressing similar views to each other.

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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 Wyoming public's values and attitudes towards regional and state-specific issues assessed through the research program.

A. OBJECTIVES

This report offers findings from *Wildlife Values in the West* for Wyoming 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 Wyoming public

2. To assess the Wyoming public's attitudes toward:
   - Funding and programming approaches, including taxes for fish and wildlife programs
   - Involving the public in wildlife management decisions, including the public's trust in government, their opinions of the performance and activities of Wyoming Game and Fish Department (WGFD) and public participation in wildlife management decision making activities
   - Managing human-wildlife conflict
   - Managing biodiversity and species of concern
   - ORV use and management

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

B. ORGANIZATION OF THIS REPORT

The body of this report presents results in the order of the objectives listed above. 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

Margin of Error

When reporting results for the entire sample of Wyoming residents (n = 848) assuming maximum possible variance on a dichotomous (i.e., two category) variable, the margin of error is ± 3.4% at the 95% confidence interval and ± 2.8% at the 90% confidence interval. When we report information obtained from analyses of specific groups within the Wyoming 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	± 4.1 %
Pluralist	± 4.9 %
Mutualist	± 7.5 %
Distanced	± 12.7 %
Recreation Participation	
Hunters/anglers	± 3.8 %
Non-hunters/anglers	± 4.5 %

Hunters/anglers and Non-hunters/anglers

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. In Wyoming, 62% of the public were classified as non-hunters/anglers and 38% were classified as hunters/anglers.

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 PCI figures are meant to convey practical, rather than statistical, significance, so the interpretations of the figures focus on the practical significance of the findings.

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 Wyoming's place in the regional distribution of wildlife value orientations. This state report addresses these objectives only briefly—as they specifically relate to Wyoming—and gives an overview of wildlife value orientations and segmentation of the public based upon the concept. Section VII utilizes this segmentation scheme—wildlife value orientation types—to better explain Wyoming residents' wildlife-related attitudes.

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

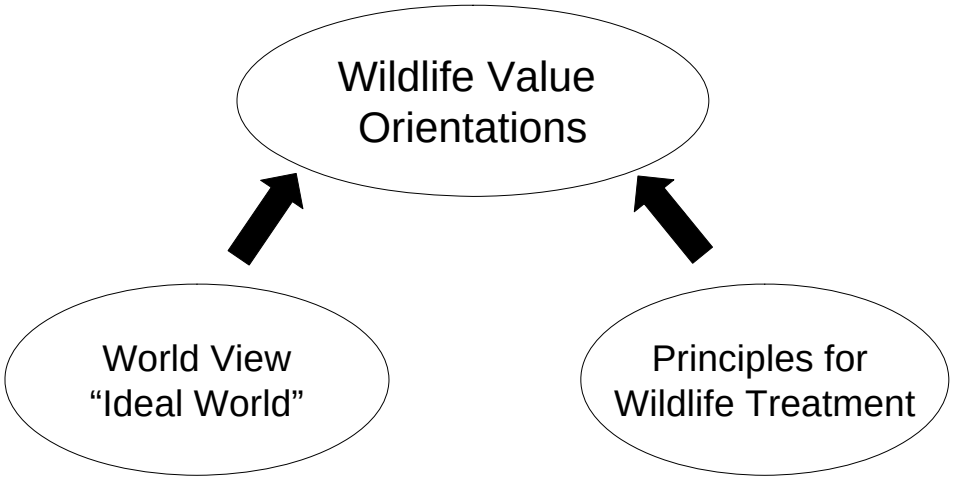
Wildlife value orientations are a component of an individual's hierarchical belief structure. They are an expression of one's values and are revealed through the pattern and direction of basic beliefs held by an individual (Fulton, Manfredo, & Lipscomb, 1996). Value orientations provide the foundation 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.

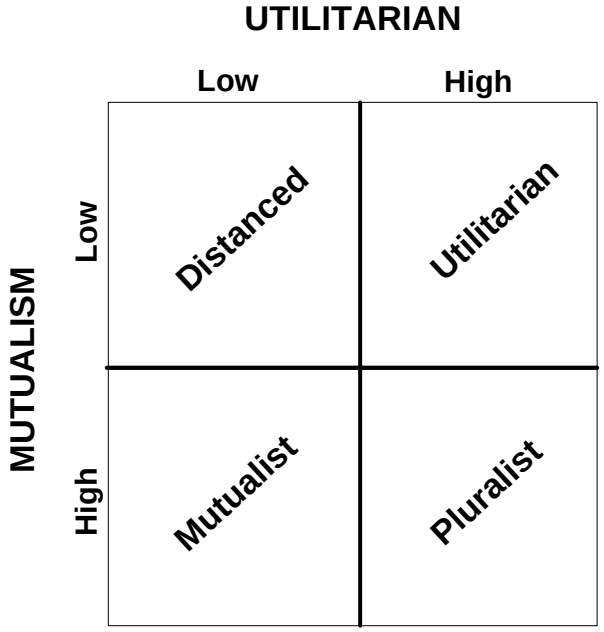
Information regarding the distribution of wildlife value orientations and belief dimensions in Wyoming is provided below.

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 and Appendix B for how the scales were created). 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.

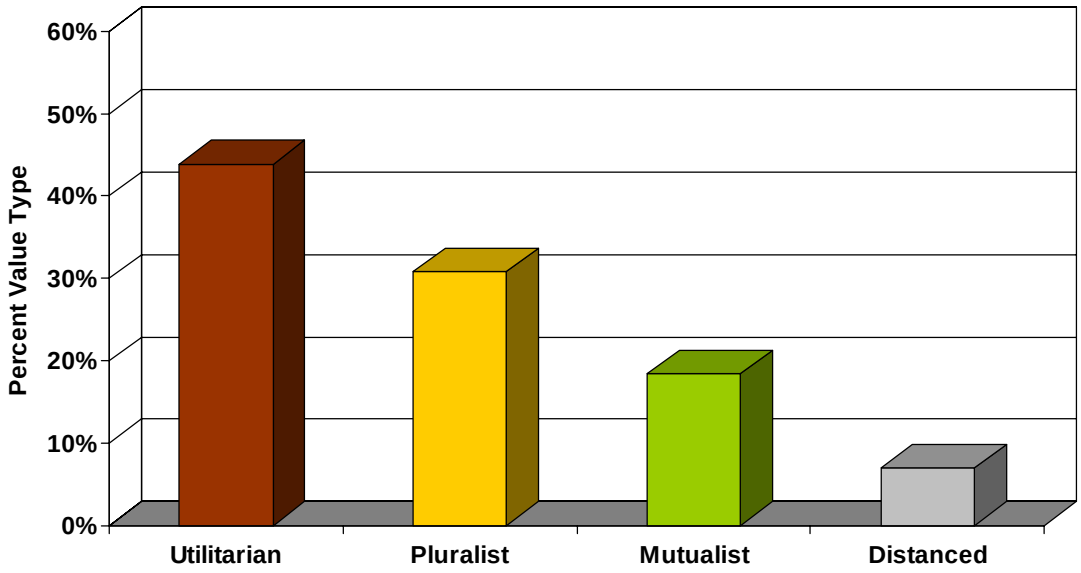
   The Pluralists as a group are believed to be an indication of our society in transition given that they hold both a utilitarian orientation toward wildlife that society is purportedly moving away from, as well as a mutualism orientation that we may be moving toward.

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 Wyoming. The majority of Wyoming residents are Utilitarians (44%) or Pluralists (31%), while fewer are Mutualists (18%) or Distanced (7%).

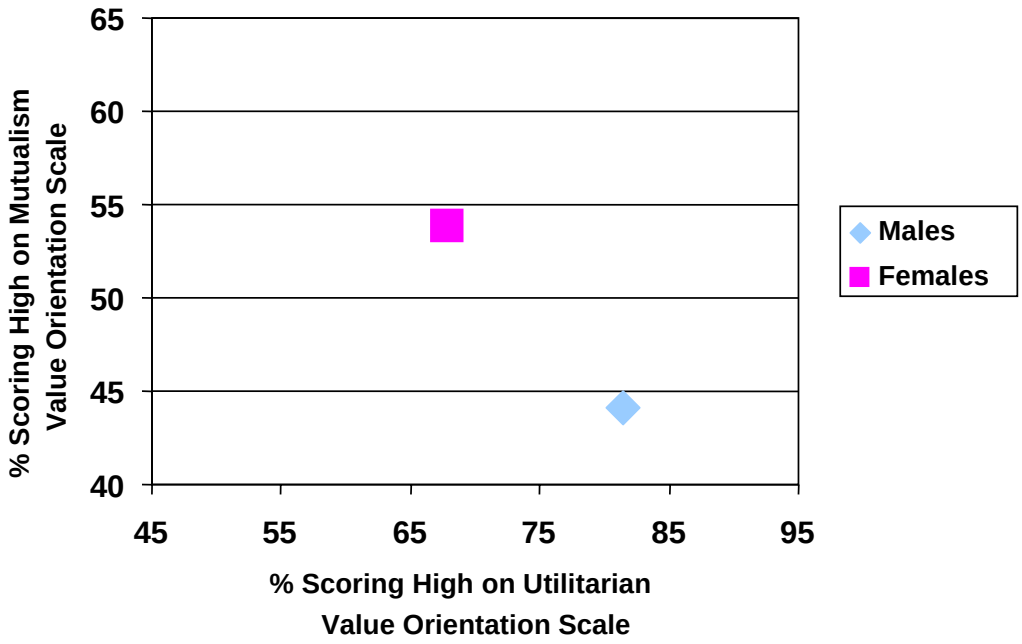
Figure II.B.2. Distribution of wildlife value orientation types in Wyoming.



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.

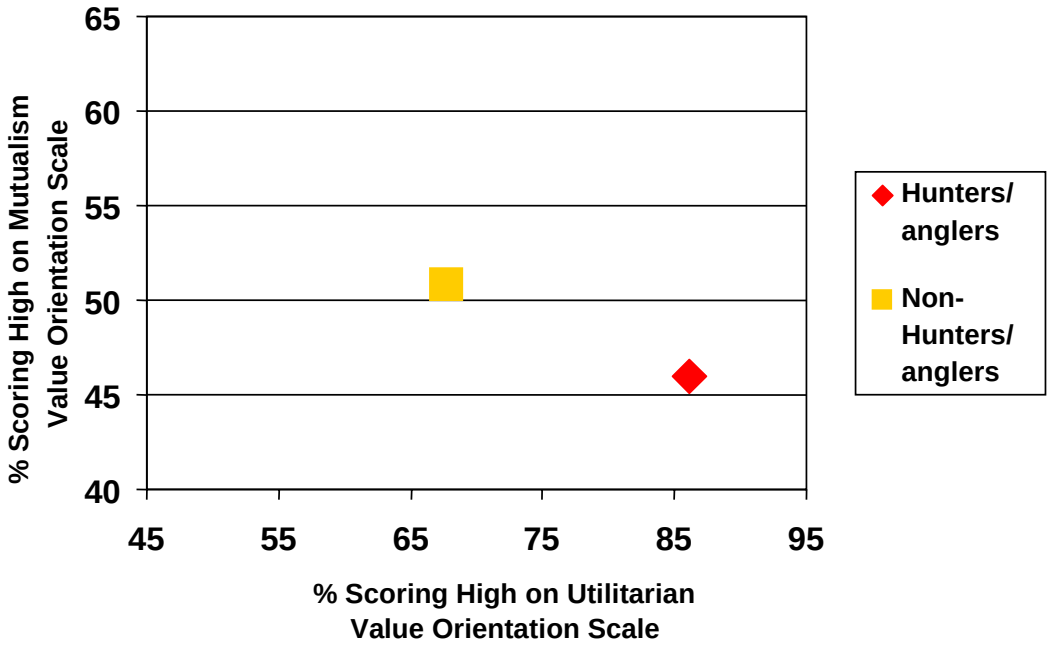
These trends are also noted in Wyoming (refer to Tables A-1 and A-2 for this section). Males are more likely than females to score high on the utilitarian value orientation scale, while females are more likely than males to score high on the mutualism value orientation scale (Figure II.B.3). Additionally, 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).

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.

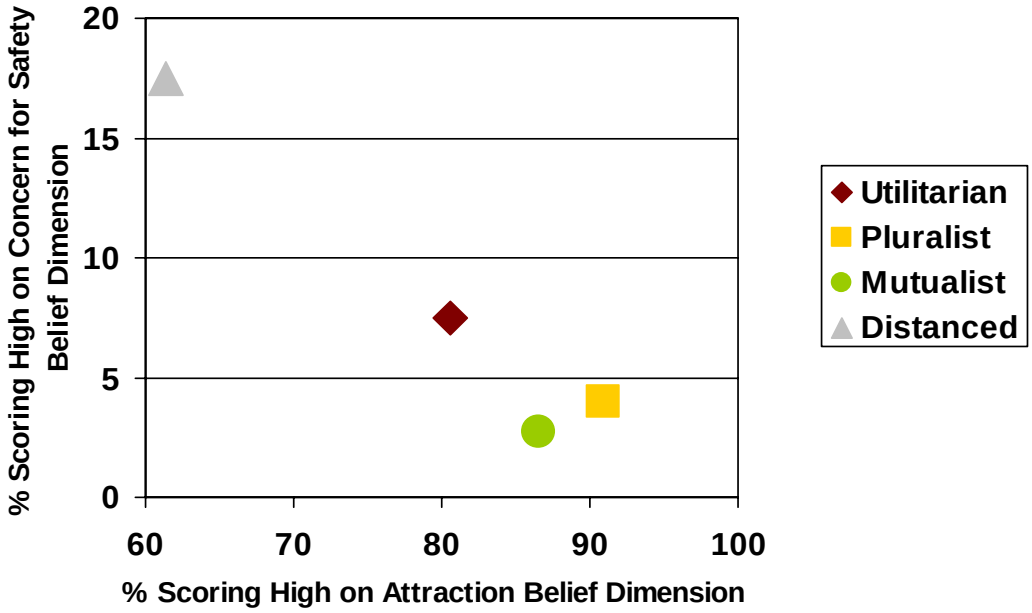


[1]"High" defined by score of > 4.5 on mean composite value orientation scale.

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 Wyoming respondents (Figure II.B.5). Distanced individuals are more likely than other value orientation types to score high on the concern for safety dimension and less likely to score high on the attraction dimension. This suggests that Distanced individuals are less interested in wildlife and wildlife-related issues.

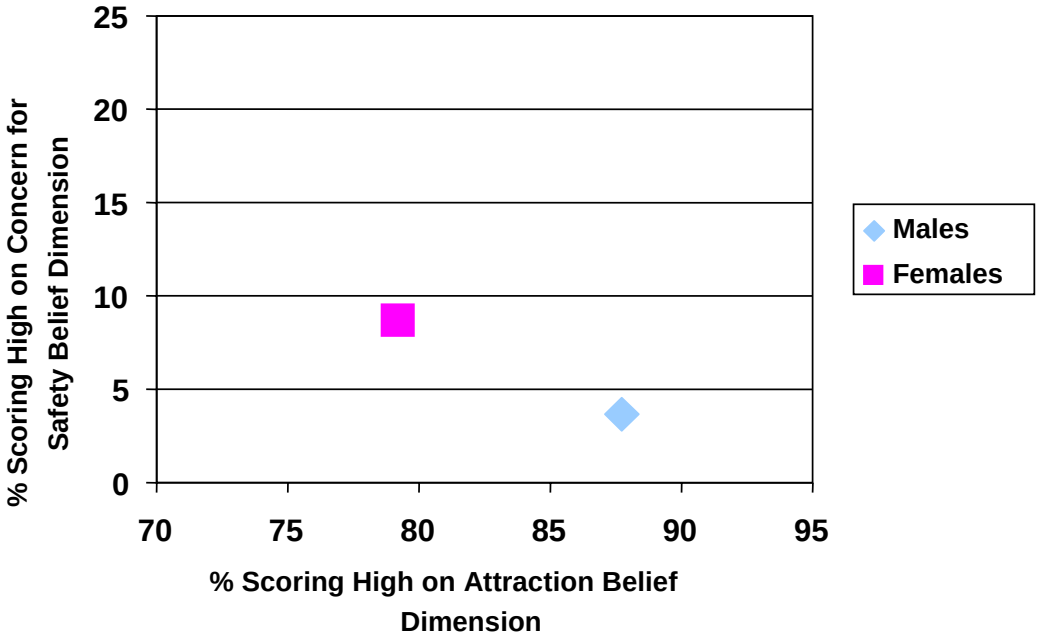
An exploration of the characteristics of those scoring high on the attraction and concern for safety belief dimensions in Wyoming highlights other sociodemographic and lifestyle differences by basic wildlife belief dimensions. In general, only a small proportion of the Wyoming public scored high on the concern for safety dimension, while over 80% 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). 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).

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.



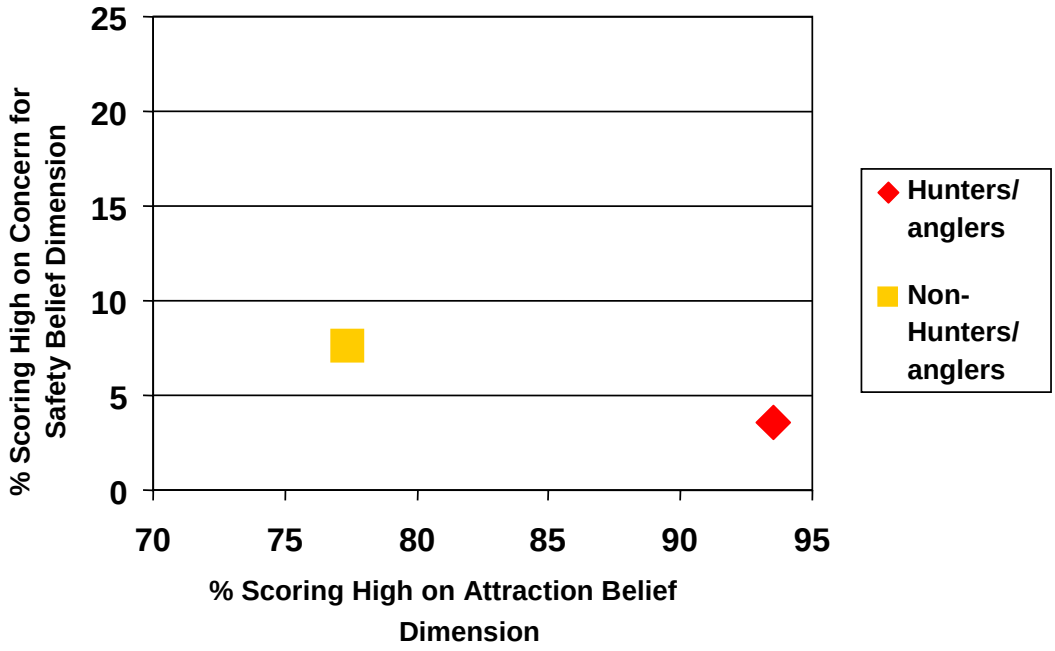
[1]"High" defined by score of > 4.5 on mean composite belief dimension scale.

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.



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

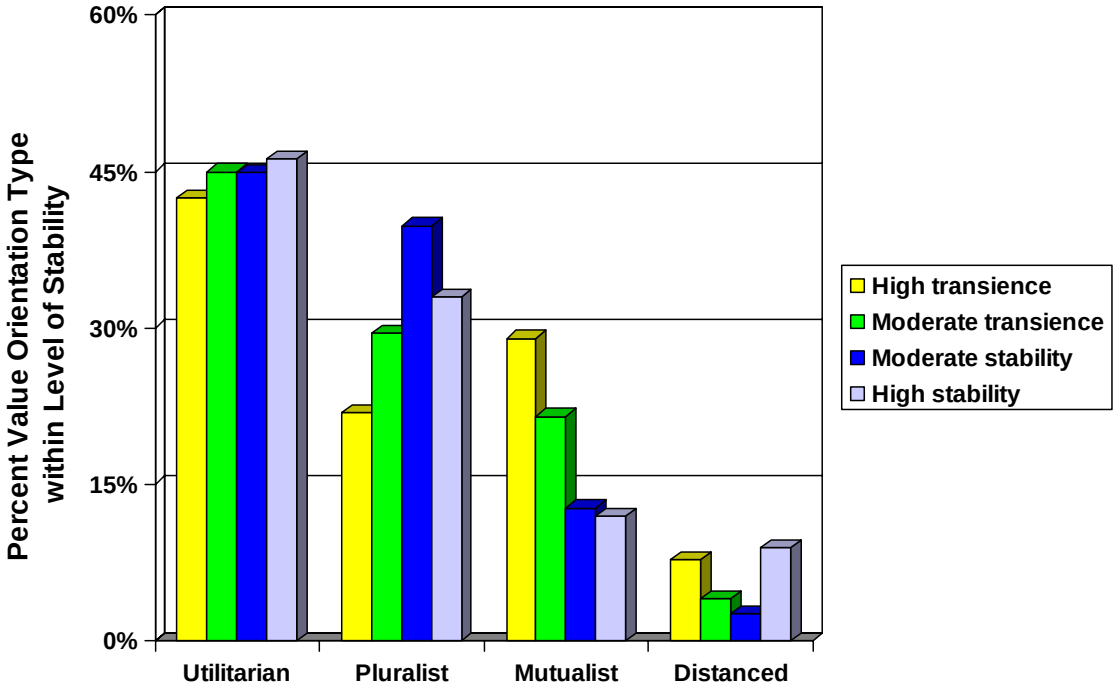
Figure II.B.7. Percent scoring "high"[1] on attraction basic wildlife belief dimension compared to concern for safety basic wildlife belief dimension by hunting and fishing participation in the past 12 months.



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

Residential stability. The current oil and gas industry boom in Wyoming, coupled with general population growth and in-migration (people moving to Wyoming from other parts of the country), is a concern for wildlife management in the future. Newcomers to the state may not have the same value orientations as those who have resided in the state for longer periods of time. In order to examine this issue, a measure of residential stability was created to compare with wildlife value orientation types. Residential stability is the percentage of their lives that individuals have spent residing in Wyoming. It was calculated by dividing length of residence by age. Figure II.B.8 shows the distribution of value orientation types within each of four levels of residential stability (see Table A-3). For example, of people who were classified as highly transient, 42% were Utilitarians, 22% were Pluralists, 29% were Mutualists, and 8% were Distanced individuals. The clearest trend seems to be the increasing percentages of Mutualists as residential stability decreases. Additionally, the percentages of Pluralists increase as stability increases. In other words, newcomers to the state are more likely to be Mutualists and less likely to be Pluralists than those who have resided in Wyoming for greater portions of their lives.

Figure II.B.8. Distribution of wildlife value orientation types within four levels of residential stability.



SECTION III. FUNDING AND PROGRAMMING[3]

Questions presented in this section examine the public's perceptions of the agency's funding and programming approaches. Two components of the topic are addressed:

1. current and desired funding and programming approaches and
2. acceptability of taxes for fish and wildlife programs and activities.

The survey items and results for each of these components are presented in order below. Additionally, results placing Wyoming 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 (refer to Tables A-4 to A-9 for this section).

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**

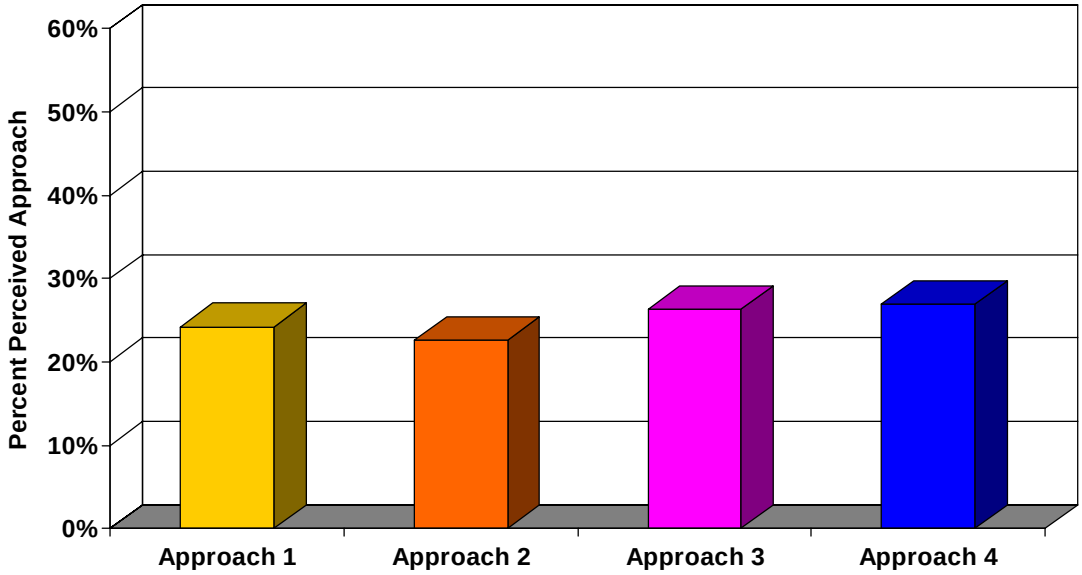
2. Which approach best represents your opinion of how things should be in your state? *Check only one (☑).*

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

[3] Text describing regional issues 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," the Wyoming public was split almost evenly between the four approaches. Approaches 3 (27%) and 4 (27%), which *meet the needs of all members of the public* but differ in funding options, had nearly identical percentages of respondents. Approaches 1 (24%) and 2 (22%), which *meet the needs of hunters/anglers* but also differ in funding options, were chosen by only slightly fewer respondents.

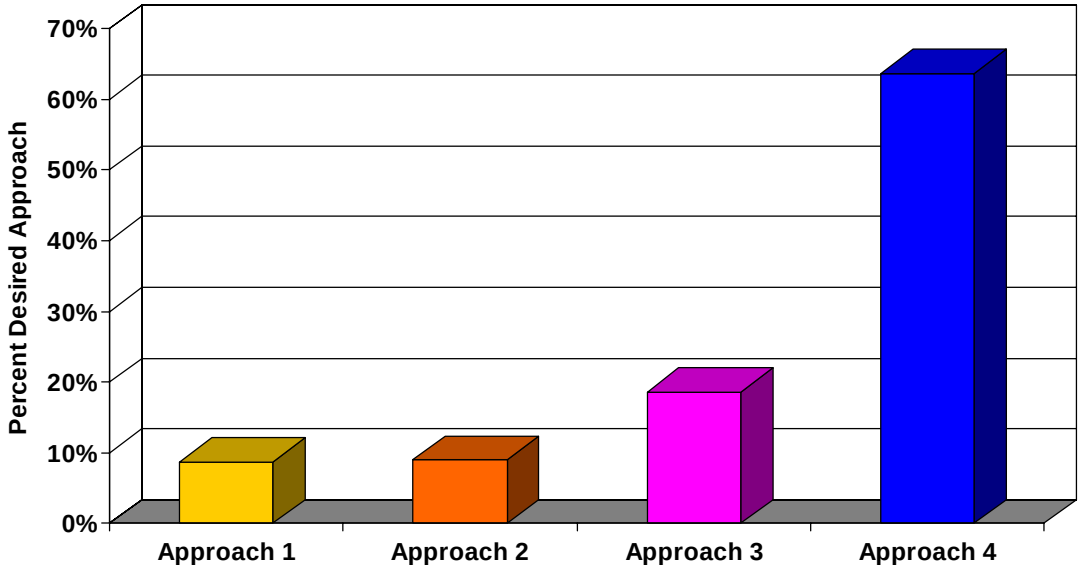
Figure III.A.1. Percent of respondents indicating each approach[1] as their perceived current approach.



[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," almost two thirds of the public 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* (Figure III.A.2). The second most frequently selected response was Approach 3, which *meets the needs of all members of the public and is funded almost entirely by hunting and fishing licenses* (19%). 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* (9%), and Approach 1, with the funding option of *almost entirely by hunting and fishing licenses* (9%).

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 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, 23.6% of the respondents selected Approach 4 as their perceived current approach and also their desired approach. In other words, approximately one-third of those with this desired approach (i.e., 23.6% of the 63.7% total selecting it) already perceived it to be the approach. The other two-thirds 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—highlighted in yellow) sum to the percent of respondents who showed consistency with their perceived current and desired funding approaches. More specifically, for Approach 1, 6.2% of all of the respondents selected it for their perceived current approach and desired approach, 4.6% for Approach 2, 11.7% for Approach 3, and 23.6% for Approach 4. Thus, 46.1% of the respondents in Wyoming 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[1]				Total (perceived)
		Approach 1	Approach 2	Approach 3	Approach 4	
Perceived current approach[1]	Approach 1	6.2	2.3	2.9	12.8	24.2
	Approach 2	0.9	4.6	2.6	14.5	22.6
	Approach 3	0.9	0.9	11.7	12.8	26.3
	Approach 4	0.8	1.2	1.4	23.6	26.9
Total (desired)		8.7	9.0	18.6	63.7	100.0

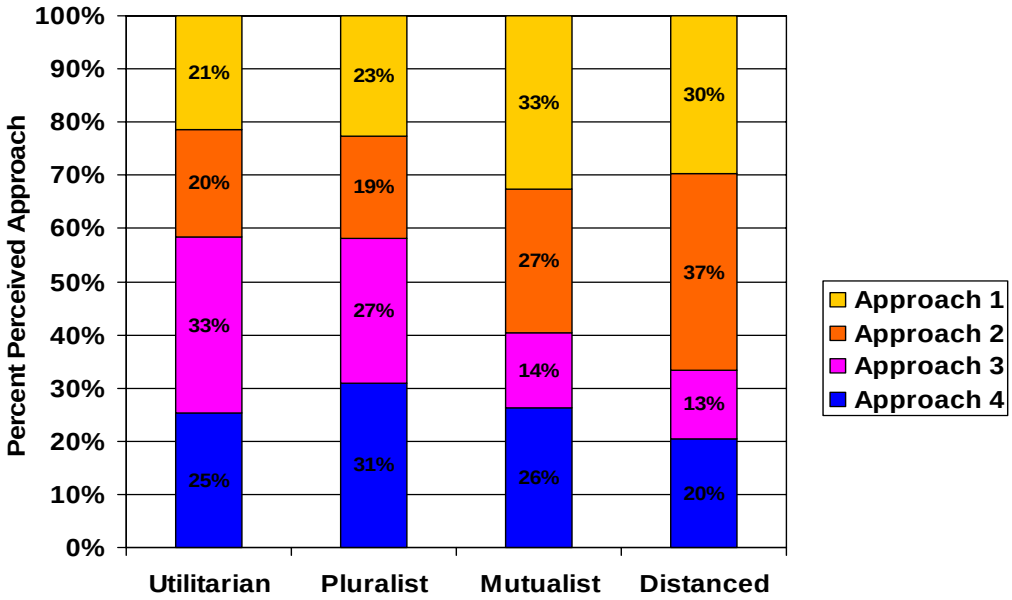
[1]Approach 1- Programs meet the needs primarily of those who hunt and/or fish. Funded almost entirely by hunting and fishing license dollars.
Approach 2 - Programs meet the needs primarily of those who hunt and/or fish. Funded substantially by both hunting and fishing license dollars *and* public taxes.
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 twelve 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 significant sociodemographic correlation was with household income (r_p = .08; p = .01). Those with higher income more likely had perceived current and desired approaches that matched, though the effect was "small" (Cohen, 1988). Significant correlations were also found with both the utilitarian value orientation (r_p = .17, p <.001) and the mutualism value orientation (r_p = -.07, p = .03). 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 for these relationships was also "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 were most likely to choose Approach 3, Pluralists were most likely to choose Approach 4, Mutualists were most likely to choose Approach 1, and Distanced individuals were most likely to choose Approach 2. Overall, more than half of the Utilitarians and Pluralists chose Approaches 3 or 4 (both of which *meet the needs of all members of the public* but are funded by different sources), while over half of Mutualists and Distanced individuals chose Approaches 1 or 2 (both of which *meet the needs primarily of those who hunt and/or fish* but are funded by different sources).

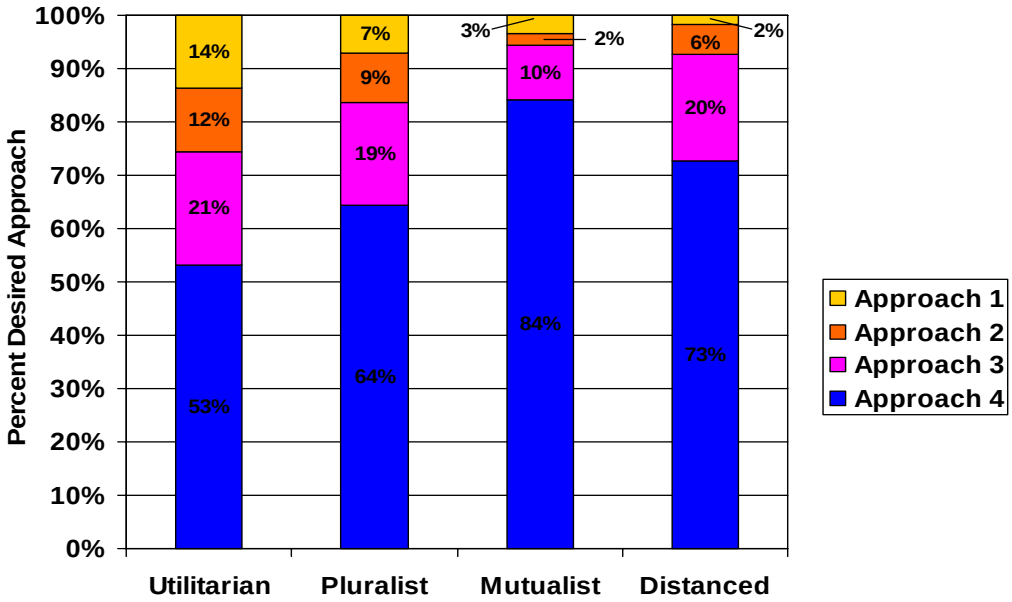
Figure III.A.3. Percent of wildlife value orientation type indicating each approach as their perceived current approach.



[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.

There is more 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, but there were differences between the types in how many respondents selected it. Over 80% of Mutualists, three-quarters of Distanced individuals, two-thirds of Pluralists, and just over half of Utilitarians chose Approach 4. The second most common choice for all types was Approach 3, with about a fifth of Utilitarians, Pluralists, and Distanced individuals and around a tenth of Mutualists selecting it. 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* and the funding for Approach 3 would come from only *hunting and fishing licenses*.

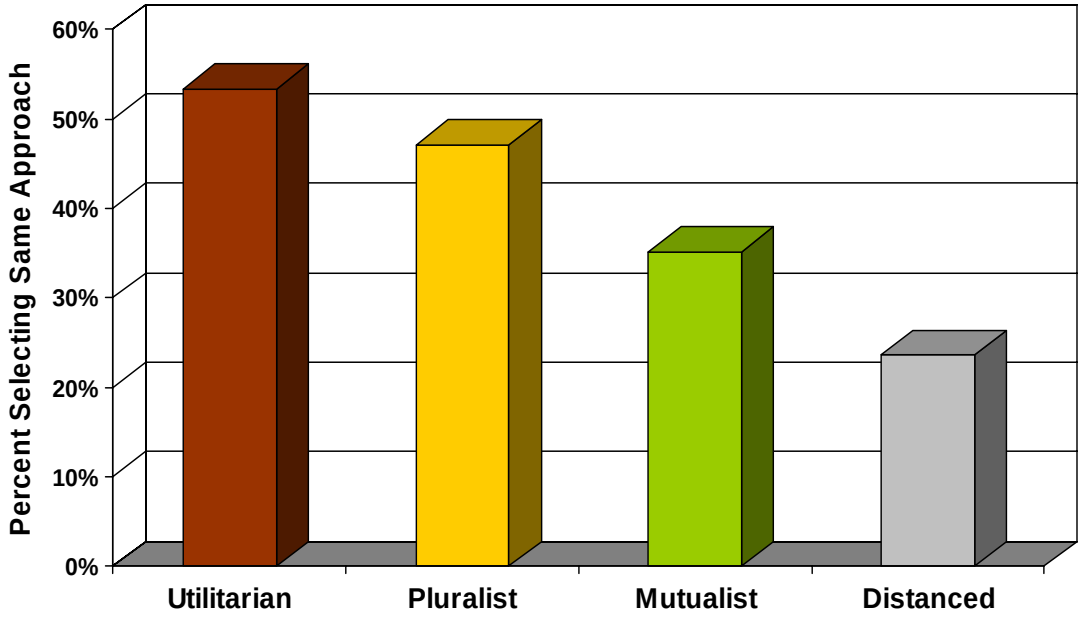
Figure III.A.4. Percent of wildlife value orientation type indicating each approach as their desired approach.



[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.

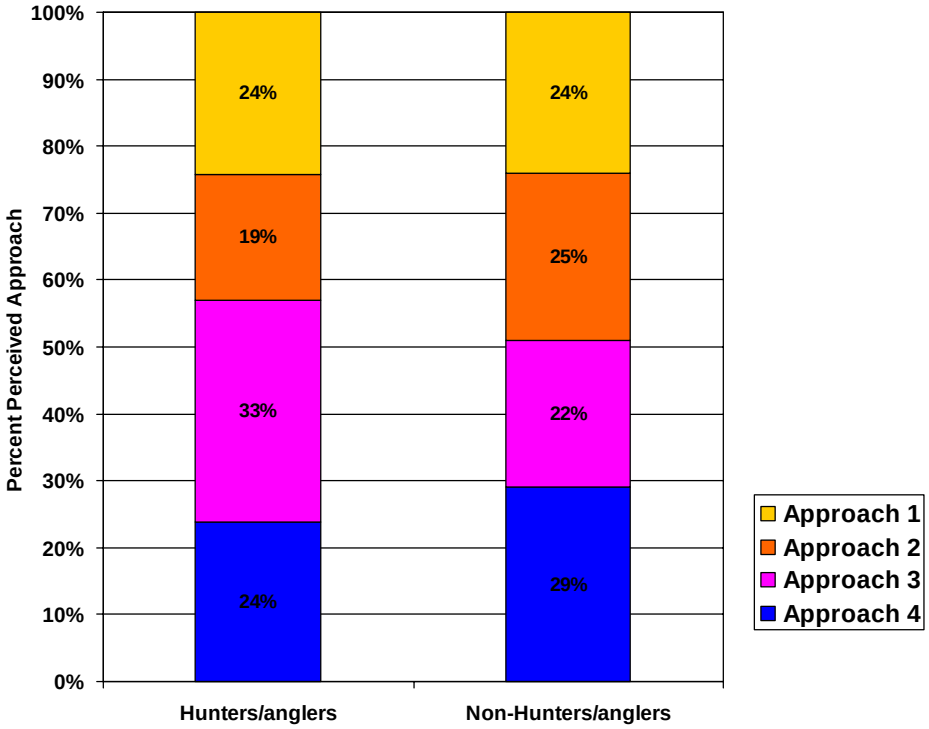
Figure III.A.5 shows the percentage of respondents within each value type which selected the same current and desired approach. Just over half of Utilitarians and just under half of Pluralists selected the same approach, while about a third of Mutualists and a quarter of Distanced individuals selected the same 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 (see Section I.C for definitions of hunters/anglers and non-hunters/anglers). Slightly more hunters/anglers felt that Approach 3 (*meet the needs of all members and funding by hunting and fishing license dollars*) was the current approach and fewer thought that Approach 2 (*meet the needs of those who hunt and fish and funded by hunting and fishing license dollars and public taxes*) was the current approach than non-hunters/anglers.

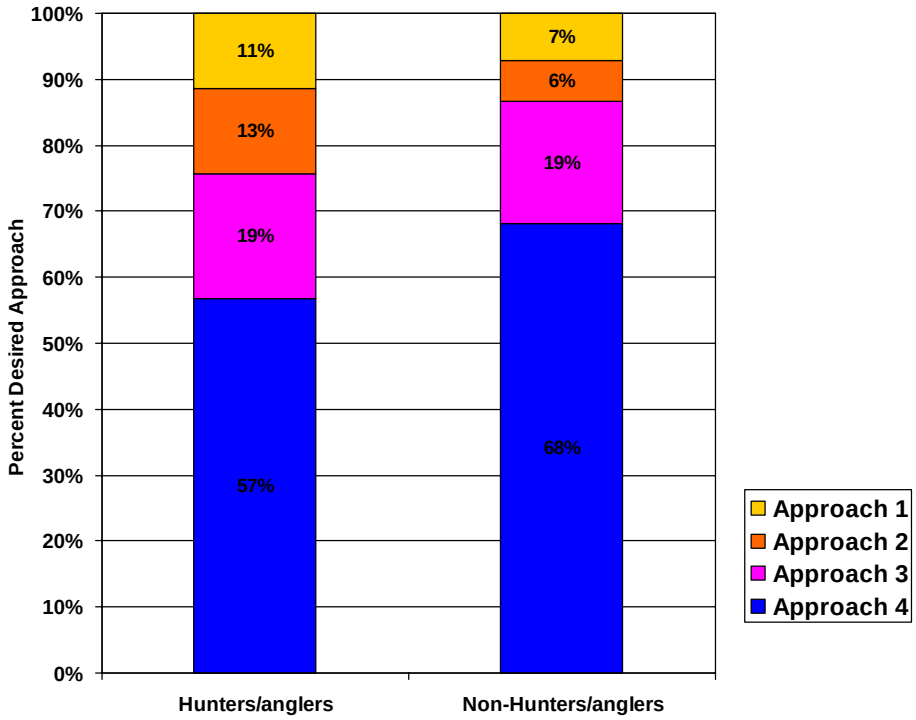
Figure III.A.6. Percent of hunters/anglers and non-hunters/anglers indicating each approach as their perceived current approach[1].



[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.

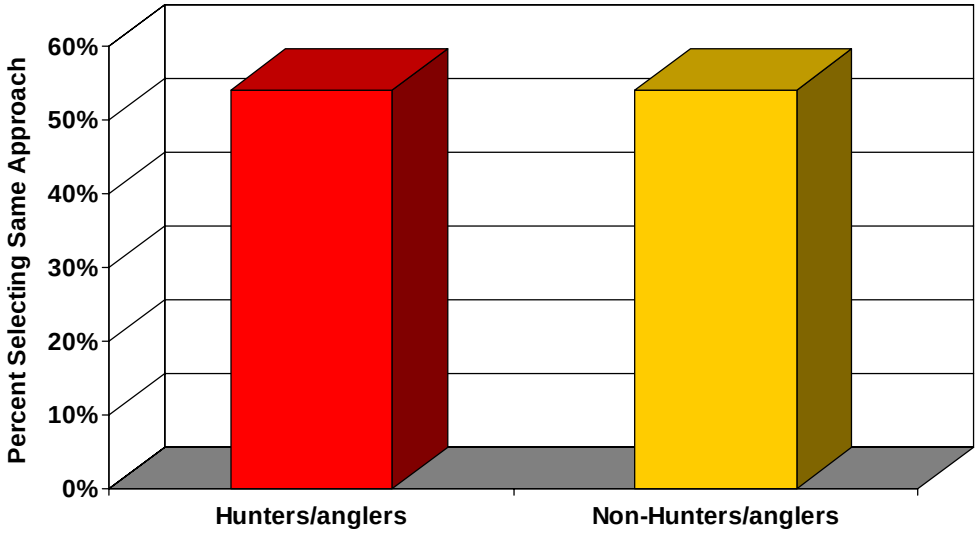
The majority of both groups chose Approach 4 (*meet the needs of all members of the public and funded by both hunting and fishing license dollars and public taxes*) as their desired approach, though more non-hunters/anglers chose it than hunters/anglers (Figure III.A.7). Higher percentages of hunters/anglers chose Approach 2 or 1 as their desired approach than non-hunters/anglers as well. Exactly the same percentage (54%) in each group chose the same approach for their current and desired approaches (Figure III.A.8).

Figure III.A.7. Percent of hunters/anglers and non-hunters/anglers indicating each approach as their desired approach[1].



[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.

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



B. ACCEPTABILITY OF TAXES FOR FISH AND WILDLIFE PROGRAMS

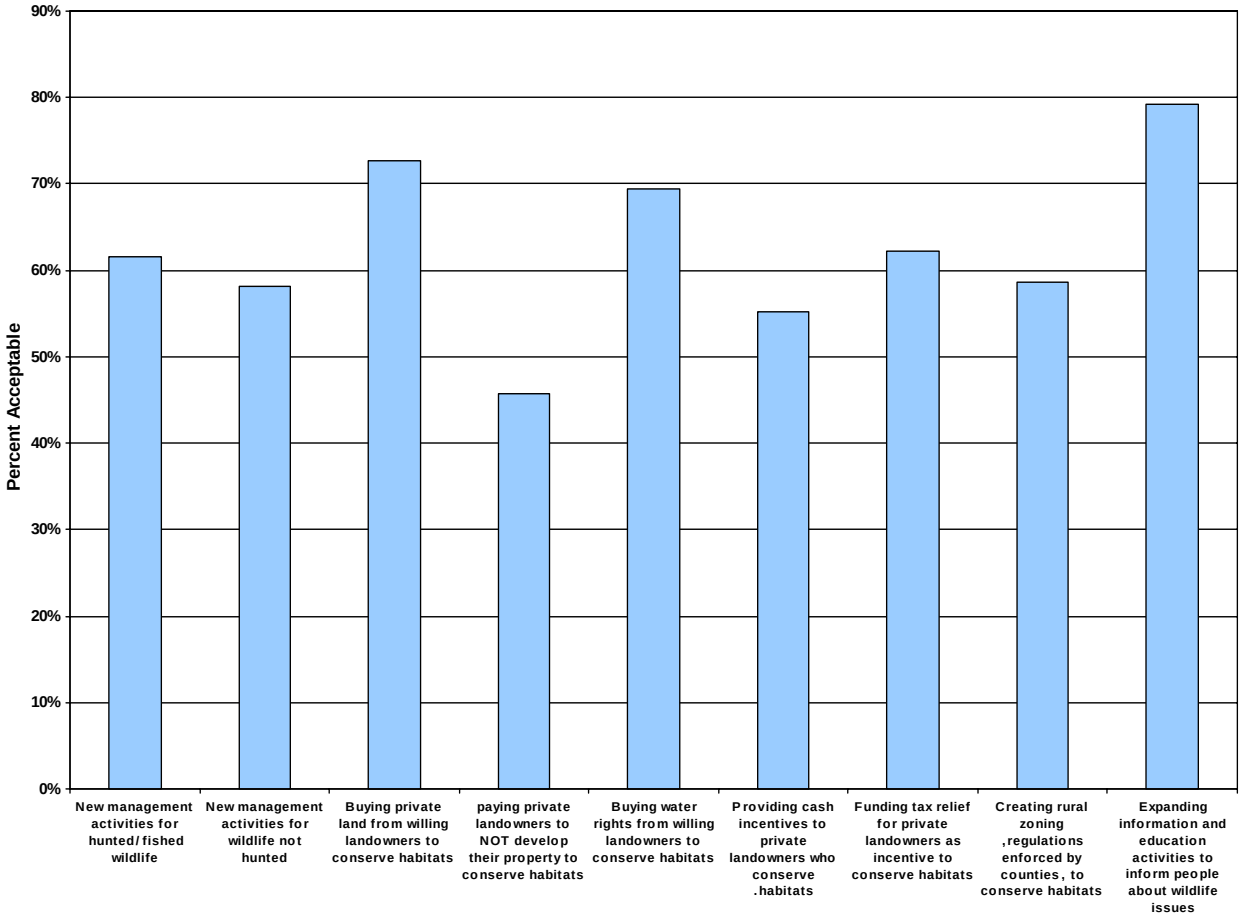
This section explores the acceptability of the Wyoming Legislature collecting taxes to pay for various WGFD programs. These items help to clarify how taxpayers would prefer new taxes be spent when it comes to fish and wildlife management. Respondents were asked to rate the acceptability of collecting taxes for each of the nine activities or programs listed below (refer to Tables A-10 to A-46 for this section).

SITUATION 1. In order to provide a flexible management system for Wyoming's fish and wildlife, the WGFD must be adequately funded and staffed. The current sources of funding do not generate sufficient money to pay for all Wyoming's fish and wildlife management needs. In the future, new sources of money must be found if the WGFD is going to be able to adequately address fish and wildlife issues. We are interested in how acceptable or unacceptable you think it would be for the Wyoming Legislature to collect additional taxes (such as sales taxes or gasoline taxes) from the people of Wyoming to pay for the following programs.

Is it unacceptable or acceptable to collect additional taxes for…	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
…new management activities for fish and wildlife that are hunted or fished (for example, elk, ducks, trout)?	1	2	3	4	5	6	7
…new management activities for fish and wildlife that people don't usually hunt or fish (for example: threatened or endangered species, songbirds, amphibians, reptiles)?	1	2	3	4	5	6	7
…buying private land from willing landowners to conserve habitats for fish and wildlife?	1	2	3	4	5	6	7
…paying private landowners to NOT develop their property in order to conserve habitats for fish and wildlife?	1	2	3	4	5	6	7
…buying water rights from willing landowners to conserve habitats for fish and wildlife?	1	2	3	4	5	6	7
…providing cash incentives to private landowners who conserve habitats for fish and wildlife?	1	2	3	4	5	6	7
…funding tax relief for private landowners as an incentive to conserve habitats for fish and wildlife?	1	2	3	4	5	6	7
…creating rural zoning regulations, that would be enforced by the counties, to conserve fish and wildlife habitats?	1	2	3	4	5	6	7
…expanding information and education activities to keep people informed about fish and wildlife issues in Wyoming?	1	2	3	4	5	6	7

Summary of results. Figure III.B.1 shows the percent of respondents who felt collecting additional taxes for each activity or program was acceptable (i.e., those who selected "slightly acceptable," "moderately acceptable," and "highly acceptable"). Over half of respondents felt that new taxes for all programs, except *paying private landowners to NOT develop their property*, were acceptable. The programs which were rated as acceptable by the most respondents were *expanding information and education activities*, *buying private land from willing landowners*, and *buying water rights from willing landowners*.

Figure III.B.1. Percent of respondents finding it acceptable to collect additional taxes for various fish and wildlife management programs.



Results by wildlife value orientation type. Figures III.B.2 to III.B.10 display PCI graphs for each of the tax items, showing a PCI bubble for each of the value orientation types and the entire public (see Section I.C for an explanation of PCI graphs). There are noticeable differences among value orientation types in the acceptability of the items. Generally, Mutualists were the most accepting of new taxes for each program, while Utilitarians were the least accepting on average. Utilitarians were the only type to find taxes for some programs unacceptable on average. Utilitarians found *paying landowners to not develop their property* least acceptable, followed by *providing cash incentives to landowners*, *management activities for non-game fish and wildlife*, and *creating rural zoning regulations*.

Figure III.B.2. Potential for conflict indices for the acceptability of the Wyoming Legislature to collect additional taxes for “new management activities for fish and wildlife that are hunted and fished” by wildlife value orientation type.

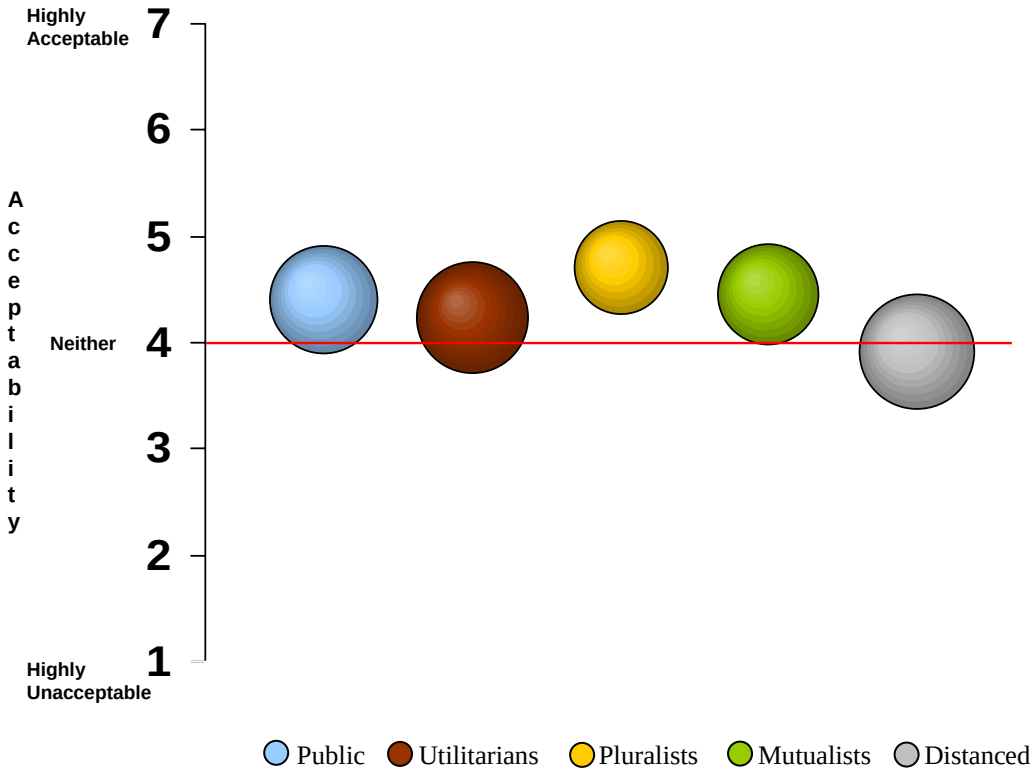


Figure III.B.3. Potential for conflict indices for the acceptability of the Wyoming Legislature to collect additional taxes for “new management activities for fish and wildlife people don’t usually hunt or fish” by wildlife value orientation type.

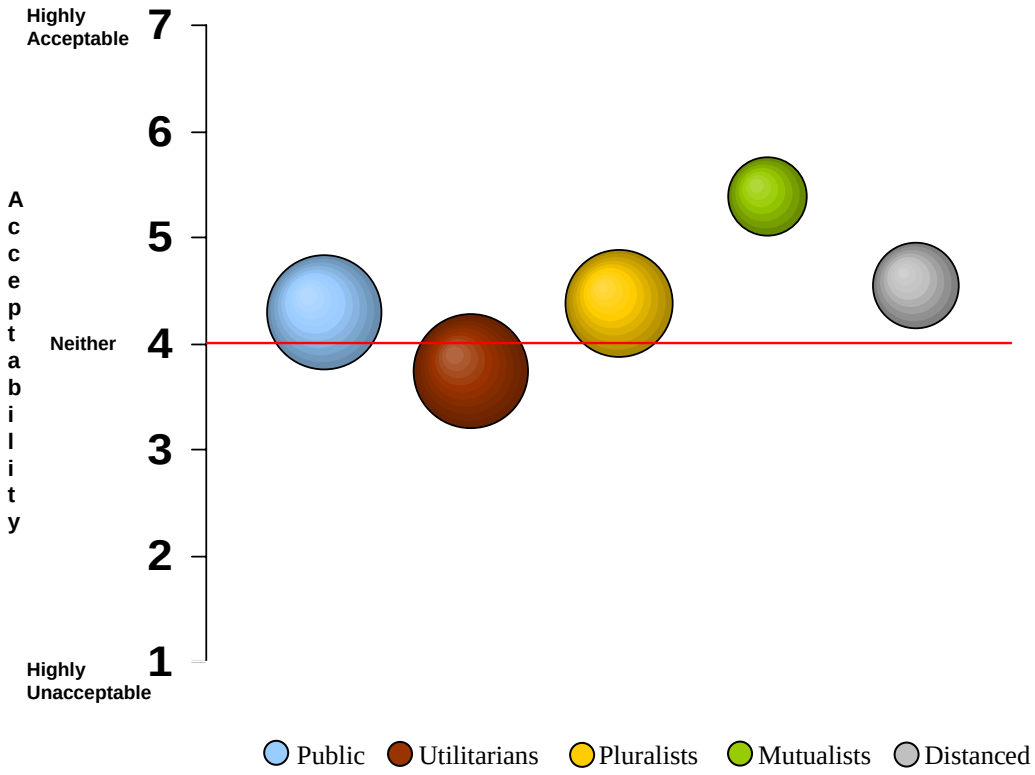


Figure III.B.4. Potential for conflict indices for the acceptability of the Wyoming Legislature to collect additional taxes for “buying private land from willing landowners to conserve habitats for fish and wildlife” by wildlife value orientation type.

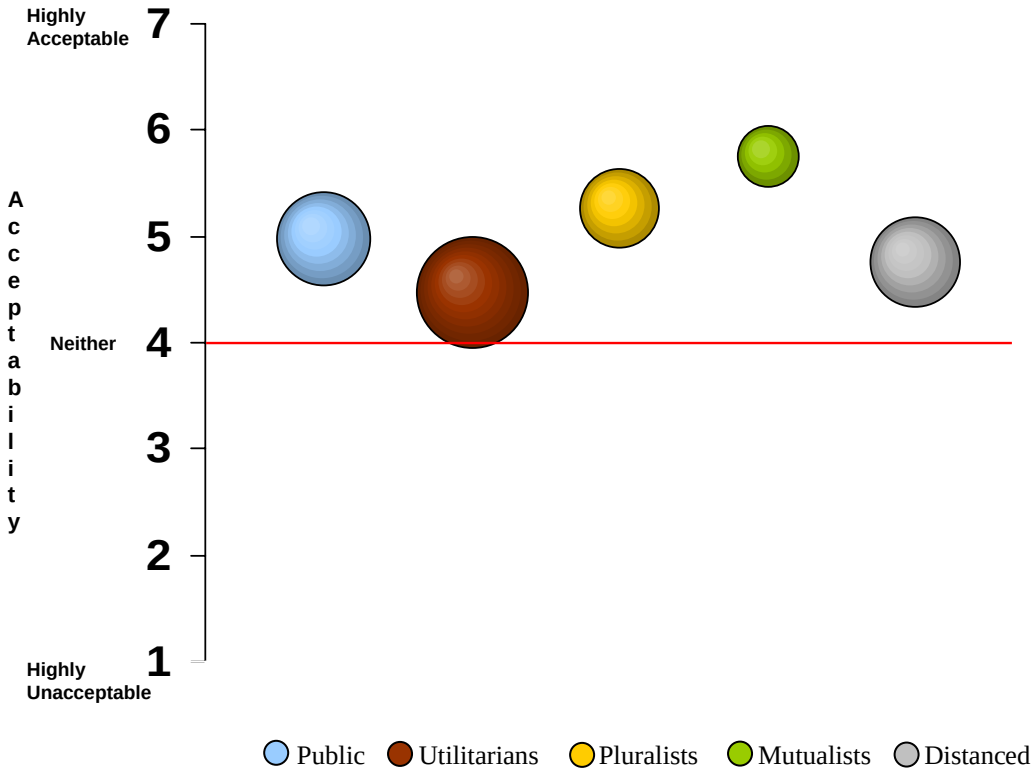


Figure III.B.5. Potential for conflict indices for the acceptability of the Wyoming Legislature to collect additional taxes for "paying private landowners to NOT develop their property in order to conserve habitats for fish and wildlife" by wildlife value orientation type.

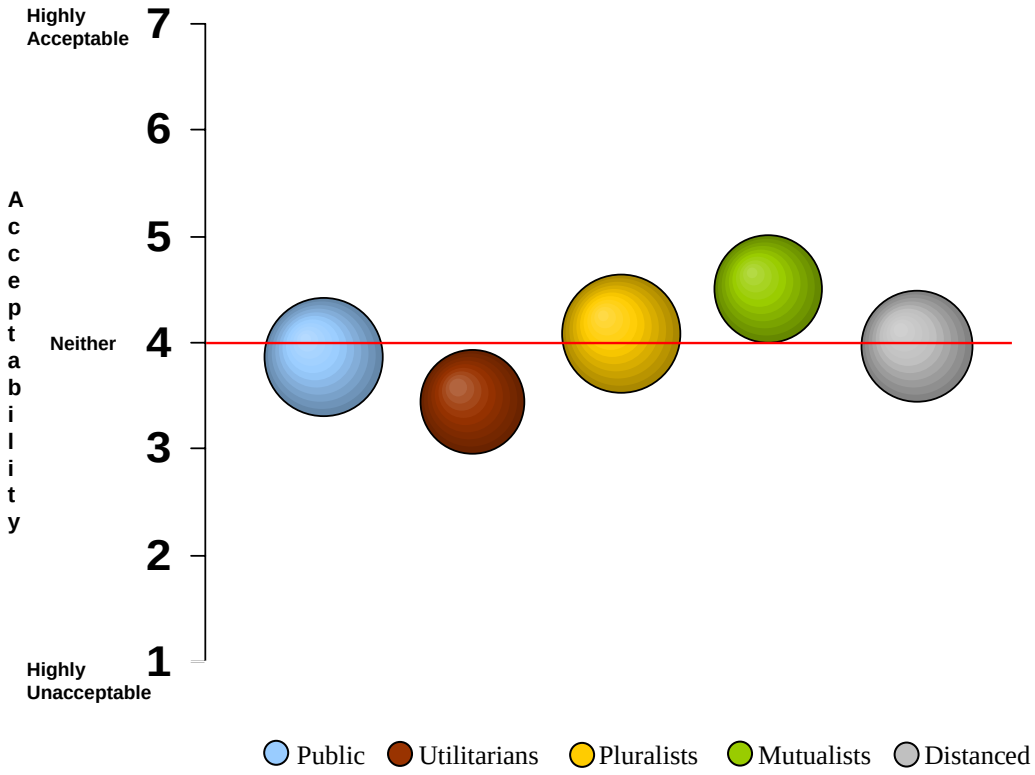


Figure III.B.6. Potential for conflict indices for the acceptability of the Wyoming Legislature to collect additional taxes for “buying water rights from willing landowners to conserve habitats for fish and wildlife” by wildlife value orientation type.

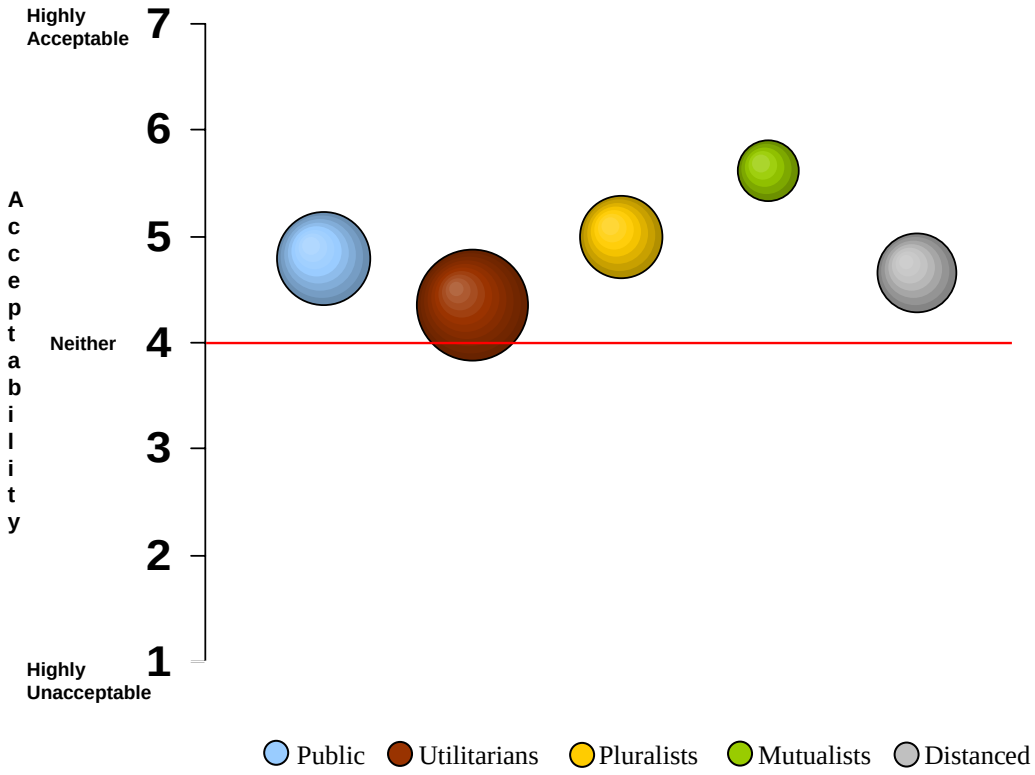


Figure III.B.7. Potential for conflict indices for the acceptability of the Wyoming Legislature to collect additional taxes for “providing cash incentives to private landowners who conserve habitats for fish and wildlife” by wildlife value orientation type.

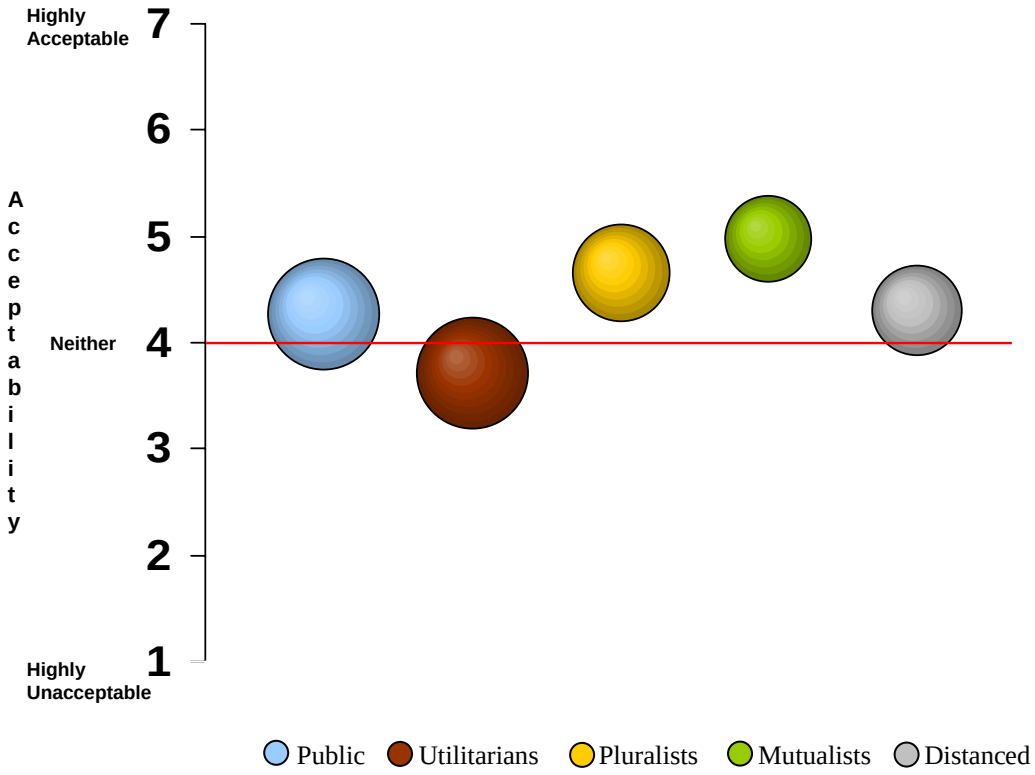


Figure III.B.8. Potential for conflict indices for the acceptability of the Wyoming Legislature to collect additional taxes for "funding tax relief for private landowners as an incentive to conserve habitats for fish and wildlife" by wildlife value orientation type.

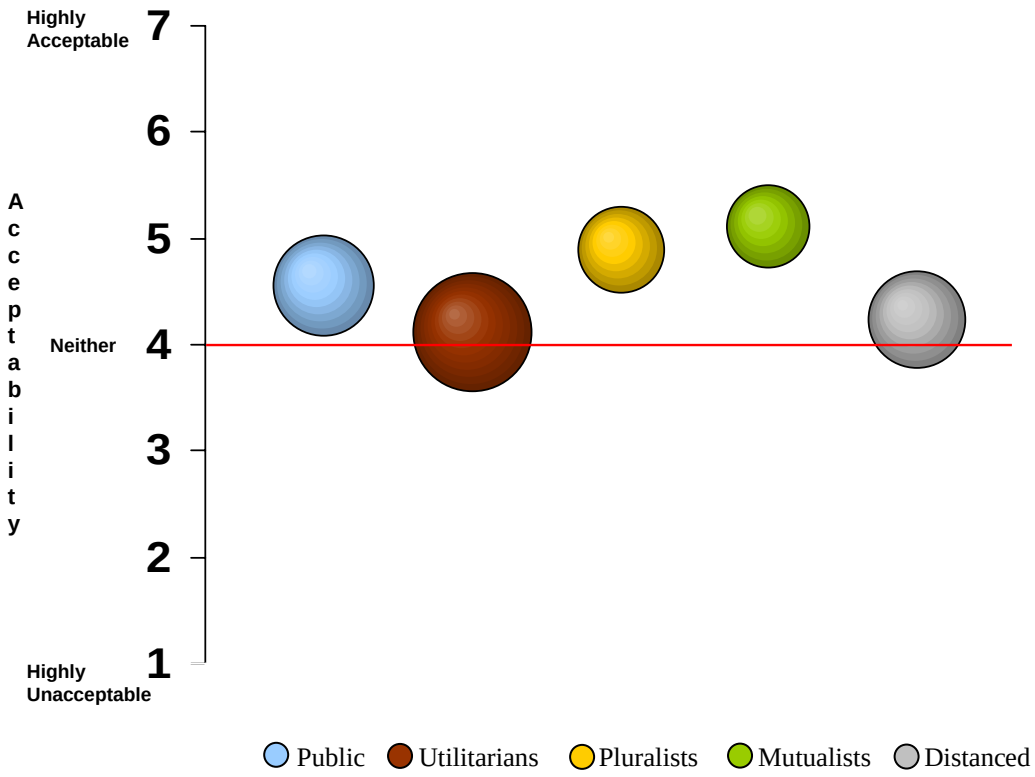


Figure III.B.9. Potential for conflict indices for the acceptability of the Wyoming Legislature to collect additional taxes for "creating rural zoning regulations, that would be enforced by the counties, to conserve fish and wildlife habitats" by wildlife value orientation type.

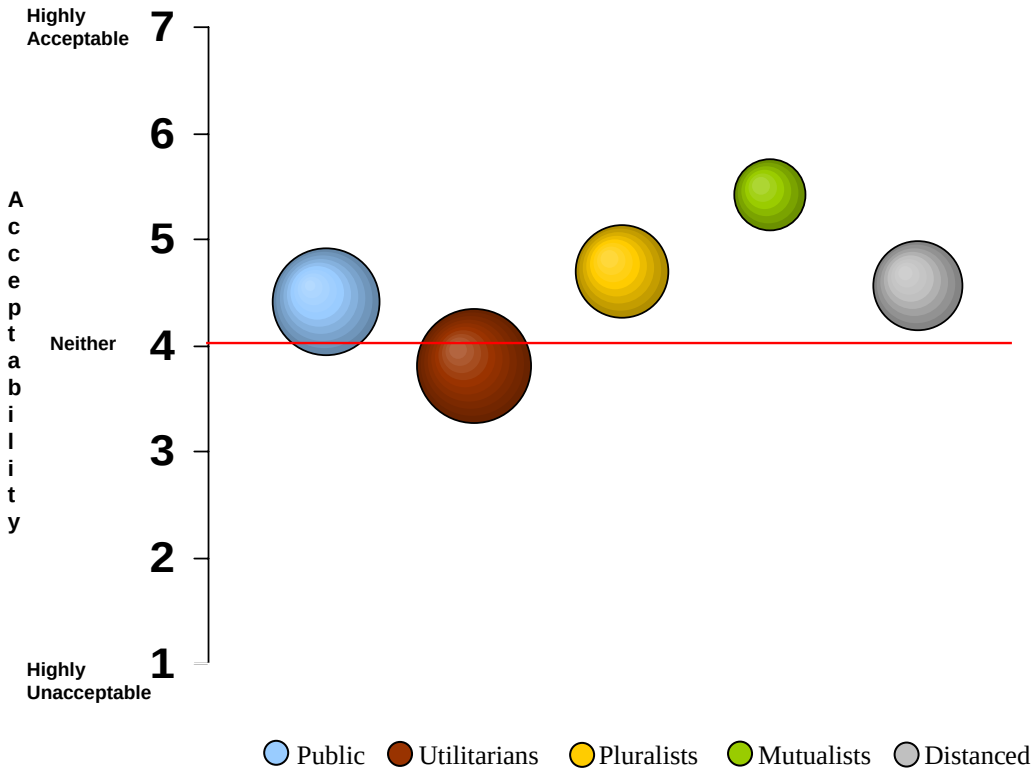
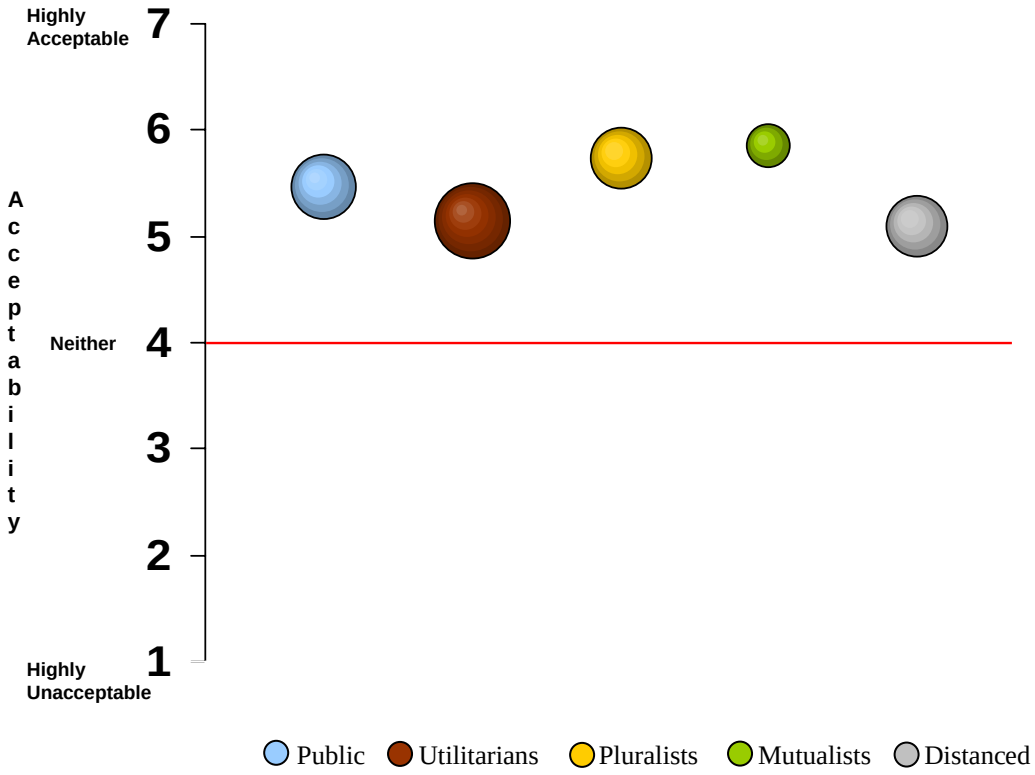
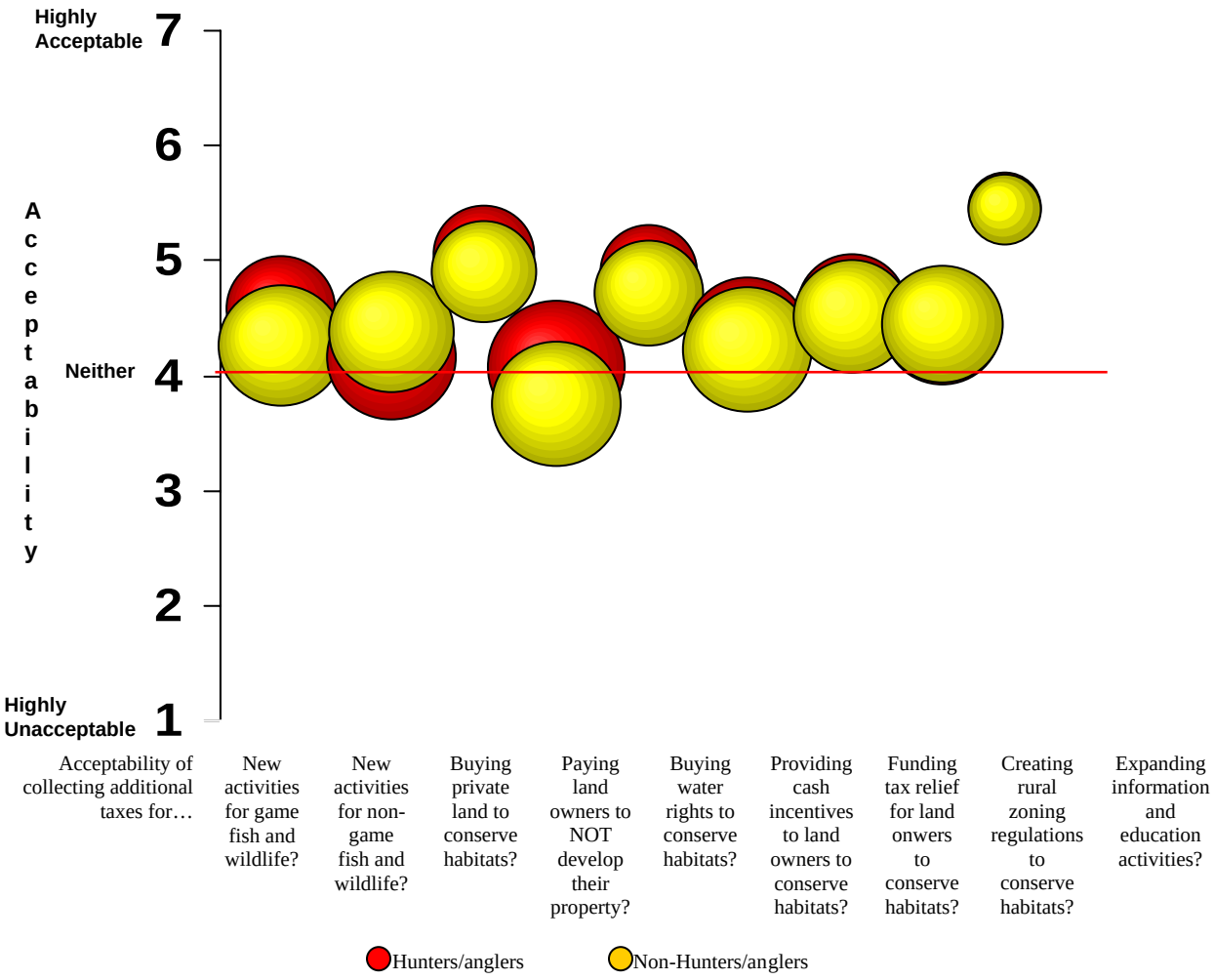


Figure III.B.10. Potential for conflict indices for the acceptability of the Wyoming Legislature to collect additional taxes for "expanding information and education activities to keep people informed about fish and wildlife issues in Wyoming" by wildlife value orientation type.



Results by participation in hunting and fishing. Figure III.B.11 displays a PCI graph for the tax items, showing a PCI bubble for hunters/anglers and non-hunters/anglers for each item. Hunters/anglers and non-hunters/anglers did not differ greatly on either level of acceptability or amount of consensus on any of the tax items. Both groups had the highest mean scores for *expanding information and education activities* and the most consensus was shown for both groups for this item as well.

Figure III.B.11. Potential for conflict indices for the acceptability of the Wyoming Legislature to collect additional taxes for new fish and wildlife programs by participation in hunting and fishing.



SECTION IV. PHILOSOPHY FOR SERVING AND INVOLVING THE PUBLIC IN WILDLIFE MANAGEMENT

Questions presented in this section examine the public's perceptions of the agency's philosophy for serving and involving the public in wildlife management. Four components of the topic are addressed:

1. public involvement philosophy;
2. trust in government;
3. performance and activities of WGFD; and
4. public participation in fish and wildlife management decision making.

A. PUBLIC INVOLVEMENT PHILOSOPHY

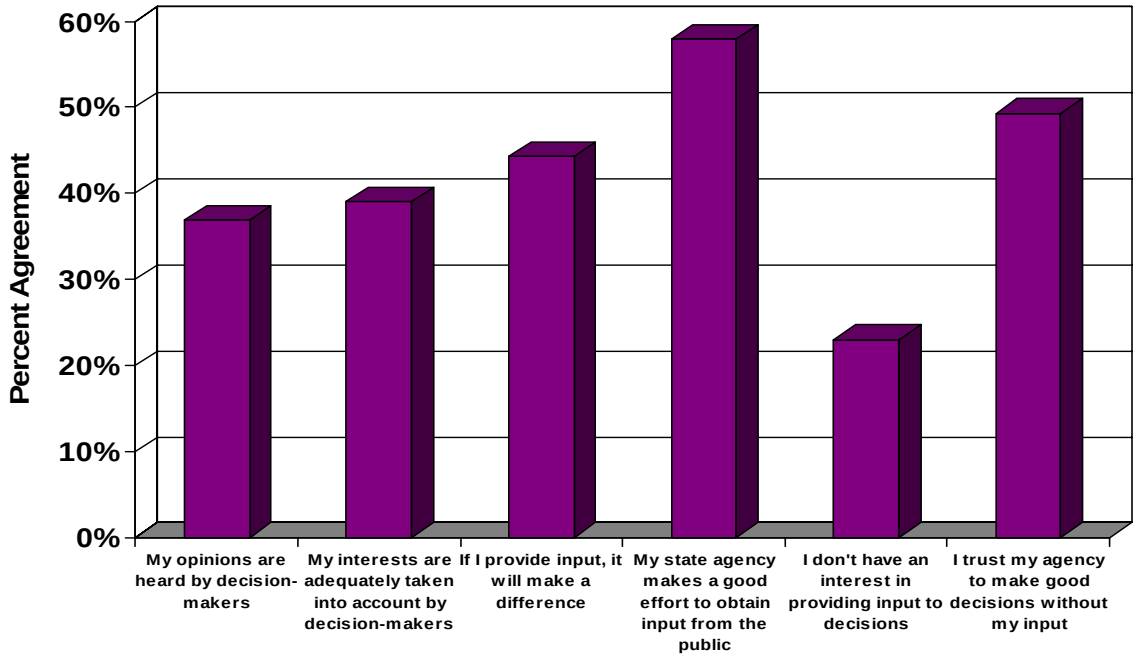
This issue measures the public's involvement in fish and wildlife decision-making at the state level. It covers the extent to which people feel their opinions, interests, and input are heard and adequately considered in decisions. It also determines whether or not people have an interest in providing 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 (refer to Tables A-47 to A-65).

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 IV.A.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 (from 14% to 29%). Over a third of respondents felt *their opinions are heard* and *their interests are taken into account*. More respondents (over 40%) felt *their input will make a difference*. More than half agreed that *their state agency makes a good effort to obtain input from the public* and almost half *trusted the agency to make decisions without their input*. Around one quarter expressed *no interest in providing input*.

Figure IV.A.1. Percent of respondents agreeing with the public involvement statements.



Results by wildlife value orientation type. Figures IV.A.2 to IV.A.7 display PCI graphs for each of the public involvement philosophy items, showing a PCI bubble for each of the value orientation types and the entire public. Several trends can be identified in these graphs. The mean agreement scores for Mutualists were lower than the mean scores of the other value orientation types for almost all the items. Mutualists also displayed the greatest within-group consensus for many items. The mean scores for Utilitarians, Pluralists and Distanced individuals hovered around the neutral line for most items. The exception to these findings was for the fifth item which stated the respondent *did not have an interest in providing input*. The mean score for Distanced individuals was at the neutral line compared with the mean scores for the other types which were all below the neutral line. Distanced individuals also had much less within-group consensus than the other types on this item.

Figure IV.A.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.

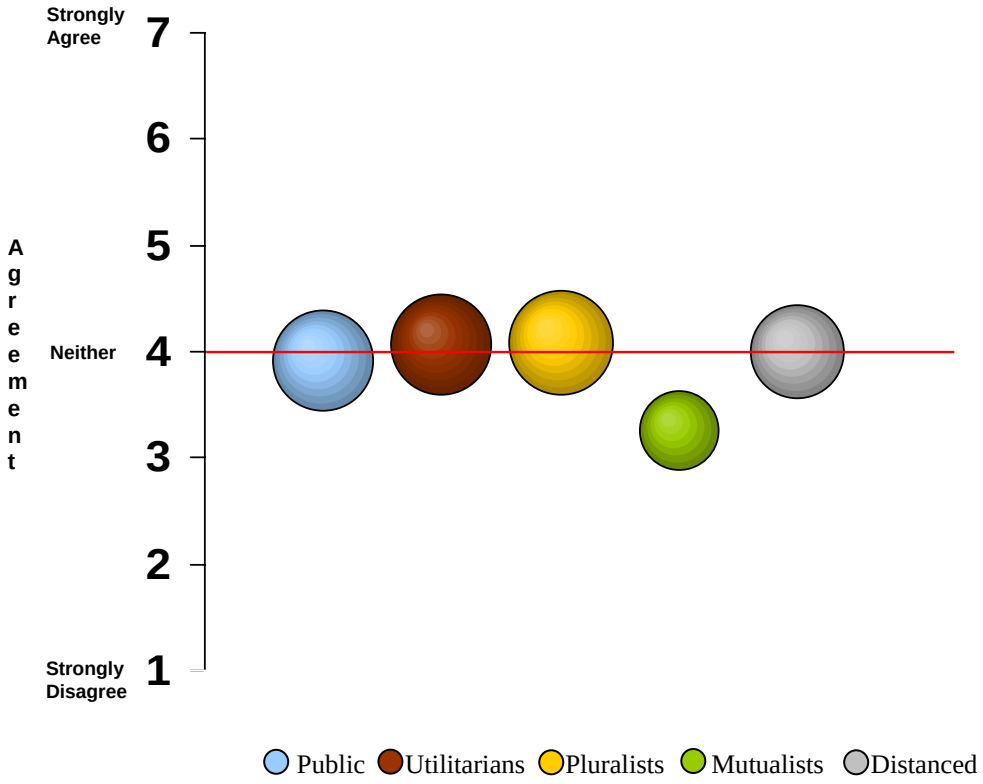


Figure IV.A.3. Potential for conflict indices for the statement "I feel that *my interests are adequately taken into account* by fish and wildlife decision makers in my state" by wildlife value orientation type.

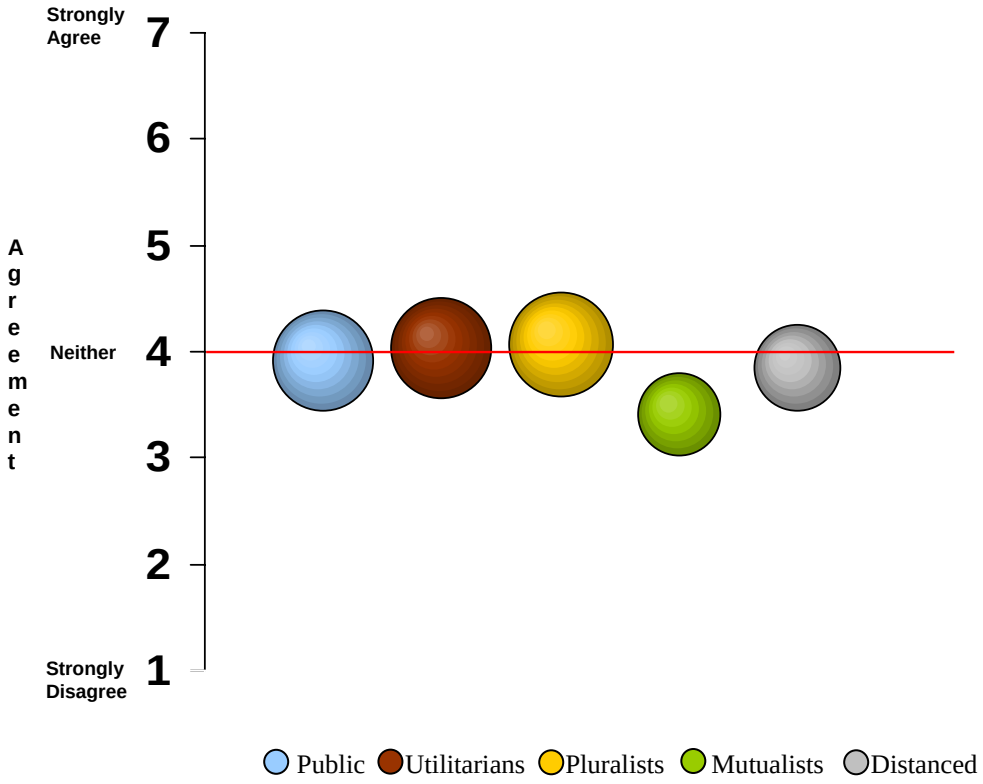


Figure IV.A.4. Potential for conflict indices for the statement "I feel that *if I provide input, it will make a difference* in fish and wildlife decisions in my state" by wildlife value orientation type.

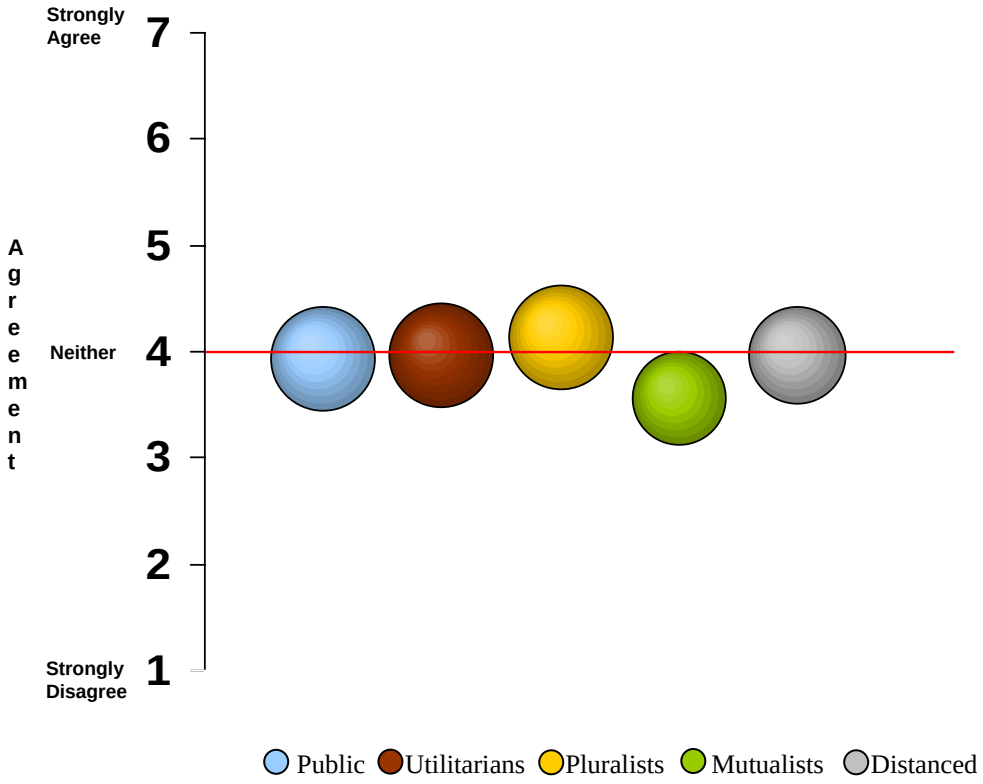


Figure IV.A.5. Potential for conflict indices for the statement "I feel that my state fish and wildlife agency makes a good effort to obtain *input from the public as a whole*" by wildlife value orientation type.

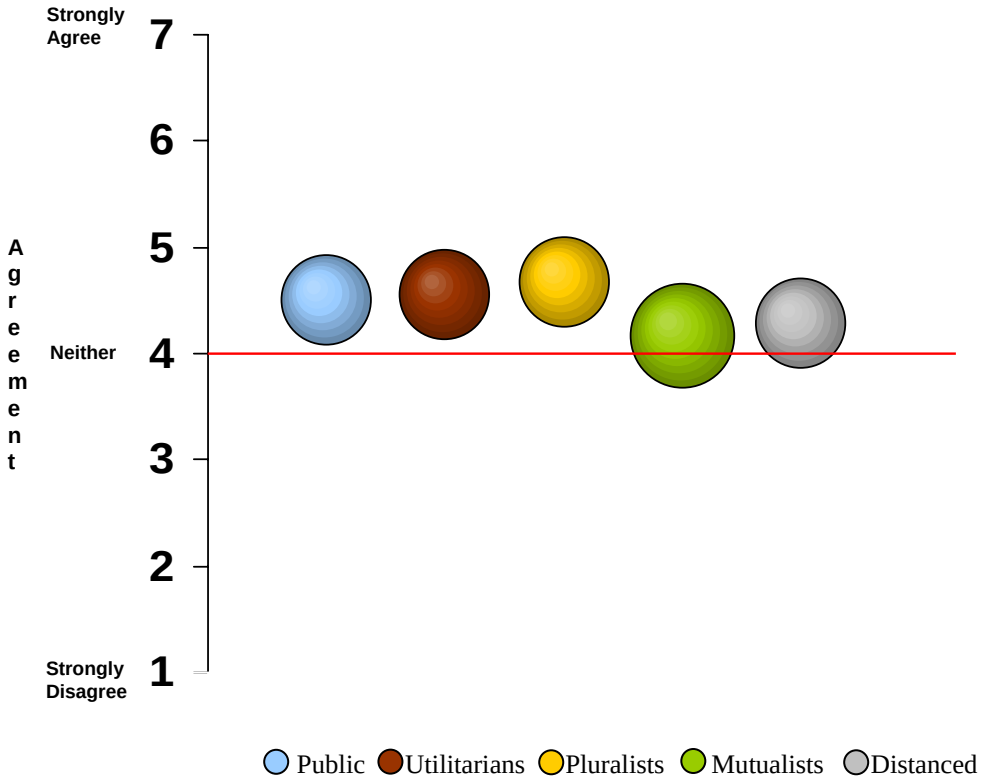


Figure IV.A.6. Potential for conflict indices for the statement "*I don't have an interest* in providing input to fish and wildlife decisions in my state" by wildlife value orientation type.

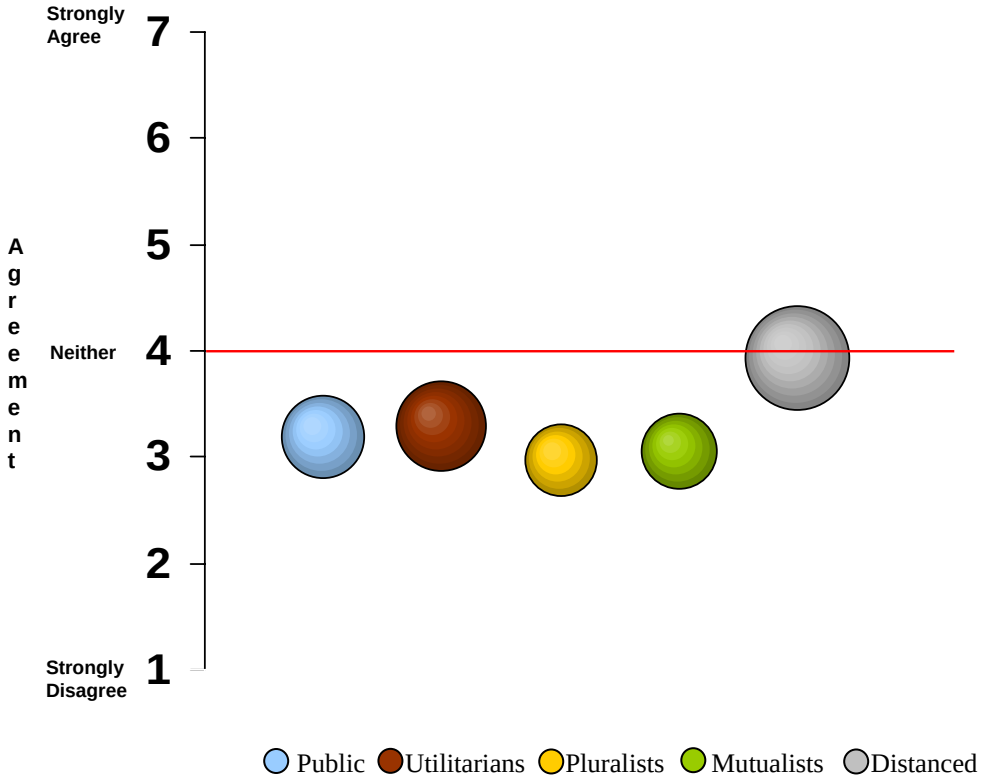
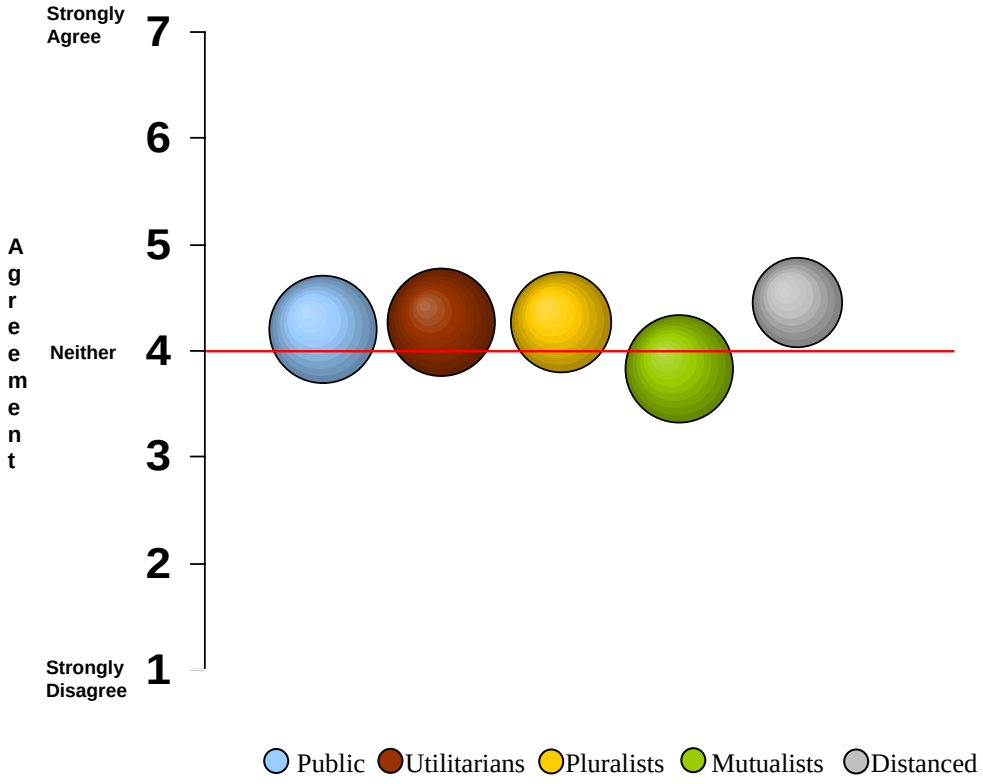
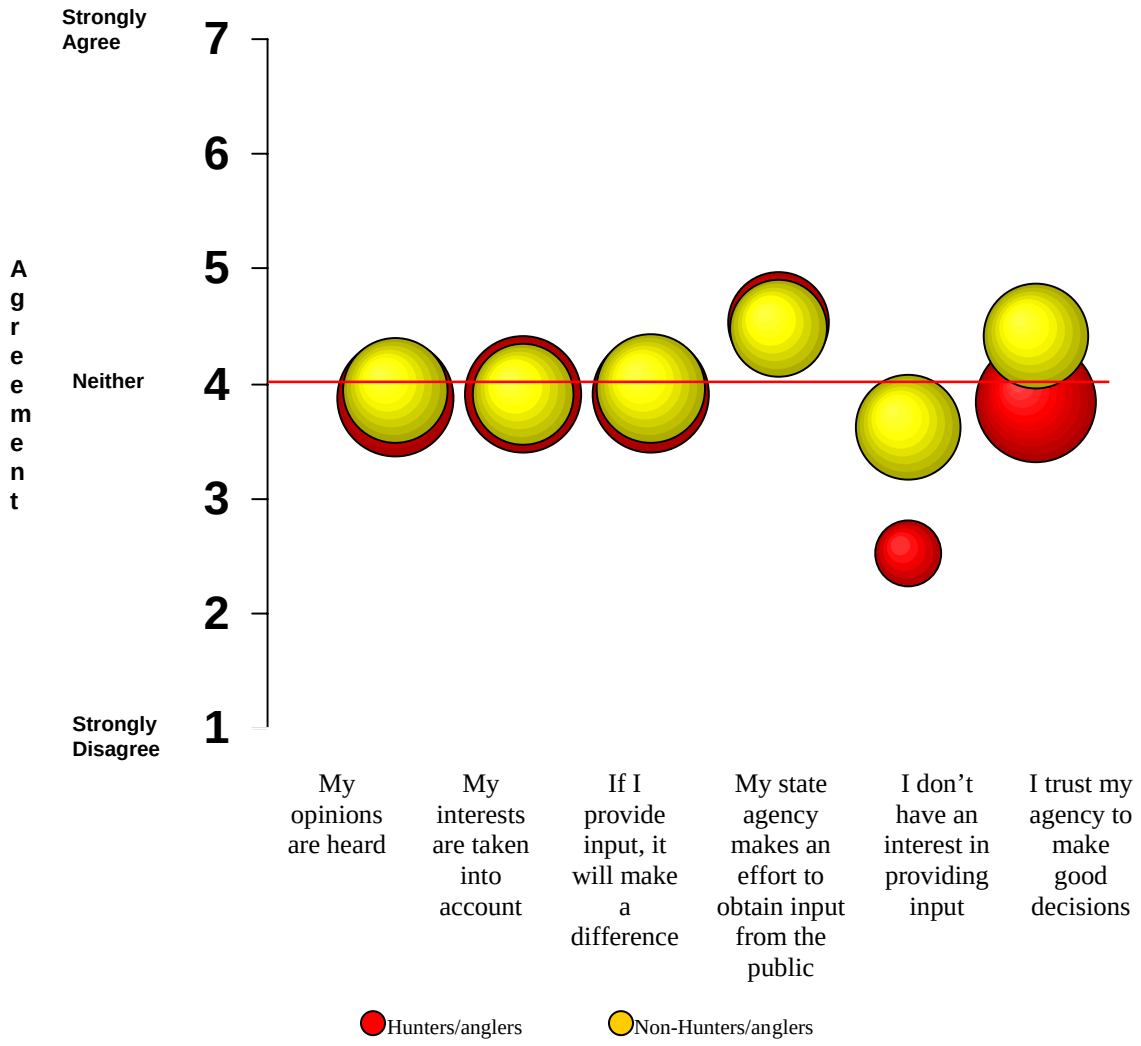


Figure IV.A.7. Potential for conflict indices for the statement "I trust my state fish and wildlife agency to *make good decisions without my input*" by wildlife value orientation type.



Results by participation in hunting and fishing. Hunters/anglers and non-hunters/anglers did not differ on level of agreement or amount of within-group consensus on the first four statements in this section (Figure IV.A.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 item. Overall, non-hunters/anglers slightly agreed that they *trust their agency to make good decisions*, while hunters/anglers were neutral.

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



B. TRUST IN GOVERNMENT

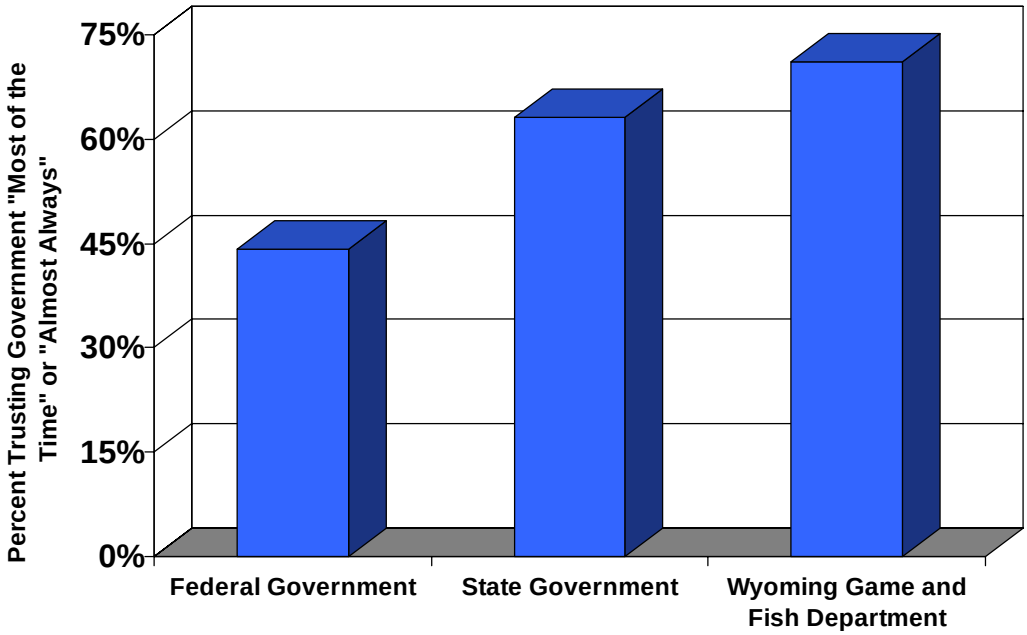
This issue explores the public's level of trust in three forms of government: federal, state, and the state fish and wildlife agency. It complements the public involvement philosophy statement *I trust my state fish and wildlife agency to make good decisions without my input* by broadly asking about 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 (refer to Tables A-66 to A-72 for this section).

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 IV.B.1 displays the percent of respondents who trust the given government body to do what is right (i.e., those who selected "most of the time" or "almost always"). The federal government was trusted by less than half the respondents (44%), while the state government was trusted substantially more (63%). With 71% of the respondents expressing trust, the WGFD was the most trusted form of government.

Figure IV.B.1. Percent of respondents expressing trust in different forms of government.

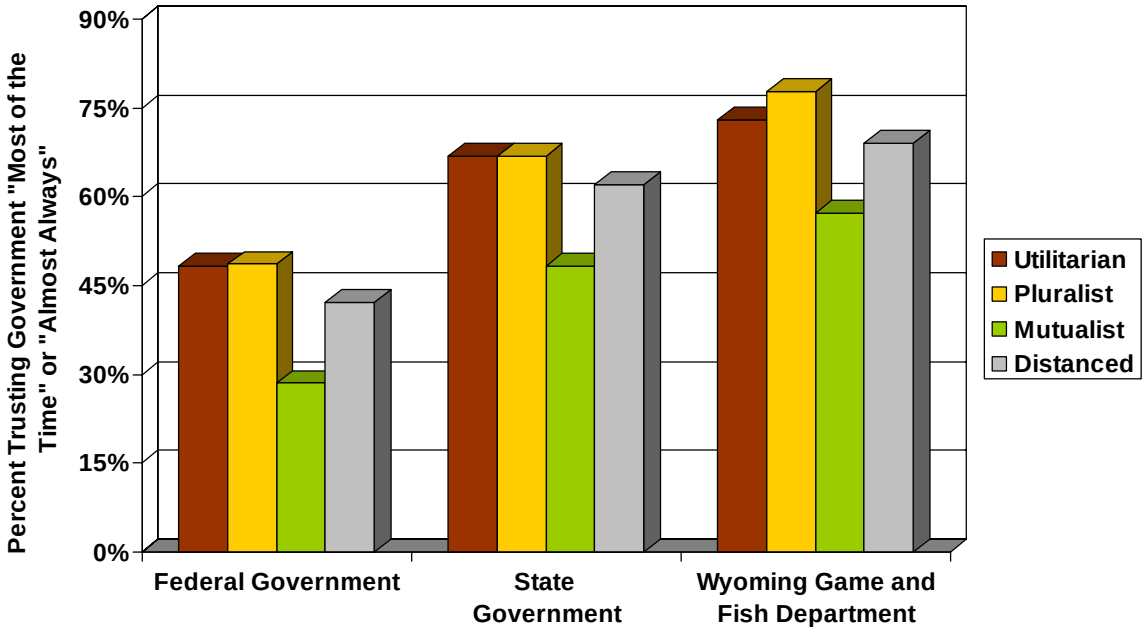


Additional analyses were conducted to explore sociodemographic, lifestyle, and cognitive (i.e., values or beliefs) characteristics of those who were more trusting of WGFD. Correlations (point biserial and Pearson's—depending on the characteristics of the variables involved in each

correlation) were conducted with participation in the past twelve months in hunting, fishing, and viewing; 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 number of children (r = -.06, p = .05), education level (r = .09; p = .01), and utilitarian wildlife value orientation (r = .14; p = <.001). These relationships show that those with fewer children, with a higher education level, or a higher score on the utilitarian wildlife value orientation scale are likely to be more trusting of WGFD. The correlations for all the relationships are considered "small" (Cohen, 1988).

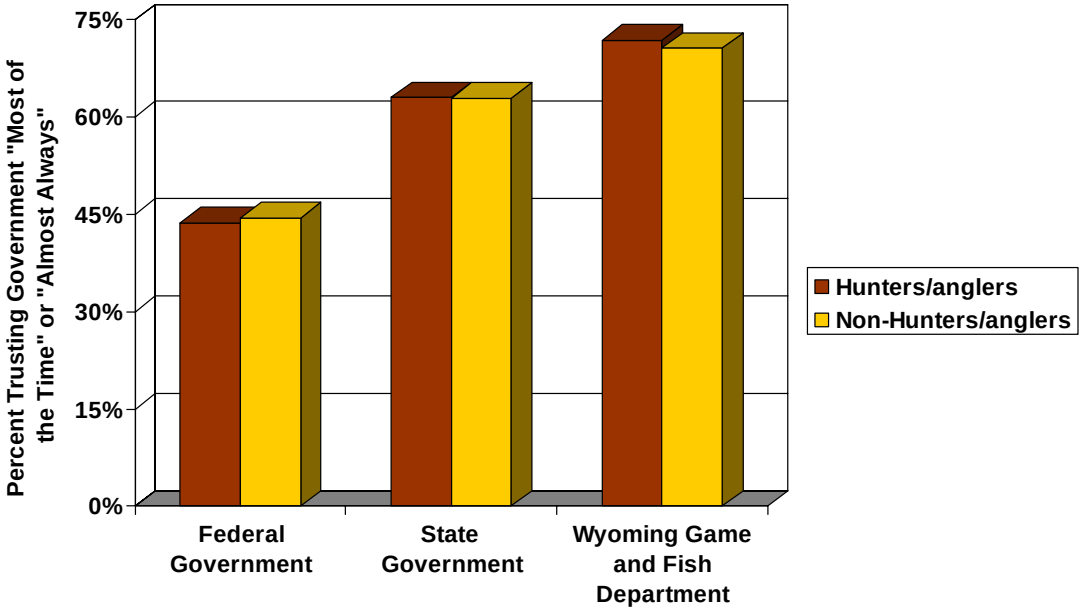
Results by wildlife value orientation type. As Figure IV.B.2 shows, trust increased from federal government to state government to the WGFD for all the value orientation types. At all levels of government, Mutualists were the least trusting, followed by Distanced individuals. Utilitarians and Pluralists were almost equal in their trust of each level of government.

Figure IV.B.2. Percent of wildlife value orientation type expressing trust in different forms of government.



Results by participation in hunting and fishing. Trust increased for hunters/anglers and non-hunters/anglers from federal government to state government to the WGFD (Figure IV.B.3). However, there was almost no difference between hunters/anglers and non-hunters/anglers in trust at all levels of government.

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



C. PERFORMANCE AND ACTIVITIES OF WGFD

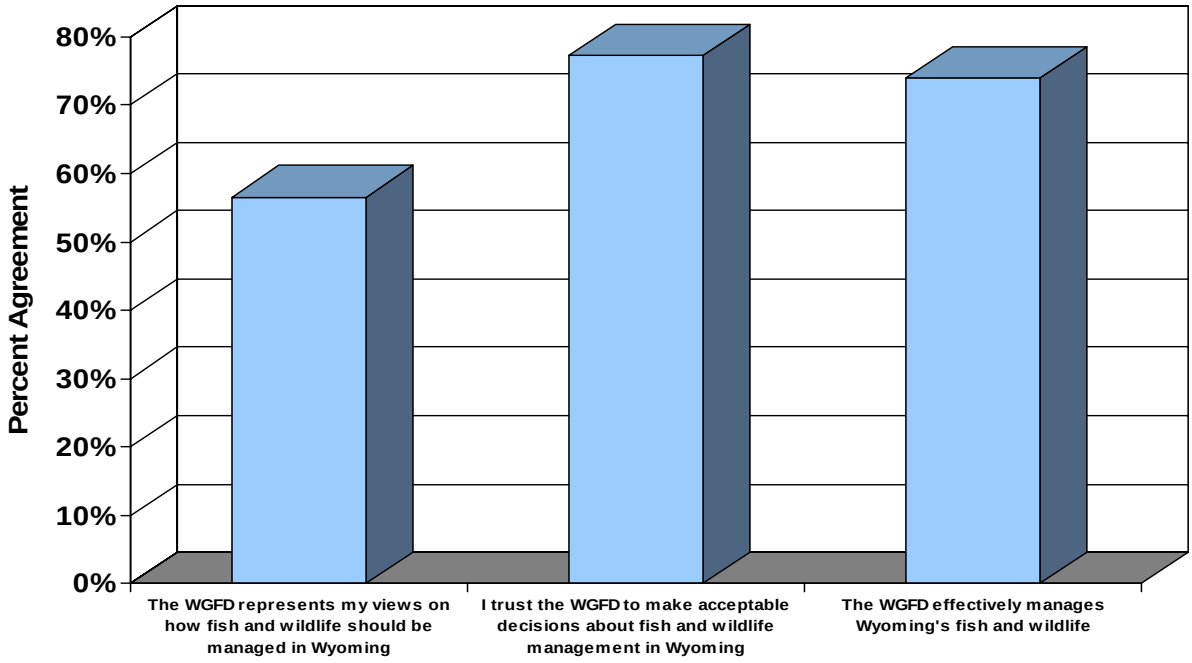
This section is comprised of a variety of statements concerning the performance and activities of WGFD, as well as the condition of fish and wildlife populations and habitat in Wyoming. The survey items are below (refer to Tables A-73 to A-113 for this section).

1. The WGFD is interested in your opinions about its activities and performance. Please indicate how strongly you either agree or disagree with the following statements. *Circle one number for each statement.*

Do you disagree or agree that…	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
The WGFD represents my views on how fish and wildlife should be managed in Wyoming.	1	2	3	4	5	6	7
I trust the WGFD to make acceptable decisions about fish and wildlife management in Wyoming.	1	2	3	4	5	6	7
The WGFD effectively manages Wyoming's fish and wildlife.	1	2	3	4	5	6	7
The WGFD provides me with accurate information on fish and wildlife issues in Wyoming.	1	2	3	4	5	6	7
The WGFD provides me with adequate amounts of information on fish and wildlife issues in Wyoming.	1	2	3	4	5	6	7
The WGFD provides information on fish and wildlife issues in a timely manner.	1	2	3	4	5	6	7
The WGFD should be a strong advocate for fish and wildlife, even if that means opposing development in some areas.	1	2	3	4	5	6	7
The WGFD should encourage more young people to hunt and fish.	1	2	3	4	5	6	7
Overall, Wyoming's fish and wildlife populations are healthy.	1	2	3	4	5	6	7
Overall, Wyoming's fish and wildlife habitats (lands that fish and wildlife depend upon) are healthy.	1	2	3	4	5	6	7

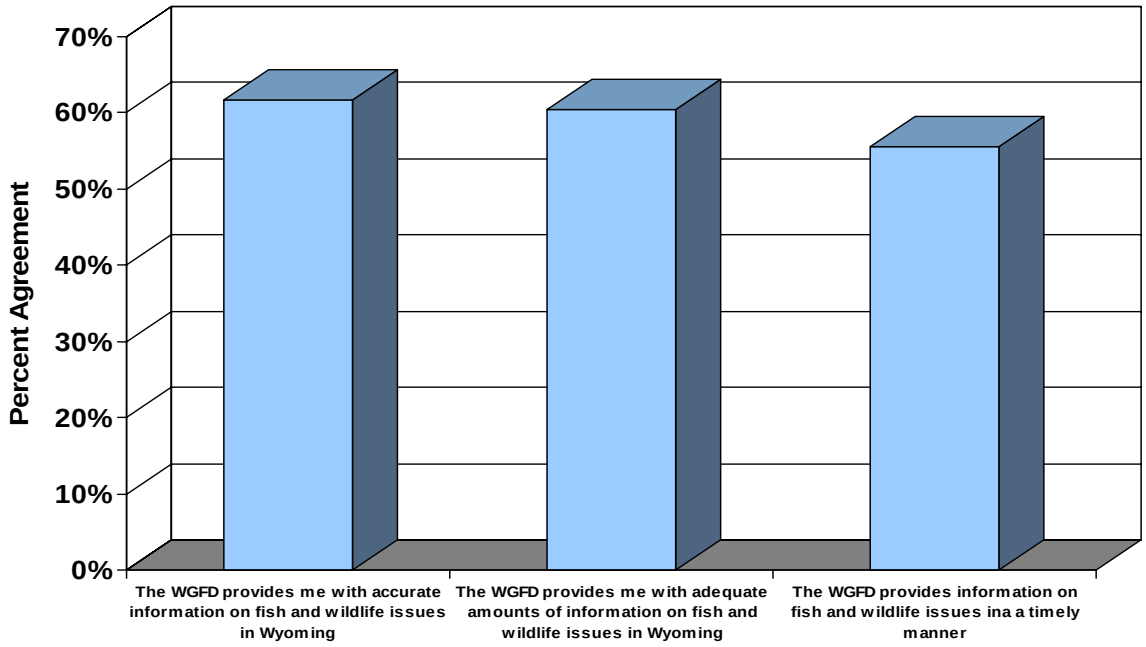
Summary of results. A majority of respondents agreed with all of these statements (i.e., those who selected "slightly agree", "moderately agree", or "strongly agree). It should be noted that a large percentage of respondents chose neither agree nor disagree for some items (from 15% to 28%). The first three statements involve the perceptions of WGFD's management of fish and wildlife. As Figure IV.C.1 shows, a slight majority felt that the *WGFD represents their views*. Not only did a majority of respondents (over 75%) *trust the WGFD to make decisions about fish and wildlife management*, they also believed that the *WGFD effectively manages Wyoming's fish and wildlife* (over 70%).

Figure IV.C.1. Percent of respondents agreeing with WGFD's management of fish and wildlife.



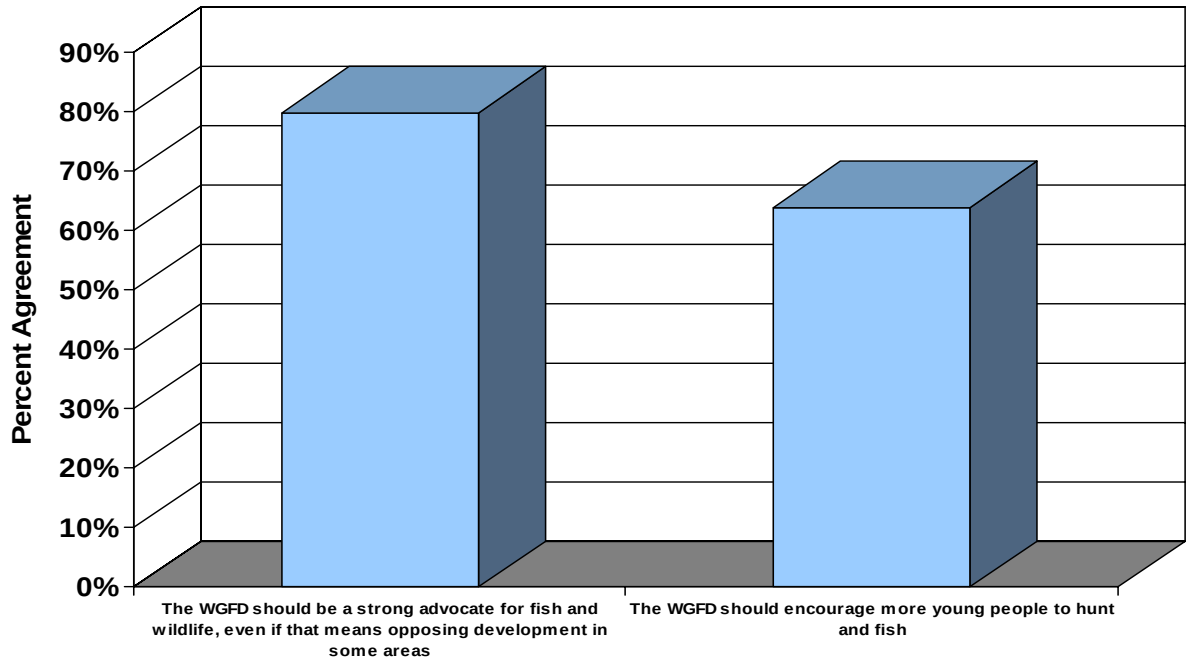
The next three statements involve the performance of the WGFD in providing information to the public. As Figure IV.C.2 shows, the majority of the respondents agree with all three statements. Around 60 % believe that the *WGFD provides them with accurate information, adequate information*, and *timely information*.

Figure IV.C.2. Percent of respondents agreeing that WGFD provides accurate and adequate amounts of information on fish and wildlife issues in a timely manner.



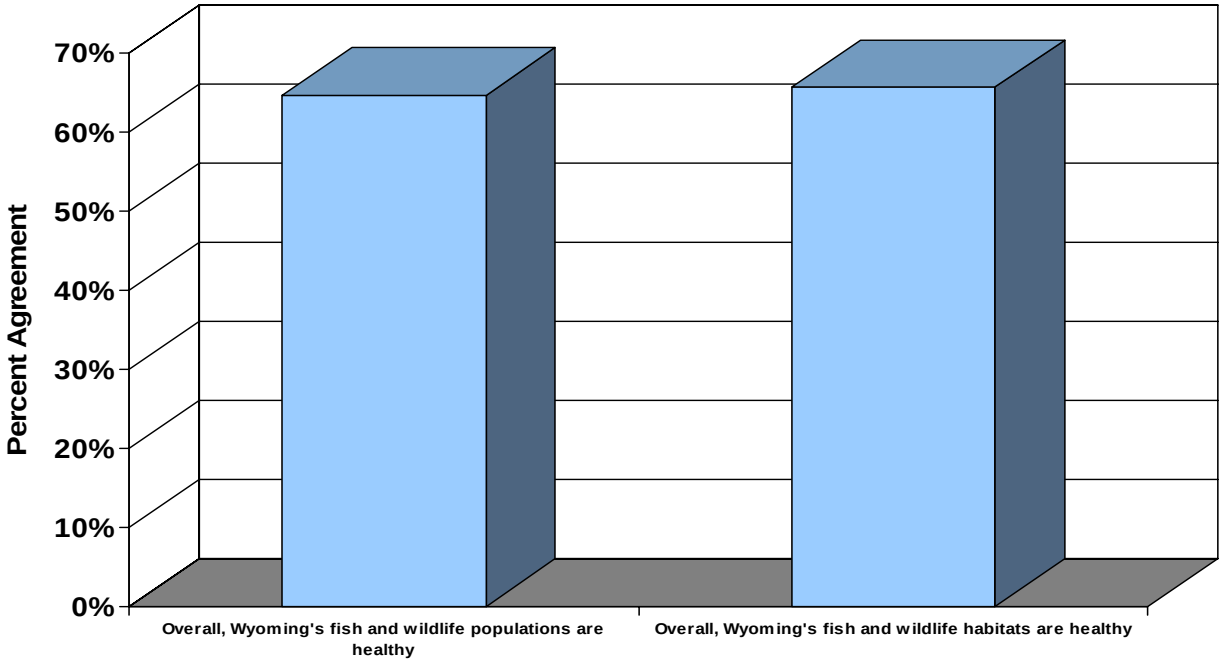
The next two statements ask whether the WGFD should be involved in certain activities (Figure IV.C.3). A large majority (80%) felt the *WGFD should be a strong advocate for fish and wildlife, even if that means opposing development*. A smaller majority felt that the *WGFD should encourage more young people to hunt and fish* (over 60%).

Figure IV.C.3. Percent of respondents agreeing that the WGFD should advocate for fish and wildlife and should encourage young people to hunt and fish.



The final two statements of this section involve the health of fish and wildlife populations and their habitats. Around 65% of respondents agreed that *Wyoming's fish and wildlife populations are healthy* and *their habitats are healthy* (Figure IV.C.4).

Figure IV.C.4. Percent of respondents agreeing that Wyoming's fish and wildlife populations and their habitats are healthy.



Results by wildlife value orientation type. Figures IV.C.5 to IV.C.14 display PCI graphs for the ten items in this section, showing a PCI bubble for each of the value orientation types and the entire public. The graphs show that there was very little difference in mean scores between value orientation types for the first six items covering how the public feels about WGFD's management and their performance in providing information. The next two items covering whether the WGFD should be involved in certain activities are where the most variability in level of agreement and consensus existed in this section. While there was general agreement that the *WGFD should be a strong advocate for fish and wildlife, even if that means opposing development in some areas*, Mutualists had the highest mean scores on average and Utilitarians and Distanced individuals had the lowest. Mutualists and Pluralists displayed the most within-group consensus for this item. While both Utilitarians and Pluralists agreed on average that *the WGFD should encourage more young people to hunt and fish*, Mutualists slightly disagreed overall and Distanced individuals were neutral. Utilitarians and Pluralists also showed much more consensus than both Mutualists and Distanced individuals on this item. The last two items regarding the *health of fish and wildlife populations* and the *health of their habitats* showed very similar responses for each of the groups. Utilitarians, Pluralists, and Distanced individuals generally agreed and showed similar amounts of consensus, while Mutualists were neutral and showed much less consensus.

Figure IV.C.5. Potential for conflict indices for the statement "The WGFD represents my views on how fish and wildlife should be managed in Wyoming" by wildlife value orientation type.

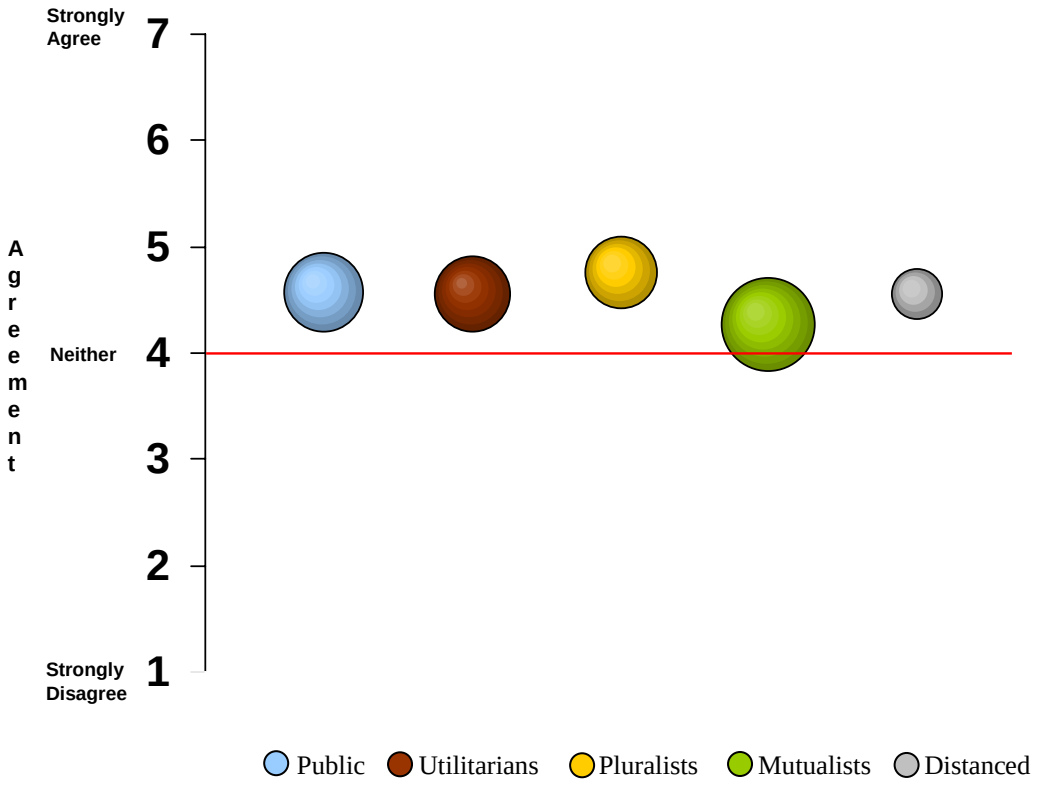


Figure IV.C.6. Potential for conflict indices for the statement “I trust the WGFD to make acceptable decisions about fish and wildlife management in Wyoming” by wildlife value orientation type.

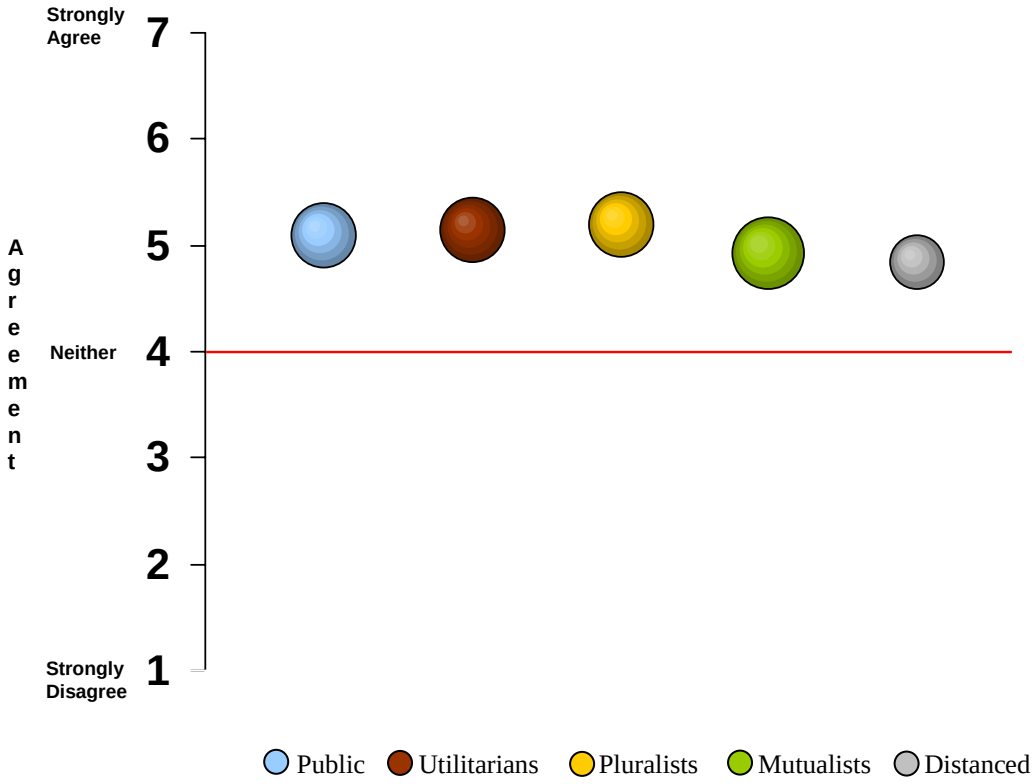


Figure IV.C.7. Potential for conflict indices for the statement “The WGFD effectively manages Wyoming’s fish and wildlife” by wildlife value orientation type.

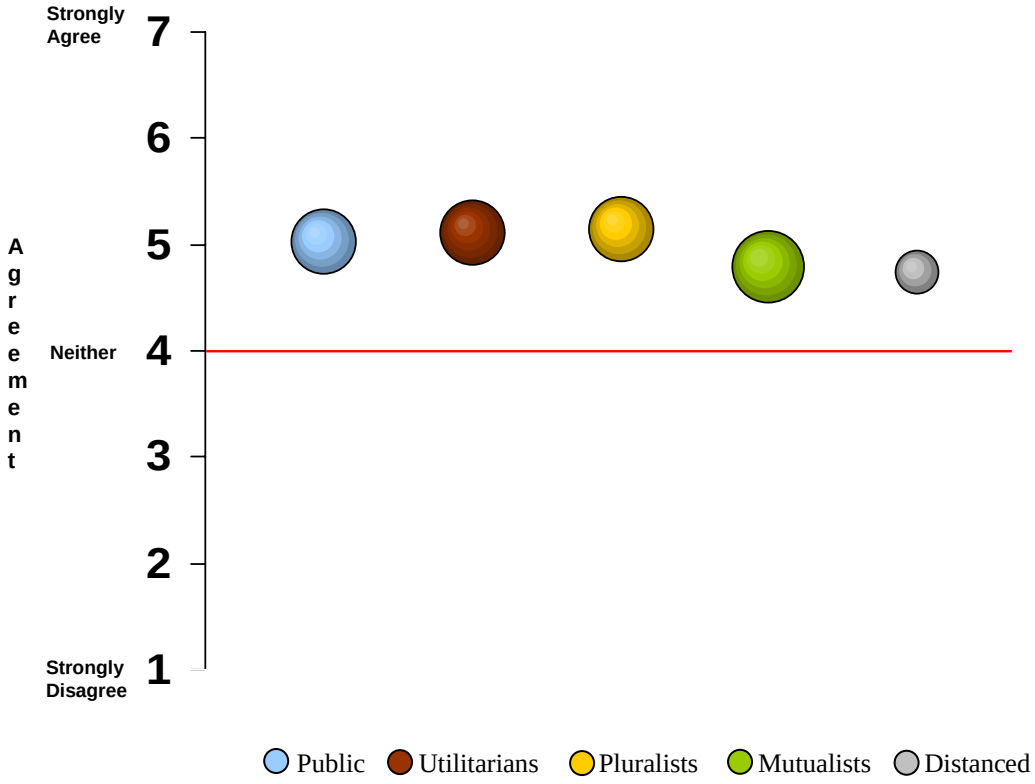


Figure IV.C.8. Potential for conflict indices for the statement "The WGFD provides me with *accurate* information on fish and wildlife issues in Wyoming" by wildlife value orientation type.

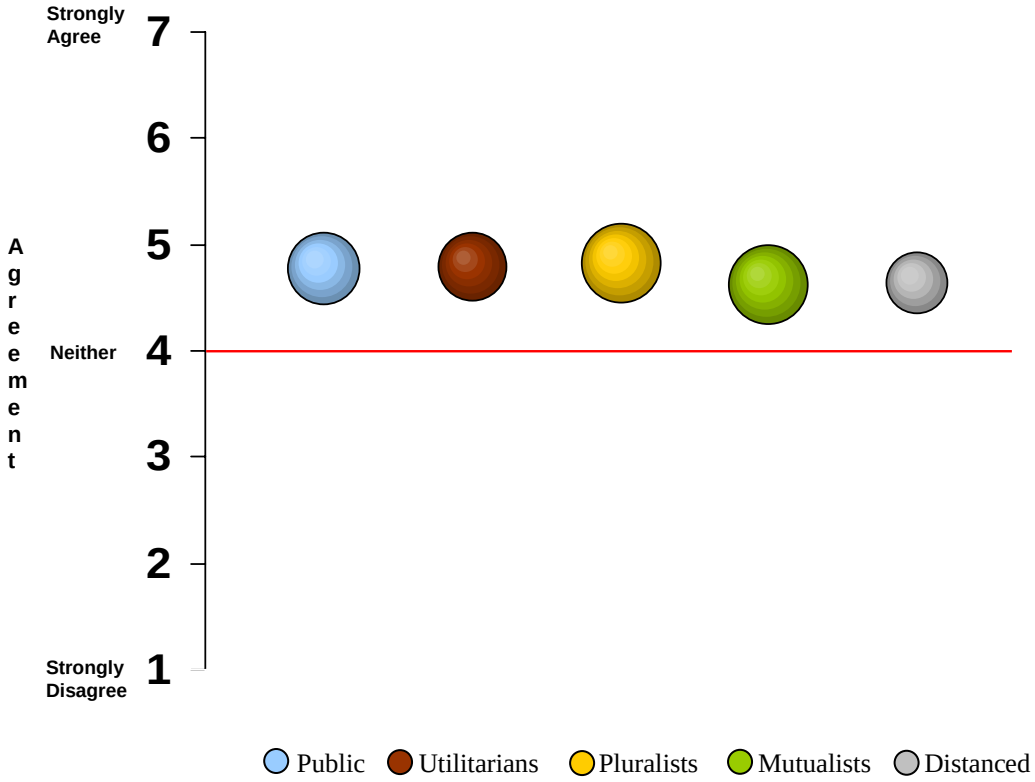


Figure IV.C.9. Potential for conflict indices for the statement “The WGFD provides me with *adequate amounts* of information on fish and wildlife issues in Wyoming” by wildlife value orientation type.

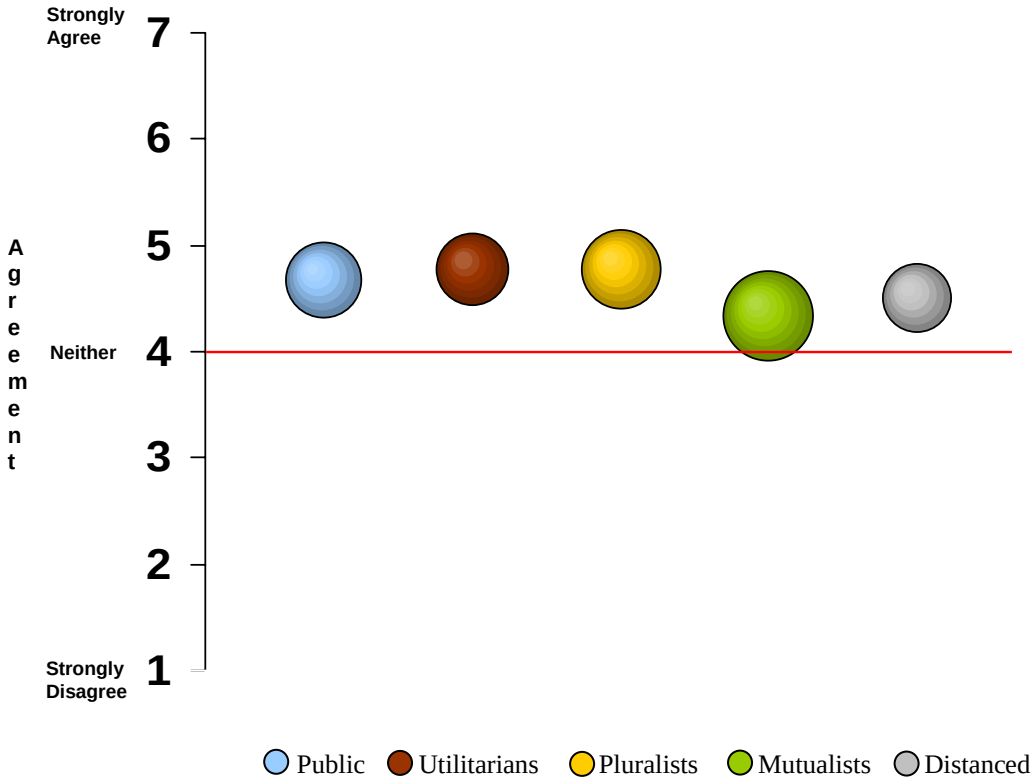


Figure IV.C.10. Potential for conflict indices for the statement “The WGFD provides information on fish and wildlife issues in a timely manner” by wildlife value orientation type.

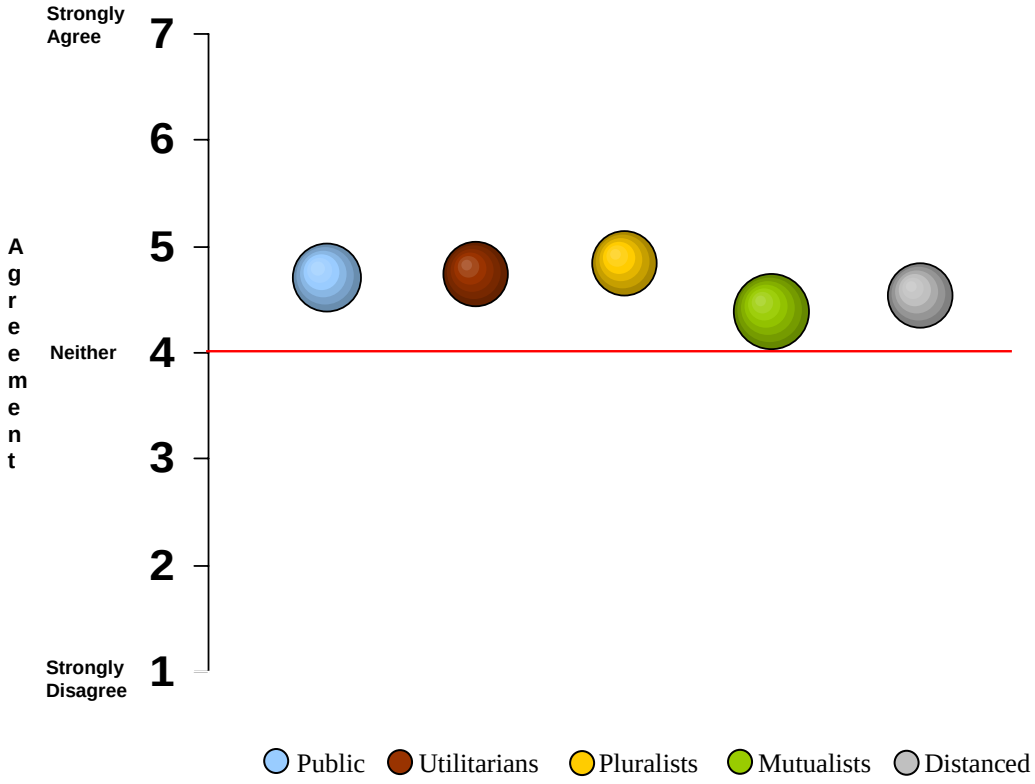


Figure IV.C.11. Potential for conflict indices for the statement “The WGFD should be a strong advocate for fish and wildlife, even if that means opposing development in some areas” by wildlife value orientation type.

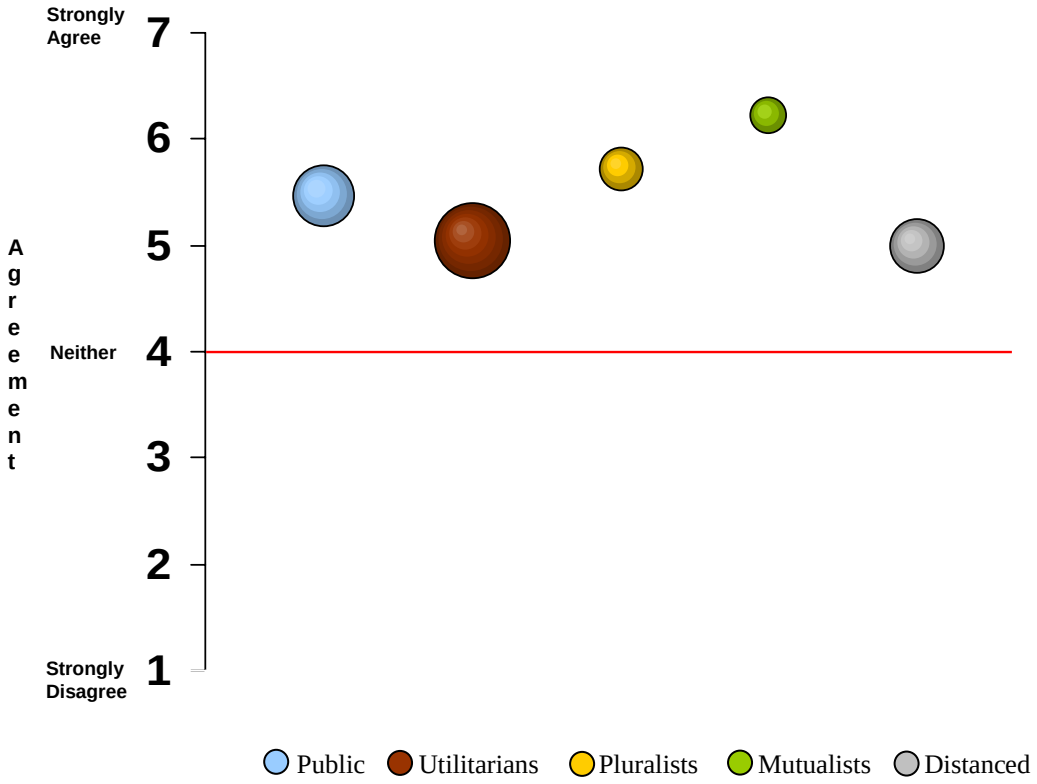


Figure IV.C.12. Potential for conflict indices for the statement “The WGFD should encourage more young people to hunt and fish” by wildlife value orientation type.

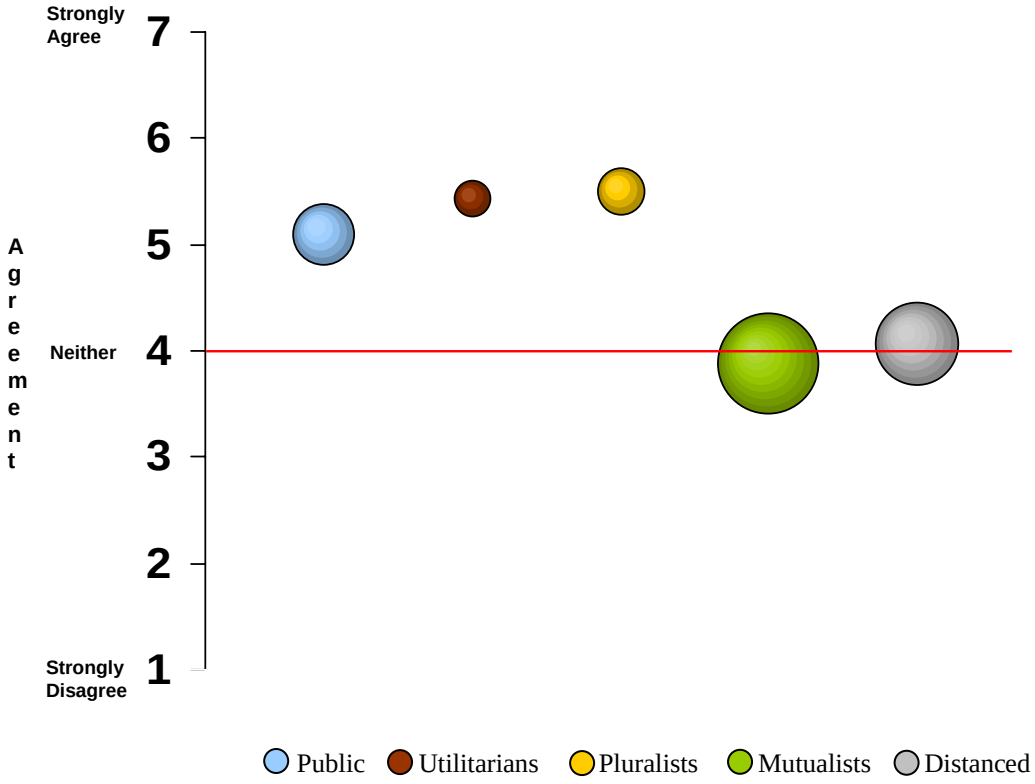


Figure IV.C.13. Potential for conflict indices for the statement “Overall, Wyoming’s fish and wildlife populations are healthy” by wildlife value orientation type.

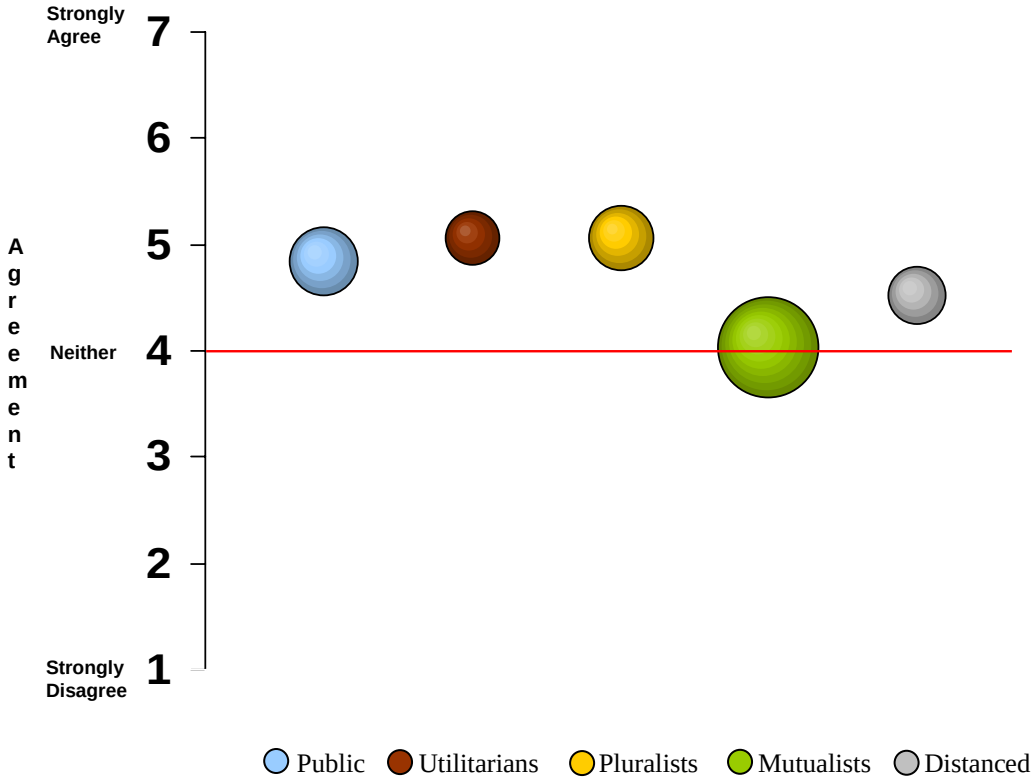
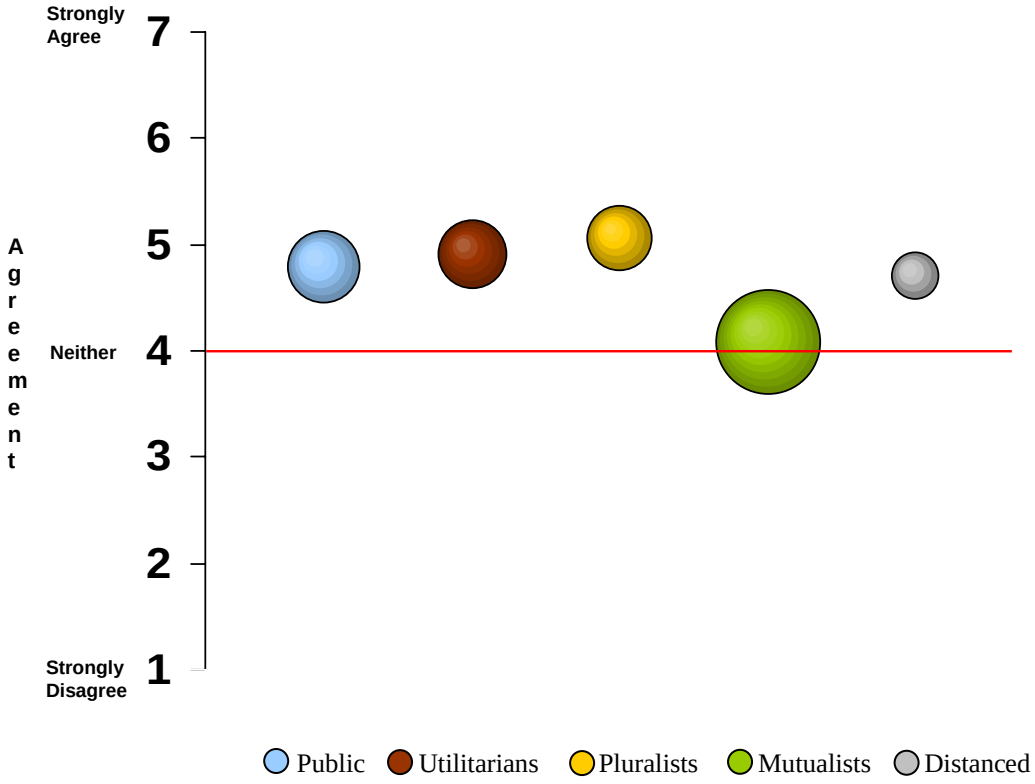


Figure IV.C.14. Potential for conflict indices for the statement “Overall, Wyoming’s fish and wildlife habitats are healthy” by wildlife value orientation type.



Results by participation in hunting and fishing. Figures IV.C.15 to IV.C.18 show how hunters/anglers and non-hunters/anglers responded to these items. Hunters/anglers did not differ significantly from non-hunters/anglers on any of the statements except that the *WGFD should encourage more young people to hunt and fish*. Though both groups agreed with this item, the mean score for hunters/anglers was higher than the mean score for non-hunters/anglers. Further, hunters/anglers showed more within-group consensus than did non-hunters/anglers for this item.

Figure IV.C.15. Potential for conflict indices for how the public feels about WGFD's management of fish and wildlife by participation in hunting and fishing.

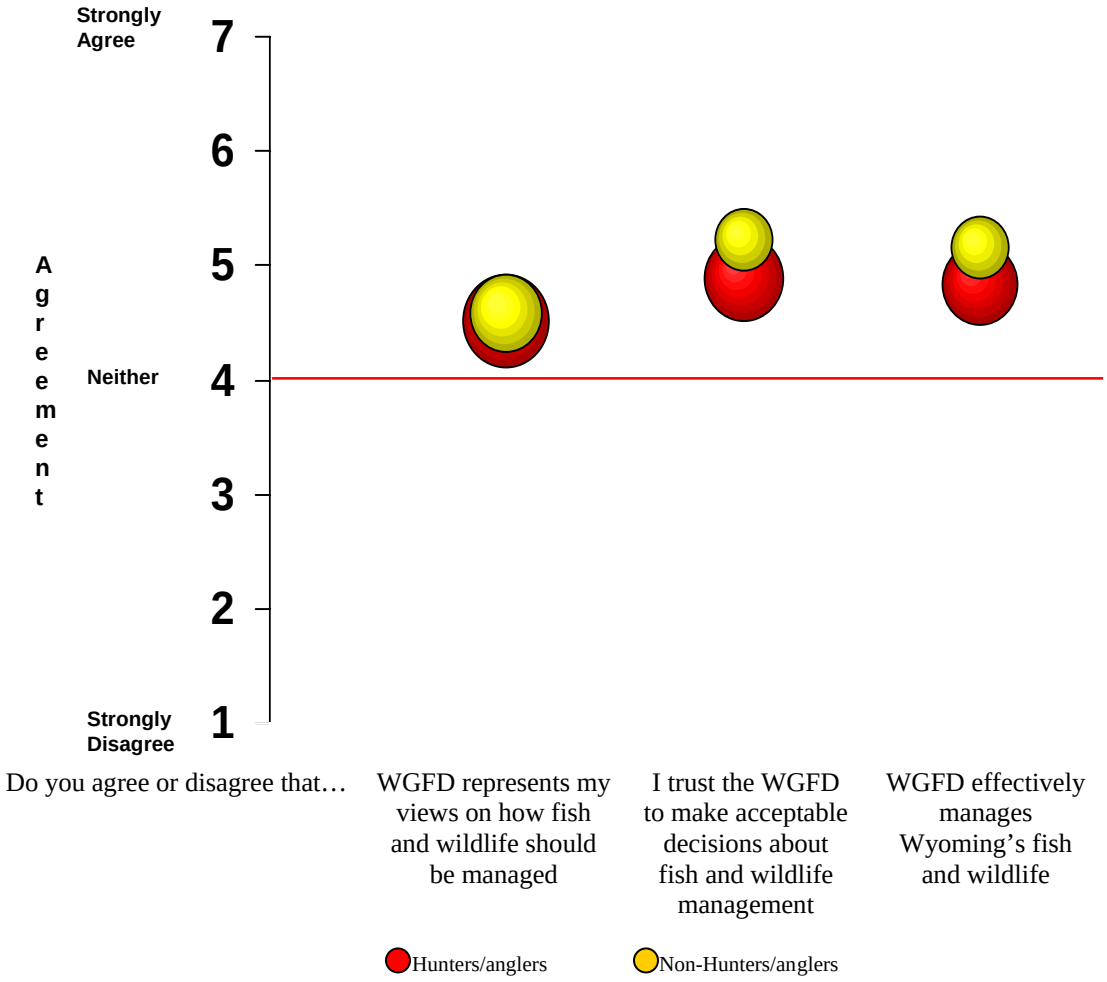


Figure IV.C.16. Potential for conflict indices for the performance of the WGFD in providing information to the public by participation in hunting and fishing.

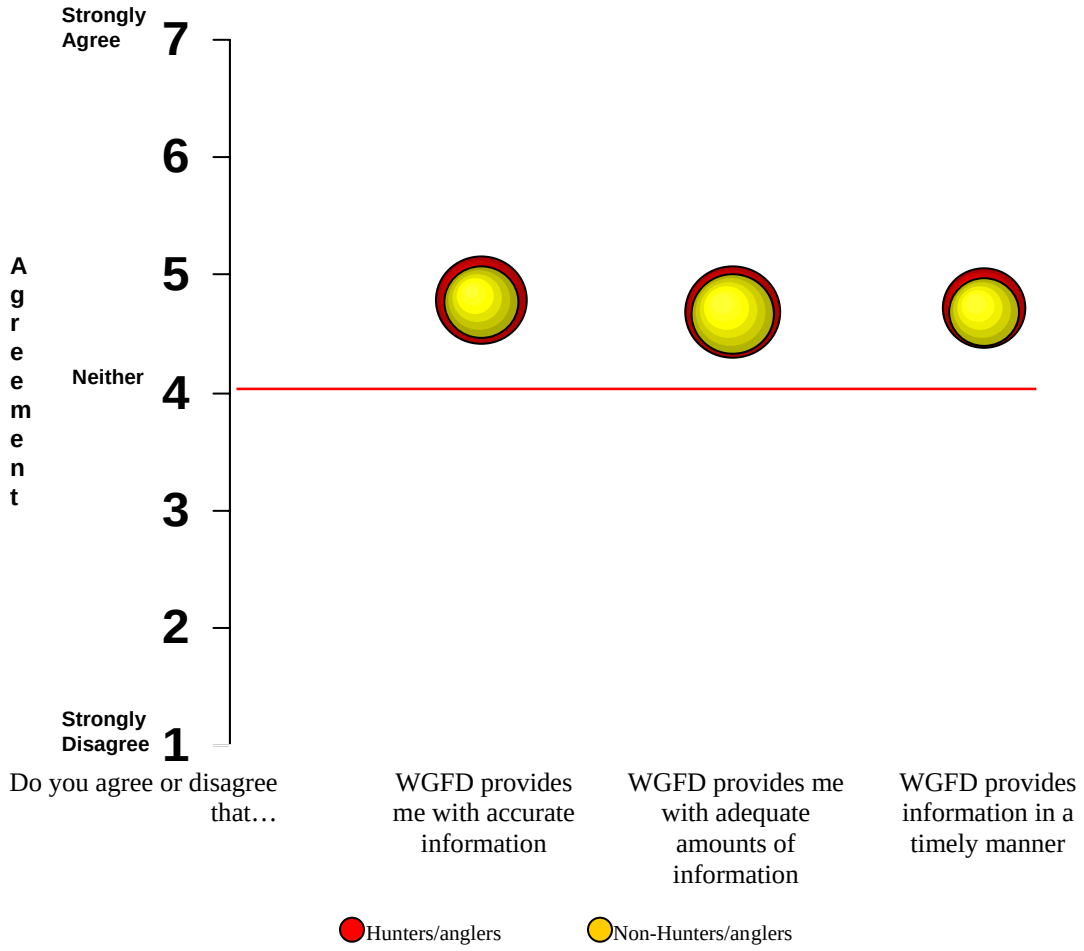


Figure IV.C.17. Potential for conflict indices for activities in which the WGFD should engage by participation in hunting and fishing.

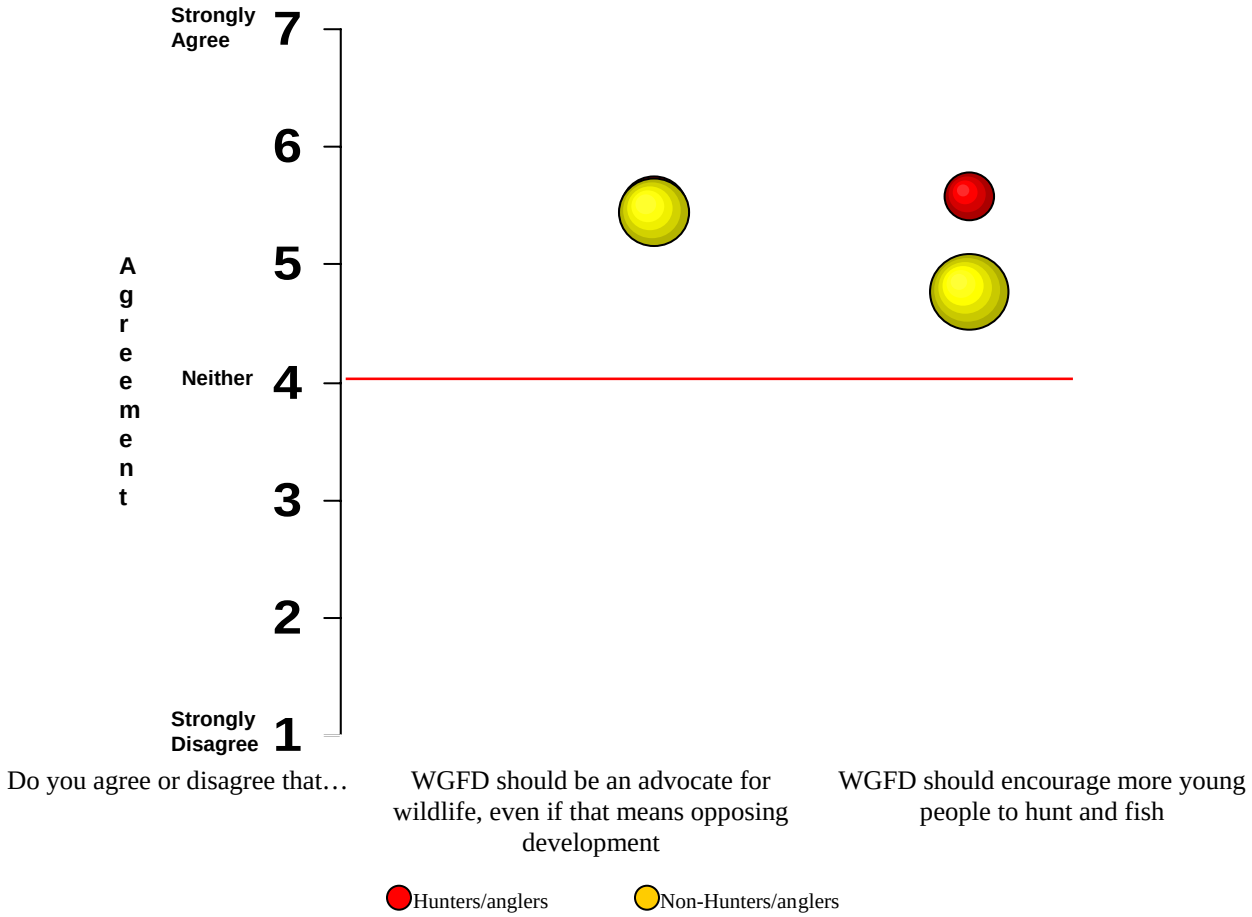
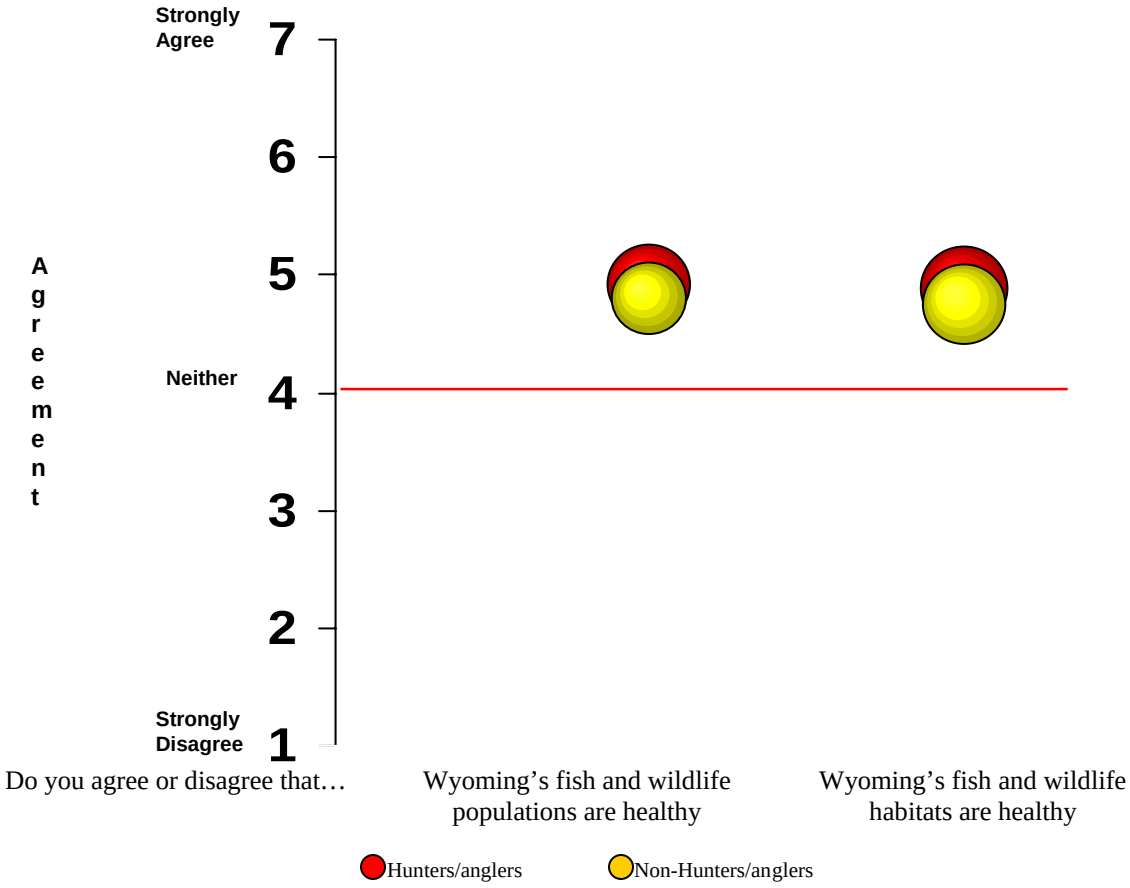


Figure IV.C.18. Potential for conflict indices for the health of fish and wildlife and their habitats in Wyoming by participation in hunting and fishing.



D. PUBLIC PARTICIPATION IN FISH AND WILDLIFE MANAGEMENT DECISION-MAKING

This section allowed respondents to indicate what sort of decision making activities they had participated in over the past year or to indicate that they had not participated in any of the activities. The items are listed below (refer to Tables A-114 to A-121).

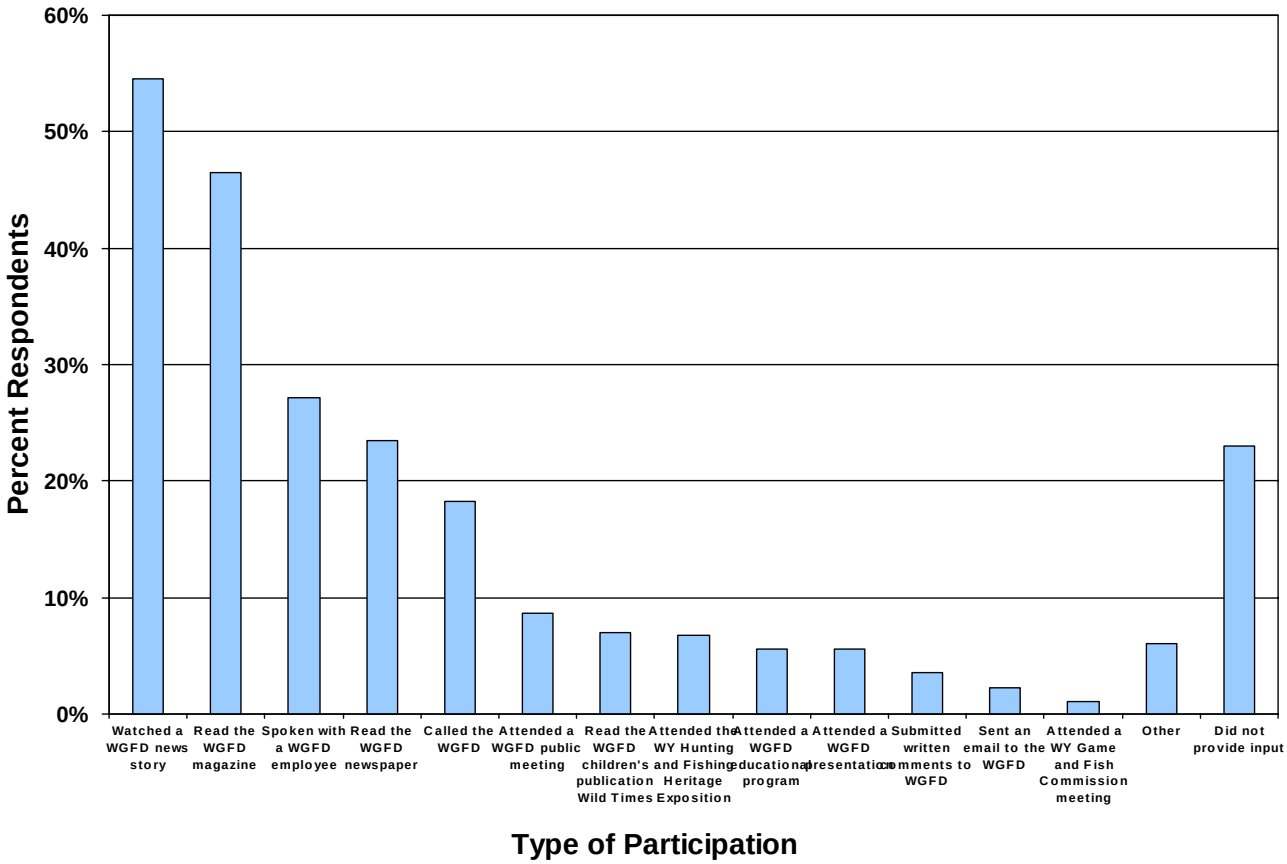
2. The WGFD works to provide Wyoming residents with information about Wyoming's fish and wildlife, as well as provide opportunities for people to participate in fish and wildlife decision-making.

During the last year (12 months), have you…? *Check (☑) all that apply.*

- ❒ Spoken with a WGFD employee while recreating outdoors (for example, hunting, fishing, boating)
- ❒ Called the WGFD
- ❒ Sent an email to the WGFD
- ❒ Submitted written comments on a WGFD management plan
- ❒ Watched a WGFD news story on the local television station
- ❒ Attended a WGFD public meeting
- ❒ Attended a Wyoming Game and Fish Commission meeting
- ❒ Attended a WGFD educational program (for example, Becoming an Outdoors Woman, Hunter Education, OREO)
- ❒ Attended a WGFD presentation (for example, Living in Bear Country)
- ❒ Attended the Wyoming Hunting and Fishing Heritage Exposition
- ❒ Read the WGFD Magazine *Wyoming Wildlife*
- ❒ Read the WGFD newspaper *Wyoming Wildlife News*
- ❒ Read the WGFD children's publication *Wild Times*
- ❒ Other (please describe)_____
- ❒ I did not do any of the above this past year.

Summary of results. As Figure IV.D.1 shows, the most common type of participation was *watching a news story about WGFD,* followed by *reading the WGFD magazine Wyoming Wildlife*. The next three most common activities were: *spoken with a WGFD employee, read the WGFD newspaper Wyoming Wildlife News,* and *called the WGFD.* All other activities were participated in by less than 10% of the respondents. Almost a quarter of the respondents reported *not participating in any decision-making activities in the past year*.

Figure IV.D.1. Percent of respondents participating in fish and wildlife decision-making activities.



In order to better understand who was participating and in what way, respondents were first broken up into three categories based on the number of activities they participated in: 0 activities, 1 to 3 activities, and 4 or more activities. Second, the methods of participation were classified into active and passive categories. The active category includes methods which required more interaction between the respondent and the agency: *speaking to a WGFD employee*, *calling and emailing the WGFD*, *submitting written comments on a WGFD plan*, and *attending any sort of meeting, educational program, or exposition*. The passive category includes methods which require less interaction by the respondent: *watching a WGFD news story* and *reading any of the WGFD's publications*. Respondents were included in the active category if they had participated through any active method, even if they had also participated by using passive methods. Respondents were included in the passive category if they had participated using only passive methods. The number of activities and the activeness of participation were then examined by wildlife value orientation type and participation in hunting and angling.

Results by wildlife value orientation type. Figure IV.D.2 shows the percent of respondents of each value orientation type and the entire public who participated using 1 to 3 methods, more than 4 methods, or not at all. Generally, the percentages for each type follow the same pattern, with a majority of each type participating by using 1 to 3 methods and a similar percentage either not participating or using more than 4 methods. However, Distanced individuals were almost twice as likely to not participate and less than half as likely to have used 4 or more methods compared to the other value orientation types. Figure IV.D.3 shows the percent of respondents by wildlife value orientation type who participated actively, passively, or not at all. Utilitarians and Pluralists were more likely to actively participate than Mutualists and Distanced individuals. Conversely, Mutualists and Distanced individuals were more likely to passively participate than Utilitarians and Pluralists. Overall, Distanced individuals were also more likely than the other types to not participate at all.

Figure IV.D.2. Percent of respondents participating in numbers of fish and wildlife decision-making methods by wildlife value orientation type.

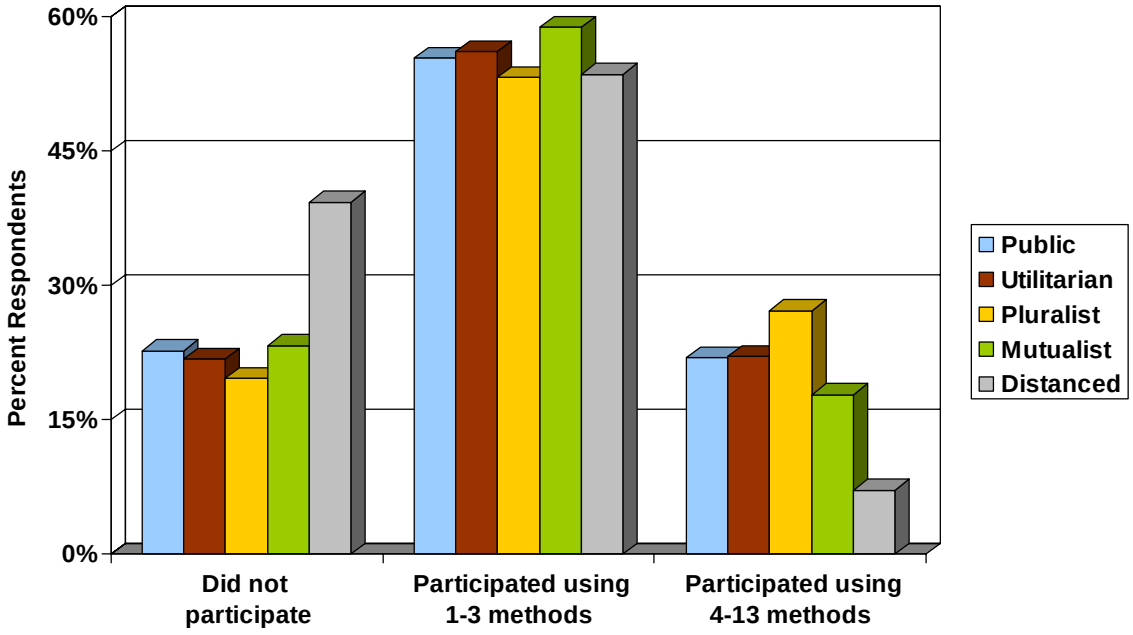
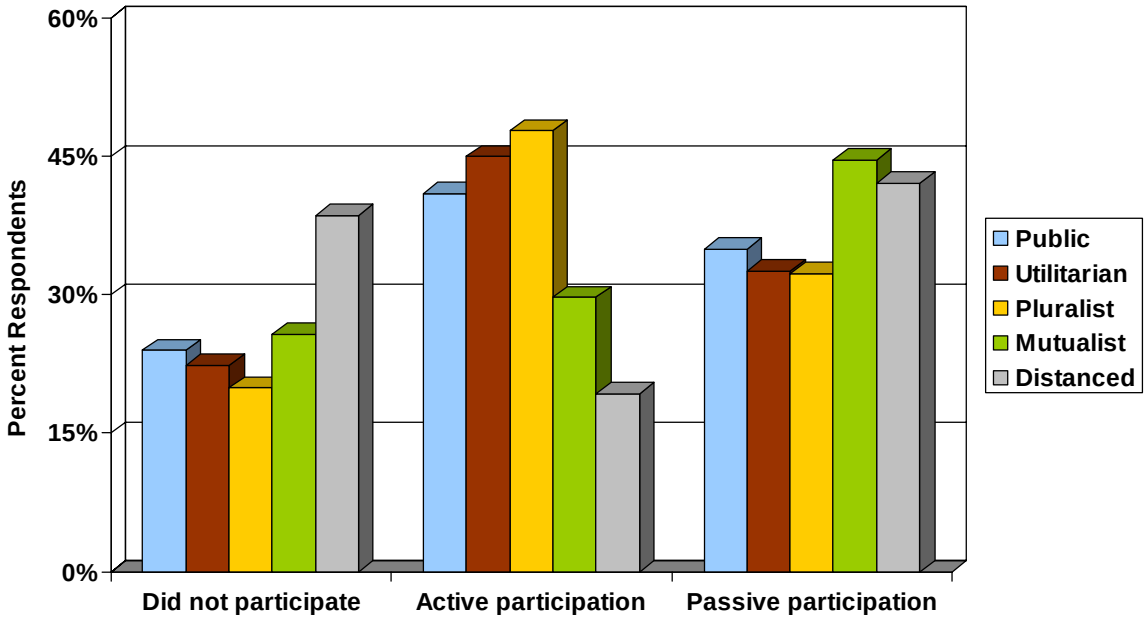


Figure IV.D.3. Percent of respondents participating in no, active, and passive methods of fish and wildlife decision-making by wildlife value orientation type.



Results by participation in hunting and fishing. Figure IV.D.4 shows the percent of respondents by participation in hunting and fishing who participated using 1 to 3 methods, 4 or more methods, or not at all. For both groups, the majority participated using 1-3 methods. Hunters/anglers were less likely to not participate and much more likely to participate using 4 or more methods than non-hunters/anglers. The reverse was true for non-hunters/anglers: they were more likely to not participate and much less likely to participate using 4 or more methods. Figure IV.D.5 shows the percent of respondents by participation in hunting and fishing who participated actively, passively, or not at all. Hunters/anglers were much more likely to actively participate than non-hunters/anglers, while non-hunters/anglers were much more likely to participate passively or not at all than hunters/anglers.

Figure IV.D.4. Percent of respondents participating in numbers of fish and wildlife decision-making methods by participation in hunting and fishing.

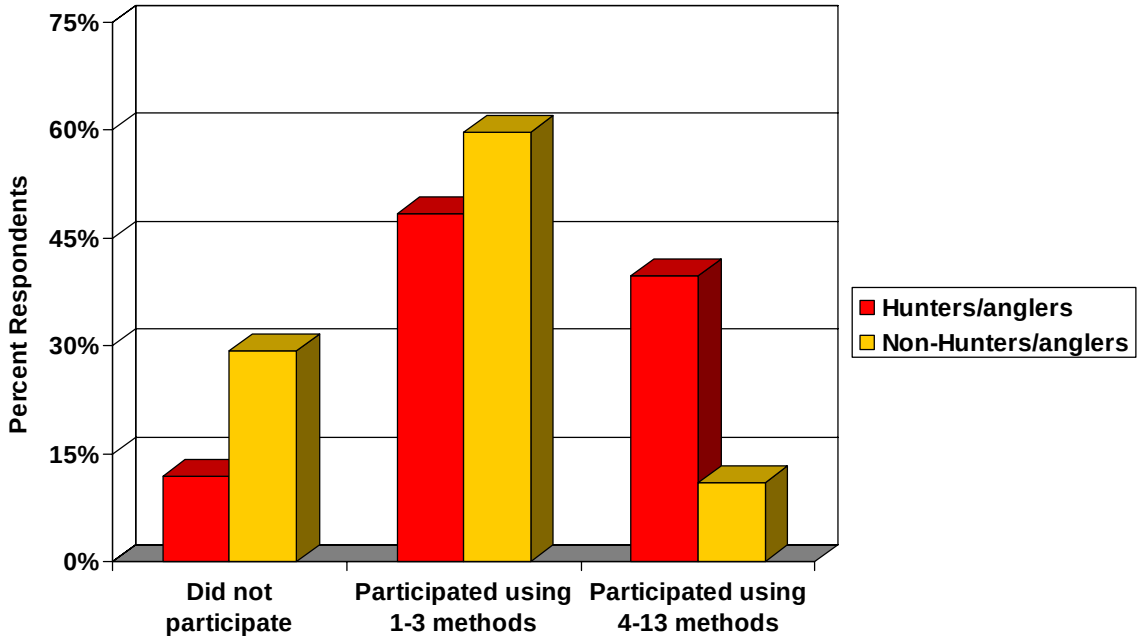
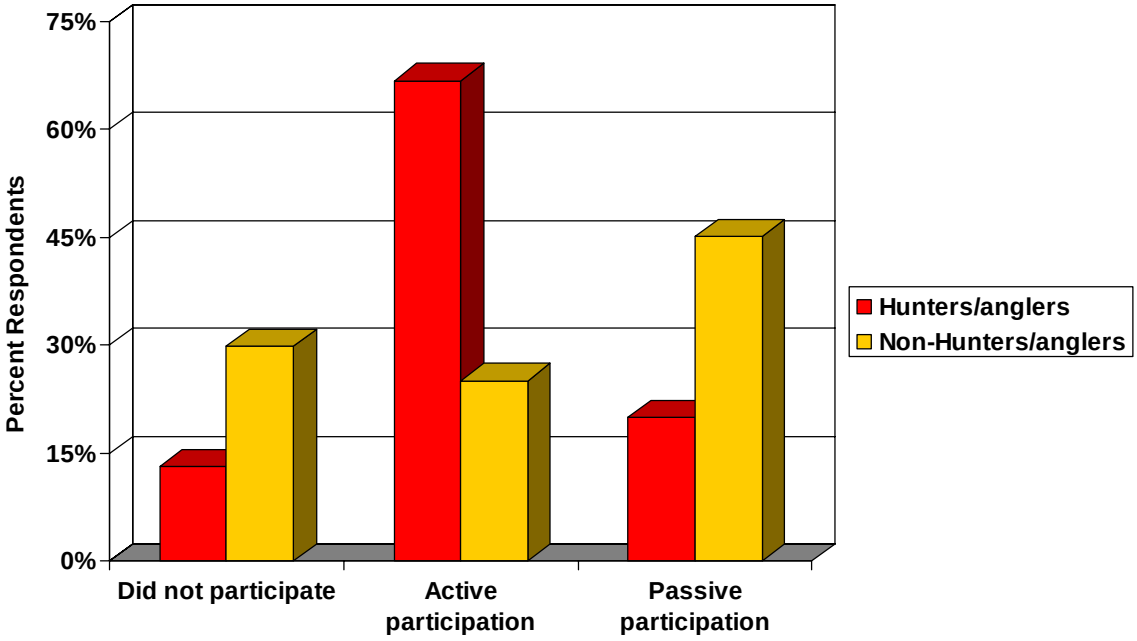


Figure IV.D.5. Percent of respondents participating in no, active, and passive methods of fish and wildlife decision-making by participation in hunting and fishing.



SECTION V. MANAGEMENT OF HUMAN-WILDLIFE CONFLICT

This issue examines the public's perceptions of population level techniques to address human-wildlife conflict, specifically conflicts with bears and deer. The issue was organized into two conflict situations: the 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.

A. POPULATION-LEVEL TECHNIQUES TO MANAGE BEARS

Respondents were asked to evaluate the acceptability of three management actions for each of the two situations concerning bears. The survey items for situations concerning bears are below (refer to Tables A-122 to A-126 for this section).

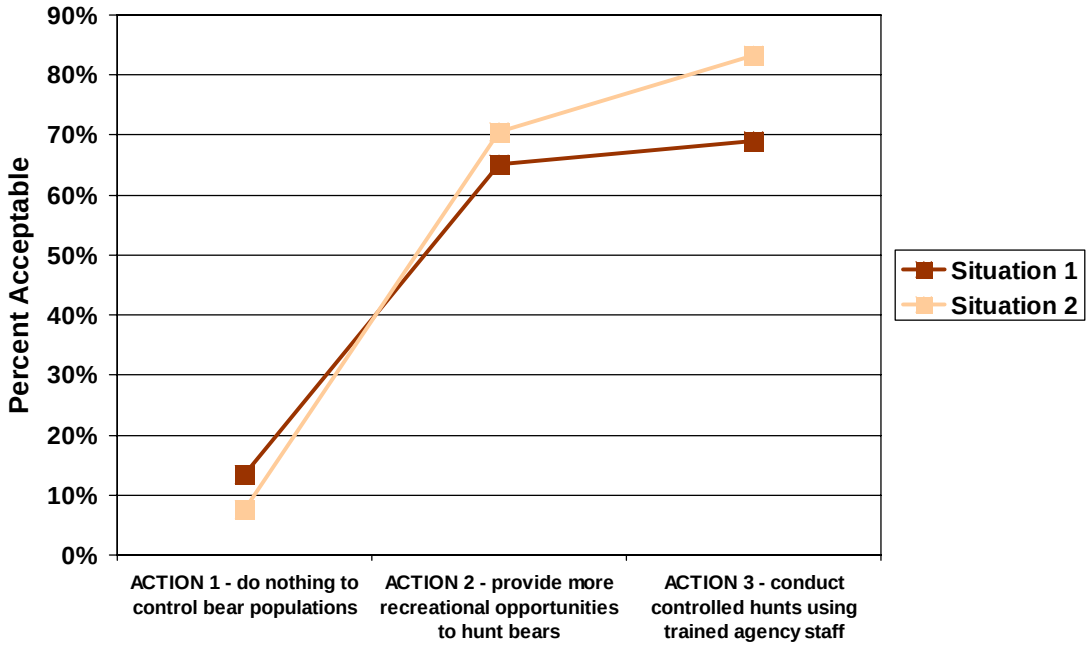
Fish and wildlife agencies want to know how the public thinks the agencies should respond to human-wildlife conflict situations. Below are two IMAGINARY situations involving black bears. We would like to know how you feel about certain management actions that could be directed at bear populations to 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 V.A.1 shows that, generally, the public found it unacceptable to *do nothing to control bear populations* but acceptable to *provide more recreational opportunities to hunt bears* and *conduct controlled hunts using trained agency staff* in both situations. *Doing nothing* was slightly more acceptable when the bears were simply a nuisance than when they were a threat to human safety. *Recreational hunting* was slightly more acceptable when the bears were a threat to human safety and *conducting controlled hunts* was more acceptable in this situation as well.

Figure V.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 V.A.2 and V.A.3 reveal very similar trends for both situations across all value orientation types. The majority of all value orientation types felt that *doing nothing* was unacceptable in both situations and that *conducting controlled hunts* was acceptable. The acceptability of providing more opportunities for recreational hunting varied by value orientation type. While the majority of Utilitarians and Pluralists (over 70% in both situations) felt more opportunities for recreational hunting was acceptable, less than 35% of Mutualists and Distanced individuals felt it was acceptable in both situations.

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

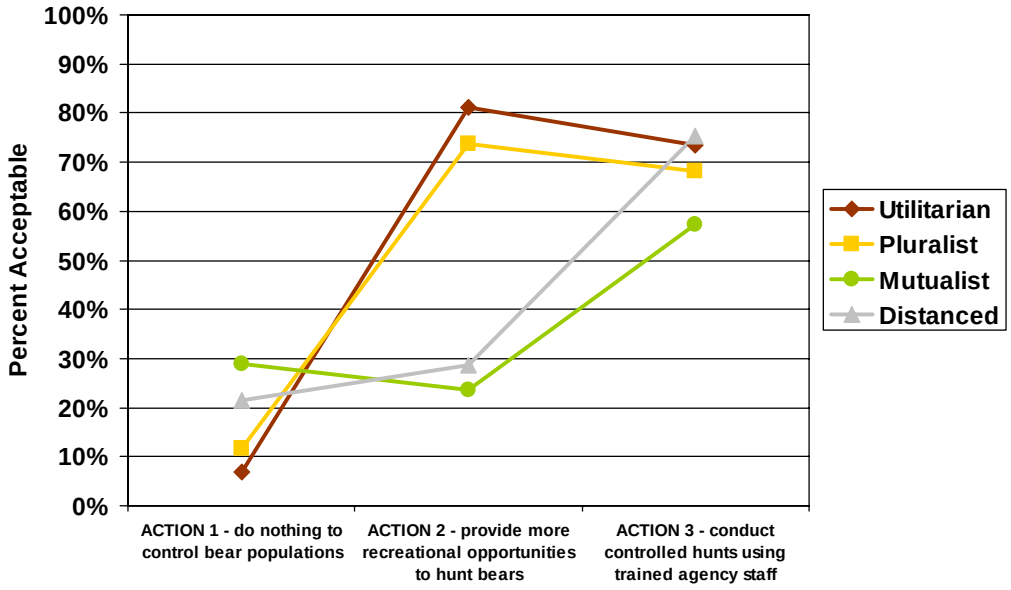
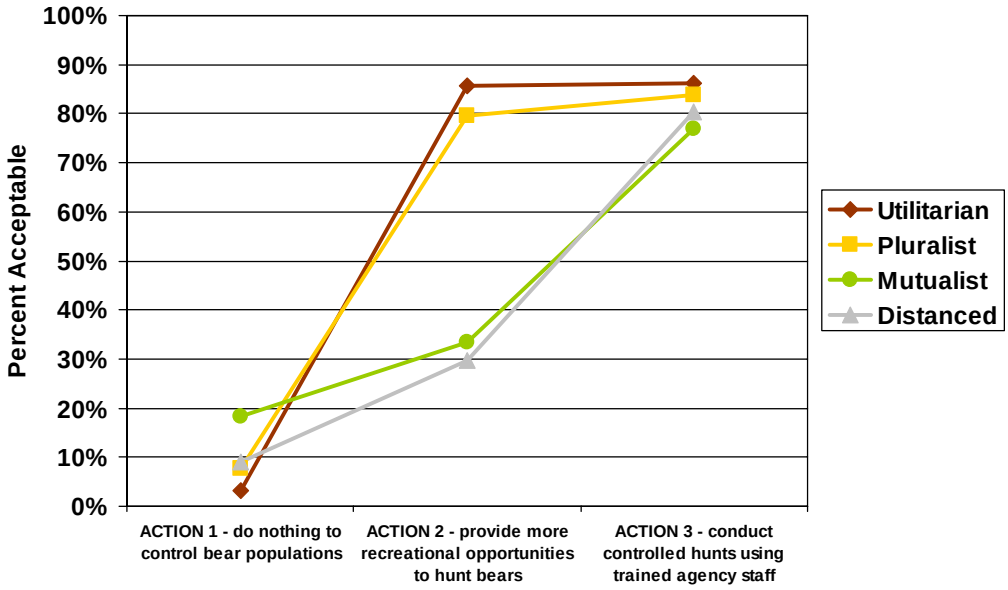


Figure V.A.3. Percent of wildlife value orientation type finding management actions acceptable when human deaths from bear attacks have occurred (situation 2).



Results by participation in hunting and fishing. Figures V.A.4 and V.A.5 reveal similar trends for both situations for hunters/anglers and non-hunters/anglers. In both situations, more hunters/anglers found *recreational hunting* to be acceptable than non-hunters/anglers. When bears were a nuisance, *recreational hunting* was the action accepted by the most hunters/anglers, while *controlled hunts* were accepted by the most non-hunters/anglers. When bears were a threat to human safety, *controlled hunts* were the most accepted action for both groups. However, almost identical percentages of hunters/anglers found *recreational hunting* and *controlled hunts* to be acceptable, whereas around 20% more non-hunters/anglers found *controlled hunts* to be acceptable than *recreational hunting*.

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

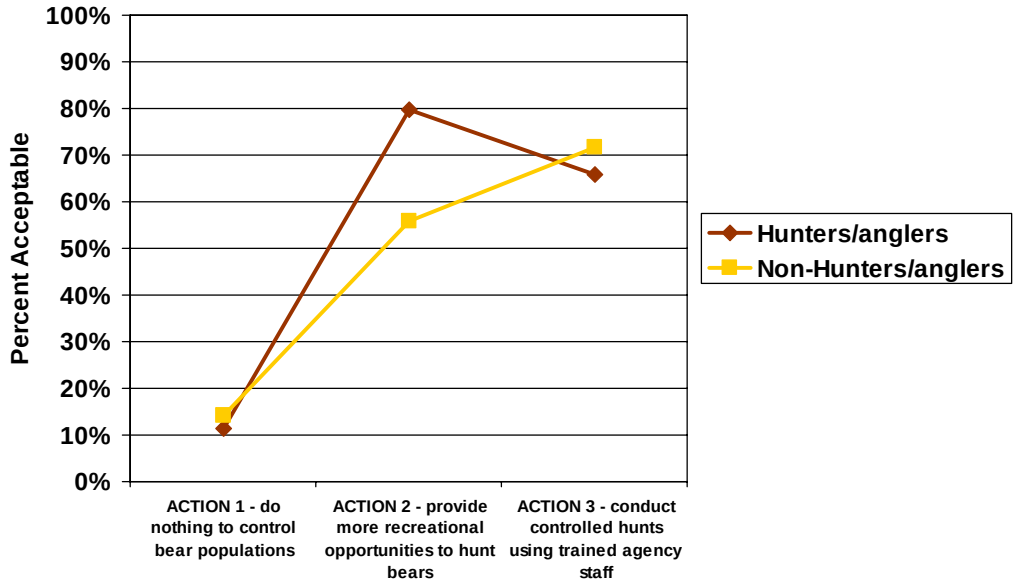
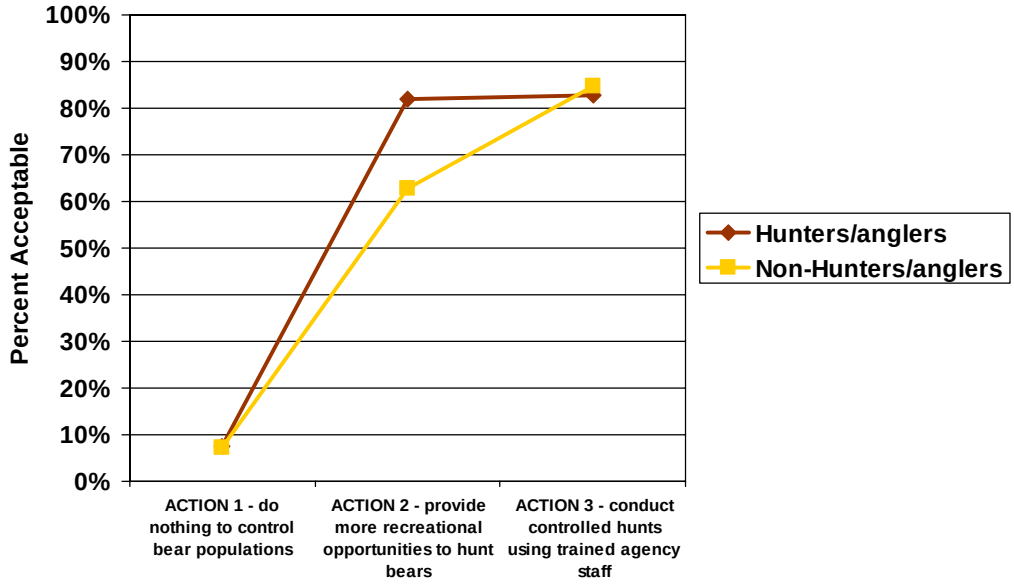


Figure V.A.5. Percent hunters/anglers and non-hunters/anglers finding management actions acceptable when human deaths from bear attacks have occurred (situation 2).



B. POPULATION-LEVEL TECHNIQUES TO MANAGE DEER

Respondents were asked to evaluate the acceptability of five management actions for each of the 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 deer are below (refer to Tables A-127 to A-131 for this section).

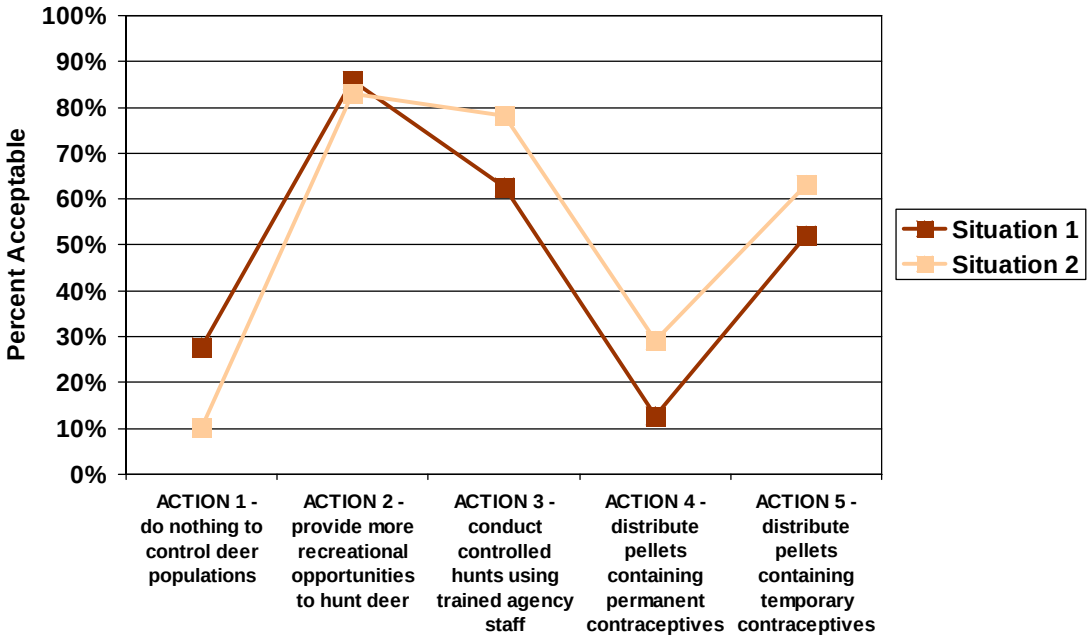
Below are two IMAGINARY situations involving deer. We would like to know how you feel about certain management actions that could be directed at deer populations to address these situations. *Even though it may seem unlikely that these things could occur where you live, we are still interested in your 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 V.B.1 shows, in both situations more than half the public found it acceptable to *provide more recreational opportunities to hunt deer*, *conduct controlled hunts*, and *distribute pellets containing temporary contraceptives*. A minority (less than 30%) found it acceptable to *do nothing* or *distribute pellets containing permanent contraceptives* in both situations. Fewer respondents found it acceptable to *do nothing* when deer carried a transmissible disease (situation 2) than when they were merely a nuisance (situation 1). There was very little difference in the percent acceptability between situations for *providing more recreational hunting opportunities*. In the cases of *controlled hunting* and *contraception*, more respondents found it acceptable to do all three actions when deer carried a transmissible disease than when they were a nuisance. The most controversial action seemed to be *temporary contraception*. While the other actions had clear majorities, this issue divided the public almost evenly when deer were a nuisance with a very slight majority (52%) finding this practice acceptable. When deer carried a transmissible disease, this percentage increased only somewhat (63%).

Figure V.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. Figures V.B.2 and V.B.3 show similar trends for both situations for all the value orientation types, though there were some differences between types in both situations. When deer were a nuisance, more Mutualists found *doing nothing* to be acceptable than the other value orientation types and fewer found *providing more recreational hunting opportunities* to be acceptable. When deer carried a transmissible disease, *providing more recreational hunting opportunities* was the most accepted action by Utilitarians and Pluralists, but *controlled hunts* was the most accepted by Mutualists and Distanced individuals. Between the two situations, fewer Utilitarians, Pluralists, and Distanced individuals felt that *recreational hunting* was acceptable when the deer carried a transmissible disease than when deer were a nuisance. However, more Mutualists found *recreational hunting* acceptable when deer carried a transmissible disease than when deer were a nuisance.

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

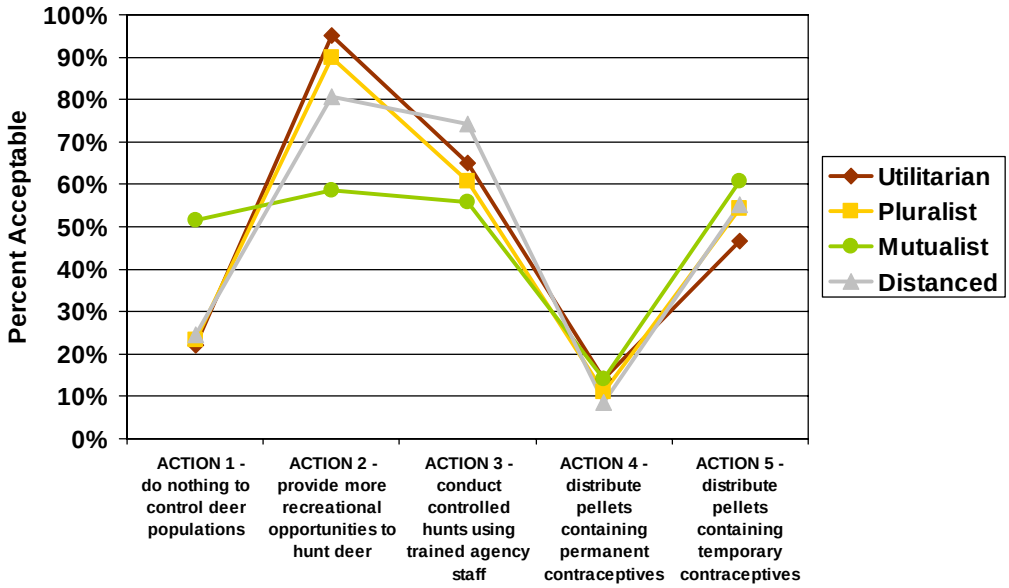
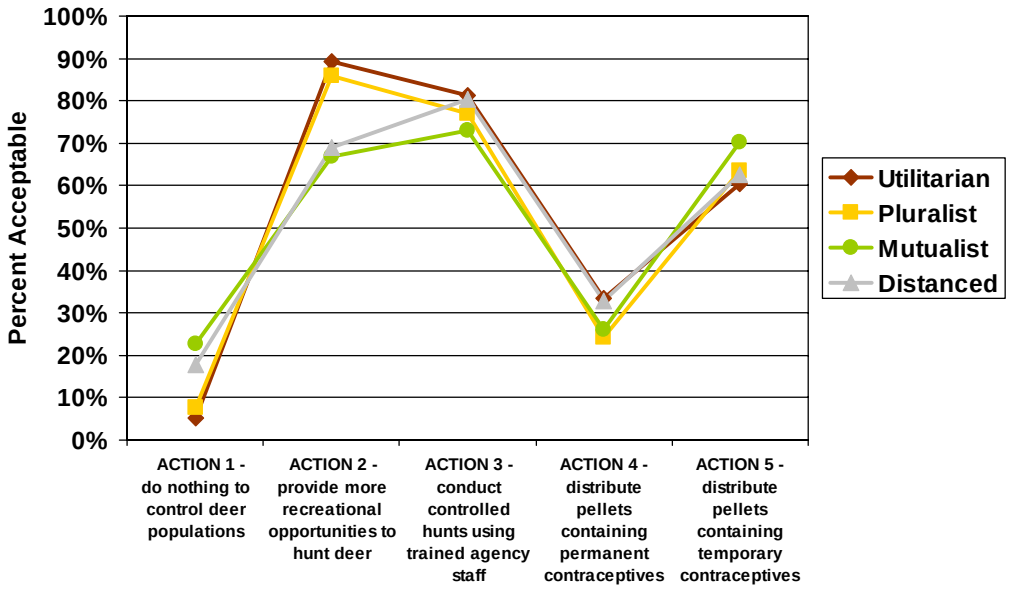


Figure V.B.3. Percent of wildlife value orientation type finding management actions acceptable when deer are carrying a disease transmissible to domestic animals and livestock (situation 2).



Results by participation in hunting and fishing. Figures V.B.4 and V.B.5 show that hunters/anglers and non-hunters/anglers differed very little in their acceptance of management actions for both situations. Slightly more hunters/anglers than non-hunters/anglers found *recreational hunting* to be acceptable and slightly more non-hunters/anglers than hunters/anglers found *temporary contraception* to be acceptable in both situations.

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

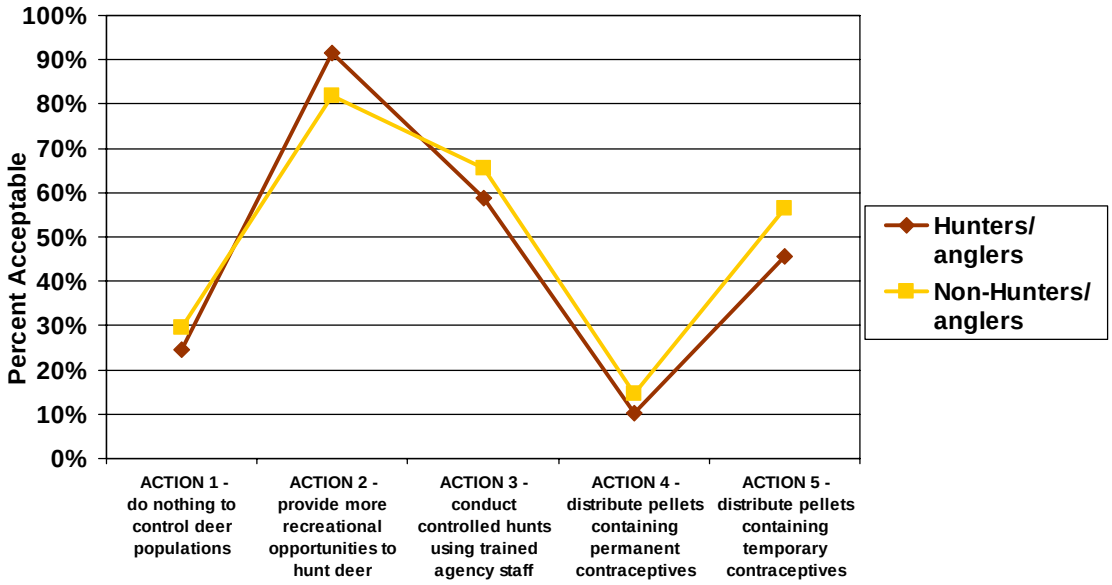
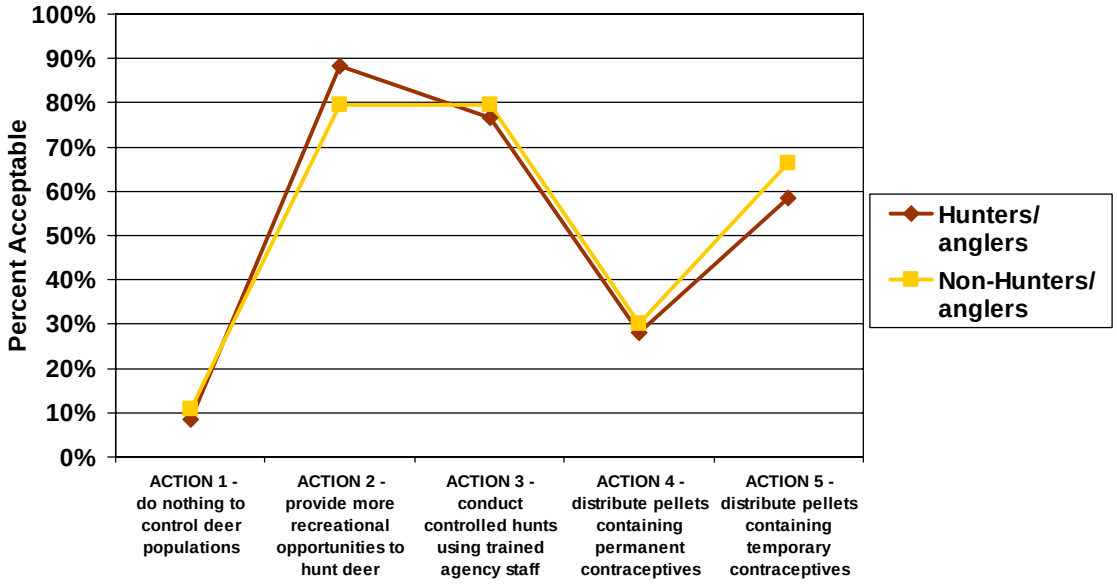


Figure V.B.5. Percent of hunters/anglers and non-hunters/anglers finding management actions acceptable when deer are carrying a disease transmissible to domestic animals and livestock (situation 2).



SECTION VI. 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 was designed specifically *to identify public priorities of conservation need and perceptions of biodiversity.*

Survey items in this section 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 nonnative species to thrive in an area? Is restoration of native species acceptable even if it means that nonnative species commonly hunted of 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 nonnative)
3. Species use (game and nongame)

A. METHODS

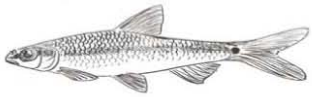
The Survey Questions. The biodiversity and species of concern section presented respondents with a series of eight hypothetical choices between species for prioritization for conservation funding. These choices included two "example species" with given characteristics. Each characteristic was represented by a statement describing a particular level (e.g., native or nonnative) 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. Wyoming was part of a subregion with Montana, North Dakota, and South Dakota. The version of the survey sent to respondents in Wyoming is shown below. Table VI.A.1 summarizes the example species given for each characteristic.

[4] Text describing the issue, portions of the methods (Section IV.A), and the entire application of the model section (IV.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: Spottail Shiner** 		➢ 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: Paddlefish**

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: Sichuan Pheasant** 		➢ This species naturally occurs in the area. ➢ Common in the area, and numbers are stable. ➢ Not a hunted/fished species. **Example: American Robin**

Survey illustrations © Ram Papish

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: Mountain Plover** 		➢ 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: Hungarian Partridge**

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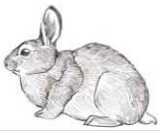
4. Which should the manager spend funds on? *(Check one ☑)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species naturally occurs in the area. ➢ Common in the area, and numbers are stable. ➢ Hunted/fished species. **Example: Cottontail Rabbit** 		➢ 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: Eurasian Collared Dove**

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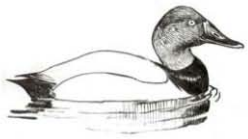
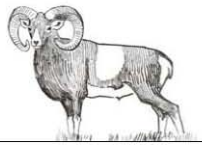
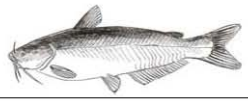
5. Which should the manager spend funds on? *(Check one ☑)*

❒ 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: Canvasback** 		➢ 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: Mouflon Sheep** 

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: Mosquitofish** 		➢ 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: Blue Catfish** 

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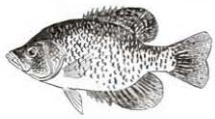
7. Which should the manager spend funds on? *(Check one ☑)*

❒ 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: Least Chipmunk** 		➢ 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: Black Crappie** 

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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: Ring-necked Pheasant** 		➢ 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: Mountain Bluebird**

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

Species Origin		Species Status			Species Use	
Native	Non-native	Common	Declining	Extirpated	Game	Nongame
Paddlefish	Spottail Shiner	Spottail Shiner	Paddlefish	Sichuan Pheasant	Paddlefish	Spottail Shiner
American Robin	Sichuan Pheasant	American Robin	Eurasian Collared Dove	Mountain Plover	Sichuan Pheasant	American Robin
Mountain Plover	Hungarian Partridge	Hungarian Partridge	Canvasback	Mouflon Sheep	Hungarian Partridge	Mountain Plover
Cottontail Rabbit	Eurasian Collared Dove	Cottontail Rabbit	Mosquitofish	Blue Catfish	Cottontail Rabbit	Eurasian Collared Dove
Canvasback	Mouflon Sheep	Least Chipmunk	Black Crappie	-	Canvasback	Mouflon Sheep
Blue Catfish	Mosquitofish	Ring-necked Pheasant	Mountain Bluebird	-	Blue Catfish	Mosquitofish
Least Chipmunk	Black Crappie	-	-	-	Black Crappie	Least Chipmunk
Mountain Bluebird	Ring-necked Pheasant	-	-	-	Ring-necked Pheasant	Mountain Bluebird

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 nonnative), 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 Blue Catfish (a native species) over the Mosquitofish (a nonnative species), this preference may be due primarily to the fact that the Blue Catfish is a game animal and the Mosquitofish is not – not whether it is a native or nonnative 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 "nonnative" 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 Wyoming 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. The table below 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 VI.A.2. Reference and nonreference species factor levels.

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

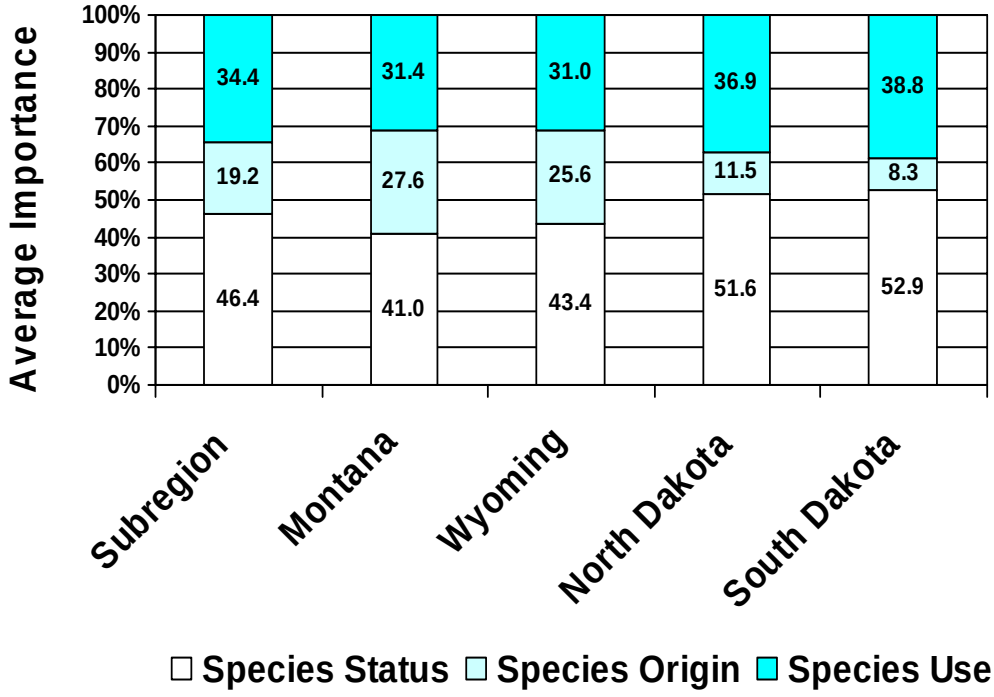
B. RESULTS

A full display of results for Wyoming and the subregion are found in Tables A-132 and A-133.

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 VI.B.1 compares the average importance of species factors in conservation funding for the subregion and each of its states. In Wyoming, species status was the most important factor (AI = 43.4) followed by species use (AI = 31.0) and species origin (AI = 25.6). As compared to the subregion, Wyoming placed only slightly less importance on species status and species use and more importance on species origin. Overall, there were differences among the states in the subregion on the average importance of these factors. North Dakota and South Dakota placed more importance on species status and species use and less on species origin than Wyoming and Montana.

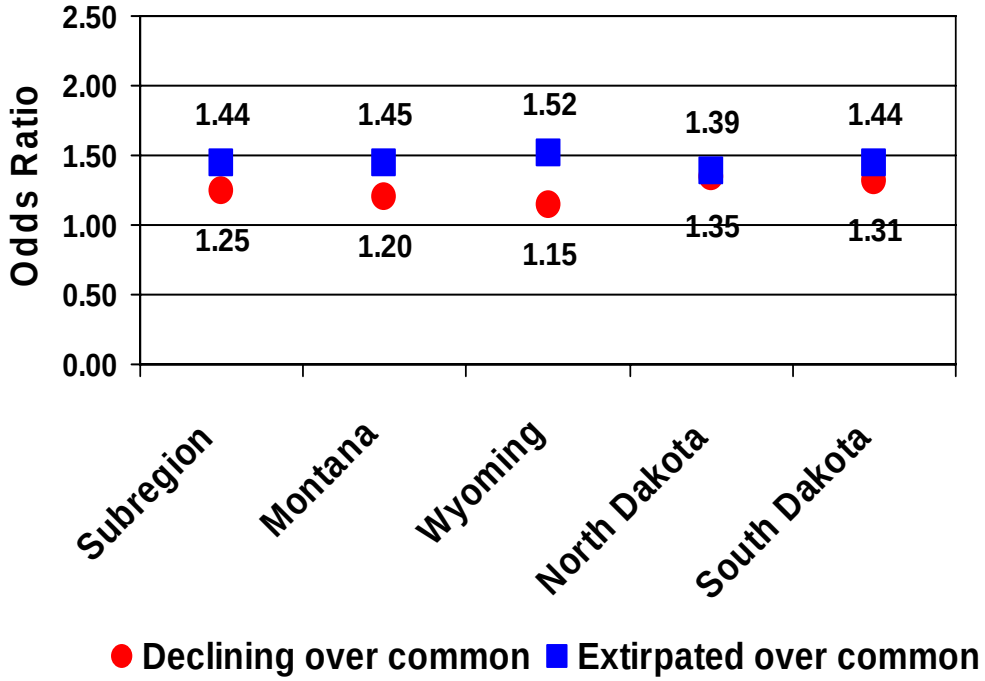
Figure VI.B.1. Average importance of species factors by state within the subregion.



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 VI.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 "extirpated" species was more likely than for "common" species in Wyoming. The odds of preferring an "extirpated" species over a "common" species was 1.52. "Declining" species were slightly more likely to be supported than "common" species. The odds of preferring a "declining" species over a "common" species was 1.15. The results in Wyoming were very similar to those found across the subregion, showing a preference for an "extirpated" species over a "common" species and for a "declining" species over a "common" species.

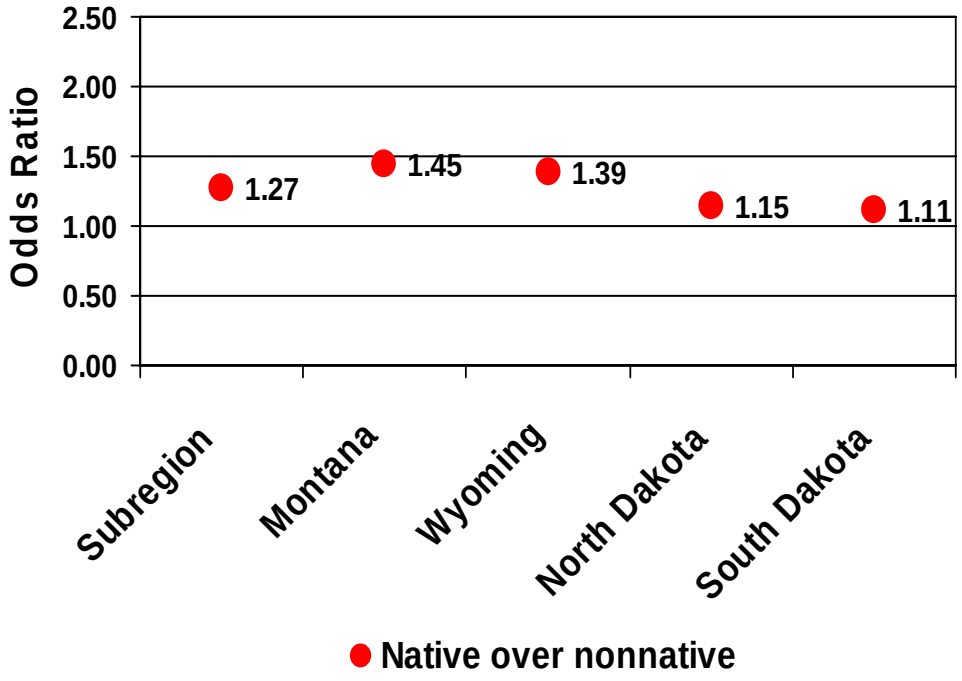
Figure VI.B.2. Odds ratios of species status levels by state within the subregion.



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

Controlling for species status and use, "native" species were more likely to be supported for conservation funding than were "nonnative" species in Wyoming (Figure VI.B.3.). The odds of preferring a "native" over a "nonnative" was 1.39. Wyoming results did not differ greatly from those of the subregion.

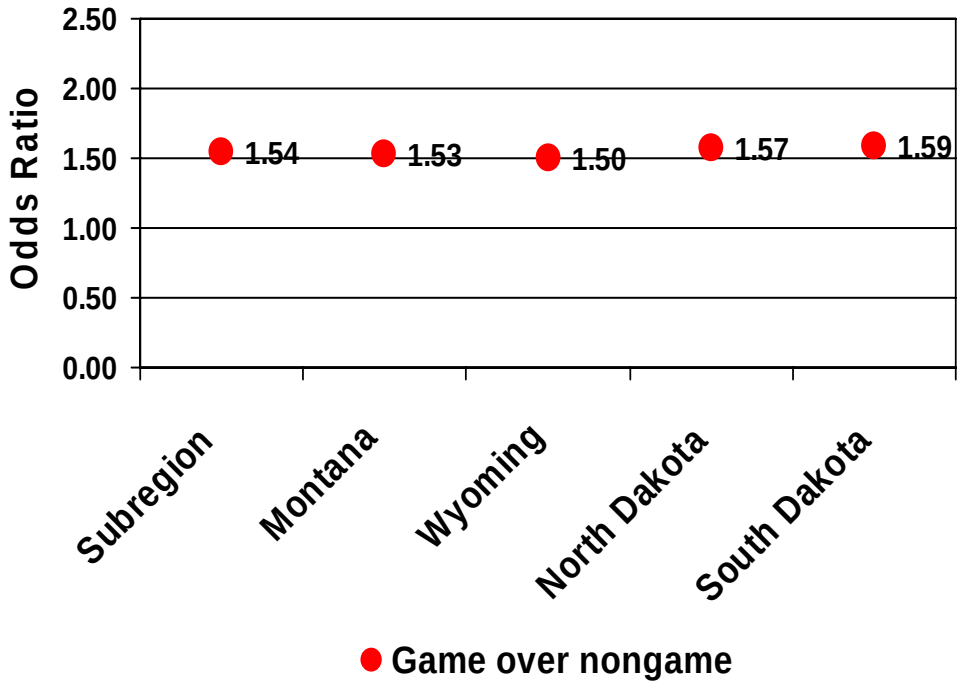
Figure VI.B.3. Odds ratios of species origin levels by state within the subregion.



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

Controlling species status and origin, "game" species were more likely to be supported for conservation funding than were "nongame" species in Wyoming (Figure VI.B.4). The odds of preferring a "game" species over a "nongame" species was 1.50. Although all states in the subregion preferred "game" over "nongame", the odds ratio for Wyoming was slightly lower than for the other states.

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



Conclusions. There were limited differences between Wyoming and the subregion as a whole on the relative importance of the species factors (origin, use, and status) and on the prioritization of factor levels (e.g., native vs. nonnative). Species status (followed by species use and species origin) is most important in influencing public preferences for funding the conservation of a species. People are more likely to prioritize extirpated species over common species and declining species over common species; game species over nongame species; and native species over nonnative 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 Wyoming'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 (Figure VI.C.1) 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 IV.C.1 provides the results for this comparison. In this situation, species 1 would be supported for conservation funding by approximately 54% of the public, while species 2 would be supported by about 46%.

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 49% of the public would support conservation funding for species 1 while about 51% would support conservation funding for species 2.

Figure VI.C.1. Wyoming's species of concern calculator.

Calculator – Example A

	Input Level of Species Attribute	
Species Factor	**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	**53.84**	**46.16**

Calculator – Example B

	Input Level of Species Attribute	
Species Factor	**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	**48.85**	**51.15**

SECTION VII. MANAGEMENT OF ORV USE ON PUBLIC LANDS

A. ATTITUDES TOWARD ORV USE

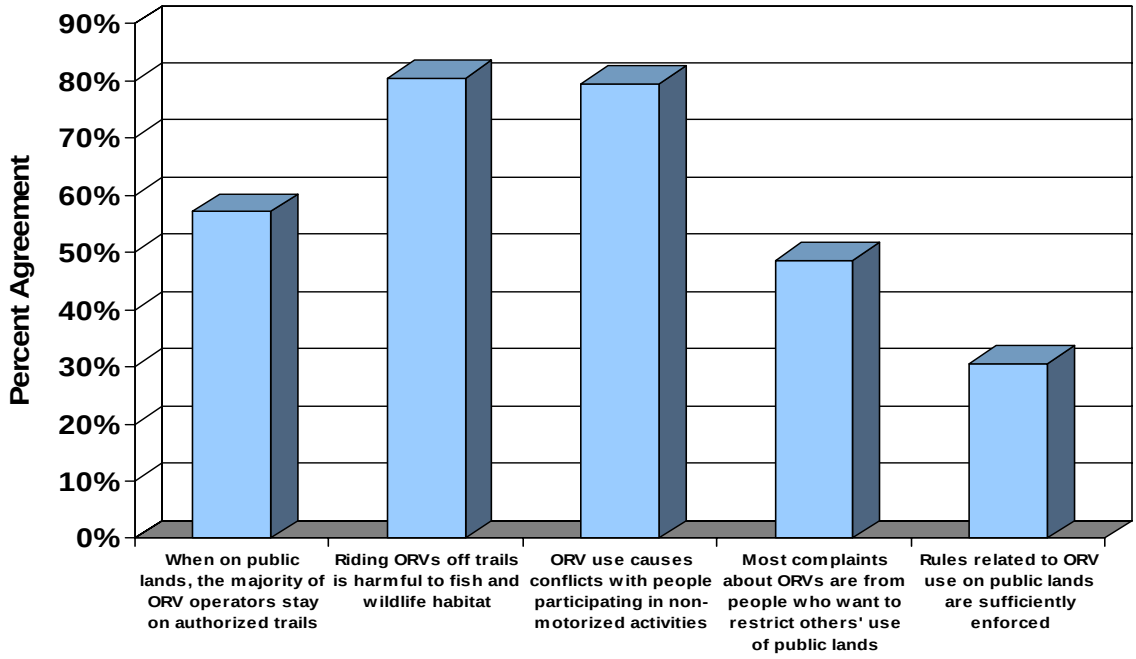
This section involved the public's view of management of ORV use on public lands. The first part concerned how respondents felt about various aspects of ORV use and ORV users. Respondents were asked to indicate their level of agreement with the five statements listed below (refer to Tables A-134 to A-180 for this section).

SITUATION 2. Off-Road vehicles (ORVs) are used for recreational and other purposes in Wyoming and have the potential to impact fish and wildlife habitats. An ORV is defined as a motorized vehicle designed for use on various types of **off-road** terrain. ORVs include all-terrain vehicles (ATVs). They do **NOT** include snow machines. Some people would like to see more effective enforcement of existing regulations for ORV use on both state and federal lands in Wyoming. This enforcement could involve the WGFD or other government agencies. We are interested in your opinions about ORVs.

Do you disagree or agree that…	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
When on public lands, the majority of ORV operators stay on authorized trails (those marked with signs).	1	2	3	4	5	6	7
Riding ORVs off trails is harmful to fish and wildlife habitat.	1	2	3	4	5	6	7
ORV use causes conflicts with people participating in non-motorized activities (for example, hunting or hiking).	1	2	3	4	5	6	7
Most complaints about ORVs are from people who want to restrict others' use of public lands.	1	2	3	4	5	6	7
Rules related to ORV use on public lands are sufficiently enforced.	1	2	3	4	5	6	7

Summary of results. Figure VII.A.1 displays the percent of respondents who agreed with each of the first five statements (i.e., those who selected "slightly agree," "moderately agree," and "highly agree"). A large majority of respondents (around 80%) agreed that *riding ORVs off trails is harmful to fish and wildlife habitat* and that *ORV use causes conflict with people participating in non-motorized activities*. Around half of the respondents believed that *most ORV users stay on trails on public lands* and that *complaints about ORV use come primarily from those who want to restrict people's use of public lands*. Less than a third felt that *rules concerning ORV use on public land are properly enforced.*

Figure VII.A.1. Percent of respondents agreeing to statements about ORV use.



Results by wildlife value orientation type. Figures VII.A.2 to VII.A.6 display PCI graphs for the first five ORV items, showing a PCI bubble for each of the value orientation types and the entire public. The biggest differences in mean scores were between Mutualists and Utilitarians. Overall, Mutualists scored the lowest of all types on the items phrased positively about ORV use (*majority of ORV operators stay on authorized trails, most complaints about ORVs are from people who want to restrict others' use of public lands,* and *rules related to ORV use on public lands are sufficiently enforced*) and highest of all value types on the items phrased negatively about ORV use (*riding ORVs off trail is harmful to fish and wildlife habitat* and *ORV use causes conflicts with people participating in non-motorized activities*). Utilitarians generally scored highest of all the value types on the positively phrased items and lowest on the negatively phrased items.

Figure VII.A.2. Potential for conflict indices for the statement “When on public lands, the majority of ORV operators stay on authorized trails” by wildlife value orientation type.

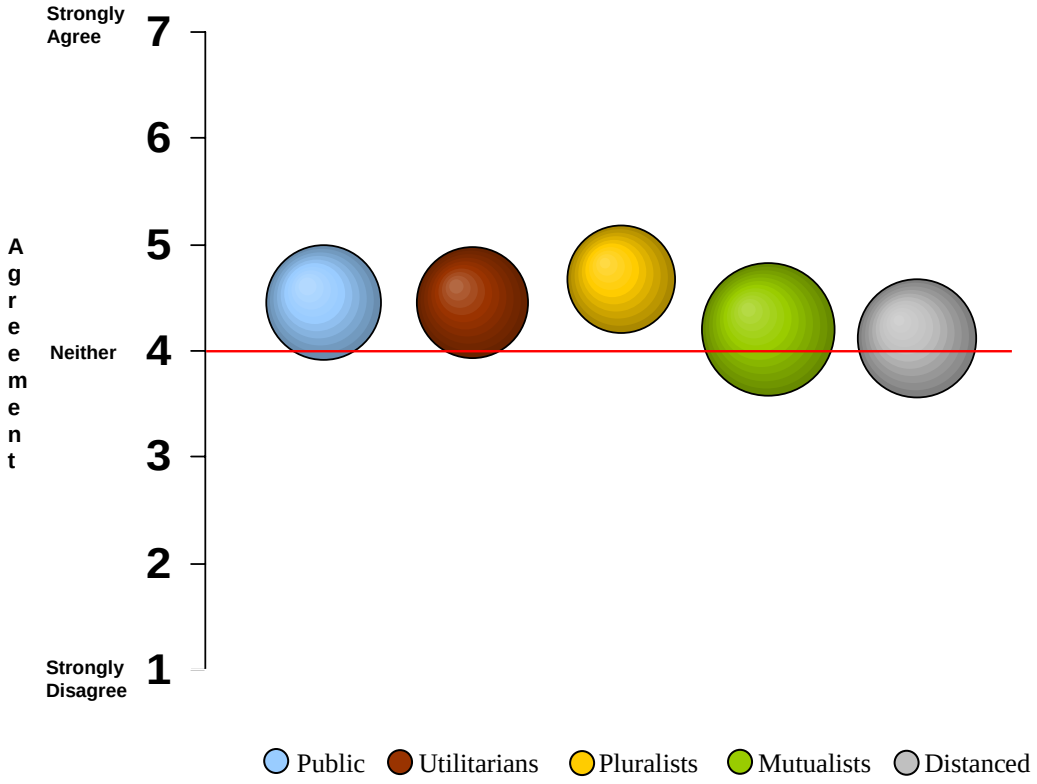


Figure VII.A.3. Potential for conflict indices for the statement “Riding ORVs off trail is harmful to fish and wildlife habitat” by wildlife value orientation type.

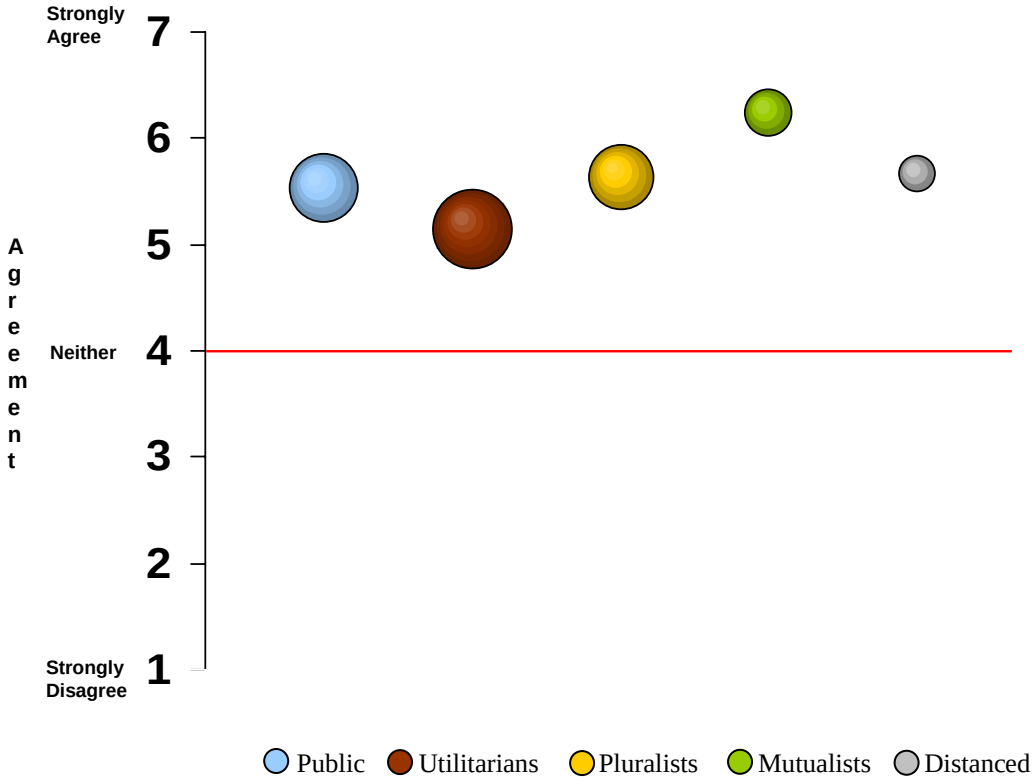


Figure VII.A.4. Potential for conflict indices for the statement “ORV use causes conflicts with people participating in non-motorized activities” by wildlife value orientation type.

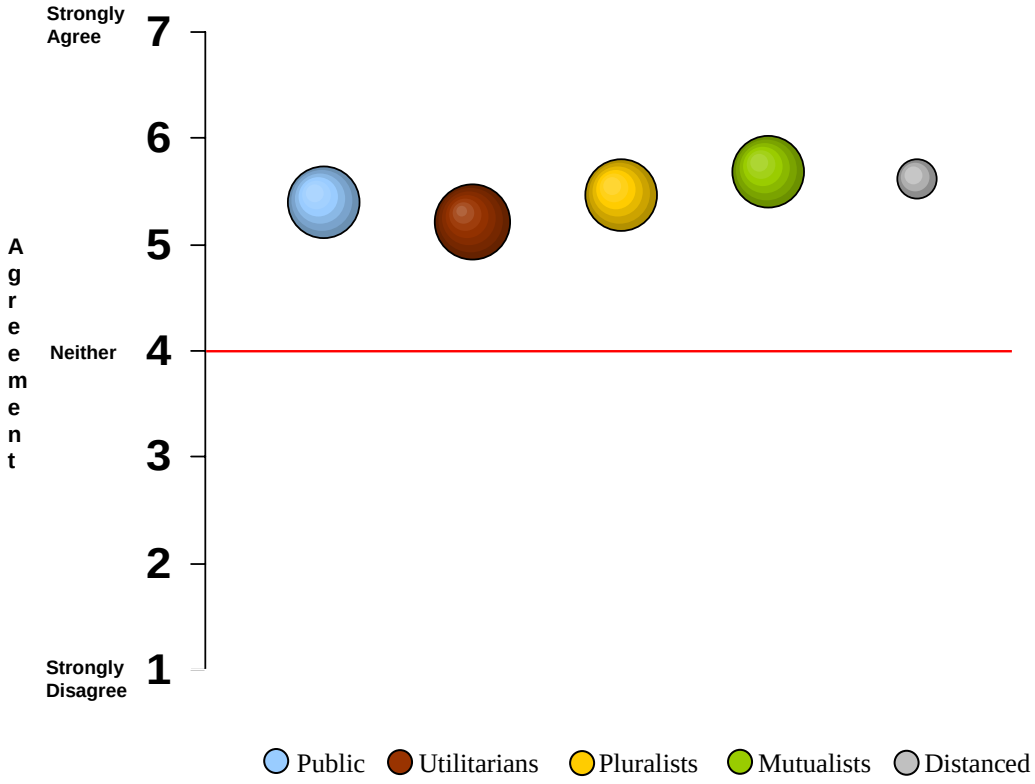


Figure VII.A.5. Potential for conflict indices for the statement “Most complaints about ORVs are from people who want to restrict others’ use of public lands” by wildlife value orientation type.

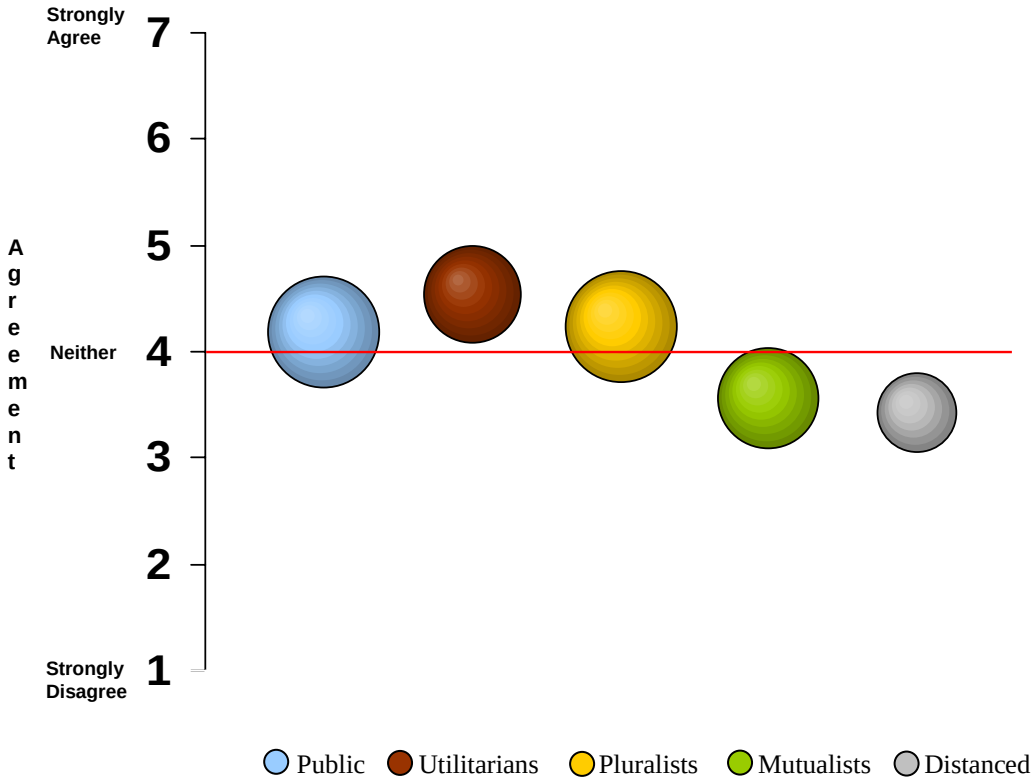
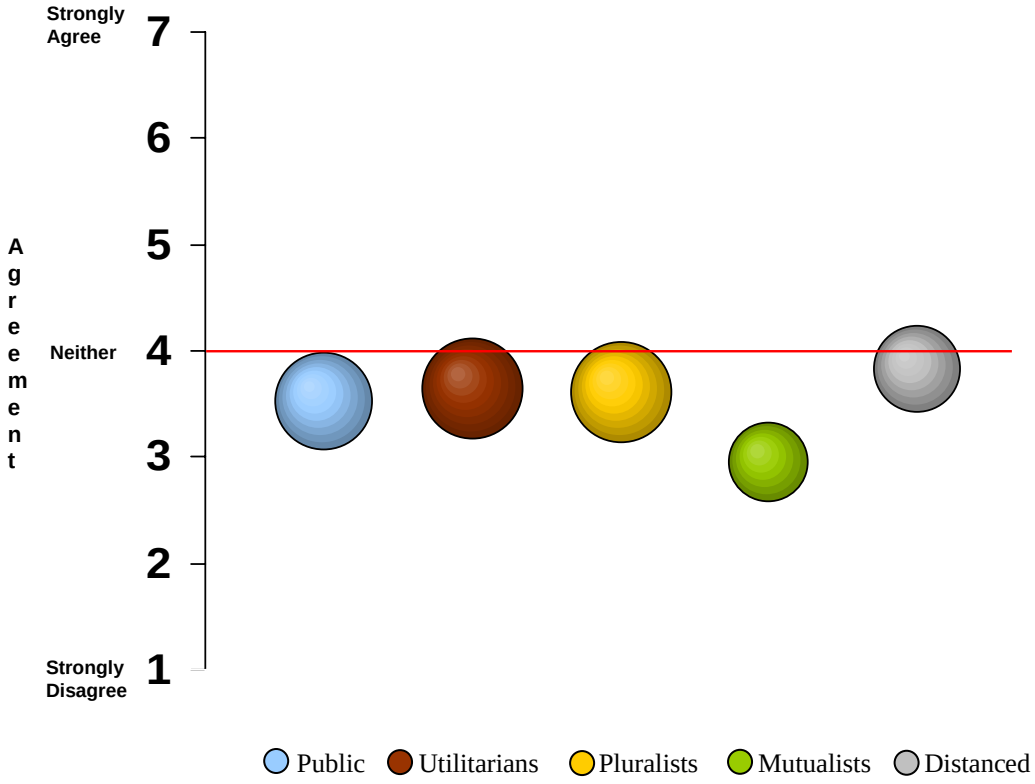
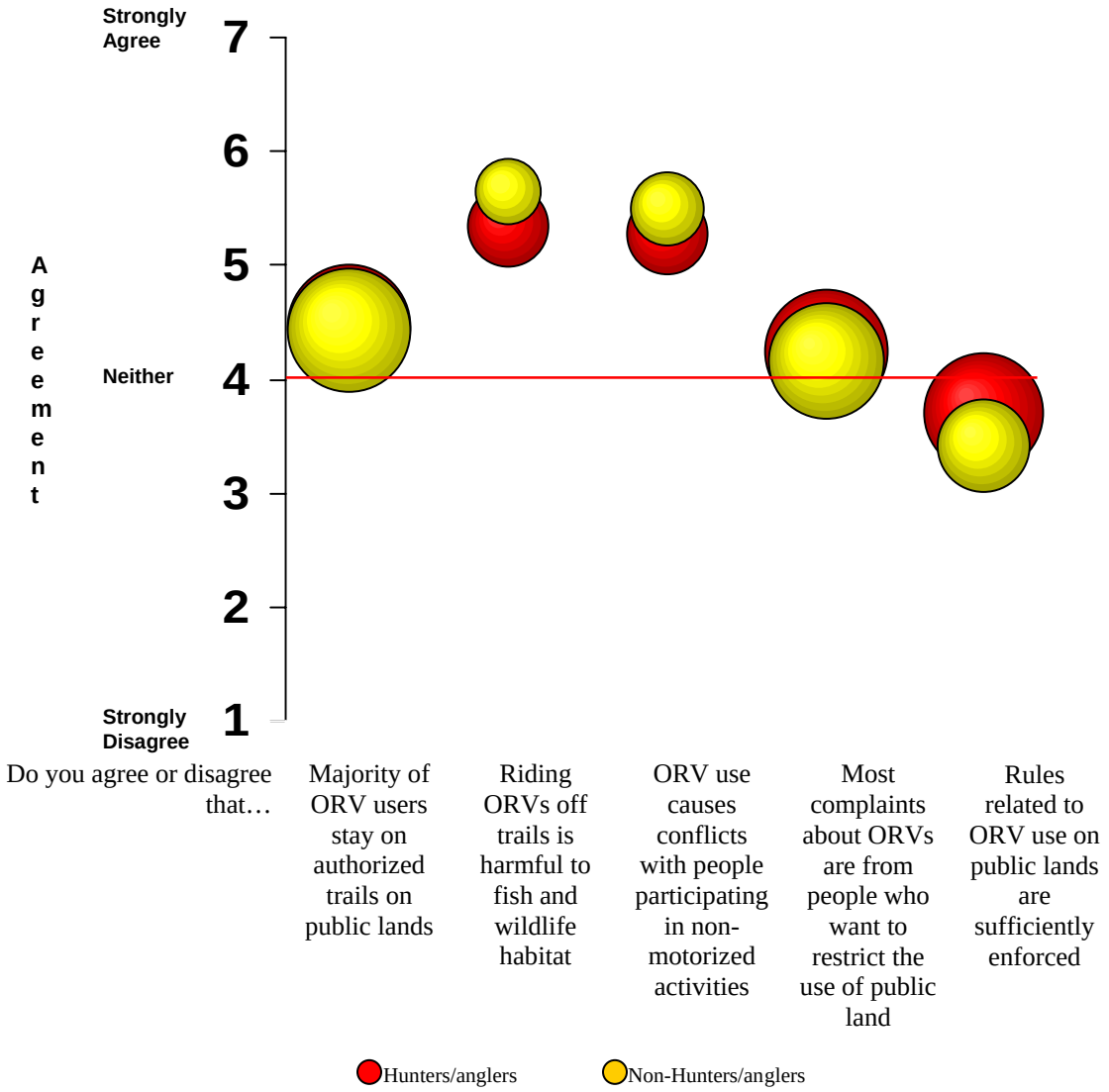


Figure VII.A.6. Potential for conflict indices for the statement “Rules related to ORV use on public lands are sufficiently enforced” by wildlife value orientation type.



Results by participation in hunting and fishing. Hunters/anglers and non-hunters/anglers did not differ greatly on any of the items either in level of agreement or within-group consensus. In general, non-hunters/anglers scored slightly higher on the two negatively phrased items (*riding ORVs off trails is harmful to habitat* and *ORV use causes conflicts with other people*) and lower on the last positively phrased item (*rules related to ORV use are sufficiently enforced*) than hunters/anglers.

Figure VII.A.7. Potential for conflict indices for statements about ORV use by participation in hunting and fishing.



B. MANAGEMENT OF ORV USE

The second part of this section of the survey involves the public's acceptance of various management actions by the WGFD and other government agencies concerning ORV use. The items are listed below.

The WGFD should help enforce existing ORV regulations on lands owned by the state.	1	2	3	4	5	6	7
The WGFD should help enforce existing ORV regulations on public lands owned by the federal government (for example, BLM or National Forest Service).	1	2	3	4	5	6	7
The WGFD should do more to inform and educate ORV operators on the potential effects ORVs can have on fish and wildlife habitats.	1	2	3	4	5	6	7

Is it unacceptable or acceptable for government agencies to…	**Highly Unacceptable**	**Moderately Unacceptable**	**Slightly Unacceptable**	**Neither**	**Slightly Acceptable**	**Moderately Acceptable**	**Highly Acceptable**
...limit the amount of ORV use on public lands where it harms fish and wildlife?	1	2	3	4	5	6	7
... limit the amount of ORV use on public lands where it causes conflicts with other recreationists (for example, hunters and people who fish)?	1	2	3	4	5	6	7
... NOT restrict ORV use under any circumstances?	1	2	3	4	5	6	7

Summary of results. The first part of this section dealt with the acceptability of possible management actions of the WGFD concerning ORV use. Figure VII.B.1 shows the percent of respondents who agreed with the first three statements (i.e., those who selected "slightly agree," "moderately agree," and "highly agree"). Over 80% of respondents agreed that the *WGFD should do more to inform and educate ORV users about the impacts of ORVs on habitat* and that they *should help to enforce ORV regulations on state lands*. Almost 70% agreed that the *WGFD should help to enforce ORV regulations on federal lands*.

Figure VII.B.1. Percent of respondents agreeing that the WGFD should engage in certain management actions concerning ORV use.

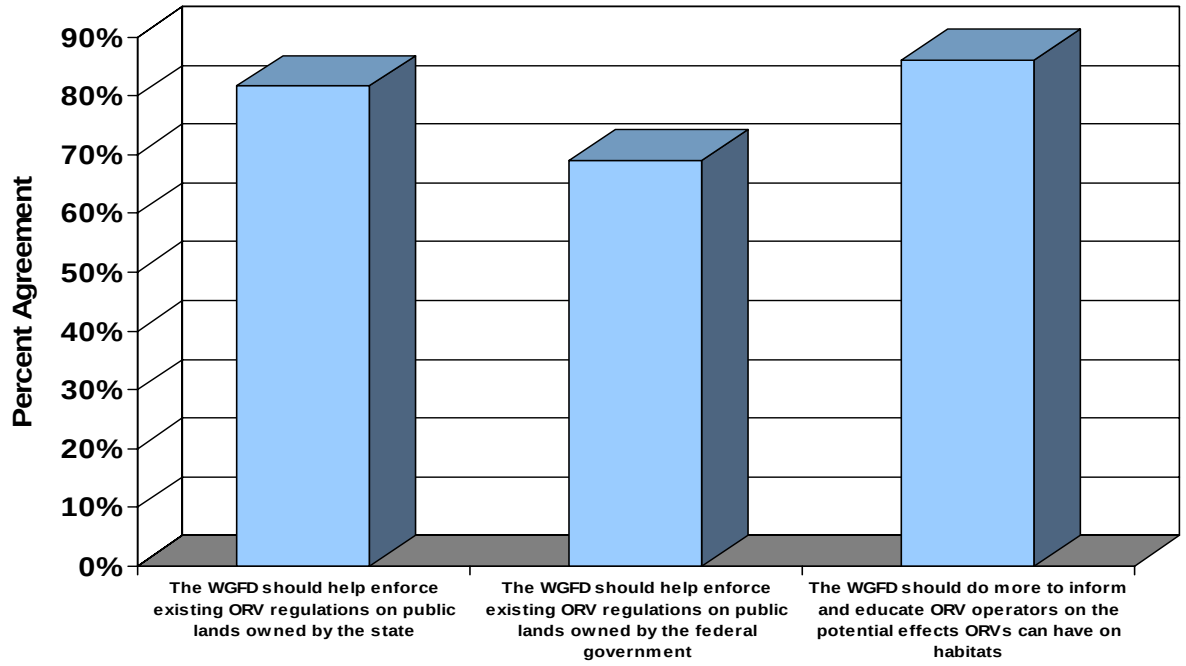
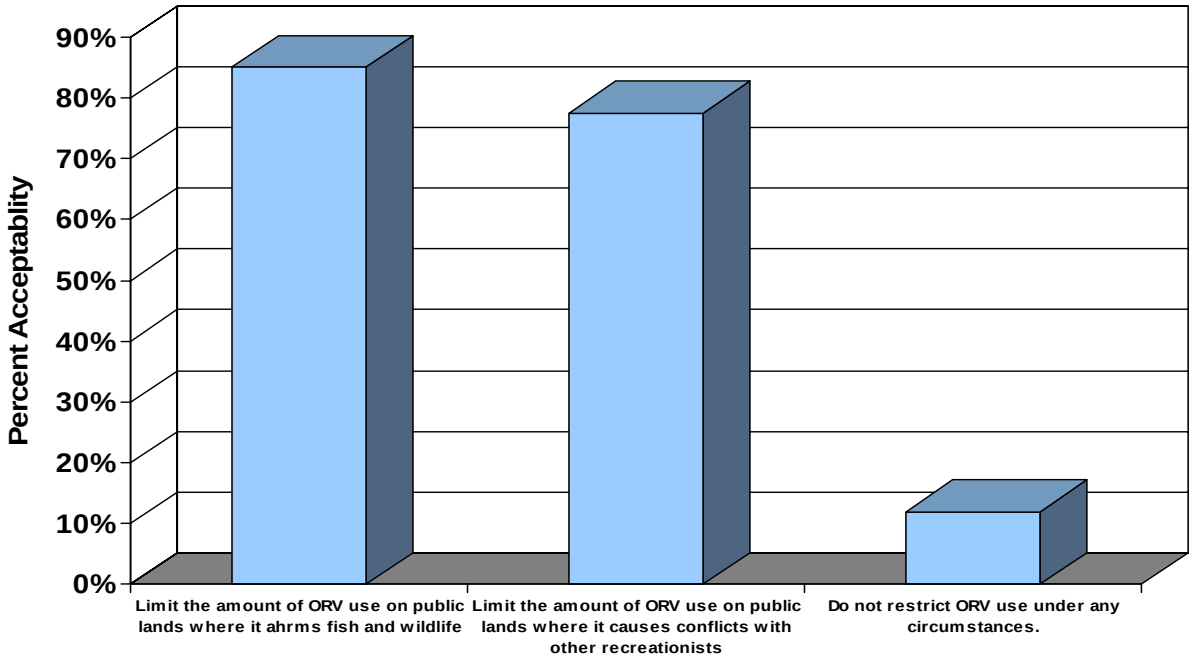


Figure VII.B.2 shows the percent of respondents who found limiting ORV use (or not) acceptable (i.e., those who selected "slightly acceptable," "moderately acceptable," and "highly acceptable"). Over 75% of respondents felt it was acceptable to *limit ORV use on public lands when harm to fish and wildlife occurs* and when it *causes conflict with other recreationists*. Only 12% of respondents felt that *not restricting ORV use in any way* was acceptable.

Figure VII.B.2. Percent of respondents finding certain limitations on ORV use acceptable.



Results by wildlife value orientation type. Figures VII.B.3 to VII.B.8 display PCI graphs for the ORV management items. There was general agreement with each of these statements across all value orientation types, except for the last item (*ORV use should not be restricted*), where all types disagreed. Overall, Utilitarians scored the lowest on these items, while Mutualists scored the highest, with the exception of the last item, where the reverse was true. All value orientation types displayed similar amounts of within-group consensus for all the items, though Distanced individuals frequently displayed the most consensus.

Figure VII.B.3. Potential for conflict indices for the statement "The WGFD should help enforce existing ORV regulations on lands owned by the *state*" by wildlife value orientation type.

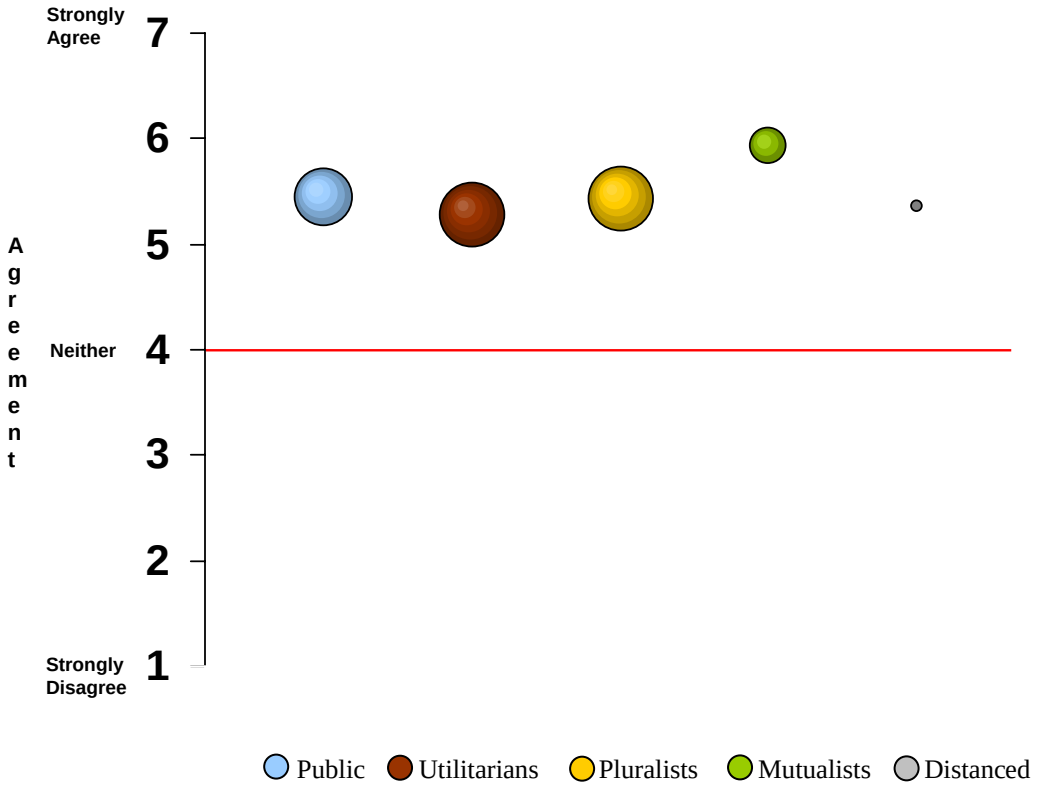


Figure VII.B.4. Potential for conflict indices for the statement "The WGFD should help enforce existing ORV regulations on lands owned by the *federal government*" by wildlife value orientation type.

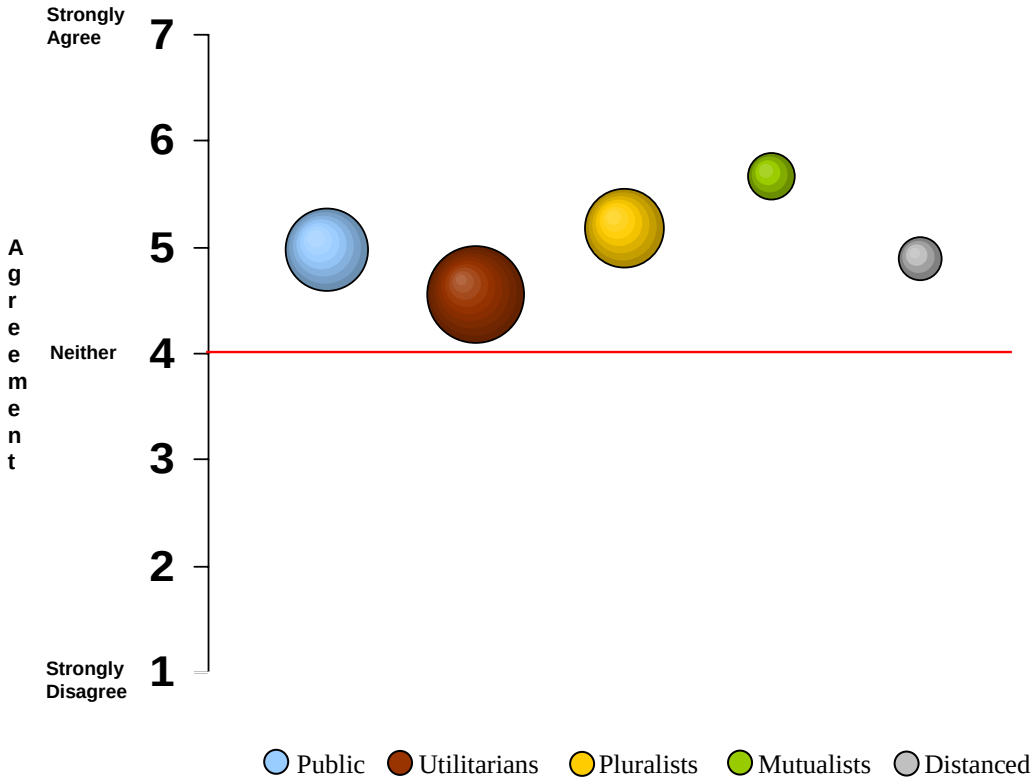


Figure VII.B.5. Potential for conflict indices for the acceptability of the WGFD to "The WGFD should do more to inform and educate ORV operators on the potential effects ORVs can have on fish and wildlife habitats" by wildlife value orientation type.

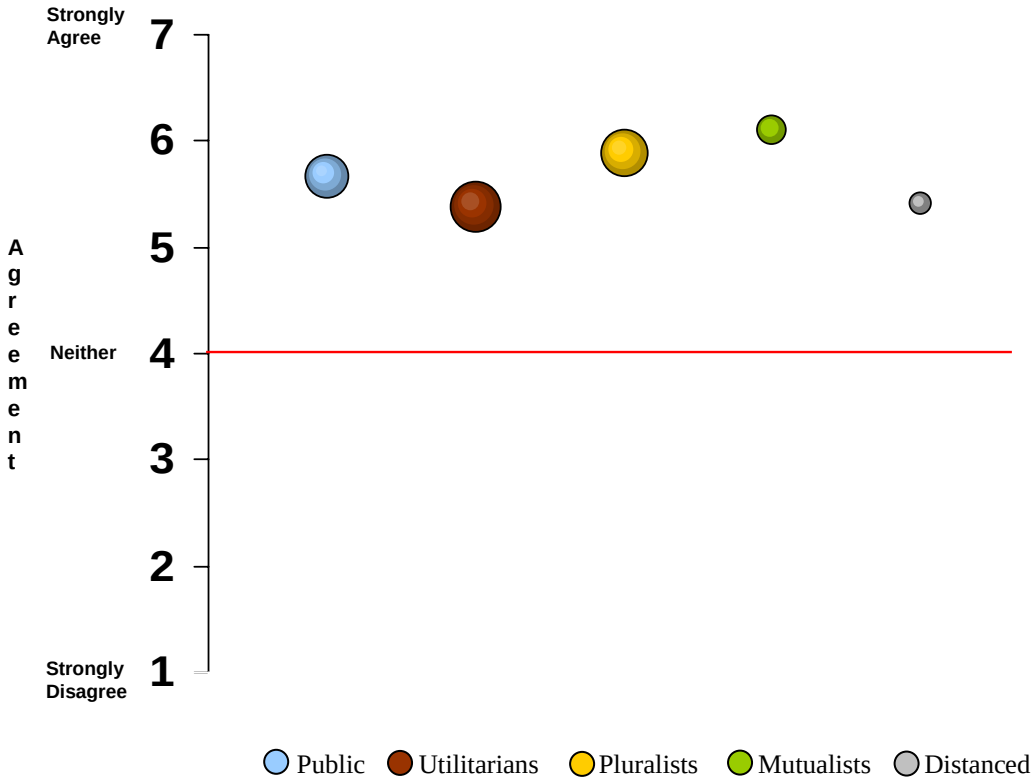


Figure VII.B.6. Potential for conflict indices for the acceptability of the WGFD to "limit the amount of ORV use on public lands where it harms fish and wildlife" by wildlife value orientation type.

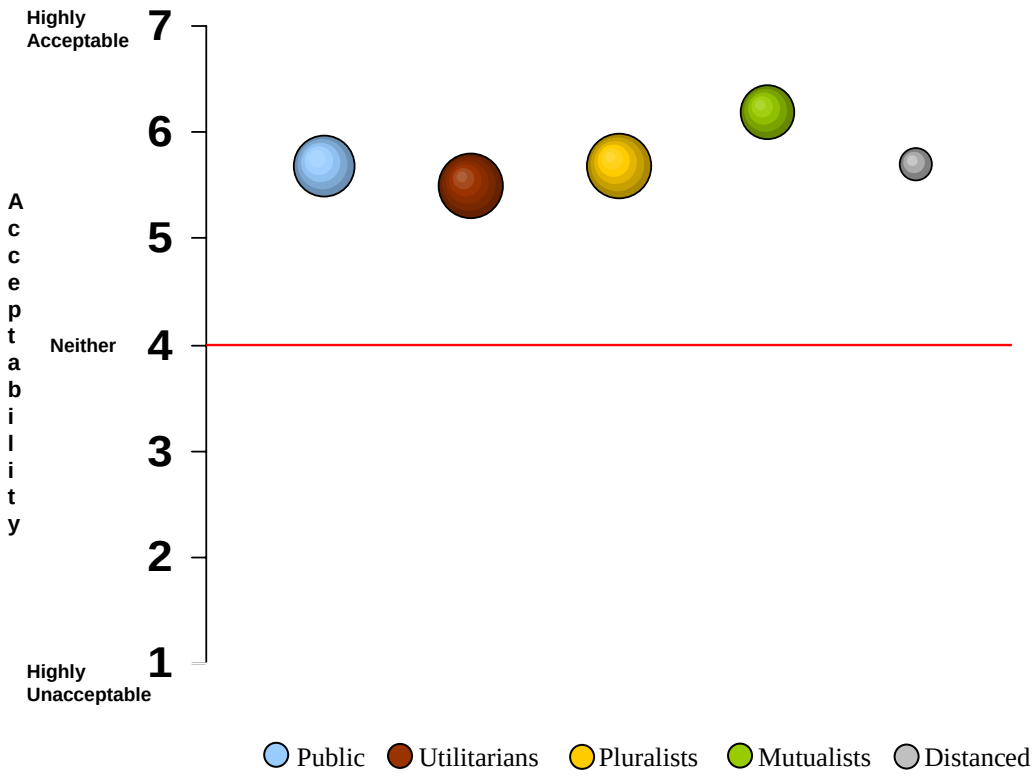


Figure VII.B.7. Potential for conflict indices for the acceptability of the WGFD to "limit the amount of ORV use on public lands where it causes conflicts with other recreationists" by wildlife value orientation type.

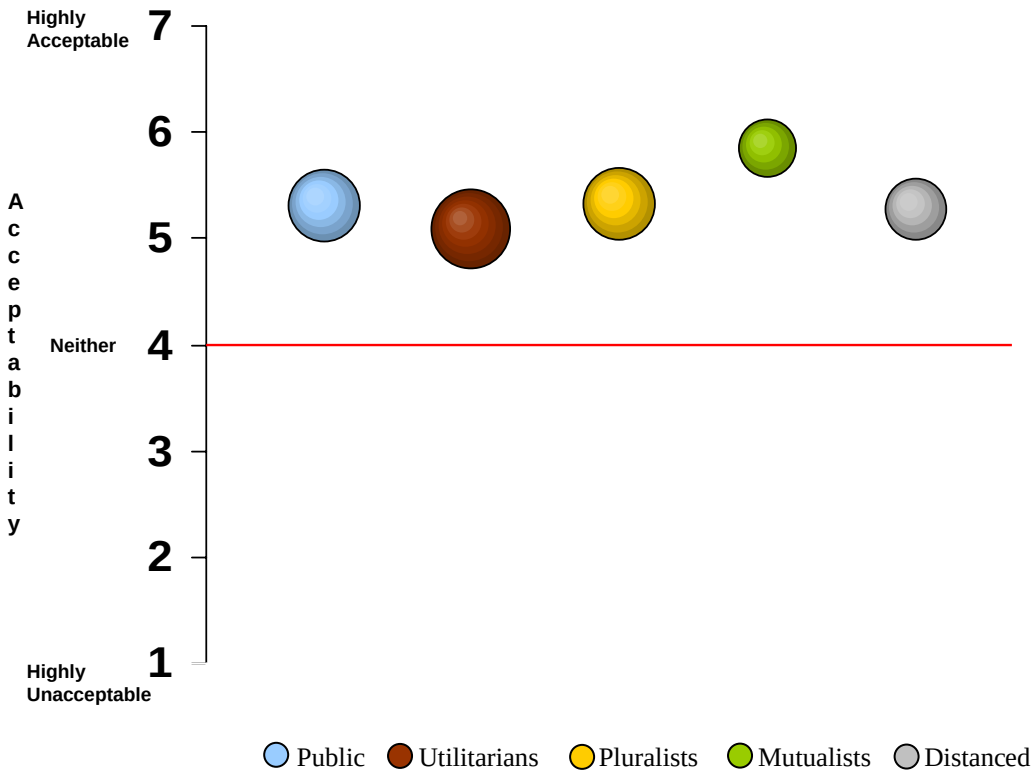
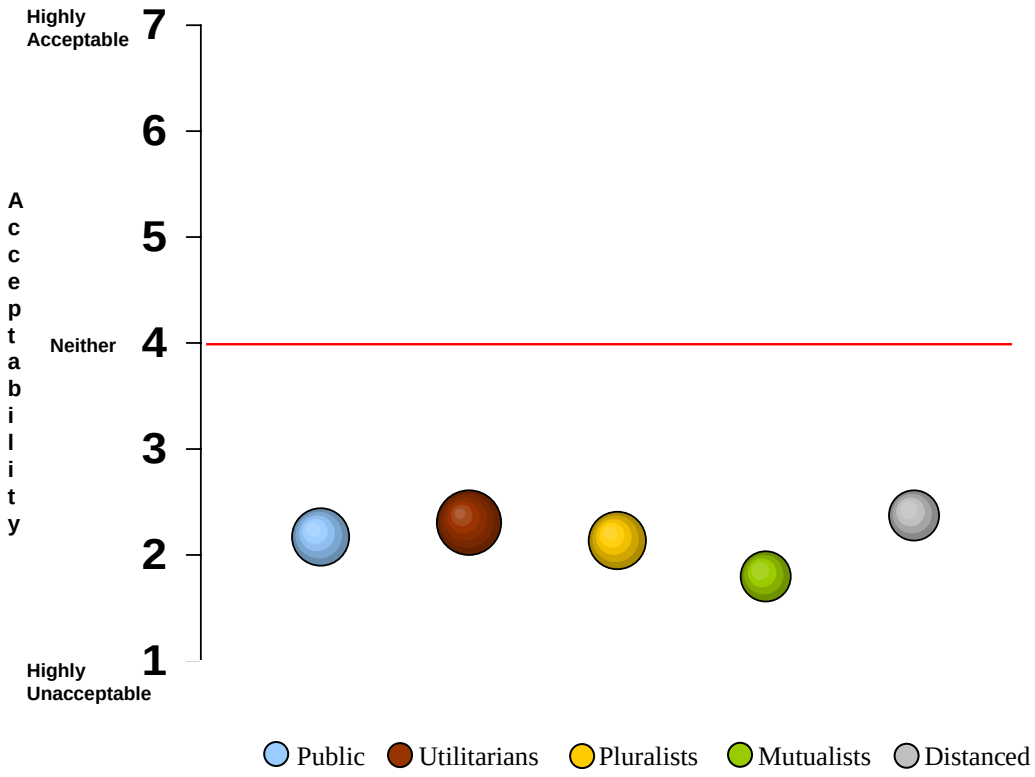


Figure VII.B.8. Potential for conflict indices for the statement “NOT restrict ORV use under any circumstances” by wildlife value orientation type.



Results by participation in hunting and fishing. As Figures VII.B.9 and VII.B.10 show, hunters/anglers and non-hunters/anglers did not differ greatly on either their level of agreement or consensus for these items. Non-hunters/anglers tended to score very slightly higher on the first five items and lower on the last item (*ORV use should not be restricted*), as well as display slightly greater within-group consensus for all items when compared to hunters/anglers.

Figure VII.B.9. Potential for conflict indices for statements asserting that WGFD should engage in certain management actions concerning ORV use by participation in hunting and fishing.

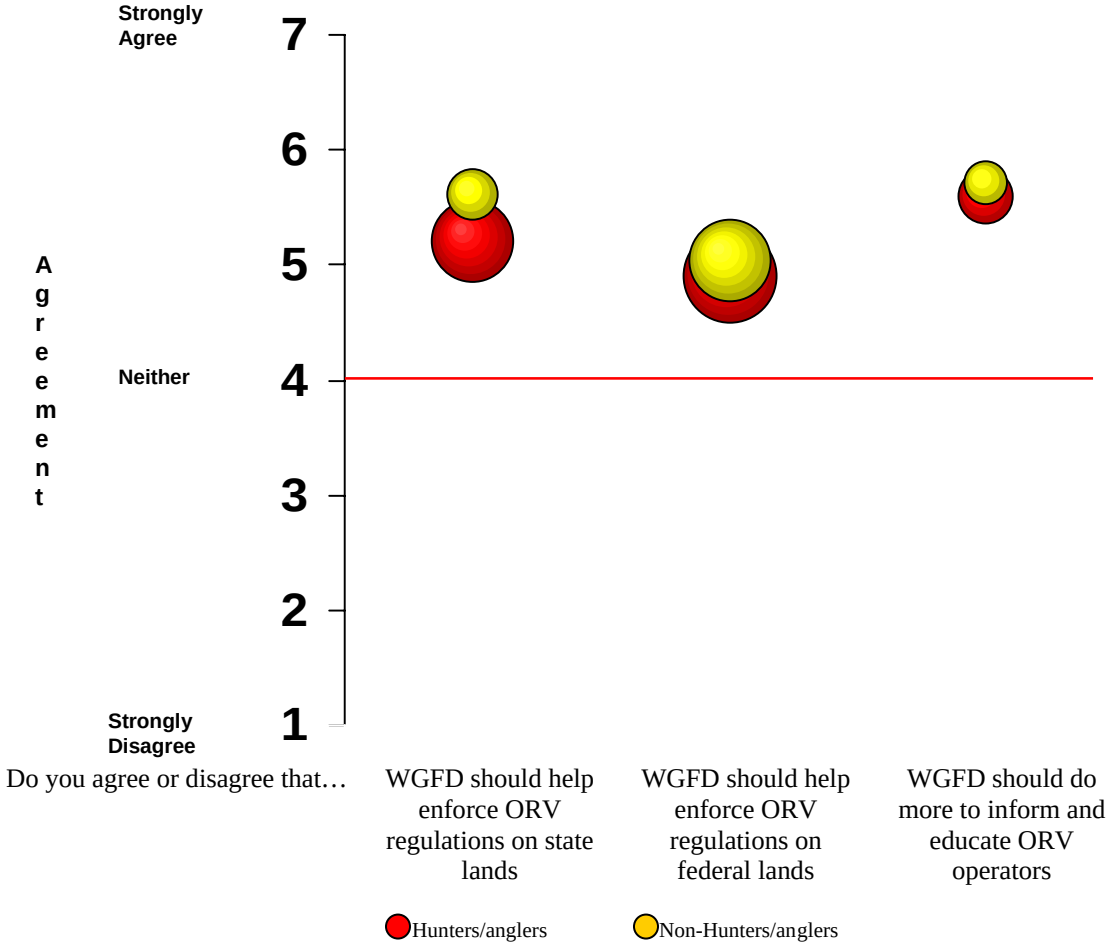
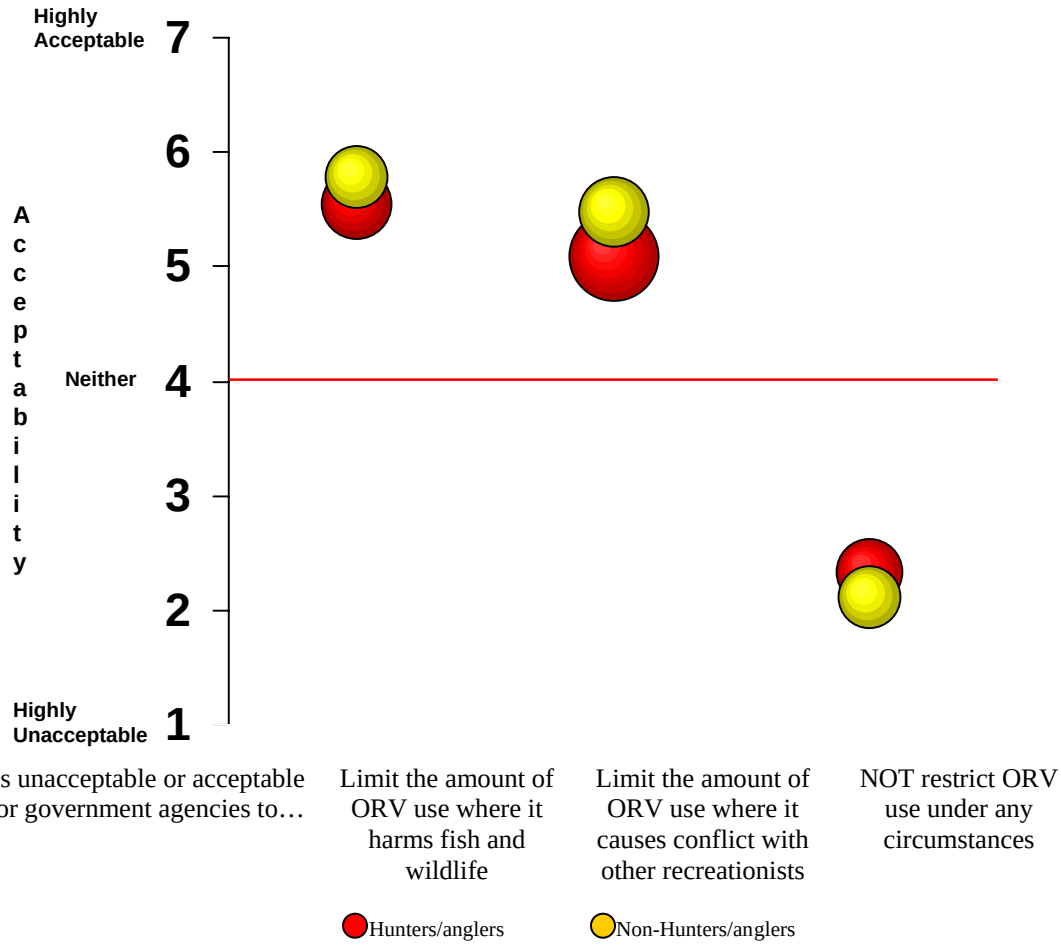


Figure VII.B.10. Potential for conflict indices for acceptability of limitations of ORV use by participation in hunting and fishing.



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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	44.1	81.4
Females	53.8	67.9
Hunters/anglers	46.0	86.1
Non-hunters/anglers	50.8	67.7

[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	80.6	7.5
Pluralist	90.9	4.0
Mutualist	86.6	2.7
Distanced	61.4	17.5
Males	87.7	3.7
Females	79.2	8.7
Hunters/anglers	93.5	3.6
Non-hunters/anglers	77.4	7.6

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

Table A-3. Percent of wildlife value orientation types within four levels of residential stability.

Value type	High transience	Moderate transience	Moderate stability	High stability
Utilitarian	41.5	45.0	44.9	43.5
Pluralist	21.9	29.5	39.8	33.0
Mutualist	29.0	21.5	12.7	11.9
Distanced	7.7	4.0	2.5	8.9

Table A-4. Correlation[1] of sociodemographic, lifestyle, and cognitive characteristics with selecting same approach and trust for WGFD.

	Selecting same approach		Trust Agency	
	Correlation	Sig. (2-tailed)	Correlation	Sig. (2-tailed)
Fished in past 12 months	-.02	.67	-.01	.41
Hunted in past 12 months	-.02	.60	.01	.39
Wildlife viewed in past 12 months	-.03	.40	.02	.33
Gender	.001	.98	-.01	.44
Age	.04	.15	.01	.38
Number of children	.02	.29	-.06	.05
Education	-.02	.33	.09	.01
Income	.08	.01	.02	.32
Fear basic belief dimension	-.004	.45	-.004	.45
Attraction basic belief dimension	.01	.42	-.01	.41
Mutualism wildlife value orientation	-.07	.03	-.04	.11
Utilitarian wildlife value orientation	.17	<.001	.14	<.001

1. For two dichotomous variables, phi correlation was used. For one dichotomous variable and one continuous variable, point biserial correlation was used. For two continuous variables, Pearson's correlation was used.

Table A-5. 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	21.3	20.4	33.0	25.3
Pluralist	22.6	19.3	27.2	30.9
Mutualist	32.6	27.0	14.2	26.2
Distanced	29.6	37.0	13.0	20.4

Table A-6. 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	13.7	12.0	21.1	53.3
Pluralist	7.0	9.4	19.3	64.3
Mutualist	3.4	2.1	10.3	84.2
Distanced	1.8	5.5	20.0	72.7

Table A-7. Percent of wildlife value orientation type selecting same approaches for *how things are now* and for *how things should be* in the state.

Value type	Selecting Same Approaches
Utilitarian	53.3
Pluralist	47.1
Mutualist	35.2
Distanced	23.6

Table A-8. Percent of hunters/anglers and non-hunters/anglers indicating each approach as that which "best resembles how things are now" in the state.[1]

Type	Approach 1	Approach 2	Approach 3	Approach 4
Hunters/anglers	24.2	18.8	33.2	23.8
Non-Hunters/anglers	24.1	24.9	21.8	29.1

[1]The corresponding approaches are listed below:

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.**

Table A-9. Percent of hunters/anglers and non-hunters/anglers indicating each approach as that which "best represents how things should be" in the state.[1]

Type	Approach 1	Approach 2	Approach 3	Approach 4
Hunters/anglers	11.3	13.0	18.9	56.8
Non-Hunters/anglers	7.1	6.2	18.5	68.2

[1]The corresponding approaches are listed below:

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.**

Table A-10. Percent of respondents finding programs acceptable for Wyoming Legislature to collect additional taxes to fund.

Program	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
New management activities for wildlife that are hunted or fished.	12.3	8.7	9.8	7.8	29.2	22.7	9.7
New management activities for wildlife that are not hunted or fished.	14.2	9.9	11.0	6.7	26.3	19.3	12.5
Buying private land from willing landowners to conserve habitats.	11.2	4.8	6.3	5.0	23.9	23.7	25.1
Paying private landowners to NOT develop property to conserve habitats.	20.1	10.8	12.9	10.5	22.3	11.5	12.0
Buying water rights from willing landowners to conserve habitats.	10.1	6.3	6.7	7.5	30.0	19.0	20.4
Providing cash incentives to private landowners who conserve habitats.	14.6	8.0	11.9	10.2	24.4	17.5	13.3
Tax relief for private landowners as an incentive to conserve habitats.	11.9	6.3	11.2	8.4	27.0	18.7	16.6
Creating rural zoning regulations enforced by county to conserve habitats.	12.6	9.1	8.7	10.9	25.6	17.9	15.1
Expanding information and education activities about fish and wildlife issues.	4.6	3.7	3.3	9.1	20.3	26.8	32.2

Table A-11. Percent of wildlife value orientation type finding it acceptable for the Wyoming Legislature to collect additional taxes for "new management activities for fish and wildlife that are hunted or fished."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	15.2	8.2	10.4	8.2	27.3	23.4	7.3
Pluralist	8.5	8.1	8.9	6.1	30.9	23.2	14.2
Mutualist	10.8	8.8	9.5	6.8	32.4	23.6	8.1
Distanced	14.0	14.0	10.5	15.8	26.3	10.5	8.8

Table A-12. Percent of wildlife value orientation type finding it acceptable for the Wyoming Legislature to collect additional taxes for "new management activities for fish and wildlife that people don't usually hunt or fish."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	19.2	16.3	10.1	5.1	29.3	15.2	4.8
Pluralist	13.0	6.5	13.4	8.5	26.8	19.9	11.8
Mutualist	6.8	3.4	7.4	4.1	18.2	26.4	33.8
Distanced	7.0	3.5	15.8	15.8	26.3	22.8	8.8

Table A-13. Percent of wildlife value orientation type finding it acceptable for the Wyoming Legislature to collect additional taxes for "buying private land from willing landowners to conserve habitats for fish and wildlife."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	16.3	7.3	7.0	4.8	26.4	23.0	15.2
Pluralist	8.1	3.2	6.5	5.3	21.1	25.9	30.0
Mutualist	5.3	2.0	2.0	2.7	22.0	23.3	42.7
Distanced	8.9	3.6	12.5	10.7	25.0	19.6	19.6

Table A-14. Percent of wildlife value orientation type finding it acceptable for the Wyoming Legislature to collect additional taxes for "paying private landowners to NOT develop their property in order to conserve habitats for fish and wildlife."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	26.8	11.8	13.5	10.7	20.6	9.3	7.3
Pluralist	16.7	8.9	14.2	10.2	22.0	14.6	13.4
Mutualist	10.8	12.8	10.1	8.1	23.0	11.5	23.6
Distanced	17.2	6.9	6.9	17.2	34.5	12.1	5.2

Table A-15. Percent of wildlife value orientation type finding it acceptable for the Wyoming Legislature to collect additional taxes for "buying water rights from willing landowners to conserve habitats for fish and wildlife."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	15.5	8.2	8.5	5.9	31.3	16.9	13.8
Pluralist	7.3	4.9	6.5	9.8	27.8	22.4	21.2
Mutualist	2.7	4.7	3.4	3.4	27.7	20.3	37.8
Distanced	7.0	5.3	5.3	17.5	38.6	14.0	12.3

Table A-16. Percent of wildlife value orientation type finding it acceptable for the Wyoming Legislature to collect additional taxes for "providing cash incentives to private landowners who conserve habitats for fish and wildlife."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	22.5	9.0	14.4	10.7	22.0	14.1	7.3
Pluralist	10.1	6.9	8.9	8.5	28.7	21.5	15.4
Mutualist	5.4	8.8	10.2	8.2	19.0	22.4	25.9
Distanced	8.8	3.5	14.0	19.3	35.1	10.5	8.8

Table A-17. Percent of wildlife value orientation type finding it acceptable for the Wyoming Legislature to collect additional taxes for "funding tax relief for private landowners as an incentive to conserve habitats for fish and wildlife."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	17.4	8.7	10.1	8.1	28.6	17.9	9.2
Pluralist	8.1	4.5	10.2	6.9	27.2	23.2	19.9
Mutualist	4.7	6.8	10.8	6.8	23.6	16.9	30.4
Distanced	10.5	0.0	22.8	21.1	22.8	10.5	12.3

Table A-18. Percent of wildlife value orientation type finding it acceptable for the Wyoming Legislature to collect additional taxes for "creating rural zoning regulations, that would be enforced by the counties, to conserve fish and wildlife habitats."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	18.8	12.0	13.2	8.7	26.9	14.0	6.4
Pluralist	9.3	8.1	4.9	13.0	27.1	22.7	15.0
Mutualist	5.4	4.7	3.4	6.8	23.6	21.6	34.5
Distanced	7.0	7.0	10.5	26.3	17.5	12.3	19.3

Table A-19. Percent of wildlife value orientation type finding it acceptable for the Wyoming Legislature to collect additional taxes for "expanding information and education activities to keep people informed about fish and wildlife issues in Wyoming."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	5.3	5.6	4.5	9.8	23.0	30.3	21.3
Pluralist	4.0	3.2	2.8	5.3	15.4	27.1	42.1
Mutualist	2.0	2.0	1.4	6.1	21.1	24.5	42.9
Distanced	7.0	0.0	1.8	29.8	22.8	8.8	29.8

Table A-20. PCI means and values for the acceptability of the Wyoming Legislature to collect additional taxes for "new management activities for fish and wildlife that are hunted or fished" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.40	0.43
Utilitarian	4.24	0.48
Pluralist	4.70	0.34
Mutualist	4.45	0.40
Distanced	3.92	0.49

Table A-21. PCI means and values for the acceptability of the Wyoming Legislature to collect additional taxes for "new management activities for fish and wildlife that people don't usually hunt or fish" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.29	0.49
Utilitarian	3.74	0.49
Pluralist	4.38	0.44
Mutualist	5.38	0.23
Distanced	4.55	0.29

Table A-22. PCI means and values for the acceptability of the Wyoming Legislature to collect additional taxes for "buying private land from willing landowners to conserve habitats for fish and wildlife" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.97	0.33
Utilitarian	4.48	0.47
Pluralist	5.26	0.25
Mutualist	5.76	0.15
Distanced	4.76	0.31

Table A-23. PCI means and values for the acceptability of the Wyoming Legislature to collect additional taxes for "paying private landowners to NOT develop their property in order to conserve habitats for fish and wildlife" by wildlife value orientation type.

Value type	Mean	PCI value
Public	3.87	0.54
Utilitarian	3.44	0.41
Pluralist	4.09	0.55
Mutualist	4.50	0.45
Distanced	3.96	0.48

Table A-24. PCI means and values for the acceptability of the Wyoming Legislature to collect additional taxes for "buying water rights from willing landowners to conserve habitats for fish and wildlife" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.79	0.33
Utilitarian	4.35	0.48
Pluralist	4.99	0.26
Mutualist	5.61	0.14
Distanced	4.66	0.25

Table A-25. PCI means and values for the acceptability of the Wyoming Legislature to collect additional taxes for "providing cash incentives to private landowners who conserve habitats for fish and wildlife" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.27	0.48
Utilitarian	3.72	0.48
Pluralist	4.65	0.35
Mutualist	4.97	0.29
Distanced	4.31	0.32

Table A-26. PCI means and values for the acceptability of the Wyoming Legislature to collect additional taxes for "funding tax relief for private landowners as an incentive to conserve habitats for fish and wildlife" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.55	0.40
Utilitarian	4.12	0.53
Pluralist	4.90	0.29
Mutualist	5.11	0.26
Distanced	4.23	0.36

Table A-27. PCI means and values for the acceptability of the Wyoming Legislature to collect additional taxes for "creating rural zoning regulations, that would be enforced by the counties, to conserve fish and wildlife habitats" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.42	0.43
Utilitarian	3.81	0.49
Pluralist	4.69	0.33
Mutualist	5.42	0.19
Distanced	4.56	0.30

Table A-28. PCI means and values for the acceptability of the Wyoming Legislature to collect additional taxes for "expanding information and education activities to keep people informed about fish and wildlife issues in Wyoming" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.46	0.16
Utilitarian	5.15	0.21
Pluralist	5.74	0.14
Mutualist	5.86	0.08
Distanced	5.09	0.15

Table A-29. Percent of hunters/anglers and non-hunters/anglers finding it acceptable to collect additional taxes for new management activities for fish and wildlife that are hunted or fished.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	11.1	6.9	8.5	6.2	31.4	24.5	11.4
Non-Hunters/anglers	13.0	9.9	10.5	8.8	28.4	20.8	8.6

Table A-30. Percent of hunters/anglers and non-hunters/anglers finding it acceptable to collect additional taxes for new management activities for fish and wildlife that people don't usually hunt or fish.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	14.3	10.7	11.7	8.8	25.1	20.5	8.8
Non-Hunters/anglers	14.0	9.5	10.5	5.4	27.0	18.8	14.8

Table A-31. Percent of hunters/anglers and non-hunters/anglers finding it acceptable to collect additional taxes for buying private land from willing landowners to conserve habitats for fish and wildlife.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	10.4	5.2	6.5	2.6	22.8	25.7	26.7
Non-Hunters/anglers	11.7	4.5	6.2	6.6	25.1	22.0	24.0

Table A-32. Percent of hunters/anglers and non-hunters/anglers finding it acceptable to collect additional taxes for paying private landowners to NOT develop their property in order to conserve habitats for fish and wildlife.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	16.6	11.0	11.7	10.7	21.1	16.2	12.7
Non-Hunters/anglers	21.9	10.6	13.5	10.4	23.1	8.8	11.7

Table A-33. Percent of hunters/anglers and non-hunters/anglers finding it acceptable to collect additional taxes for buying water rights from willing landowners to conserve habitats for fish and wildlife.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	7.5	6.2	7.2	6.9	30.1	22.2	19.9
Non-Hunters/anglers	11.5	6.4	6.4	7.8	30.2	17.1	20.6

Table A-34. Percent of hunters/anglers and non-hunters/anglers finding it acceptable to collect additional taxes for providing cash incentives to private landowners who conserve habitats for fish and wildlife.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	13.0	7.5	12.7	8.4	27.1	19.6	12.1
Non-Hunters/anglers	15.2	8.6	11.5	11.3	23.0	16.0	14.2

Table A-35. Percent of hunters/anglers and non-hunters/anglers finding it acceptable to collect additional taxes for funding tax relief for private landowners as an incentive to conserve habitats for fish and wildlife.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	12.4	4.6	7.8	8.5	32.9	19.2	14.7
Non-Hunters/anglers	11.3	7.6	13.4	8.2	22.8	18.7	17.9

Table A-36. Percent of hunters/anglers and non-hunters/anglers finding it acceptable to collect additional taxes for creating rural zoning regulations, that would be enforced by the counties, to conserve fish and wildlife habitats.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	10.4	9.8	9.8	13.4	25.1	18.9	12.7
Non-Hunters/anglers	13.8	8.6	8.2	9.0	26.3	17.5	16.6

Table A-37. Percent of hunters/anglers and non-hunters/anglers finding it acceptable to collect additional taxes for expanding information and education activities to keep people informed about fish and wildlife issues in Wyoming.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	4.2	3.9	4.5	6.8	20.5	29.2	30.8
Non-Hunters/anglers	4.9	3.7	2.7	10.5	20.7	25.2	32.4

Table A-38. PCI means and values for the statement “It is acceptable to collect additional taxes for new management activities for fish and wildlife that are hunted or fished” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.39	0.43
Hunters/anglers	4.59	0.37
Non-Hunters/anglers	4.26	0.46

Table A-39. PCI means and values for the statement “It is acceptable to collect additional taxes for new management activities for fish and wildlife that people don’t usually hunt or fish” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.29	0.49
Hunters/anglers	4.16	0.51
Non-Hunters/anglers	4.38	0.48

Table A-40. PCI means and values for the statement “It is acceptable to collect additional taxes for buying private land from willing landowners to conserve habitats for fish and wildlife” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.97	0.33
Hunters/anglers	5.06	0.32
Non-Hunters/anglers	4.91	0.34

Table A-41. PCI means and values for the statement “It is acceptable to collect additional taxes for paying private landowners to NOT develop their property in order to conserve habitats for fish and wildlife” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	3.88	0.54
Hunters/anglers	4.08	0.56
Non-Hunters/anglers	3.75	0.50

Table A-42. PCI means and values for the statement “It is acceptable to collect additional taxes for buying water rights from willing landowners to conserve habitats for fish and wildlife” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.80	0.33
Hunters/anglers	4.91	0.28
Non-Hunters/anglers	4.72	0.36

Table A-43. PCI means and values for the statement “It is acceptable to collect additional taxes for providing cash incentives to private landowners who conserve habitats for fish and wildlife” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.28	0.48
Hunters/anglers	4.35	0.44
Non-Hunters/anglers	4.23	0.50

Table A-44. PCI means and values for the statement “It is acceptable to collect additional taxes for funding tax relief for private landowners as an incentive to conserve habitats for fish and wildlife” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.55	0.40
Hunters/anglers	4.60	0.36
Non-Hunters/anglers	4.51	0.42

Table A-45. PCI means and values for the statement “It is acceptable to collect additional taxes for creating rural zoning regulations, that would be enforced by the counties, to conserve fish and wildlife habitats” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.43	0.43
Hunters/anglers	4.41	0.40
Non-Hunters/anglers	4.44	0.44

Table A-46. PCI means and values for the statement “It is acceptable to collect additional taxes for expanding information and education activities to keep people informed about fish and wildlife issues in Wyoming” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	5.45	0.16
Hunters/anglers	5.47	0.17
Non-Hunters/anglers	5.44	0.17

Table A-47. 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	11.6	9.7	12.5	29.3	19.5	13.9	3.5
My interests are adequately taken into account	9.4	12.1	14.2	25.2	23.0	13.4	2.7
If I provide input, it will make a difference	10.6	10.4	15.8	18.9	29.2	11.8	3.3
My agency makes a good effort to obtain input	5.9	8.5	13.0	14.6	27.6	20.8	9.6
I don't have an interest in providing input	21.1	17.8	21.9	16.2	11.1	6.4	5.5
I trust agency to make good decisions without my input	10.7	9.1	15.4	15.5	21.4	19.3	8.7

[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-48. 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	7.9	9.3	13.5	29.0	22.5	15.2	2.5
Pluralist	10.0	10.0	10.4	26.4	22.0	17.6	3.6
Mutualist	23.5	11.4	16.1	26.8	11.4	8.1	2.7
Distanced	10.5	7.0	5.3	50.9	10.5	5.3	10.5

Table A-49. 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	7.6	10.1	15.2	25.6	25.0	14.0	2.5
Pluralist	7.2	14.5	10.8	21.3	27.7	16.1	2.4
Mutualist	16.7	15.3	18.0	24.0	14.7	9.3	2.0
Distanced	12.3	5.3	14.0	43.9	10.5	8.8	5.3

Table A-50. 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	9.0	9.0	18.6	21.8	25.4	13.0	3.1
Pluralist	10.5	9.3	11.3	15.3	36.3	14.5	2.8
Mutualist	14.8	18.1	13.4	15.4	28.2	7.4	2.7
Distanced	8.8	3.5	24.6	28.1	24.6	3.5	7.0

Table A-51. 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	5.3	7.8	13.2	15.1	27.7	20.2	10.6
Pluralist	5.6	7.6	12.4	9.6	26.5	28.9	9.2
Mutualist	9.3	10.7	12.0	18.0	28.7	14.7	6.7
Distanced	1.8	12.5	16.1	25.0	28.6	3.6	12.5

Table A-52. 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	19.3	18.8	22.1	13.4	12.3	7.6	6.4
Pluralist	26.1	16.5	21.3	17.7	10.0	5.6	2.8
Mutualist	20.5	20.5	26.5	15.2	7.9	3.3	6.0
Distanced	12.3	10.5	10.5	31.6	15.8	10.5	8.8

Table A-53. 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	10.6	9.5	16.0	9.8	22.4	23.8	7.8
Pluralist	8.4	8.8	15.2	16.8	24.0	18.8	8.0
Mutualist	16.6	11.3	12.6	21.9	17.2	10.6	9.9
Distanced	5.2	5.2	19.0	27.6	12.1	17.2	13.8

Table A-54. 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	3.91	0.39
Utilitarian	4.06	0.37
Pluralist	4.08	0.40
Mutualist	3.26	0.24
Distanced	4.00	0.34

Table A-55. 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	3.91	0.39
Utilitarian	4.03	0.39
Pluralist	4.07	0.41
Mutualist	3.41	0.26
Distanced	3.84	0.29

Table A-56. 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	3.94	0.42
Utilitarian	3.97	0.40
Pluralist	4.13	0.41
Mutualist	3.56	0.34
Distanced	3.97	0.35

Table A-57. 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	4.50	0.32
Utilitarian	4.55	0.30
Pluralist	4.68	0.30
Mutualist	4.17	0.41
Distanced	4.29	0.31

Table A-58. 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	3.19	0.27
Utilitarian	3.29	0.31
Pluralist	2.97	0.20
Mutualist	3.05	0.22
Distanced	3.94	0.42

Table A-59. 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	4.20	0.44
Utilitarian	4.27	0.45
Pluralist	4.27	0.39
Mutualist	3.83	0.45
Distanced	4.46	0.30

Table A-60. 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.”

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	12.4	14.1	12.4	19.9	20.6	17.0	3.6
Non-Hunters/anglers	10.7	7.3	12.3	35.6	18.8	12.3	3.0

Table A-61. 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.”

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	9.2	16.4	14.5	15.8	25.3	16.1	2.6
Non-Hunters/anglers	9.3	9.3	14.1	31.7	21.6	11.7	2.2

Table A-62. 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.”

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	13.3	10.4	16.2	12.7	30.2	14.0	3.2
Non-Hunters/anglers	8.9	10.3	15.8	22.7	28.4	10.8	3.0

Table A-63. 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.”

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	6.2	9.8	13.1	9.5	26.5	26.8	8.2
Non-Hunters/anglers	5.7	7.5	13.0	18.2	28.1	17.4	10.1

Table A-64. 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.”

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	33.7	25.2	17.6	10.8	6.9	3.3	2.6
Non-Hunters/anglers	13.1	13.5	24.6	19.2	13.7	8.3	7.5

Table A-65. 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.”

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	14.6	14.0	16.3	10.1	22.8	16.6	5.5
Non-Hunters/anglers	8.2	6.4	14.9	18.5	20.1	21.3	10.5

Table A-66. 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	9.8	46.0	39.6	4.5
State government	4.2	32.7	56.7	6.4
Wyoming Game and Fish Department	3.2	25.6	57.4	13.7

Table A-67. 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	6.2	45.6	43.7	4.5
Pluralist	7.2	44.2	45.4	3.2
Mutualist	20.5	51.0	21.9	6.6
Distanced	13.8	43.1	36.2	6.9

Table A-68. Percent of wildlife value orientation type that trusts their state government to do what is right for the Wyoming.

Value type	Almost never	Only some of the time	Most of the time	Almost always
Utilitarian	2.5	30.6	59.8	7.1
Pluralist	3.2	29.9	61.4	5.6
Mutualist	8.7	43.0	43.0	5.4
Distanced	6.9	31.0	55.2	6.9

Table A-69. Percent of wildlife value orientation type that trusts the Wyoming Game and Fish Department 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	2.0	25.1	57.5	15.5
Pluralist	2.4	19.9	63.7	13.9
Mutualist	7.3	35.3	46.0	11.3
Distanced	3.4	27.6	58.6	10.3

Table A-70. Percent of hunters/anglers and non-hunters/anglers that trusts their federal government to do what is right for the country.

Type	Almost Never	Only Some of the Time	Most of the Time	Almost Always
Hunters/anglers	9.4	46.9	39.5	4.2
Non-Hunters/anglers	9.9	45.7	39.5	4.9

Table A-71. Percent of hunters/anglers and non-hunters/anglers that trusts their state government to do what is right for Wyoming.

Type	Almost Never	Only Some of the Time	Most of the Time	Almost Always
Hunters/anglers	3.9	33.1	57.5	5.5
Non-Hunters/anglers	4.3	32.8	56.0	6.9

Table A-72. Percent of hunters/anglers and non-hunters/anglers that trusts the Wyoming Game and Fish Department to do what is right for fish and wildlife management.

Type	Almost Never	Only Some of the Time	Most of the Time	Almost Always
Hunters/anglers	2.9	25.2	57.6	14.2
Non-Hunters/anglers	3.4	26.0	57.4	13.2

Table A-73. Percent of respondents agreeing with the WGFD activities and performance statements.

Statement	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
WGFD represents my views on how fish and wildlife should be managed.	4.1	6.6	8.9	23.7	26.5	25.2	4.9
I trust WGFD to make acceptable decisions about fish and wildlife management.	2.7	5.1	7.5	7.5	30.0	36.2	11.2
WGFD effectively manages Wyoming's fish and wildlife.	2.9	3.9	7.8	11.9	28.6	35.8	9.1
WGFD provides me with *accurate* information on fish and wildlife issues.	4.1	5.0	7.8	21.5	25.5	26.7	9.4
WGFD provides me with *adequate amounts* of information on wildlife issues.	4.3	5.2	10.5	19.6	27.7	24.3	8.4
WGFD provides information on fish and wildlife issues in a timely manner.	2.7	3.8	10.0	28.0	22.5	26.2	6.8
WGFD should be an advocate for wildlife, even if that means opposing development.	2.4	3.6	6.3	7.8	24.6	23.7	31.5
WGFD should encourage more young people to hunt and fish.	3.0	2.3	8.2	22.6	19.5	22.3	22.1
Overall, Wyoming's fish and wildlife populations are healthy.	2.2	4.8	10.2	18.2	26.3	30.5	7.7
Overall, Wyoming's fish and wildlife habitats are healthy.	3.0	5.5	11.2	14.7	27.4	31.2	7.0

Table A-74. Percent of wildlife value orientation type agreeing with the statement "The WGFD represents my views on how fish and wildlife should be managed in Wyoming."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	3.4	6.2	10.9	23.2	26.1	27.5	2.8
Pluralist	3.3	6.9	7.3	20.3	25.6	28.0	8.5
Mutualist	8.5	8.5	7.8	24.8	27.7	19.1	3.5
Distanced	1.8	1.8	7.0	40.4	31.6	12.3	5.3

Table A-75. Percent of wildlife value orientation type agreeing with the statement "I trust the WGFD to make acceptable decisions about fish and wildlife management in Wyoming."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	3.1	4.2	7.0	5.0	31.4	39.8	9.5
Pluralist	2.4	4.5	9.3	3.6	28.3	38.5	13.4
Mutualist	2.1	9.0	6.9	13.9	25.0	30.6	12.5
Distanced	1.8	3.5	5.3	22.8	40.4	17.5	8.8

Table A-76. Percent of wildlife value orientation type agreeing with the statement "The WGFD effectively manages Wyoming's fish and wildlife."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	3.1	3.9	7.0	8.1	30.6	38.4	8.9
Pluralist	3.3	4.1	7.3	10.2	24.0	38.6	12.6
Mutualist	3.5	4.2	11.9	13.3	29.4	33.6	4.2
Distanced	0.0	3.6	3.6	39.3	32.1	12.5	8.9

Table A-77. Percent of wildlife value orientation type agreeing with the statement "The WGFD provides me with *accurate* information on fish and wildlife issues in Wyoming."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	3.0	4.2	8.3	21.9	27.1	27.4	8.0
Pluralist	4.5	6.5	8.5	11.8	29.7	28.5	10.6
Mutualist	5.6	7.0	6.3	28.9	15.5	26.1	10.6
Distanced	5.3	0.0	5.3	42.1	21.1	15.8	10.5

Table A-78. Percent of wildlife value orientation type agreeing with the statement "The WGFD provides me with *adequate amounts* of information on fish and wildlife issues in Wyoming."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	3.9	3.1	10.6	17.9	30.7	26.8	7.0
Pluralist	4.0	8.1	8.9	13.8	27.1	27.5	10.5
Mutualist	5.6	8.4	12.6	25.2	25.2	16.1	7.0
Distanced	5.4	0.0	10.7	42.9	17.9	12.5	10.7

Table A-79. Percent of wildlife value orientation type agreeing with the statement "The WGFD provides information on fish and wildlife issues in a timely manner."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	2.5	2.5	10.6	26.5	22.9	29.9	5.0
Pluralist	2.8	3.6	8.5	23.5	23.1	28.7	9.7
Mutualist	2.1	9.2	9.2	34.0	22.7	18.4	4.3
Distanced	3.5	0.0	14.0	40.4	17.5	12.3	12.3

Table A-80. Percent of wildlife value orientation type agreeing with the statement "The WGFD should be a strong advocate for fish and wildlife, even if that means opposing development in some areas."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	3.9	5.8	9.4	9.4	26.4	23.6	21.4
Pluralist	0.8	2.4	4.5	3.3	27.6	28.0	33.3
Mutualist	2.1	0.0	2.1	4.9	12.0	19.0	59.9
Distanced	0.0	5.4	5.4	23.2	32.1	16.1	17.9

Table A-81. Percent of wildlife value orientation type agreeing with the statement "The WGFD should encourage more young people to hunt and fish."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	0.8	0.3	4.2	24.2	18.9	23.1	28.4
Pluralist	0.8	1.6	6.9	12.6	20.6	30.8	26.7
Mutualist	12.7	7.0	17.6	28.2	19.0	9.2	6.3
Distanced	3.5	7.0	15.8	42.1	19.3	12.3	0.0

Table A-82. Percent of wildlife value orientation type agreeing with the statement "Overall, Wyoming's fish and wildlife populations are healthy."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	1.1	3.7	7.3	15.7	29.2	34.0	9.0
Pluralist	1.6	5.2	8.9	12.1	24.6	38.7	8.9
Mutualist	5.7	8.5	22.0	25.5	22.0	12.1	4.3
Distanced	3.5	1.8	5.3	40.4	26.3	19.3	3.5

Table A-83. Percent of wildlife value orientation type agreeing with the statement “Overall, Wyoming's fish and wildlife habitats are healthy.”

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	1.4	5.8	11.7	11.4	27.9	34.3	7.5
Pluralist	2.5	4.1	8.6	10.3	25.9	41.2	7.4
Mutualist	8.6	8.6	17.1	20.0	28.6	11.4	5.7
Distanced	1.8	1.8	3.6	41.1	28.6	19.6	3.6

Table A-84. PCI means and values for the statement “The WGFD represents my views on how fish and wildlife should be managed in Wyoming” by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.57	0.23
Utilitarian	4.56	0.22
Pluralist	4.76	0.21
Mutualist	4.27	0.34
Distanced	4.56	0.11

Table A-85. PCI means and values for the statement “I trust the WGFD to make acceptable decisions about fish and wildlife management in Wyoming” by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.10	0.17
Utilitarian	5.15	0.16
Pluralist	5.19	0.17
Mutualist	4.93	0.21
Distanced	4.84	0.12

Table A-86. PCI means and values for the statement “The WGFD effectively manages Wyoming's fish and wildlife” by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.03	0.16
Utilitarian	5.11	0.16
Pluralist	5.14	0.17
Mutualist	4.79	0.21
Distanced	4.74	0.07

Table A-87. PCI means and values for the statement "The WGFD provides me with *accurate* information on fish and wildlife issues in Wyoming" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.77	0.20
Utilitarian	4.80	0.17
Pluralist	4.83	0.23
Mutualist	4.62	0.25
Distanced	4.64	0.14

Table A-88. PCI means and values for the statement "The WGFD provides me with *adequate amounts* of information on fish and wildlife issues in Wyoming" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.68	0.23
Utilitarian	4.77	0.19
Pluralist	4.77	0.25
Mutualist	4.33	0.31
Distanced	4.50	0.18

Table A-89. PCI means and values for the statement "The WGFD provides information on fish and wildlife issues in a timely manner" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.70	0.17
Utilitarian	4.74	0.15
Pluralist	4.85	0.16
Mutualist	4.38	0.23
Distanced	4.54	0.16

Table A-90. PCI means and values for the statement "The WGFD should be a strong advocate for fish and wildlife, even if that means opposing development in some areas" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.46	0.14
Utilitarian	5.05	0.22
Pluralist	5.72	0.08
Mutualist	6.22	0.06
Distanced	5.00	0.11

Table A-91. PCI means and values for the statement "The WGFD should encourage more young people to hunt and fish" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.09	0.15
Utilitarian	5.43	0.05
Pluralist	5.50	0.08
Mutualist	3.89	0.38
Distanced	4.07	0.27

Table A-92. PCI means and values for the statement "Overall, Wyoming's fish and wildlife populations are healthy" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.84	0.18
Utilitarian	5.06	0.12
Pluralist	5.06	0.16
Mutualist	4.03	0.37
Distanced	4.53	0.13

Table A-93. PCI means and values for the statement “Overall, Wyoming's fish and wildlife habitats are healthy” by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.80	0.21
Utilitarian	4.91	0.18
Pluralist	5.06	0.16
Mutualist	4.09	0.40
Distanced	4.70	0.08

Table A-94. Percent of hunters/anglers and non-hunters/anglers agreeing that the WGFD represents my views on how fish and wildlife should be managed in Wyoming.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	4.8	7.7	12.9	17.7	23.5	28.4	4.8
Non-Hunters/anglers	3.5	6.1	6.5	27.7	28.5	23.2	4.5

Table A-95. Percent of hunters/anglers and non-hunters/anglers agreeing that they trust the WGFD to make acceptable decisions about fish and wildlife management in Wyoming.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	3.5	6.1	12.2	6.1	28.6	34.7	8.7
Non-Hunters/anglers	2.0	4.3	4.5	8.6	31.0	37.3	12.2

Table A-96. Percent of hunters/anglers and non-hunters/anglers agreeing that the WGFD effectively manages Wyoming's fish and wildlife.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	3.2	6.8	10.0	10.0	28.8	35.0	6.1
Non-Hunters/anglers	2.7	2.0	6.3	13.3	28.6	36.6	10.4

Table A-97. Percent of hunters/anglers and non-hunters/anglers agreeing that the WGFD provides accurate information of fish and wildlife issues in Wyoming.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	4.9	6.2	10.4	11.7	27.9	28.6	10.4
Non-Hunters/anglers	3.3	4.3	6.1	28.1	23.6	25.8	8.8

Table A-98. Percent of hunters/anglers and non-hunters/anglers agreeing that the WGFD provides adequate amounts of information on fish and wildlife issues in Wyoming.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	4.8	6.4	13.2	11.3	29.6	26.0	8.7
Non-Hunters/anglers	3.9	4.5	8.8	25.2	26.6	22.9	8.2

Table A-99. Percent of hunters/anglers and non-hunters/anglers agreeing that the WGFD provides information on fish and wildlife issues in a timely manner.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	2.9	4.5	12.3	21.0	23.0	28.8	7.4
Non-Hunters/anglers	2.5	3.3	8.6	32.7	21.9	24.7	6.3

Table A-100. Percent of hunters/anglers and non-hunters/anglers agreeing that the WGFD should be a strong advocate for fish and wildlife, even if that means opposing development in some areas.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	1.6	3.5	7.7	6.8	21.5	30.2	28.6
Non-Hunters/anglers	2.9	3.7	5.1	8.6	26.7	19.9	33.1

Table A-101. Percent of hunters/anglers and non-hunters/anglers agreeing that the WGFD should encourage more young people to hunt and fish.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	0.6	1.9	6.1	15.2	15.2	27.7	33.2
Non-Hunters/anglers	4.5	2.5	9.4	27.6	22.3	19.0	14.7

Table A-102. Percent of hunters/anglers and non-hunters/anglers agreeing that overall, Wyoming's fish and wildlife populations are healthy.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	2.6	5.8	11.9	11.6	23.2	35.4	9.6
Non-Hunters/anglers	2.1	4.1	8.8	22.6	28.5	27.3	6.6

Table A-103. Percent of hunters/anglers and non-hunters/anglers agreeing that overall, Wyoming's fish and wildlife habitats are healthy.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	3.2	5.2	13.2	9.0	25.5	35.8	8.1
Non-Hunters/anglers	2.9	5.4	10.0	18.4	28.9	28.5	6.2

Table A-104. PCI means and values for the statement "The WGFD represents my views on how fish and wildlife should be managed in Wyoming" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.57	0.23
Hunters/anglers	4.52	0.29
Non-Hunters/anglers	4.59	0.19

Table A-105. PCI means and values for the statement "I trust the WGFD to make acceptable decisions about fish and wildlife management in Wyoming" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	5.10	0.17
Hunters/anglers	4.89	0.23
Non-Hunters/anglers	5.23	0.13

Table A-106. PCI means and values for the statement "The WGFD effectively manages Wyoming's fish and wildlife" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	5.03	0.16
Hunters/anglers	4.84	0.22
Non-Hunters/anglers	5.15	0.12

Table A-107. PCI means and values for the statement "The WGFD provides me with accurate information on fish and wildlife issues in Wyoming" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.77	0.20
Hunters/anglers	4.78	0.25
Non-Hunters/anglers	4.77	0.16

Table A-108. PCI means and values for the statement "The WGFD provides me with adequate amounts of information on fish and wildlife issues in Wyoming" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.68	0.23
Hunters/anglers	4.68	0.27
Non-Hunters/anglers	4.67	0.19

Table A-109. PCI means and values for the statement "The WGFD provides information on fish and wildlife issues in a timely manner" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.70	0.17
Hunters/anglers	4.72	0.20
Non-Hunters/anglers	4.68	0.15

Table A-110. PCI means and values for the statement "The WGFD should be a strong advocate for fish and wildlife, even if that means opposing development in some areas" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	5.46	0.14
Hunters/anglers	5.48	0.13
Non-Hunters/anglers	5.44	0.14

Table A-111. PCI means and values for the statement "The WGFD should encourage more young people to hunt and fish" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	5.09	0.15
Hunters/anglers	5.58	0.08
Non-Hunters/anglers	4.77	0.19

Table A-112. PCI means and values for the statement "Overall, Wyoming's fish and wildlife populations are healthy" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.85	0.18
Hunters/anglers	4.92	0.21
Non-Hunters/anglers	4.80	0.15

Table A-113. PCI means and values for the statement "Overall, Wyoming's fish and wildlife habitats are healthy" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.80	0.21
Hunters/anglers	4.88	0.22
Non-Hunters/anglers	4.75	0.20

Table A-114. Percent of respondents indicating ways by which they have been informed about Wyoming's fish and wildlife or participated in fish and wildlife decision-making in the past 12 months.

Statement	Percent respondents
Spoken with a WGFD employee while recreating outdoors.	27.1
Called the WGFD.	18.3
Sent an email to the WGFD.	2.3
Submitted written comments on a WGFD management plan.	3.5
Watched a WGFD news story on the local television station.	54.5
Attended a WGFD public meeting.	8.6
Attended a Wyoming Game and Fish Commission meeting.	1.1
Attended a WGFD educational program.	5.6
Attended a WGFD presentation.	5.6
Attended the Wyoming Hunting and Fishing Heritage Exposition.	6.7
Read the WGFD Magazine *Wyoming Wildlife.*	46.5
Read the WGFD newspaper *Wyoming Wildlife News.*	23.5
Read the WGFD children's publication *Wild Times.*	7.1
Other	5.6
Did not provide input during last 2 years.	22.7

Table A-115. Other ways stated through which respondents have been informed about Wyoming's fish and wildlife or participated in fish and wildlife decision-making in the past 12 months.

Statement
Attended the display of headquarters-Cheyenne
Employee of U.S. Forest Service, pick up WGFD and get advice at sporting stores, buy books
Filled out license survey
Gave plenty of experience based opinions to WGFD employees
Gone out of state to participate much
I love WYO wildlife magazine
I read and try to stay informed in areas that concern me
Newspapers and radio (2 responses)
Participated in interagency meetings and field trips as part of my work (2 responses)
Presentation at cub scout camp
Radio show/Web Site
Read an occasional in Casper Star Tribune
Read articles in local newspaper and letters to editor (2 responses)
Read brochures & pamphlets by WGFD (3 responses)
Read newspaper articles (6 responses)
Reviewed License materials
Signed a petition to WGFD
Special CWD meeting Feb 2004
Spoke with and attended tour with biodiversity conservation alliance
Spoken with WGFD employee while not recreating outdoors (2 responses)
Subscribed to "Your Big Backyard" for our kids
Talked casually with WGFD directors about state conditions/needs
Turned in poachers (2 responses)
Visited local WGFD office (2 responses)
Watched the news (2 responses)
Website (5 responses)
Website for info on CWD (2 responses)
Went hunting and fishing

Table A-116. Percent of respondents indicating the number of methods used to participate in fish and wildlife decision-making in Wyoming.

Number of methods	Percent respondents
0	22.7
1	22.6
2	17.7
3	15.1
4	10.1
5	5.5
6	2.6
7	1.8
8	1.1
9	0.3
10	0.3
11	0.0
12	0.1
13	0.1

Table A-117. Percent of wildlife value orientation type participating in fish and wildlife decision-making in Wyoming.

Value type	Did not participate	Participated using 1-3 methods	Participated using 4-13 methods	Participated in decision-making
Public	22.7	55.4	21.9	77.3
Utilitarian	21.8	56.1	22.1	78.2
Pluralist	19.6	53.2	27.2	80.4
Mutualist	23.1	58.9	17.8	76.9
Distanced	39.3	53.6	7.1	60.7

Table A-118. Percent of wildlife value orientation type for each level of participation in decision-making.

Value type	Did not participate	Active participation	Passive participation
Public	23.5	41.3	35.3
Utilitarian	22.4	45.0	32.6
Pluralist	19.9	47.8	32.3
Mutualist	25.7	29.7	44.6
Distanced	38.6	19.3	42.1

Table A-119. Percent of hunters/anglers and non-hunters/anglers indicating the number of methods used to participate in fish and wildlife decision-making in Wyoming.

Number of methods	Hunters/anglers	Non-hunters/anglers
0	11.9	29.3
1	15.2	27.5
2	14.5	19.7
3	18.7	12.4
4	17.4	5.6
5	9.4	3.0
6	5.5	1.0
7	3.5	0.8
8	2.6	0.4
9	1.0	0.0
10	0.3	0.2
11	0.0	0.0
12	0.0	0.0
13	0.0	0.0

Table A-120. Percent of hunters/anglers and non-hunters/anglers participating in fish and wildlife decision-making in Wyoming.

Participation	Did not participate	Participated using 1-3 methods	Participated using 4-13 methods	Participated in decision-making
Public	22.7	55.4	21.9	77.3
Hunters/anglers	11.9	48.4	39.7	88.1
Non-hunters/anglers	29.3	59.7	11.0	70.7

Table A-121. Percent of hunters/anglers and non-hunters/anglers for each level of participation in decision-making.

Participation	Did not participate	Active participation	Passive participation
Public	23.5	41.3	35.3
Hunters/anglers	13.2	66.8	20.0
Non-hunters/anglers	29.9	25.1	45.1

Table A-122. Percent of respondents agreeing with actions to address bear situations.

Bear situation[1]	Do nothing	Provide more hunting	Conduct controlled hunts
Getting into trash and pet food containers	13.4	65.2	69.1
Human deaths from bear attacks occurred	7.6	70.6	83.4

[1]Shortened versions of the statements are provided in each row of the table. The complete statements are below:
1. Bears 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-123. Percent of wildlife value orientation type agreeing with actions to address bear situation 1[1].

Value type	Do nothing	Provide more hunting	Conduct controlled hunts
Utilitarian	7.0	81.1	73.5
Pluralist	11.6	73.7	68.3
Mutualist	29.0	23.7	57.2
Distanced	21.4	28.6	75.4

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

Table A-124. Percent of wildlife value orientation type agreeing with actions to address bear situation 2[1].

Value type	Do nothing	Provide more hunting	Conduct controlled hunts
Utilitarian	3.1	85.6	86.2
Pluralist	7.8	79.6	83.9
Mutualist	18.2	33.3	76.8
Distanced	8.9	29.8	80.4

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

Table A-125. Percent of hunters/anglers and non-hunters/anglers agreeing with actions to address Bear Situation 1. [1]

Type	Do nothing	Provide more hunting	Conduct controlled hunts
Hunters/anglers	11.4	79.7	65.8
Non-Hunters/anglers	14.3	55.9	71.7

[1]The corresponding situation is listed below:
Bear Situation 1. Bears are wandering into areas where humans live in search of food. Bears are getting into trash and pet food containers.

Table A-126. Percent of hunters/anglers and non-hunters/anglers agreeing with actions to address Bear Situation 2. [1]

Type	Do nothing	Provide more hunting	Conduct controlled hunts
Hunters/anglers	7.5	82.0	82.7
Non-Hunters/anglers	7.3	62.9	84.6

[1]The corresponding situation is listed below:
Bear Situation 2. Bears are wandering into areas where humans live in search of food. Human deaths from bear attacks have occurred.

Table A-127. Percent of respondents agreeing with actions 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	27.9	85.8	62.7	12.8	52.0
Carrying transmissible disease	10.1	83.0	78.3	29.2	63.1

[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-128. Percent of wildlife value orientation type agreeing with actions to address deer situation 1[1].

Value type	Do nothing	Provide more hunting	Conduct controlled hunts	Permanent contraceptives	Short-term contraceptives
Utilitarian	22.1	95.2	65.1	14.1	46.5
Pluralist	23.2	90.0	60.7	11.0	54.4
Mutualist	51.4	58.5	55.9	14.2	60.7
Distanced	24.6	80.7	74.1	8.6	55.2

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

Table A-129. Percent of wildlife value orientation type agreeing with actions to address deer situation 2[1].

Value type	Do nothing	Provide more hunting	Conduct controlled hunts	Permanent contraceptives	Short-term contraceptives
Utilitarian	5.1	89.2	81.4	33.5	60.5
Pluralist	7.7	86.0	77.0	24.1	63.4
Mutualist	22.8	66.9	73.0	26.0	70.2
Distanced	17.9	69.1	80.4	32.7	62.5

[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-130. Percent of hunters/anglers and non-hunters/anglers agreeing with actions to address Deer Situation 1. [1]

Type	Do nothing	Provide more hunting	Conduct controlled hunts	Distribute permanent contraceptive pellets	Distribute temporary contraceptive pellets
Hunters/anglers	24.5	91.6	58.9	10.2	45.6
Non-Hunters/anglers	29.4	81.9	65.4	14.5	56.4

[1]The corresponding situation is listed below:
Deer Situation 1. Deer numbers are increasing. There are complaints about deer entering people's yards and eating shrubs and garden plants.

Table A-131. Percent of hunters/anglers and non-hunters/anglers agreeing with actions to address Deer Situation 2. [1]

Type	Do nothing	Provide more hunting	Conduct controlled hunts	Distribute permanent contraceptive pellets	Distribute temporary contraceptive pellets
Hunters/anglers	8.6	88.3	76.6	28.0	58.6
Non-Hunters/anglers	10.8	79.6	79.5	30.0	66.3

[1]The corresponding situation is listed below:
Deer Situation 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-132. Biodiversity stated choice results for Wyoming.

Attribute (variable)	Tier of Importance[2]	Average Importance[3]	Coefficient (Utility Score)[1,4]	p-value	Odds Ratio[5]
Status	1	43.4			
Common			-.56	-	-
Declining/Endangered			.14	< .001	1.15
Extirpated			.42	< .001	1.52
Origin	3	25.6			
Native			.33	< .001	1.39
Non-Native			-.33	-	-
Use	2	31.0			
Game			.40	< .001	1.50
Non-Game			-.40	-	-
Proportion of choices correctly predicted		73.6			

[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., -.33 to .33 for origin).

[3] Averaged importance is computed by dividing the range for each attribute by the total ranges of the 3 attributes (e.g., 1.12 / (1.12 + .66 + .80) 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-133. Biodiversity stated choice results for subregion 3 (Montana, Wyoming, North Dakota, South Dakota).

Attribute (variable)	Tier of Importance[2]	Average Importance[3]	Coefficient (Utility Score)[1,4]	p-value	Odds Ratio[5]
Status	1	46.4			
Common			-.58	-	-
Declining/Endangered			.22	< .001	1.25
Extirpated			.36	<.001	1.44
Origin	3	19.2			
Native			.24	< .001	1.27
Non-Native			-.24	-	-
Use	2	34.4			
Game			.43	< .001	1.54
Non-Game			-.43	-	-
Proportion of choices correctly predicted	71.08				

[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., -.24 to .24 for origin).

[3] Averaged importance is computed by dividing the range for each attribute by the total ranges of the 3 attributes (e.g., 1.16 / (1.16 + .48 + .86) 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-134. Percent of respondents agreeing with the ORV statements.

Statement	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
When on public lands, the majority of ORV operators stay on authorized trails.	11.4	14.4	11.4	5.6	15.7	19.0	22.4
Riding ORVs off trails is harmful to fish and wildlife habitat.	4.6	3.6	6.4	5.0	18.0	24.8	37.6
ORV use causes conflicts with people participating in non-motorized activities.	4.5	4.8	6.3	4.8	20.7	27.2	31.5
Most complaints about ORVs are from people who want to restrict others' use of public lands.	11.8	11.7	12.0	15.9	21.0	14.1	13.4
Rules related to ORV use on public lands are sufficiently enforced.	17.4	16.4	15.7	19.9	13.6	11.8	5.3

Table A-135. Percent of wildlife value orientation type agreeing with the statement "When on public lands, the majority of ORV operators stay on authorized trails."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	10.7	12.1	12.4	5.6	20.3	21.5	17.2
Pluralist	10.6	12.6	10.6	3.7	15.0	21.1	26.4
Mutualist	16.7	18.8	11.1	4.2	8.3	11.8	29.2
Distanced	6.9	25.9	8.6	17.2	8.6	12.1	20.7

Table A-136. Percent of wildlife value orientation type agreeing with the statement "Riding ORVs off trails is harmful to fish and wildlife habitat."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	5.9	5.6	8.2	7.3	21.1	25.1	26.8
Pluralist	4.5	2.8	6.5	2.4	19.4	23.9	40.5
Mutualist	2.7	0.7	4.1	2.0	6.1	22.3	62.2
Distanced	1.7	1.7	0.0	10.2	23.7	33.9	28.8

Table A-137. Percent of wildlife value orientation type agreeing with the statement "ORV use causes conflicts with people participating in non-motorized activities."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	4.8	5.9	6.8	5.4	25.1	28.5	23.7
Pluralist	3.7	5.3	7.8	2.9	19.3	25.9	35.0
Mutualist	6.8	2.0	4.8	5.4	7.5	27.9	45.6
Distanced	1.7	1.7	1.7	8.5	33.9	22.0	30.5

Table A-138. Percent of wildlife value orientation type agreeing with the statement "Most complaints about ORVs are from people who want to restrict others' use of public lands."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	8.7	10.6	8.4	16.5	19.9	18.5	17.4
Pluralist	10.6	11.8	14.2	12.2	22.8	15.0	13.4
Mutualist	20.8	13.4	12.8	16.1	22.1	7.4	7.4
Distanced	15.5	13.8	20.7	27.6	13.8	3.4	5.2

Table A-139. Percent of wildlife value orientation type agreeing with the statement "Rules related to ORV use on public lands are sufficiently enforced."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	16.3	13.8	15.5	22.3	14.1	12.1	5.9
Pluralist	16.0	17.2	15.2	17.6	13.9	15.2	4.9
Mutualist	23.6	27.7	14.2	12.2	10.8	8.8	2.7
Distanced	12.3	1.8	24.6	35.1	15.8	3.5	7.0

Table A-140. PCI means and values for the statement “When on public lands, the majority of ORV operators stay on authorized trails” by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.46	0.50
Utilitarian	4.46	0.46
Pluralist	4.68	0.45
Mutualist	4.21	0.66
Distanced	4.12	0.54

Table A-141. PCI means and values for the statement “Riding ORVs off trails is harmful to fish and wildlife habitat” by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.53	0.18
Utilitarian	5.15	0.25
Pluralist	5.64	0.17
Mutualist	6.24	0.09
Distanced	5.67	0.06

Table A-142. PCI means and values for the statement “ORV use causes conflicts with people participating in non-motorized activities” by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.40	0.20
Utilitarian	5.21	0.22
Pluralist	5.46	0.20
Mutualist	5.69	0.20
Distanced	5.62	0.07

Table A-143. PCI means and values for the statement “Most complaints about ORVs are from people who want to restrict others’ use of public lands” by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.19	0.47
Utilitarian	4.54	0.37
Pluralist	4.23	0.46
Mutualist	3.56	0.39
Distanced	3.42	0.24

Table A-144. PCI means and values for the statement “Rules related to ORV use on public lands are sufficiently enforced” by wildlife value orientation type.

Value type	Mean	PCI value
Public	3.52	0.35
Utilitarian	3.64	0.37
Pluralist	3.62	0.39
Mutualist	2.95	0.24
Distanced	3.83	0.29

Table A-145. Percent of hunters/anglers and non-hunters/anglers agreeing that when on public lands, the majority of ORV operators stay on authorized trails.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	13.3	13.0	11.0	3.6	15.6	22.1	21.4
Non-Hunters/anglers	10.3	15.7	11.8	7.2	15.9	16.7	22.5

Table A-146. Percent of hunters/anglers and non-hunters/anglers agreeing that riding ORV off trails is harmful to fish and wildlife habitat.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	3.9	6.2	8.8	4.2	17.6	26.1	33.2
Non-Hunters/anglers	4.7	1.8	4.9	5.5	18.1	24.4	40.5

Table A-147. Percent of hunters/anglers and non-hunters/anglers agreeing that ORV use causes conflicts with people participating in non-motorized activities.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	5.2	5.5	7.8	3.9	24.4	21.8	31.3
Non-Hunters/anglers	4.1	4.3	4.8	5.6	18.8	30.2	32.2

Table A-148. Percent of hunters/anglers and non-hunters/anglers agreeing that most complaints about ORV are from people who want to restrict others' use of public lands.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	13.0	11.7	11.7	10.7	22.1	15.9	14.9
Non-Hunters/anglers	10.9	11.9	12.1	19.1	20.1	13.3	12.5

Table A-149. Percent of hunters/anglers and non-hunters/anglers agreeing that rules related to ORV use on public lands are sufficiently enforced.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	17.0	15.7	16.0	13.4	14.7	15.4	7.8
Non-Hunters/anglers	17.6	16.6	15.6	23.8	12.9	9.8	3.7

Table A-150. PCI means and values for the statement “When on public lands, the majority of ORV operators stay on authorized trails” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.45	0.50
Hunters/anglers	4.47	0.51
Non-Hunters/anglers	4.43	0.49

Table A-151. PCI means and values for the statement “Riding ORVs off trails is harmful to fish and wildlife habitat” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	5.54	0.18
Hunters/anglers	5.35	0.22
Non-Hunters/anglers	5.65	0.15

Table A-152. PCI means and values for the statement “ORV use causes conflicts with people participating in non-motorized activities” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	5.41	0.20
Hunters/anglers	5.27	0.23
Non-Hunters/anglers	5.49	0.17

Table A-153. PCI means and values for the statement “Most complaints about ORVs are from people who want to restrict others’ use of public lands” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.19	0.47
Hunters/anglers	4.25	0.49
Non-Hunters/anglers	4.16	0.46

Table A-154. PCI means and values for the statement “Rules related to ORV use on public lands are sufficiently enforced” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	3.52	0.35
Hunters/anglers	3.70	0.46
Non-Hunters/anglers	3.41	0.29

Table A-155. Percent of respondent agreeing with ORV management actions by the WGFD.

Statement	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
The WGFD should help enforce existing ORV regulations on lands owned by the *state*.	3.2	3.1	3.8	8.2	27.0	26.1	28.6
The WGFD should help enforce existing ORV regulations on public lands owned by the *federal government*.	6.8	5.3	7.2	11.6	24.6	22.2	22.2
The WGFD should do more to inform and educate ORV operators on the effects ORVs can have on wildlife habitats.	2.0	1.5	2.6	7.8	26.9	25.9	33.4

Table A-156. Percent of respondents finding actions acceptable for government agencies to manage ORV use.

Statement	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Limit the amount of ORV use on public lands where it harms fish and wildlife.	3.3	3.2	5.0	3.5	19.5	26.0	39.5
Limit the amount of ORV use on public lands where it causes conflicts with other recreationists.	4.7	4.5	7.7	5.5	21.5	27.3	28.7
Do NOT restrict ORV use under any circumstances.	53.1	16.1	12.1	6.8	5.0	5.1	1.8

Table A-157. Percent of wildlife value orientation type agreeing with the statement "The WGFD should help enforce existing ORV regulations on lands owned by the *state*."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	3.9	3.7	4.5	9.0	28.7	27.5	22.8
Pluralist	4.4	3.6	4.8	6.0	22.2	30.2	28.6
Mutualist	0.7	2.0	2.0	6.1	23.8	19.0	46.3
Distanced	0.0	0.0	0.0	19.3	43.9	17.5	19.3

Table A-158. Percent of wildlife value orientation type agreeing with the statement "The WGFD should help enforce existing ORV regulations on public lands owned by the *federal government*."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	9.8	8.7	8.4	9.8	28.9	20.2	14.0
Pluralist	6.9	3.3	7.3	8.5	20.3	28.5	25.2
Mutualist	1.4	2.0	5.4	11.6	19.0	21.1	39.5
Distanced	0.0	3.4	5.1	35.6	28.8	11.9	15.3

Table A-159. Percent of wildlife value orientation type agreeing with the statement "The WGFD should do more to inform and educate ORV operators on the potential effects ORVs can have on fish and wildlife habitats."

Value type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	2.8	2.0	3.1	9.8	33.1	26.6	22.7
Pluralist	2.0	2.0	2.0	3.6	20.6	28.3	41.3
Mutualist	1.4	0.0	1.4	5.4	18.2	24.3	49.3
Distanced	0.0	0.0	3.4	19.0	36.2	15.5	25.9

Table A-160. Percent of wildlife value orientation type finding it acceptable for government agencies to "limit the amount of ORV use on public lands where it harms fish and wildlife."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	3.4	3.4	6.4	3.9	23.7	29.6	29.6
Pluralist	4.4	3.2	5.6	2.0	16.1	28.2	40.3
Mutualist	2.7	3.4	1.4	4.1	9.5	10.9	68.0
Distanced	0.0	1.7	3.4	5.2	31.0	32.8	25.9

Table A-161. Percent of wildlife value orientation type finding it acceptable for government agencies to "limit the amount of ORV use on public lands where it causes conflicts with other recreationists."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	5.0	5.8	10.6	5.3	22.0	30.1	21.2
Pluralist	5.3	3.2	7.7	6.9	21.5	24.7	30.8
Mutualist	4.1	2.7	2.7	2.7	16.9	24.3	46.6
Distanced	1.7	6.9	3.4	8.6	29.3	29.3	20.7

Table A-162. Percent of wildlife value orientation type finding it acceptable for government agencies to "NOT restrict ORV use under any circumstances."

Value type	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	46.8	18.9	14.5	5.8	5.8	6.7	1.4
Pluralist	54.4	16.9	9.3	7.3	6.9	3.2	2.0
Mutualist	71.4	6.8	8.2	6.8	0.7	3.4	2.7
Distanced	39.7	19.0	20.7	10.3	5.2	5.2	0.0

Table A-163. PCI means and values for the statement "The WGFD should help enforce existing ORV regulations on lands owned by the *state*" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.45	0.13
Utilitarian	5.28	0.16
Pluralist	5.44	0.17
Mutualist	5.93	0.05
Distanced	5.37	0.00

Table A-164. PCI means and values for the statement "The WGFD should help enforce existing ORV regulations on public lands owned by the *federal government*" by wildlife value orientation type.

Value type	Mean	PCI value
Public	4.98	0.25
Utilitarian	4.56	0.37
Pluralist	5.18	0.23
Mutualist	5.67	0.09
Distanced	4.89	0.08

Table A-165. PCI means and values for the statement "The WGFD should do more to inform and educate ORV operators on the potential effects ORVs can have on fish and wildlife habitats" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.67	0.08
Utilitarian	5.39	0.10
Pluralist	5.88	0.08
Mutualist	6.10	0.04
Distanced	5.41	0.02

Table A-166. PCI means and values for the acceptability of government agencies to "limit the amount of ORV use on public lands where it harms fish and wildlife" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.69	0.14
Utilitarian	5.49	0.15
Pluralist	5.69	0.17
Mutualist	6.19	0.11
Distanced	5.70	0.05

Table A-167. PCI means and values for the acceptability of government agencies to "limit the amount of ORV use on public lands where it causes conflicts with other recreationists" by wildlife value orientation type.

Value type	Mean	PCI value
Public	5.31	0.21
Utilitarian	5.09	0.25
Pluralist	5.33	0.20
Mutualist	5.85	0.14
Distanced	5.28	0.15

Table A-168. PCI means and values for the acceptability of government agencies to "NOT restrict ORV use under any circumstances" by wildlife value orientation type.

Value type	Mean	PCI value
Public	2.17	0.14
Utilitarian	2.31	0.16
Pluralist	2.13	0.13
Mutualist	1.80	0.10
Distanced	2.37	0.10

Table A-169. Percent of hunters/anglers and non-hunters/anglers agreeing that the WGFD should help enforce existing ORV regulations on lands owned by the state.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	5.5	5.1	5.1	7.7	26.0	25.1	25.4
Non-Hunters/anglers	1.8	1.8	2.9	8.6	27.3	26.8	30.7

Table A-170. Percent of hunters/anglers and non-hunters/anglers agreeing that the WGFD should help enforce existing ORV regulations on public lands owned by the federal government.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	9.0	4.2	8.4	9.4	26.1	19.4	23.5
Non-Hunters/anglers	4.7	6.0	6.6	13.0	23.7	24.1	21.9

Table A-171. Percent of hunters/anglers and non-hunters/anglers agreeing that the WGFD should do more to inform and educate ORV operators on the potential effects ORVs can have on fish and wildlife habitats.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	1.9	2.3	4.2	7.8	25.9	24.6	33.3
Non-Hunters/anglers	2.1	1.0	1.6	8.0	27.5	26.1	33.7

Table A-172. Percent of hunters/anglers and non-hunters/anglers finding it acceptable for government agencies to limit the amount of ORV use on public lands where it harms fish and wildlife.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	4.2	25.9	6.1	3.9	22.3	25.6	35.3
Non-Hunters/anglers	2.5	3.5	4.3	3.3	18.1	25.9	42.5

Table A-173. Percent of hunters/anglers and non-hunters/anglers finding it acceptable for government agencies to limit the amount of ORV use on public lands where it causes conflicts with other recreationists.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	5.5	5.5	10.7	7.4	21.7	22.0	27.2
Non-Hunters/anglers	3.7	3.9	5.9	4.5	21.5	30.1	30.3

Table A-174. Percent of hunters/anglers and non-hunters/anglers finding it acceptable for government agencies to NOT restrict ORV use under any circumstances.

Type	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunters/anglers	50.0	17.1	13.5	5.2	7.7	4.2	2.3
Non-Hunters/anglers	54.8	16.0	11.5	8.0	2.7	5.5	1.6

Table A-175. PCI means and values for the statement "The WGFD should help enforce existing ORV regulations on lands owned by the state" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	5.46	0.13
Hunters/anglers	5.21	0.21
Non-Hunters/anglers	5.62	0.08

Table A-176. PCI means and values for the statement "The WGFD should help enforce existing ORV regulations on public lands owned by the federal government" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	4.99	0.25
Hunters/anglers	4.91	0.29
Non-Hunters/anglers	5.04	0.22

Table A-177. PCI means and values for the statement "The WGFD should do more to inform and educate ORV operators on the potential effects ORVs can have on fish and wildlife habitats" by participation in hunting and fishing.

Value type	Mean	PCI value
Public	5.67	0.08
Hunters/anglers	5.60	0.10
Non-Hunters/anglers	5.71	0.07

Table A-178. PCI means and values for the statement “It is acceptable for government agencies to limit the amount of ORV use on public lands where it harms fish and wildlife” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	5.69	0.14
Hunters/anglers	5.55	0.16
Non-Hunters/anglers	5.78	0.12

Table A-179. PCI means and values for the statement “It is acceptable for government agencies to limit the amount of ORV use on public lands where it causes conflicts with other recreationists” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	5.33	0.21
Hunters/anglers	5.09	0.25
Non-Hunters/anglers	5.48	0.17

Table A-180. PCI means and values for the statement “It is acceptable for government agencies to NOT restrict ORV use under any circumstances” by participation in hunting and fishing.

Value type	Mean	PCI value
Public	2.16	0.14
Hunters/anglers	2.33	0.15
Non-Hunters/anglers	2.11	0.12

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 Wyoming are presented below.

The Survey

Data reported here were collected via mail-back surveys administered by Colorado State University in the Fall of 2004. This final survey administration followed a pretest of the survey instrument and methodology in 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 Wyoming 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, sociodemographic 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 Colorado State University 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 a particular state. The questions appearing in this part of the survey were developed by Wyoming, with input and suggestions from Colorado State University and other members of the project work group.

Sampling

A sample of 2999 people from Wyoming 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 for each state. 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 residents in October-November 2004. All survey administration, including preparation of mailings (e.g., addressing and envelope stuffing), occurred from Colorado State University. 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.

Surveys and cover letters were designed to portray the project as a joint effort among WAFWA, participating state fish and wildlife agencies, and Colorado State University. 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 Colorado State University 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, 828 completed surveys were received from Wyoming residents. The response rate for Wyoming was 31%.

Nonresponse Check via Telephone Survey

A sample of residents in each state 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 can also be found in the regional report, and representativeness of the data can also be found in the regional report.

Measurement of Wildlife Value Orientations

Wildlife value orientations were measured following the approach used by Fulton, Manfredo, and Lipscomb (1996). In this approach, value orientations are identified by composite scales consisting of survey items that represent basic beliefs about wildlife and wildlife management. A set of items was identified to represent each of the belief dimensions described in Section II. Items were developed through extensive pretesting which occurred prior to implementation of the final survey instrument.

Pretesting began in 2002 with the pilot phase of Wildlife Values in the West and continued in the Summer of 2004 at which time the survey instrument for the larger multi-state effort was mailed to a sample of residents in each of the 19 participating states. A phone survey consisting of basic belief items administered to a sample of Colorado residents was also conducted in the Summer of 2004 to allow for further refinement and testing of this methodology.

Reliability and Creation of Scales

Table B-1 provides a listing of the items corresponding to each basic belief dimension and reports the reliability of belief dimension and value orientation scales for the entire regional sample. Value orientation scale scores were computed in a two stage process. First, items were grouped into their basic belief dimension and tested for internal consistency using Cronbach's alpha. Results indicated high internal consistency for basic belief item clusters (Table B-1; Nunnally & Bernstein, 1994). Respondents were given a score for each basic belief dimension, computed as the mean of all items within that dimension.

In the second stage, we assessed the reliability of value orientation scales – consisting of groupings of basic belief dimensions. These scales were also found to be highly internally consistent (Table B-1). Value orientation scores were assigned by computing the mean of their respective basic belief domain scale scores.

Table B-1. Reliability results for wildlife basic belief and value orientation dimensions.[1]

Wildlife value orientation *Basic belief dimension* Items comprising the basic belief dimension[2]	Cronbach's alpha
Utilitarian value orientation	.83
Utilitarian belief dimension	.78
Humans should manage fish and wildlife populations so that humans benefit.	
The needs of humans should take priority over fish and wildlife protection.	
It is acceptable for people to kill wildlife if they think it poses a threat to their life.	
It is acceptable for people to kill wildlife if they think it poses a threat to their property.	
It is acceptable to use fish and wildlife in research even if it may harm or kill some animals.	
Fish and wildlife are on earth primarily for people to use.	
Hunting belief dimension	.80
We should strive for a world where there's an abundance of fish and wildlife for hunting and fishing.	
Hunting is cruel and inhumane to the animals.[R]	
Hunting does not respect the lives of animals.[R]	
People who want to hunt should be provided the opportunity to do so.	
Mutualism value orientation	.86
Mutualism belief dimension	.82
We should strive for a world where humans and fish and wildlife can live side by side without fear.	
I view all living things as part of one big family.	
Animals should have rights similar to the rights of humans.	
Wildlife are like my family and I want to protect them.	
Caring belief dimension	.80
I care about animals as much as I do other people.	
It would be more rewarding to me to help animals rather than people.	
I take great comfort in the relationships I have with animals.	
I feel a strong emotional bond with animals.	
I value the sense of companionship I receive from animals.	
Other belief dimensions	
Concern for Safety belief dimension	.82
If I had to walk in the outdoors, I would be worried about encountering a wild animal.	
I have concerns about being around wildlife because they may carry a disease.	
I have concerns about being around wildlife because they may hurt me.	
If I were around wildlife in the outdoors I would be uncomfortable.	
Attraction belief dimension	.63[3]
I am not interested in knowing anything more about fish and wildlife.[R]	
I am really not that interested in fish and wildlife.[R]	

[1]Consistent with requirements of procedures like those performed in Amos 5.0.1 (used later to further verify internal consistency; Arbuckle, 2003), unweighted data were used in reliability analysis. Reliability results using weighted data were not significantly different from what is reported above.
[2]Items were measured on a scale ranging from 1 = "strongly disagree" to 7 = "strongly agree."
[3]Inter-item correlation (Pearson's r). This measure of internal consistency is reported in place of Cronbach's alpha because the belief dimension scale consists of fewer than three items (Nunnally & Bernstein, 1994).
[R]Item reverse-coded prior to analysis.

References

Dillman, D. A. (2000). *Mail and internet surveys: The Tailored Design Method*, 2nd Edition. New York, NY: John Wiley & Sons.

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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.

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

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.***

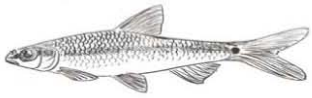
(PLEASE TELL US HOW YOU FEEL ABOUT THE ACTIONS LISTED BELOW FOR EACH SITUATION)

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: Spottail Shiner** 		➢ 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: Paddlefish**

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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: Sichuan Pheasant** 		➢ This species naturally occurs in the area. ➢ Common in the area, and numbers are stable. ➢ Not a hunted/fished species. **Example: American Robin**

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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: Mountain Plover** 		➢ 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: Hungarian Partridge**

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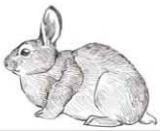
4. Which should the manager spend funds on? *(Check one ☑)*

❒ CHOICE A	⇔ *OR*	❒ CHOICE B
➢ This species naturally occurs in the area. ➢ Common in the area, and numbers are stable. ➢ Hunted/fished species. **Example: Cottontail Rabbit** 		➢ 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: Eurasian Collared Dove**

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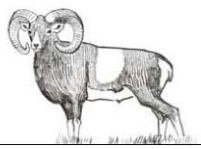
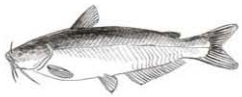
5. Which should the manager spend funds on? *(Check one ☑)*

❒ 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: Canvasback** 		➢ 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: Mouflon Sheep** 

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: Mosquitofish** 		➢ 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: Blue Catfish** 

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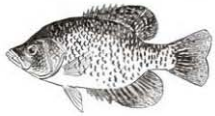
7. Which should the manager spend funds on? *(Check one ☑)*

❒ 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: Least Chipmunk** 		➢ 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: Black Crappie** 

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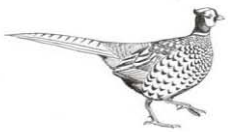
8. Which should the manager spend funds on? *(Check one ☑)*

❒ 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: Ring-necked Pheasant** 		➢ 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: Mountain Bluebird**

Section III.

Next, we would like your input on fish and wildlife management in Wyoming. The information you provide will help the Wyoming Game and Fish Department (WGFD) understand how people from Wyoming feel about these issues and improve their ability to manage fish and wildlife populations and habitats in Wyoming. ***Please read the description for each situation below and respond to the statements that follow. Circle one number for each statement.***

SITUATION 1. In order to provide a flexible management system for Wyoming's fish and wildlife, the WGFD must be adequately funded and staffed. The current sources of funding do not generate sufficient money to pay for all Wyoming's fish and wildlife management needs. In the future, new sources of money must be found if the WGFD is going to be able to adequately address fish and wildlife issues. We are interested in how acceptable or unacceptable you think it would be for the Wyoming Legislature to collect additional taxes (such as sales taxes or gasoline taxes) from the people of Wyoming to pay for the following programs.

Is it unacceptable or acceptable to collect additional taxes for…	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
…new management activities for fish and wildlife that are hunted or fished (for example, elk, ducks, trout)?	1	2	3	4	5	6	7
…new management activities for fish and wildlife that people don't usually hunt or fish (for example: threatened or endangered species, songbirds, amphibians, reptiles)?	1	2	3	4	5	6	7
…buying private land from willing landowners to conserve habitats for fish and wildlife?	1	2	3	4	5	6	7
…paying private landowners to NOT develop their property in order to conserve habitats for fish and wildlife?	1	2	3	4	5	6	7
…buying water rights from willing landowners to conserve habitats for fish and wildlife?	1	2	3	4	5	6	7
…providing cash incentives to private landowners who conserve habitats for fish and wildlife?	1	2	3	4	5	6	7
…funding tax relief for private landowners as an incentive to conserve habitats for fish and wildlife?	1	2	3	4	5	6	7
…creating rural zoning regulations, that would be enforced by the counties, to conserve fish and wildlife habitats?	1	2	3	4	5	6	7
…expanding information and education activities to keep people informed about fish and wildlife issues in Wyoming?	1	2	3	4	5	6	7

SITUATION 2. Off-Road vehicles (ORVs) are used for recreational and other purposes in Wyoming and have the potential to impact fish and wildlife habitats. An ORV is defined as a motorized vehicle designed for use on various types of **off-road** terrain. ORVs include all-terrain vehicles (ATVs). They do **NOT** include snow machines. Some people would like to see more effective enforcement of existing regulations for ORV use on both state and federal lands in Wyoming. This enforcement could involve the WGFD or other government agencies. We are interested in your opinions about ORVs.

Do you disagree or agree that…	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neither**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
When on public lands, the majority of ORV operators stay on authorized trails (those marked with signs).	1	2	3	4	5	6	7
Riding ORVs off trails is harmful to fish and wildlife habitat.	1	2	3	4	5	6	7
ORV use causes conflicts with people participating in non-motorized activities (for example, hunting or hiking).	1	2	3	4	5	6	7
Most complaints about ORVs are from people who want to restrict others' use of public lands.	1	2	3	4	5	6	7
Rules related to ORV use on public lands are sufficiently enforced.	1	2	3	4	5	6	7
The WGFD should help enforce existing ORV regulations on lands owned by the state.	1	2	3	4	5	6	7
The WGFD should help enforce existing ORV regulations on public lands owned by the federal government (for example, BLM or National Forest Service).	1	2	3	4	5	6	7
The WGFD should do more to inform and educate ORV operators on the potential effects ORVs can have on fish and wildlife habitats.	1	2	3	4	5	6	7

Is it unacceptable or acceptable for government agencies to…	**Highly Unacceptable**	**Moderately Unacceptable**	**Slightly Unacceptable**	**Neither**	**Slightly Acceptable**	**Moderately Acceptable**	**Highly Acceptable**
...limit the amount of ORV use on public lands where it harms fish and wildlife?	1	2	3	4	5	6	7
... limit the amount of ORV use on public lands where it causes conflicts with other recreationists (for example, hunters and people who fish)?	1	2	3	4	5	6	7
... NOT restrict ORV use under any circumstances?	1	2	3	4	5	6	7

1. The WGFD is interested in your opinions about its activities and performance. Please indicate how strongly you either agree or disagree with the following statements. *Circle one number for each statement.*

Do you disagree or agree that…	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
The WGFD represents my views on how fish and wildlife should be managed in Wyoming.	1	2	3	4	5	6	7
I trust the WGFD to make acceptable decisions about fish and wildlife management in Wyoming.	1	2	3	4	5	6	7
The WGFD effectively manages Wyoming's fish and wildlife.	1	2	3	4	5	6	7
The WGFD provides me with accurate information on fish and wildlife issues in Wyoming.	1	2	3	4	5	6	7
The WGFD provides me with adequate amounts of information on fish and wildlife issues in Wyoming.	1	2	3	4	5	6	7
The WGFD provides information on fish and wildlife issues in a timely manner.	1	2	3	4	5	6	7
The WGFD should be a strong advocate for fish and wildlife, even if that means opposing development in some areas.	1	2	3	4	5	6	7
The WGFD should encourage more young people to hunt and fish.	1	2	3	4	5	6	7
Overall, Wyoming's fish and wildlife populations are healthy.	1	2	3	4	5	6	7
Overall, Wyoming's fish and wildlife habitats (lands that fish and wildlife depend upon) are healthy.	1	2	3	4	5	6	7

2. The WGFD works to provide Wyoming residents with information about Wyoming's fish and wildlife, as well as provide opportunities for people to participate in fish and wildlife decision-making.

During the last year (12 months), have you…? *Check (☑) all that apply.*

- ❒ Spoken with a WGFD employee while recreating outdoors (for example, hunting, fishing, boating)
- ❒ Called the WGFD
- ❒ Sent an email to the WGFD
- ❒ Submitted written comments on a WGFD management plan
- ❒ Watched a WGFD news story on the local television station
- ❒ Attended a WGFD public meeting
- ❒ Attended a Wyoming Game and Fish Commission meeting
- ❒ Attended a WGFD educational program (for example, Becoming an Outdoors Woman, Hunter Education, OREO)
- ❒ Attended a WGFD presentation (for example, Living in Bear Country)
- ❒ Attended the Wyoming Hunting and Fishing Heritage Exposition
- ❒ Read the WGFD Magazine *Wyoming Wildlife*
- ❒ Read the WGFD newspaper *Wyoming Wildlife News*
- ❒ Read the WGFD children's publication *Wild Times*
- ❒ Other (please describe)_____
- ❒ I did not do any of the above this past year.

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 Wyoming? (*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.*) _____

13. Your state fish and wildlife agency is periodically interested in gathering input from the public on a variety of fish and wildlife issues. Toward this end, we would like to know if you would be interested in providing input in the future by way of email. If so, and if you have an email address, **please print your name and email on a separate sheet of paper** and return it along with your completed survey. Based upon how you respond to a subset of questions on this survey, your state fish and wildlife agency may decide to contact you for input.

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.