Executive Summary
Wildlife and Environmental Attitudes of South Dakota Citizens – 2012

This survey of South Dakota citizens' wildlife and environmental attitudes was conducted in 2012 in conjunction with South Dakota Game, Fish and Parks' (SDGFP) revision of the South Dakota Wildlife Action Plan (WAP). The WAP was first approved in 2006 and SDGFP made a commitment to review and revise the plan five years following its approval. This survey, in part, addresses the eighth essential element in the WAP, *'each state's provisions to provide public participation in the development, revisions, and implementation of its strategy'*. The purpose of the survey was to identify trends as well as mapping current environmental attitudes, providing a better understanding of South Dakota citizens.

The mail survey questionnaire (11 by 8½ booklets) was developed with input from SDGFP staff and survey results were analyzed by South Dakota State University. Two versions of the questionnaire were developed to maximize the number of questions asked while minimizing the overall length of the survey. Initial sample size was 2,400 randomly selected South Dakota citizens (94 addresses were undeliverable) and 1,138 usable questionnaires (49%) were returned. A total of 45 questions measured an array of wildlife and environmental attitudes and 12 items measured people's Wildlife Value Orientations, plus questions measured people's participation in hunting, fishing, and wildlife viewing and a few demographic variables.

Results

In general, most South Dakota residents have positive attitudes towards wildlife and are supportive of efforts to maintain quality habitat for wildlife. The importance of wildlife is best summarized by the results showing that 80% of South Dakota residents reported fish and wildlife contributes to a high "quality of life" and only about 1% reporting that fish and wildlife detracts from their "quality of life" in South Dakota. However, there can be some controversy when it comes to issues involving specific wildlife species. For example, this survey measured a greater level of disagreement regarding issues involving specific wildlife species, such as, prairie dogs, mountain lions, rattlesnakes, bats, river otters, and ospreys.

Controversy surrounding some species of wildlife generally stems from different opinions on how wildlife should be viewed/treated/managed. These differences are best

summarized by the Wildlife Value Orientation (WVO) scale, which measures a general core value people have towards wildlife. The WVO scale measures peoples' wildlife values along a continuum of utilitarian values at one end and mutualist values at the other end and classifies people into four groups (Utilitarian, Mutualist, Pluralist, and Distanced) (Figure 1). Pluralists can hold both value orientations and their attitude towards a specific issue is dependent upon the given situation, while people with a distanced orientation do not hold either orientation. Utilitarians value wildlife primarily for their use or benefit to humans while mutualists view all wildlife as deserving of rights and caring. Such contrasting viewpoints can create controversial issues involving a range of wildlife species and management actions. The potential for conflict is also supported by the split in peoples' attitudes regarding the degree to which wildlife management decisions should favor game animals/fish or rare wildlife species. In general, most South Dakota residents (54%) favored a "balanced approach" on wildlife management decisions regarding game animals/fish versus rare wildlife species with the remaining residents about evenly split between favoring game/fish and rare wildlife species.

The value of the WVO scale lies in its potential to predict how people may respond to various wildlife issues. Utilitarians will generally be supportive of actions that allow use of wildlife classified as game and control of species deemed as harmful to humans, their property, or valued game species. Mutualists will generally be opposed to any management actions that are harmful to any wildlife species. Thus, the WVO of South Dakota residents measured in this survey can be used to estimate attitudes towards wildlife issues not measured by this survey. South Dakotan' WVO have not change much since last measured in 2004 (Figure 2) and most of the wildlife and environmental attitudes also have remained relatively stable over the past decade.

Fishing, Hunting and Wildlife Viewing. Most South Dakotans have fished (87%) or hunted (60%) at least sometime in their lives, and almost half (49%) reported they have taken trips sometime in their lifetime for which fish and wildlife viewing was the primary purpose of the trip. Overall, 91% of South Dakota residents have participated in some combination of these activities (Figure 3). Participation in one or more of these activities increased peoples' appreciation for wildlife and also increased the likelihood of holding stronger opinions on various wildlife management issues.

UTILITARIAN (53.6%). Believe that wildlife should be used and managed primarily for human benefit. Individuals with a strong utilitarian orientation are more likely to prioritize human well-being over wildlife in their attitudes and behaviors. They are also more likely to find justification for treatment of wildlife in utilitarian terms and to rate actions that result in death or harm to wildlife as being acceptable.

MUTUALIST (15.3%). View wildlife as capable of living in relationships of trust with humans, as if part of an extended family, and deserving of rights and caring. Those with a strong mutualism orientation are less likely to support actions resulting in death or harm to wildlife, more likely to engage in welfare-enhancing behaviors for individual wildlife (e.g., feeding), and more likely to view wildlife in human terms (e.g., Bambi).

PLURALIST (20.9%). Hold both a mutualism and a utilitarian value orientation toward wildlife. Which of the orientations plays a role is dependent upon the given situation. For certain issues, Pluralists are likely to respond in a manner similar to that of Utilitarians, whereas for other issues they may behave more like Mutualists.

DISTANCED (10.2%). Do not hold either a utilitarian or a mutualism orientation. As their label suggests, they tend to be less interested in wildlife and wildlife related issues. The Distanced type is also more likely than the other value types to express fear, or concern for safety, while in the outdoors due to the possibility of negative encounters with wildlife (e.g., risk of being attacked or contracting a disease).

Figure 1. Descriptions of the four wildlife value orientations (measured in 2012 for SD residents).

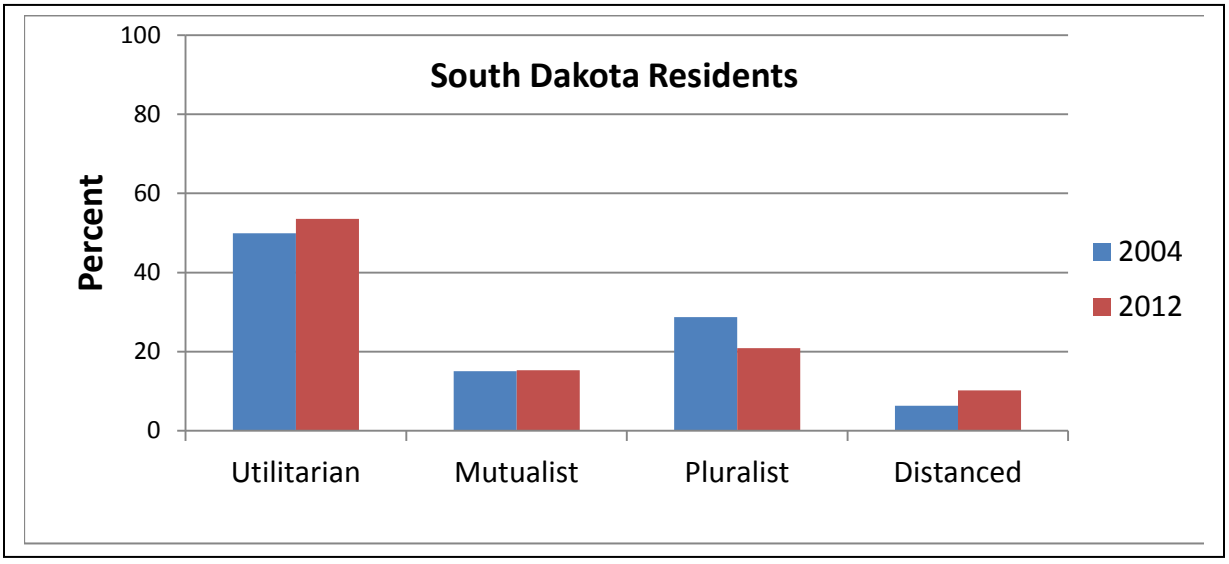

Figure 2. South Dakota residents' wildlife value orientations measured in 2004 and 2012.

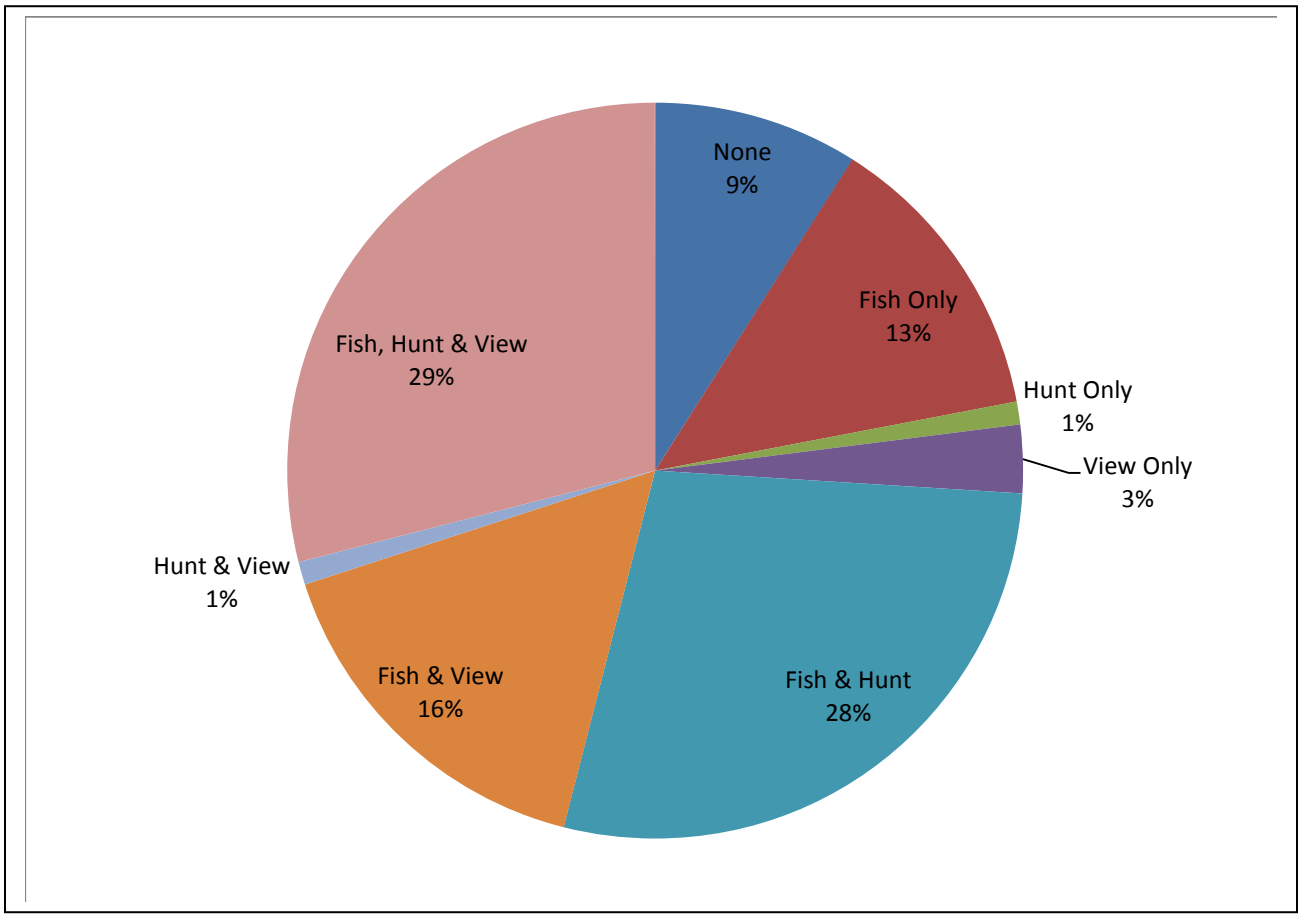

Figure 3. Participation in fishing, hunting and/or wildlife viewing trips by South Dakotans sometime during their lifetime (measured in 2012).

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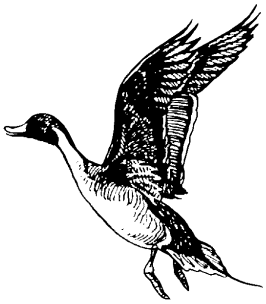
WILDLIFE VALUE ORIENTATIONS

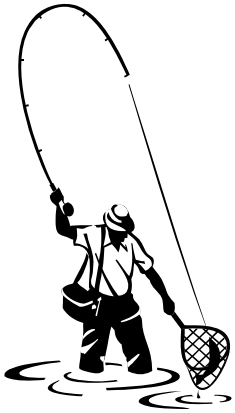
OF SOUTH DAKOTA CITIZENS: A 2012 SURVEY

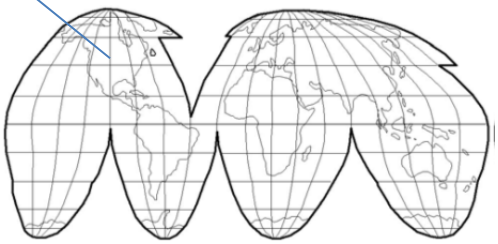
Progress Report (2-2012)

prepared for

South Dakota Game, Fish, and Parks
Division of Wildlife
523 E. Capitol
Pierre, SD 57501







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This progress report was produced for the South Dakota Game, Fish, and Parks Department as part of their revision of the South Dakota Wildlife Action Plan. This progress report provides analyses of the relationship between peoples' wildlife value orientation and various specific wildlife and environmental attitudes. This work was funded in part by federal funding through State Wildlife Grant T-48-R-1, Study 2457, administered through the U.S. Fish and Wildlife Service in cooperation with the South Dakota Department of Game, Fish and Parks.

Suggested Citation

Gigliotti, L.M. 2012. Wildlife Value Orientations of South Dakota citizens: A 2012 survey. Progress Report: 2-2012. U.S. Geological Survey, South Dakota Cooperative Fish and Wildlife Research Unit. Department of Natural Resource Management, South Dakota State University, Brookings, S.D.

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Wildlife Value Orientations of South Dakota Citizens: A 2012 Survey

Progress Report (2-2012)

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Overall Project Title: Revision of South Dakota Comprehensive Wildlife Conservation Plan

The South Dakota Comprehensive Wildlife Conservation Plan, hereafter called the South Dakota Wildlife Action Plan (WAP), received approval from the National Advisory Acceptance Team on May 11, 2006, indicating that each of the 8 required elements was satisfactorily addressed. Although revision at least every 10 years is required, SD Game, Fish and Parks (SDGFP) committed to review and revise the plan 5 years following its approval. A revised plan is needed for SDGFP to continue to be eligible to receive State Wildlife Grants (SWG) allocations.

Project Title: Understanding South Dakota Citizens – Wildlife Values

Human Dimensions Component: The human dimensions component addresses the eighth essential element in the WAP, '*each state's provisions to provide the necessary public participation in the development, revisions, and implementation of its strategy*.' The South Dakota WAP included a summary of a number of public opinion studies measuring wildlife values and other opinions concerning various environmental issues. This project conducted a statewide survey (using a traditional mail survey and a special e-mail panel of South Dakota citizens) measuring the wildlife value orientations of citizens and opinions related to various wildlife and environmental issues relative to South Dakota. The mail survey will be used to identify trends as well as mapping current environmental attitudes, providing a better understanding of South Dakota citizens.

Project Objectives:

(1) Measure South Dakota Citizens' wildlife value orientations
(2) Determine the relationship between wildlife value orientations and specific attitudes towards various wildlife & environmental issues
(3) Measure trends in wildlife and environmental attitudes
(4) Compare results from the two methods of data collection (e-mail panel vs. mail survey)

Progress Report 1-2012 provided a basic description of the mail survey results. This report (Progress Report 2-2012) provides a more detailed analysis of the Wildlife Value Orientations scale and its value in predicting a range of wildlife and environmental attitudes of South Dakota citizens.

Methods

The mail survey instruments (11 by 8½ booklets) were developed with input from the South Dakota Game, Fish and Parks (SDGFP) staff. Two versions of the questionnaires were developed to both maximize the number of questions that were asked while minimizing the overall length of the survey (Appendix A). Both survey instruments begin with the same set of six general questions about fish and wildlife management in South Dakota (page 2). Questions 1 through 5 have been used in previous surveys conducted by SDGFP. Both survey instruments contain the same set of 14 questions used to measure respondents Wildlife Value Orientation (WVO) (page 3).

Pages 4 and 5 were different for the two questionnaires. Survey Version 1 had five questions related to prairie ecosystems, five questions related to bats, four questions related to mountain lions, and five miscellaneous questions about some specific wildlife management issues. Survey Version 2 had five questions related to climate change, four questions related to energy development in South Dakota, six questions related to management of rare non-game species versus game animals/fish, and questions measuring the importance of five functions of wetlands. Pages 6 and 7 of both survey instruments measured hunting, fishing and wildlife viewing participation and selected demographic variables were measured on page 8.

Two lists of randomly selected names and addresses of South Dakota residents (N=1,200 each) aged 18 and older were purchased from Survey Sampling International (SSI). Questionnaires were mailed early January 2012 along with a cover letter and full-sized, postage-paid business return envelope (Appendix A). A post-card reminder was mailed mid-February and a second mailing of the questionnaire, return envelope and different cover letter were mailed in early March (Appendix A).

Wildlife Value Orientations Scale. The Wildlife Value Orientations (WVO) scale, developed by Teel and Manfredo (2010), measures domination and mutualism orientations using composite scales consisting of items representing basic beliefs about wildlife and wildlife management (Appendix B). The domination orientation consists of two belief dimensions: hunting and use of wildlife; and the mutualism orientation was also described by two belief dimensions: caring and social affiliation. Four types of people were classified based on how they scored on each orientation (i.e., WVO types: high-low, low-high, high-high, and low-low) (Figures 1 and 2).

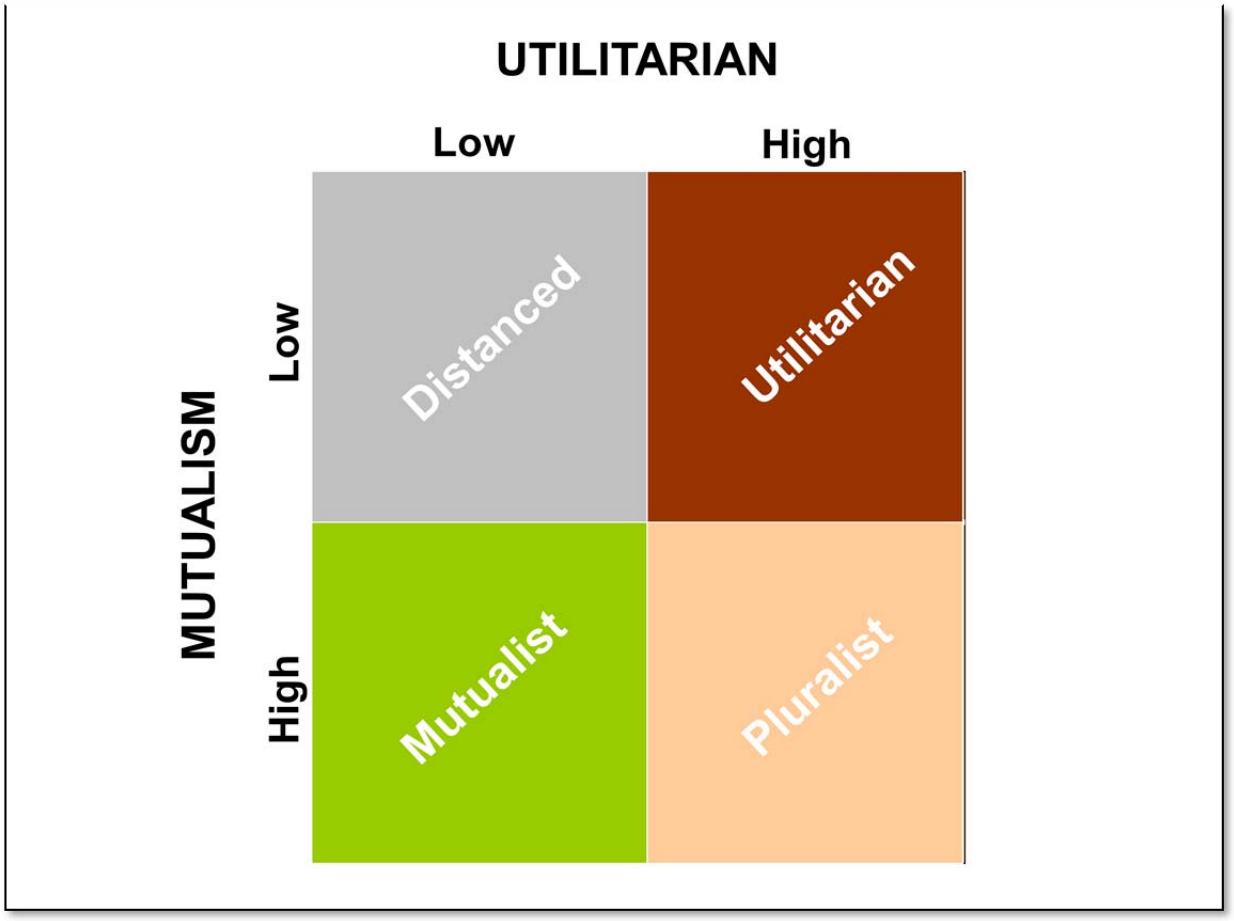
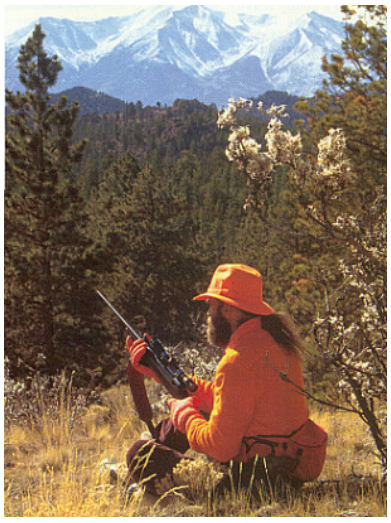


Figure 1. The two wildlife value orientations and the four types of people based on their beliefs about wildlife and wildlife management.

Utilitarian



Ideal World

- **Wildlife exists for human use & enjoyment**
- **Abundance of wildlife for hunting & fishing**

Principles

- **Manage wildlife so that humans benefit**
- **Needs of humans take priority over wildlife**

Ideology

Domination/Human Mastery

Mutualism

Ideal World

- **Humans and wildlife live side by side without fear**
- **All living things part of one big family**
- **Emotional bonding and companionship**
- **No animal suffering**

Principles

- **Animals should have rights like humans**
- **Take care of wildlife**
- **Prevent cruelty to animals**

Ideology

Egalitarianism

Figure 2. General descriptions of the two wildlife value orientations (utilitarian & mutualism).

Results

The return rate (49%) was relatively good for a general public survey (Figure 3). The mail survey under-sampled females and younger age groups (ages: 18-34 and 35-49). A combination of sex-age weights were applied to the mail survey data to adjust for a potential sex-age bias for reporting of the general data representing South Dakota citizens (Progress Report 1-2012) but weighted data were not used for the analyses describing the relationships with the Wildlife Value Orientations scale (except for the frequencies presented in Section 1).

Parameter	Survey Version 1	Survey Version 2	Combined
Initial Sample Size	1,200	1,200	2,400
Undeliverable	50	44	94
Undeliverable Rate	4.2%	3.7%	3.9%
Final Sample Size	1,150	1,156	2,306
Blank Returns	47	50	97
Usable Returns	574	564	1,138
Usable Return Rate	49.9%	48.9%	49.3%

Figure 3. Return rates for the mail survey of South Dakota residents conducted in 2012.

Section 1. *General Description of the Wildlife Value Orientations (WVO) of South Dakota Citizens.* Wildlife value orientations are used to classify South Dakota residents in four groups based on their basic beliefs about wildlife and wildlife management (Figure 4). South Dakota residents' WVO measured in 2004 (Teel, et al., 2005) is relatively similar to their WVO measured in 2012 (Table 1 and Figure 5). Black Hills residents' WVO measured in 2008 (Gigliotti, et al., 2009) is relatively similar to their WVO measured in 2012 (Table 1 and Figure 6). Teel, et al. (2005) measured the WVO for the 19 member states of the Western Association of Fish and Wildlife Agencies (WAFWA). South Dakota had the second highest percent (49.9%) of people with a utilitarian orientation and the lowest percent of people classified as mutualist (15.1%) (Figures 7 and 8).

UTILITARIAN (53.6%). Believe that wildlife should be used and managed primarily for human benefit. Individuals with a strong utilitarian orientation are more likely to prioritize human well-being over wildlife in their attitudes and behaviors. They are also more likely to find justification for treatment of wildlife in utilitarian terms and to rate actions that result in death or harm to wildlife as being acceptable.

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Figure 4. Descriptions of the four wildlife value orientations (measured in 2012 for SD residents).

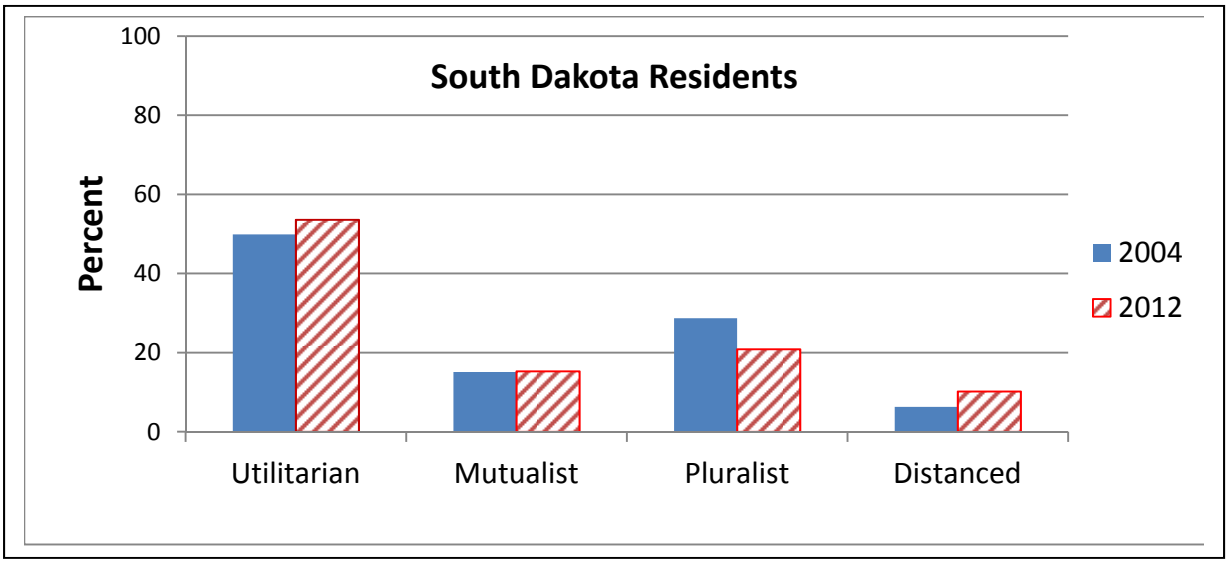


Figure 5. South Dakota residents' wildlife value orientations measured in 2004 and 2012.

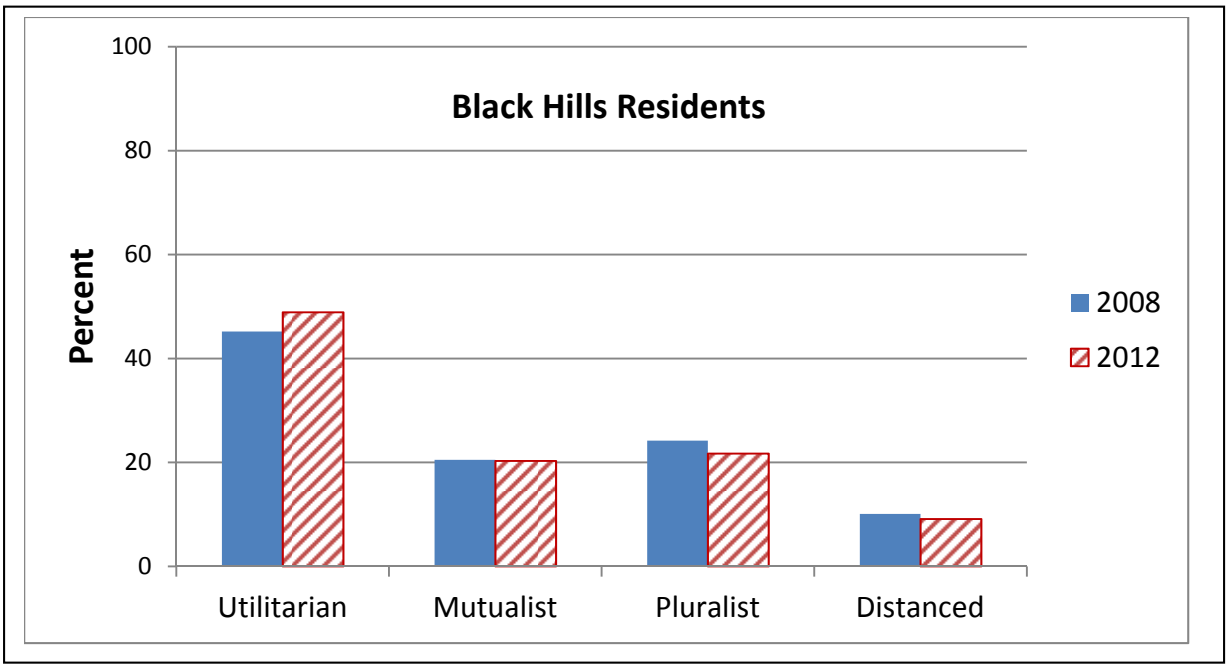


Figure 6. Black Hills residents' wildlife value orientations measured in 2008 and 2012.

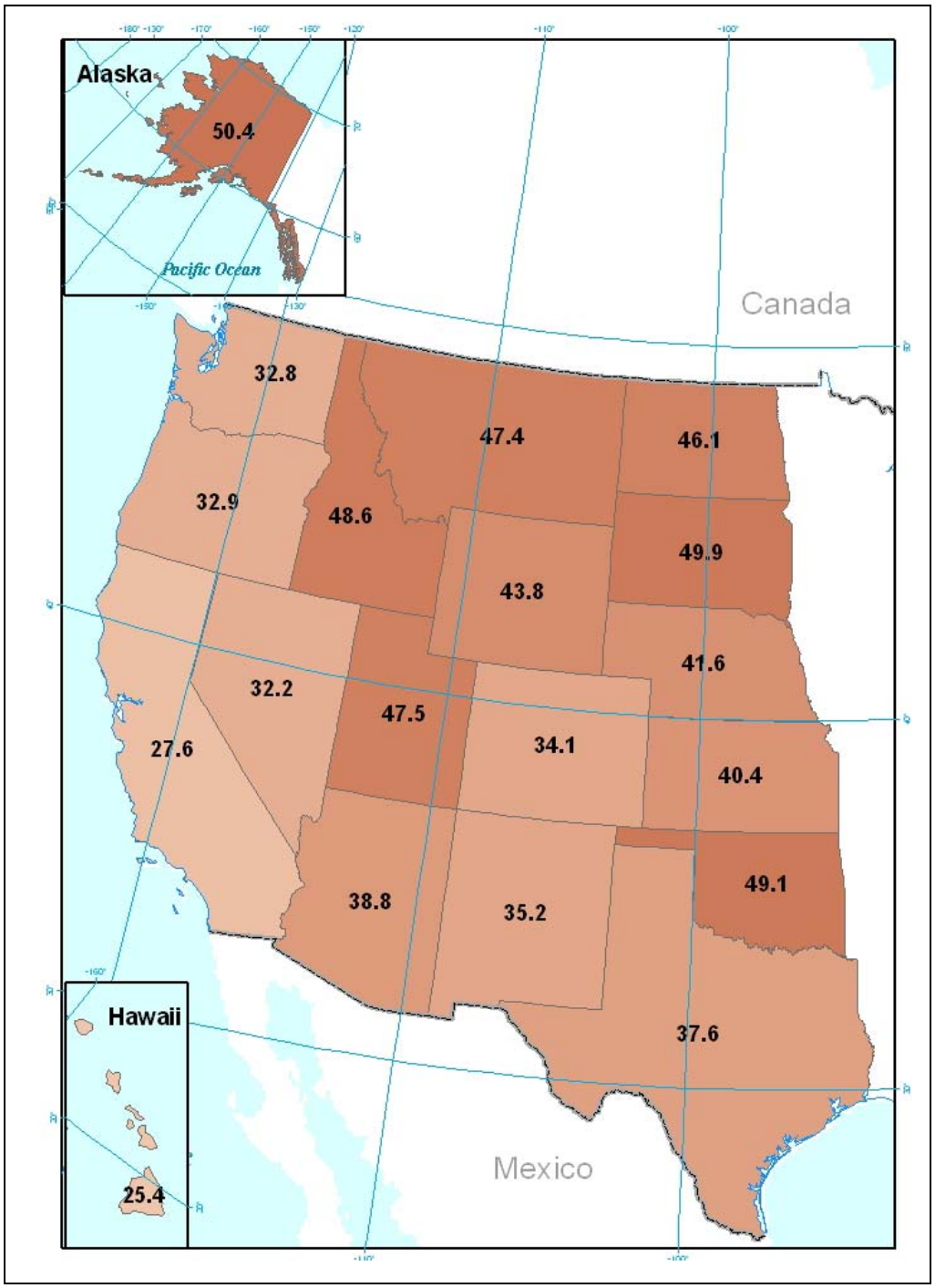


Figure 7. Percent of people classified as utilitarian for the each of the 19 member states in the Western Association of Fish and Wildlife Agencies (Teel, et al., 2005; p. 11).

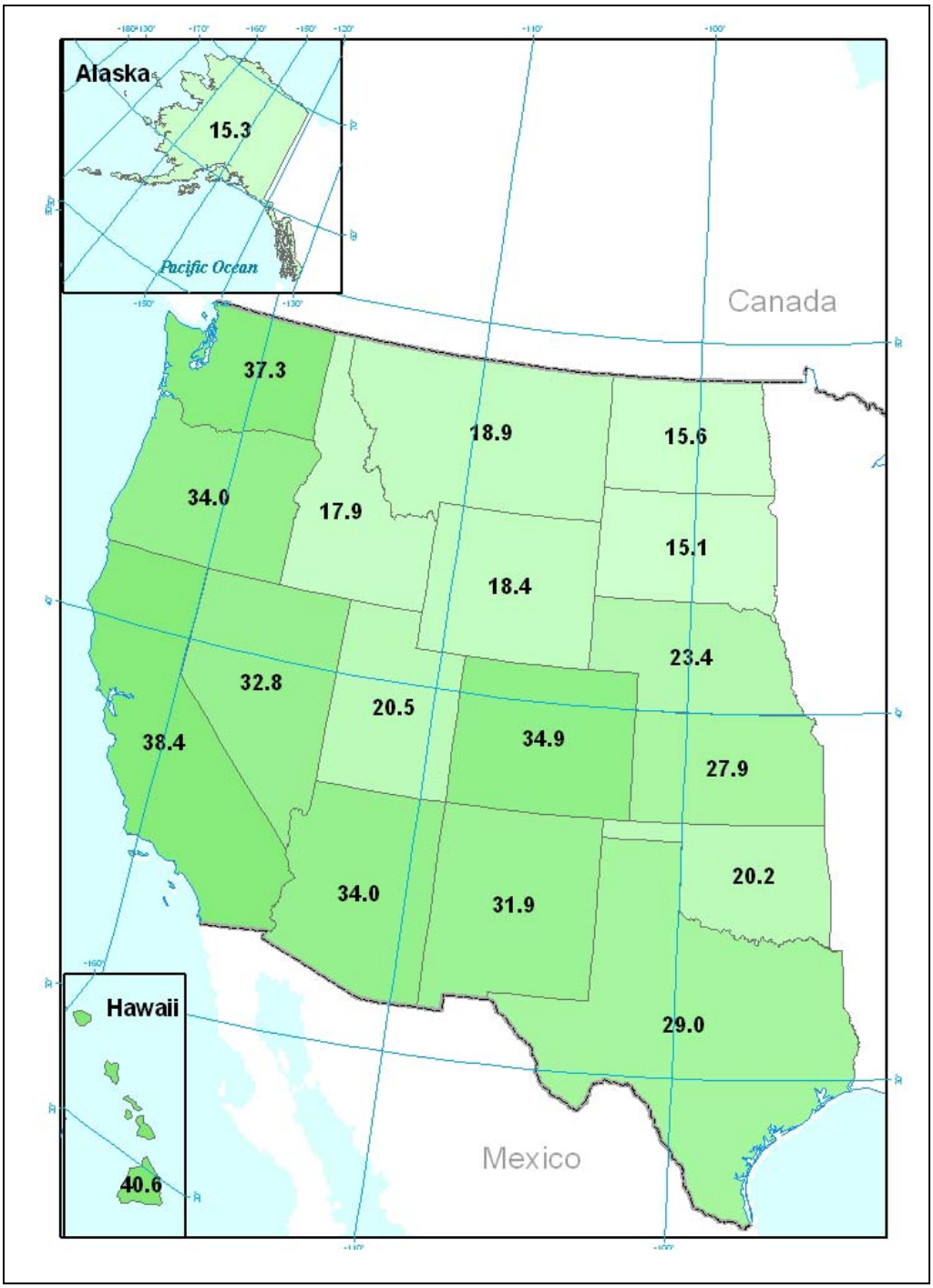


Figure 8. Percent of people classified as mutualist for the each of the 19 member states in the Western Association of Fish and Wildlife Agencies (Teel, et al., 2005; p. 12).

Table 1. Wildlife Value Orientations of South Dakota citizens measured in 2004 and 2012 and Black Hills residents measured in 2008 and 2012.

Wildlife Value Orientation	S.D. Citizens 2004 (N=751)	S.D. Citizens 2012 (N=1,053)	Black Hills 2008 (N=4,544)	Black Hills 2012 (N=220)
Utilitarian	49.9%	53.6%	45.2%	48.9%
Mutualist	15.1%	15.3%	20.5%	20.3%
Pluralist	28.7%	20.9%	24.2%	21.7%
Distanced	6.3%	10.2%	10.1%	9.1%

Section 2. *Utilitarian and Mutualism Scales.* The utilitarian and mutualism scales ranged from values of 1 to 7. Most survey respondents scored on the high end of the utilitarian scale (Figure 9) and in the medium range of the mutualism scale (Figure 10) (Table 2). The utilitarian and mutualism scales were significantly correlated with most of the wildlife and environmental attitudes held by South Dakota citizens. The utilitarian scale was significantly correlated (.05 level) with 32 of the 45 (71%) wildlife and environmental attitudes measured in this survey and the mutualism scale was significantly correlated with 39 of the 45 (87%) wildlife and environmental attitudes measured in this survey (Tables 3 and 4).

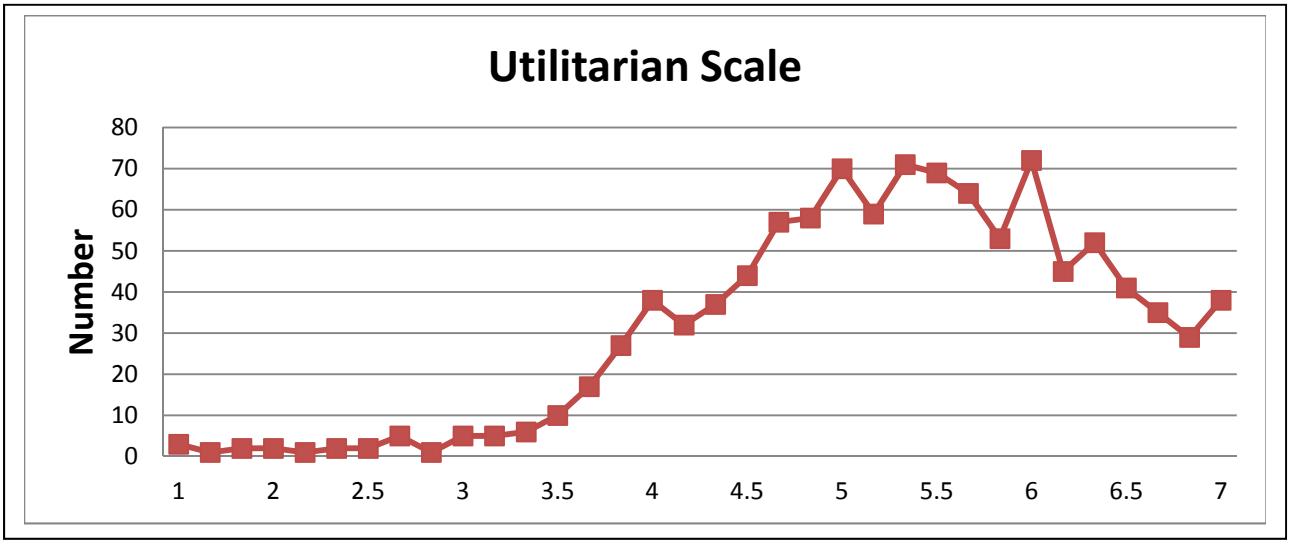


Figure 9. Frequency distribution of the utilitarian scale for the South Dakota citizen sample *(see Table 2)*.

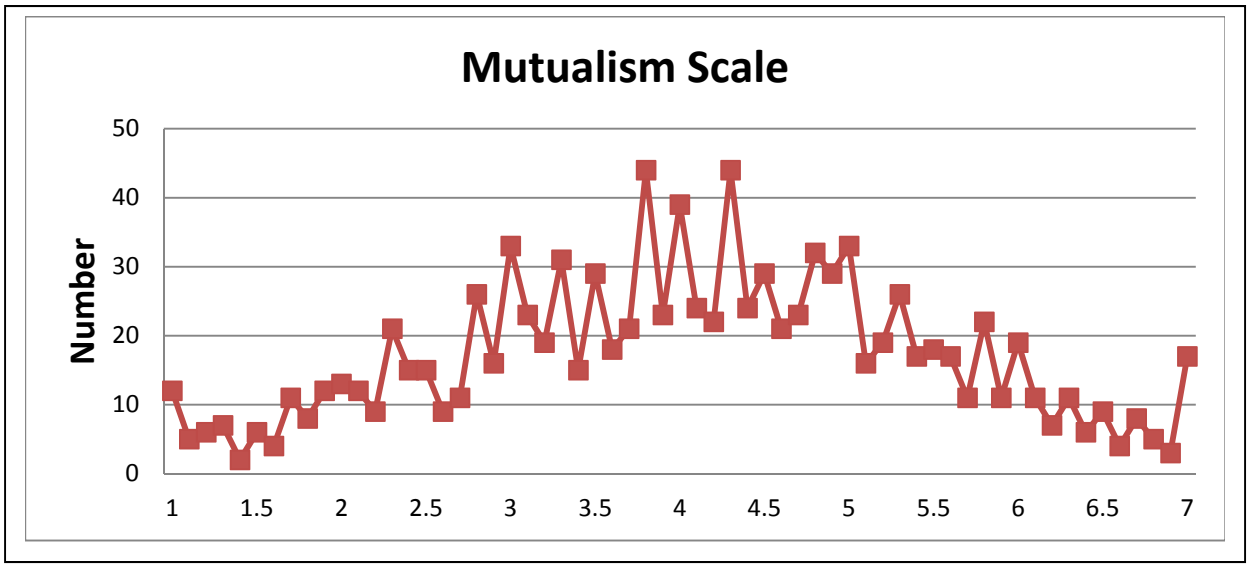


Figure 10. Frequency distribution of the mutualism scale for the South Dakota citizen sample *(see Table 2)*

Table 2. Statistics for the utilitarian and mutualism scales (*see Figures 9 and 10*).

Statistic	**Utilitarian Scale**	**Mutualism Scale**
Mean	5.29	4.08
95% Confidence Interval	5.23 – 5.35	3.99 – 4.16
Standard Deviation	1.009	1.375
Variance	1.018	1.890
Median	5.33	4.08
Skewness	-0.600	-0.068
Kurtosis	0.728	-0.529
Number	1,053	1,053

Table 3. Pearson correlations between wildlife and environmental attitudes held by South Dakota citizens and their score on the utilitarian scale.

Variables	Pearson Correlation	*p*-value
General Questions		
How important is it to you that South Dakota conserves/protects as much fish and wildlife as possible where appropriate?	-.049	.116
How important do you think healthy fish and wildlife populations are to the economy and well-being of South Dakota residents?	.007	.830
How strongly do you disagree or agree with the following statement? The diversity of fish and wildlife in an area is a sign of the quality of the natural environment.	-.028	.358
In general, how would you rate Game, Fish and Parks' (GFP) efforts to conserve and protect the diversity (variety) of fish and wildlife in South Dakota?	.164	<.001
Compared to other places where you could consider living, how would you rate life in South Dakota?	.161	<.001
In general, how much does fish and wildlife detract or contribute to a high "quality of life" for you?	.085	.007
Prairie Ecosystems		
Maintaining a native prairie ecosystem in South Dakota is important to me.	-.008	.851
Prairie dogs are an important component of native ecosystems and need some degree of protection.	-.251	<.001
Prairie dogs are a destructive agricultural pest that should be eliminated from South Dakota.	.170	<.001
I support using some money from hunting license fees for projects designed to conserve and enhance native prairie ecosystems and their associated wildlife.	-.090	.041
I am concerned about the accelerated conversion of native prairie habitat.	-.048	.277
Bats in South Dakota		
Maintaining healthy populations and diversity of bat species in South Dakota is important to me.	-.109	.014
Bats pose an unacceptable health risk to people.	.153	<.001
Bats are important and should have some legal protection from harm.	-.193	<.001
I would enjoy having bats living and feeding near my house.	-.051	.250
I am concerned about the impact of diseases, such as white nose syndrome, on bat populations.	-.063	.153

Table 3 continued on next page.

Table 3 - Continued. Pearson correlations between wildlife and environmental attitudes held by South Dakota citizens and their score on the utilitarian scale.

Variables	Pearson Correlation	*p*-value
Mountain Lions in South Dakota		
Having a healthy, viable population of mountain lions in S.D. is important to me.	-.140	.001
I am concerned about mountain lions killing too many game (hunted) animals.	.224	<.001
Having any mountain lions in South Dakota is too dangerous a risk to people.	.083	.058
Do you oppose or favor a regulated mountain lion season in South Dakota?	.394	<.001
Wildlife Management Issues: Rare Non-game Species vs. Game Animals/Fish		
I would be concerned about River Otters taking too many game fish if their populations were to increase.	.162	<.001
I would support releasing River Otters into suitable habitats in South Dakota.	-.182	<.001
I support efforts by GFP to increase Osprey numbers in South Dakota.	-.139	.001
I would be concerned about Osprey taking too many game fish if their populations were to increase.	.103	.018
The Missouri River should not be managed for threatened or endangered species, such as terns and plovers, if it would in any way decrease game fish populations.	.218	<.001
In general, should wildlife management decisions favor game animals/fish OR rare wildlife species.	-.268	<.001
Wildlife Management in South Dakota: Miscellaneous		
I would support requirements to use non-toxic bullets for shooting prairie dogs to reduce lead poisoning of eagles, hawks and other wildlife.	-.223	<.001
I am concerned about feral (wild), free ranging house cats killing native birds.	.031	.479
I would support regulations to control commercial harvest and unregulated take of turtles, lizards, snakes, frogs and toads if information showed that their populations were declining to unacceptable levels.	-.165	<.001
Rattlesnakes are an important component of South Dakota's assemblage of wildlife and should not be killed indiscriminately.	-.204	<.001
In general, efforts should be made to reduce predator numbers to help increase the numbers of game animals for hunters.	.360	<.001

Table 3 continued on next page.

Table 3 - Continued. Pearson correlations between wildlife and environmental attitudes held by South Dakota citizens and their score on the utilitarian scale.

Variables	Pearson Correlation	*p*-value
Wildlife Management in South Dakota: Miscellaneous -- Continued		
Climate Change		
I believe that climate change is currently affecting South Dakota.	-.276	<.001
I believe that climate change is a serious threat that requires changes in current life styles.	-.330	<.001
I support regulations to reduce carbon emissions to address climate change.	-.306	<.001
I don't believe that climate change will result in any negative impacts on wildlife populations in South Dakota	.228	<.001
Beliefs concerning the causes of climate change generally range from totally natural causes to totally human activities or some approximate combination of both. On this scale of 1 (all climate change is due to natural causes to 7 (all climate change is from human activities), please indicate your personal belief about the causes of climate change.	-.297	<.001
Energy Development in South Dakota		
Wildlife impacts and grassland habitat loss should be considered when increasing biofuel production.	-.160	<.001
I support efforts to increase ethanol production in South Dakota.	.070	.108
Negative impacts on wildlife should be considered when developing wind energy in South Dakota.	-.178	<.001
I think people worry too much about possible environmental problems associated with pipelines for transporting oil across South Dakota.	.286	<.001
Wetlands preform many functions: How important is…		
… reducing flood events.	.030	.496
… providing wildlife habitat.	-.006	.887
… providing recreational opportunities.	.154	<.001
… providing clean water.	-.011	.795
… providing economic opportunity.	.164	<.001

Table 4. Pearson correlations between wildlife and environmental attitudes held by South Dakota citizens and their score on the mutualism scale.

Variables	Pearson Correlation	*p*-value
General Questions		
How important is it to you that South Dakota conserves/protects as much fish and wildlife as possible where appropriate?	.219	<.001
How important do you think healthy fish and wildlife populations are to the economy and well-being of South Dakota residents?	.193	<.001
How strongly do you disagree or agree with the following statement? The diversity of fish and wildlife in an area is a sign of the quality of the natural environment.	.221	<.001
In general, how would you rate Game, Fish and Parks' (GFP) efforts to conserve and protect the diversity (variety) of fish and wildlife in South Dakota?	-.140	<.001
Compared to other places where you could consider living, how would you rate life in South Dakota?	-.048	.128
In general, how much does fish and wildlife detract or contribute to a high "quality of life" for you?	.177	<.001
Prairie Ecosystems		
Maintaining a native prairie ecosystem in South Dakota is important to me.	.310	<.001
Prairie dogs are an important component of native ecosystems and need some degree of protection.	.397	<.001
Prairie dogs are a destructive agricultural pest that should be eliminated from South Dakota.	-.275	<.001
I support using some money from hunting license fees for projects designed to conserve and enhance native prairie ecosystems and their associated wildlife.	.296	<.001
I am concerned about the accelerated conversion of native prairie habitat.	.256	<.001
Bats in South Dakota		
Maintaining healthy populations and diversity of bat species in South Dakota is important to me.	.246	<.001
Bats pose an unacceptable health risk to people.	-.091	.039
Bats are important and should have some legal protection from harm.	.340	<.001
I would enjoy having bats living and feeding near my house.	.154	<.001
I am concerned about the impact of diseases, such as white nose syndrome, on bat populations.	.176	<.001

Table 4 continued on next page.

Table 4 - Continued. Pearson correlations between wildlife and environmental attitudes held by South Dakota citizens and their score on the mutualism scale.

Variables	Pearson Correlation	*p*-value
Mountain Lions in South Dakota		
Having a healthy, viable population of mountain lions in S.D. is important to me.	.312	<.001
I am concerned about mountain lions killing too many game (hunted) animals.	-.119	.007
Having any mountain lions in South Dakota is too dangerous a risk to people.	-.145	.001
Do you oppose or favor a regulated mountain lion season in South Dakota?	-.200	<.001
Wildlife Management Issues: Rare Non-game Species vs. Game Animals/Fish		
I would be concerned about River Otters taking too many game fish if their populations were to increase.	.031	.480
I would support releasing River Otters into suitable habitats in South Dakota.	.131	<.001
I support efforts by GFP to increase Osprey numbers in South Dakota.	.168	<.001
I would be concerned about Osprey taking too many game fish if their populations were to increase.	.000	.998
The Missouri River should not be managed for threatened or endangered species, such as terns and plovers, if it would in any way decrease game fish populations.	-.047	.284
In general, should wildlife management decisions favor game animals/fish OR rare wildlife species.	.255	<.001
Wildlife Management in South Dakota: Miscellaneous		
I would support requirements to use non-toxic bullets for shooting prairie dogs to reduce lead poisoning of eagles, hawks and other wildlife.	.283	<.001
I am concerned about feral (wild), free ranging house cats killing native birds.	.091	.039
I would support regulations to control commercial harvest and unregulated take of turtles, lizards, snakes, frogs and toads if information showed that their populations were declining to unacceptable levels.	.308	<.001
Rattlesnakes are an important component of South Dakota's assemblage of wildlife and should not be killed indiscriminately.	.289	<.001
In general, efforts should be made to reduce predator numbers to help increase the numbers of game animals for hunters.	-.067	.126

Table 4 continued on next page.

Table 4 - Continued. Pearson correlations between wildlife and environmental attitudes held by South Dakota citizens and their score on the mutualism scale.

Variables	Pearson Correlation	*p*-value
Climate Change		
I believe that climate change is currently affecting South Dakota.	.359	<.001
I believe that climate change is a serious threat that requires changes in current life styles.	.406	<.001
I support regulations to reduce carbon emissions to address climate change.	.429	<.001
I don't believe that climate change will result in any negative impacts on wildlife populations in South Dakota	-.203	<.001
Beliefs concerning the causes of climate change generally range from totally natural causes to totally human activities or some approximate combination of both. On this scale of 1 (all climate change is due to natural causes to 7 (all climate change is from human activities), please indicate your personal belief about the causes of climate change.	.297	<.001
Energy Development in South Dakota		
Wildlife impacts and grassland habitat loss should be considered when increasing biofuel production.	.335	<.001
I support efforts to increase ethanol production in South Dakota.	.043	.327
Negative impacts on wildlife should be considered when developing wind energy in South Dakota.	.292	<.001
I think people worry too much about possible environmental problems associated with pipelines for transporting oil across South Dakota.	-.224	<.001
Wetlands preform many functions: How important is…		
… reducing flood events.	.148	.001
… providing wildlife habitat.	.244	<.001
… providing recreational opportunities.	.138	.001
… providing clean water.	.104	.017
… providing economic opportunity.	.096	.028

Section 3. *Wildlife and Environmental Attitudes Analyzed by the Wildlife Value Orientations Model.* Most (91%) of the wildlife and environmental attitudes measured in this study were significantly related to the WVO model (Table 5). Many of the largest differences were between the utilitarian and mutualist orientations (Appendices C and D). For example, people with a utilitarian orientation were very different from people with a mutualist orientation regarding the importance of prairie dogs to native ecosystems and their need for protection (Appendix C – Table 7-B and Figures 11-A and 11-B). In general, while most people felt that wildlife management should use a balanced approach regarding decisions favoring game species versus rare wildlife species, more people with a utilitarian orientation reported that wildlife management decisions should favor game animals/fish while more people with a mutualist orientation felt that management decisions should favor rare wildlife species (Appendix C – Table 10-F and Figures 12-A and 12-B).

Some additional specific examples:

- Bats are important and should have some legal protection from harm (Appendices C & D – Table 8-C and Figures 13-A and 13-B).
- Having a healthy, viable population of mountain lions in S.D. is important to me (Appendices C & D – Table 9-A and Figures 14-A and 14-B).
- I believe that climate change is a serious threat that requires changes in current life styles (Appendices C & D – Table 12-B and Figures 15-A and 15-B)

Table 5. Summary of ANOVA analyses comparing South Dakota citizens' wildlife and environmental attitudes with their Wildlife Value Orientations (*see Appendix C*).

Type of Questions	**Number of Questions**	**Number Significant ANOVA**	**Eta^2 Values**		
			Small	**Moderate**	**Strong**
General Wildlife Questions	6	6	6	0	0
Prairie Ecosystems	5	5	3	2	0
Bats in South Dakota	5	5	4	1	0
Mountain Lions in South Dakota	4	4	2	2	0
Rare Non-game vs. Game Animals	6	5	4	1	0
Wildlife Management: Miscellaneous	5	4	0	4	0
Climate Change	5	5	1	4	0
Energy Development in South Dakota	4	3	1	2	0
Importance of Wetland Functions	5	4	3	1	0
Total	45	41	24	17	0
Percent		**91%**	**59%**	**41%**	**0%**

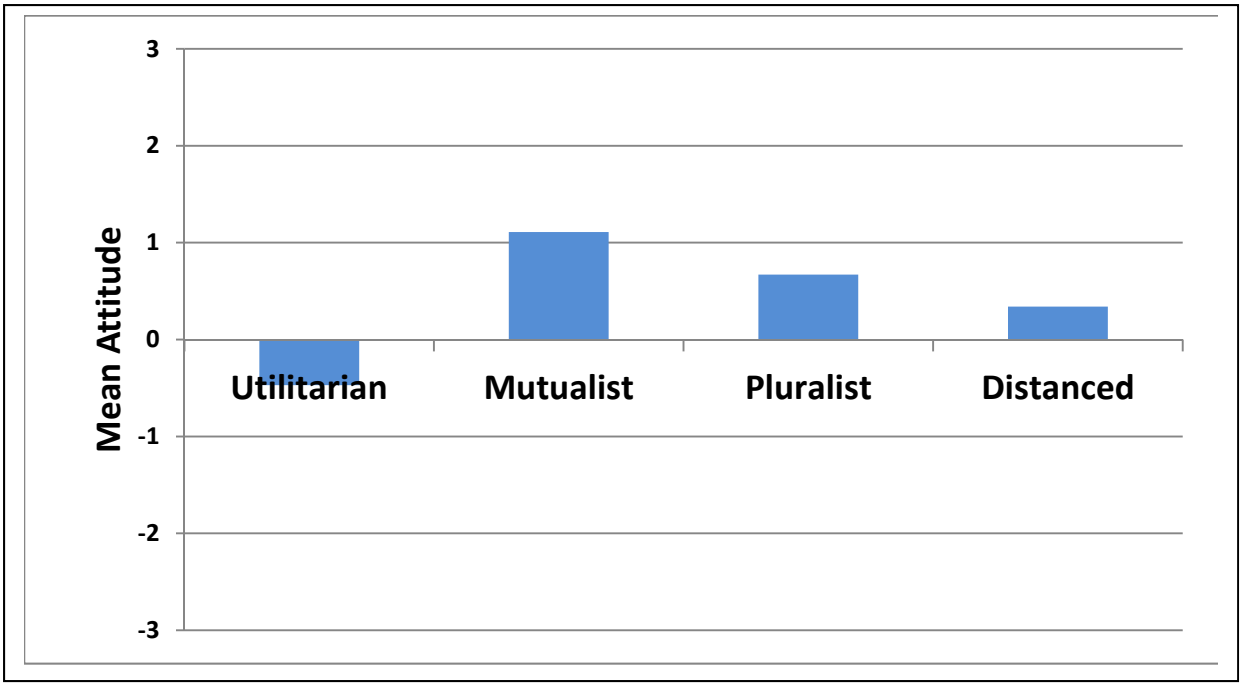


Figure 11-A. Mean attitude: "Prairie dogs are an important component of native ecosystems and need some degree of protection," analyzed by Wildlife Value Orientations.
Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

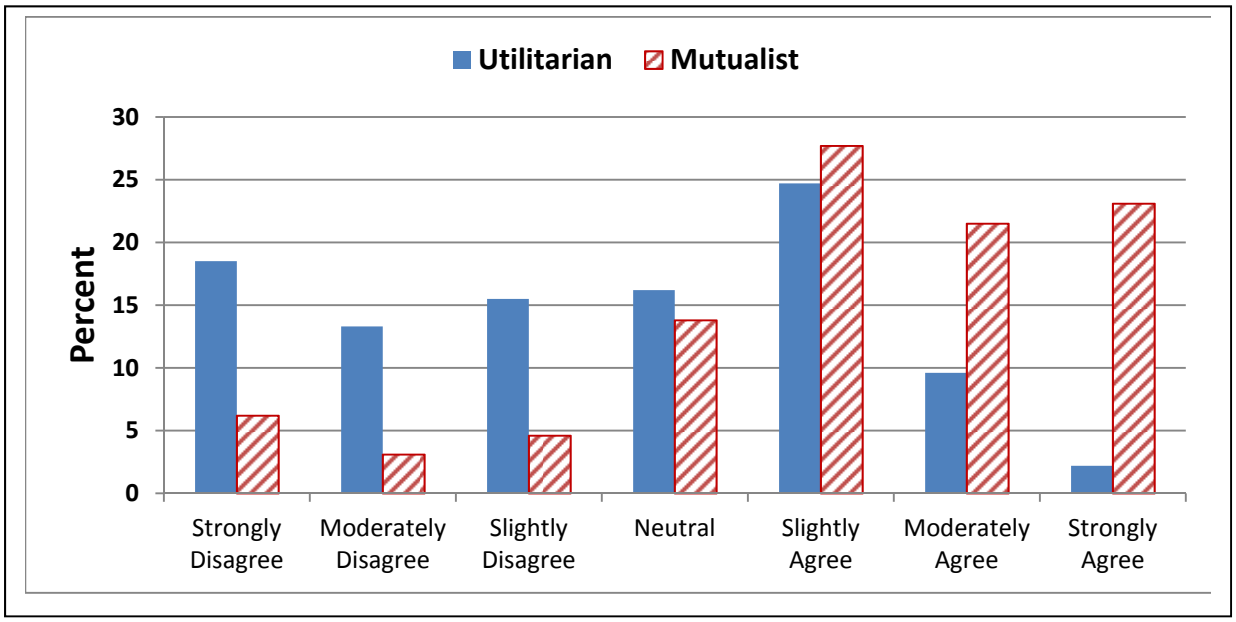


Figure 11-B. Attitude: "Prairie dogs are an important component of native ecosystems and need some degree of protection," comparing the utilitarian and mutualist orientations.

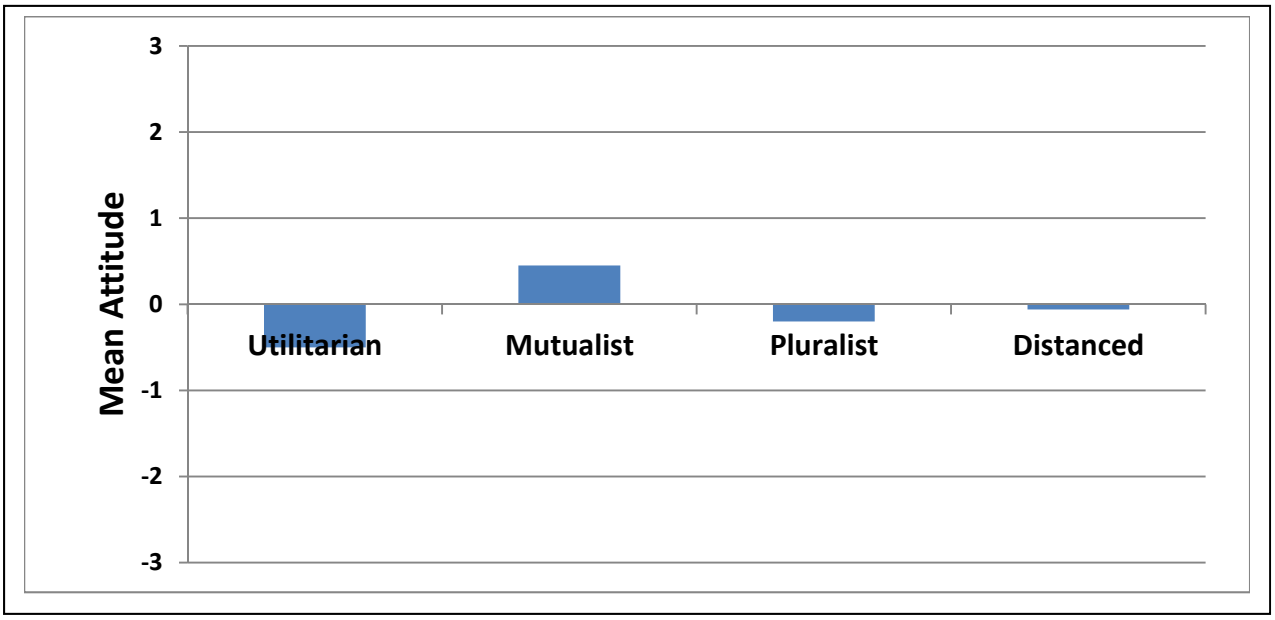


Figure 12-A. Mean attitude: "In general, should wildlife management decisions favor game animals/fish OR rare wildlife species," analyzed by Wildlife Value Orientations. Attitude Scale: -3=Strongly Favor Game Species; -2=Moderately Favor Game Species; -1=Slightly Favor Game Species; 0=Balanced Approach; 1=Slightly Favor Rare Wildlife Species; 2=Moderately Favor Rare Wildlife Species; 3=Strongly Favor Rare Wildlife Species

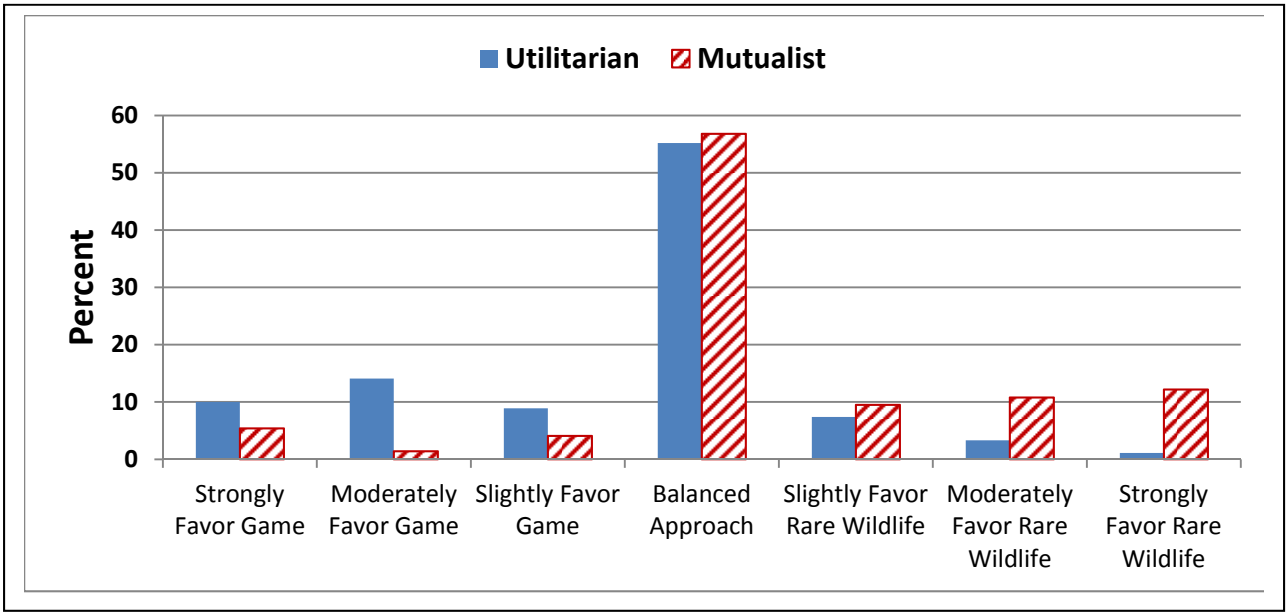


Figure 12-B. Attitude: "In general, should wildlife management decisions favor game animals/ fish OR rare wildlife species," comparing the utilitarian and mutualist orientations.

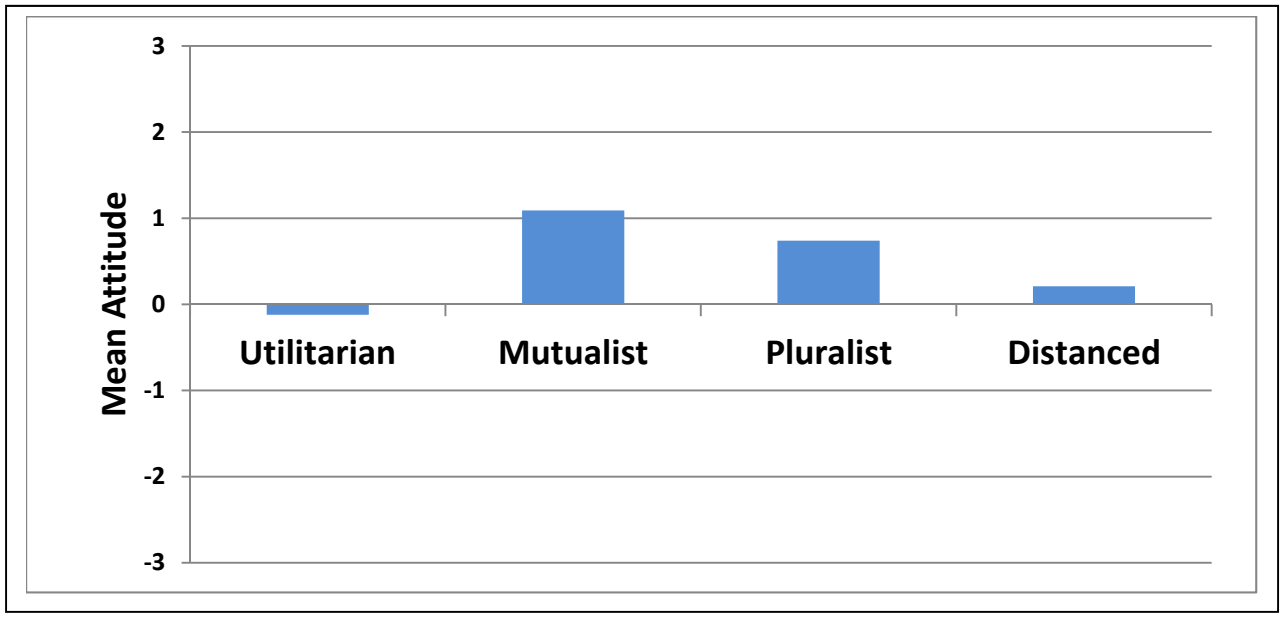


Figure 13-A. Mean attitude: "Bats are important and should have some legal protection from harm," analyzed by Wildlife Value Orientations.
Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

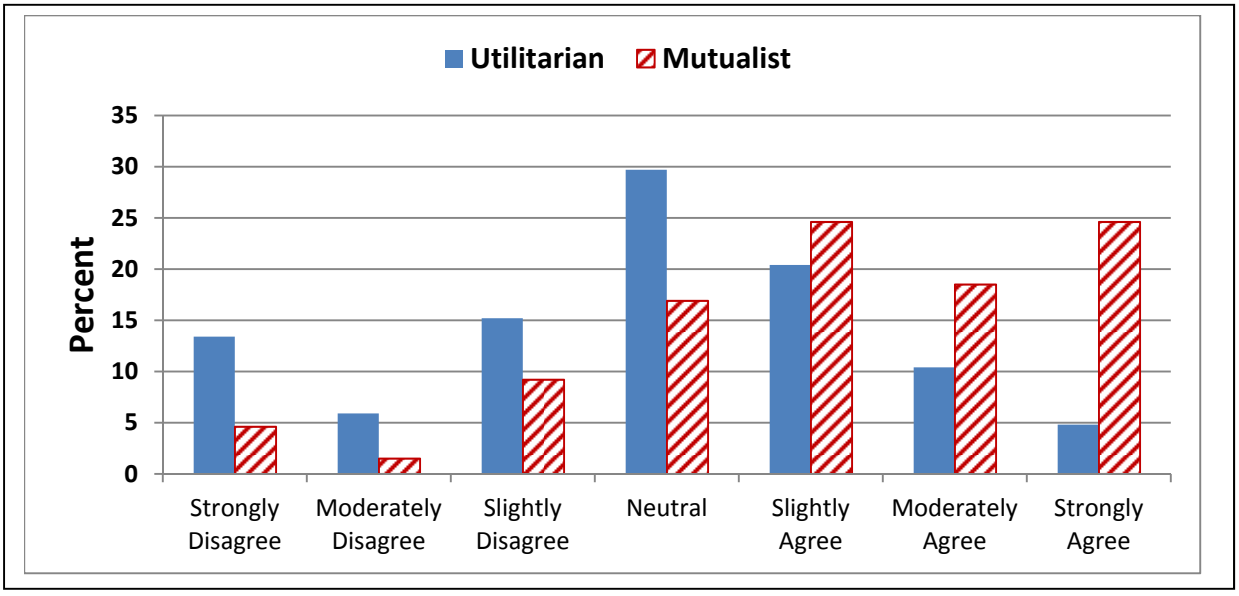


Figure 13-B. Attitude: "Bats are important and should have some legal protection from harm," comparing the utilitarian and mutualist orientations.

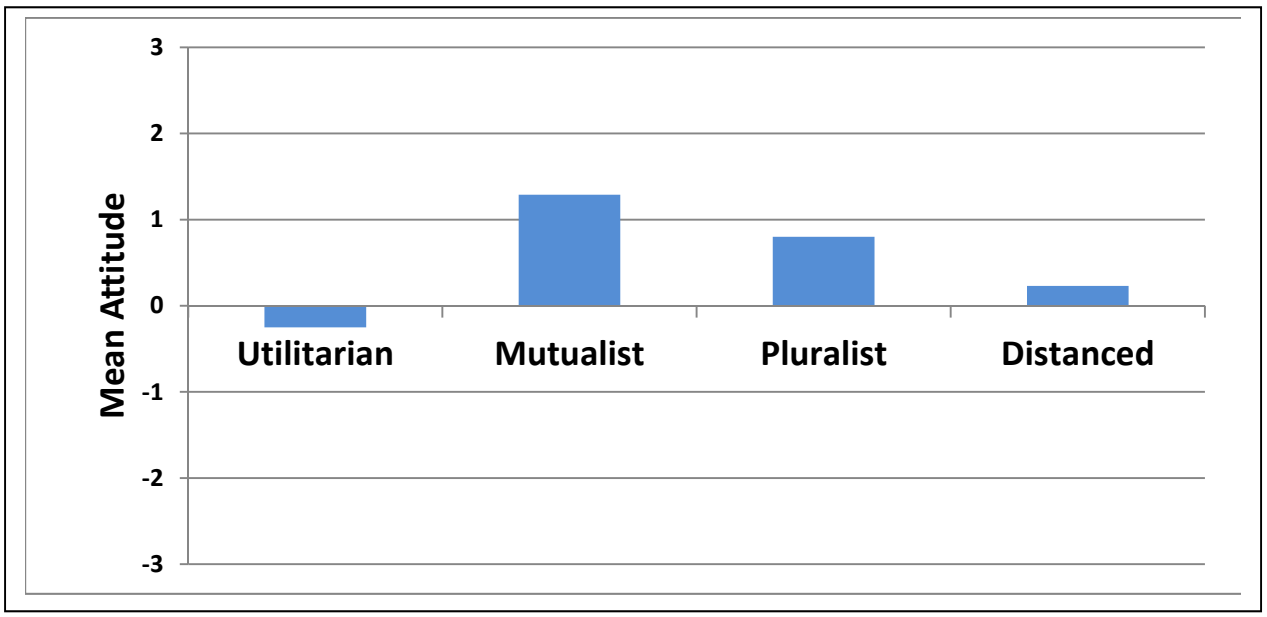


Figure 14-A. Mean attitude: "Having a healthy, viable population of mountain lions in South Dakota is important to me," analyzed by Wildlife Value Orientations.
Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

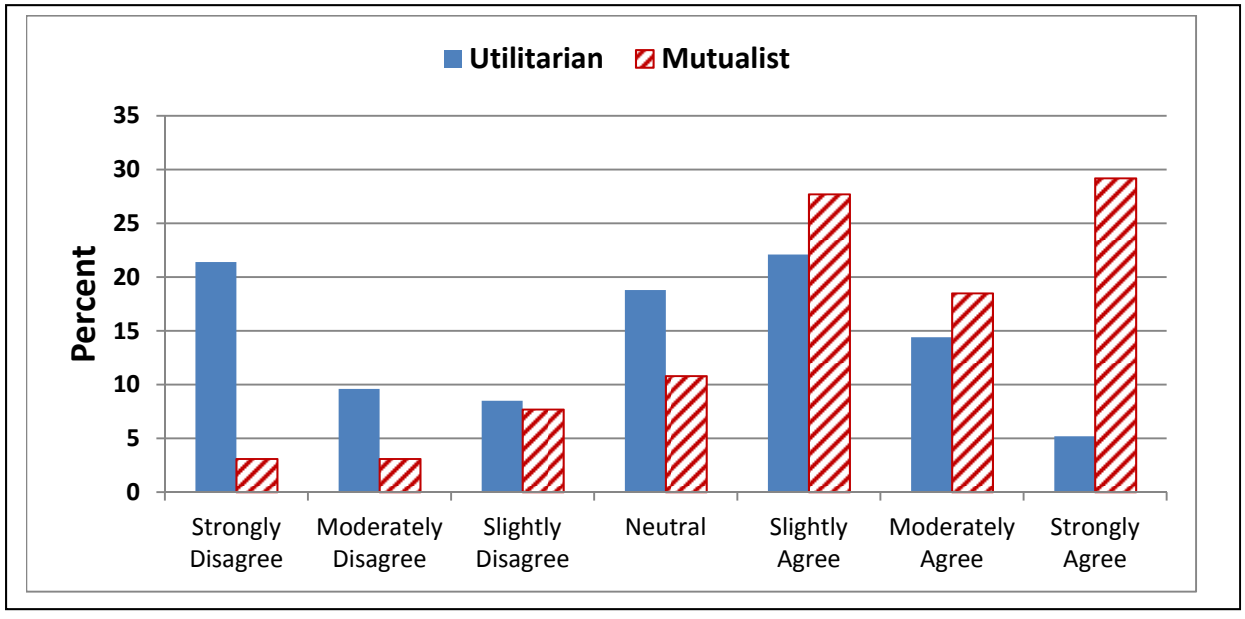


Figure 14-B. Attitude: "Having a healthy, viable population of mountain lions in South Dakota is important to me," comparing the utilitarian and mutualist orientations.

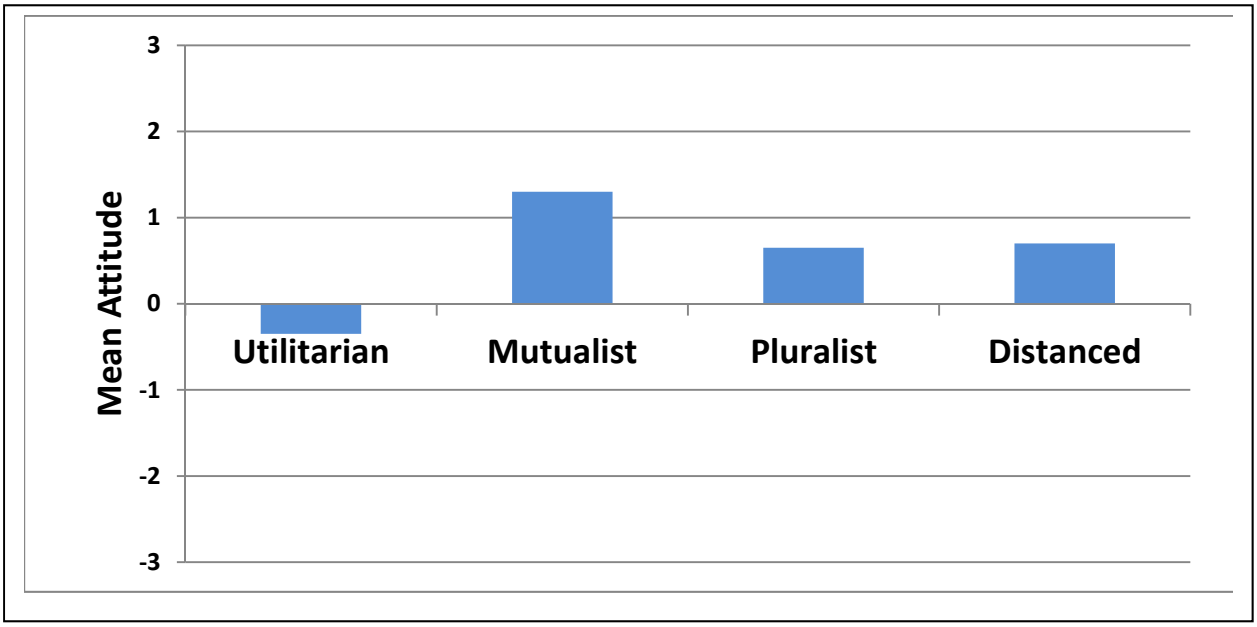


Figure 15-A. Mean attitude: "I believe that climate change is a serious threat that requires changes in current life styles," analyzed by Wildlife Value Orientations.
Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

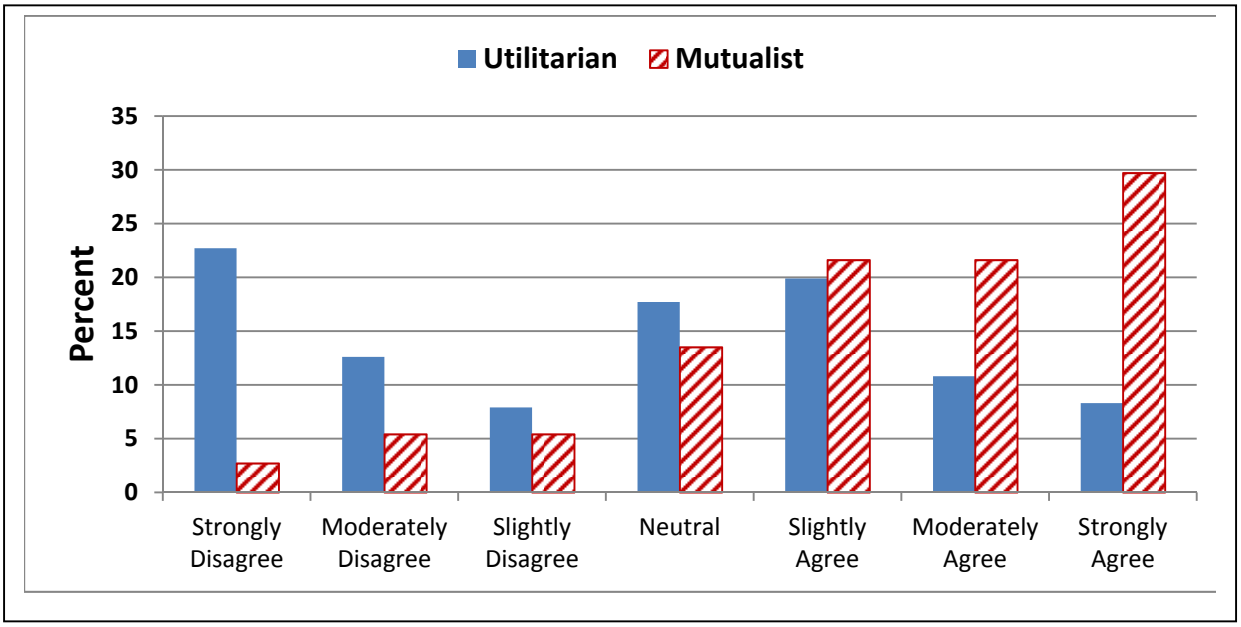


Figure 15-B. Attitude: "I believe that climate change is a serious threat that requires changes in current life styles," comparing the utilitarian and mutualist orientations.

These examples are provided to demonstrate the value of the Wildlife Value Orientations model in predicting a wide range of specific wildlife and environmental attitudes. The data reported in Appendix C provide the mean attitudes for all the wildlife and environmental attitude questions asked in this 2012 survey of South Dakota citizens analyzed by WVO and the data in Appendix D provide the frequency distribution for all the wildlife and environmental attitude questions analyzed by WVO.

While many of the largest differences were between the utilitarian and mutualist orientations the pluralists, as a group, tended to have responses to the wildlife and environmental attitude questions relatively mid-point between the utilitarian and the mutualist. On the other hand, the distanced group tended to be more neutral or have no opinion on all the wildlife and environmental attitudes in the study compared to the other three groups (Appendix D).

Section 4. *Participation in Fishing, Hunting and Wildlife Viewing and Demographic Variables Analyzed by the Wildlife Value Orientations Model.* Many of the fishing, hunting, wildlife viewing and demographic variables (67%) measured in this study were significantly related to the Wildlife Values Orientation model (Table 6 and Appendix E). While most respondents have participated in fishing, a higher percent of people with a utilitarian or pluralist orientation have fished sometime in their lifetime and have fished recently (within the past 2 years) (Figure 16 and Appendix E – Table 1). This pattern was similar for hunting (Figure 17 and Appendix E – Table 3). A higher percent of people with a pluralist or mutualist orientation have taken primary wildlife viewing trips sometime in their lifetime compared to utilitarian and distanced orientations (Figure 18 and Appendix E – Table 5). Based on participants who have ever participated in fishing, hunting or taken primary wildlife viewing trips the utilitarian, pluralist and distanced orientations rated hunting highest in importance while people with a mutualist orientation rated wildlife viewing trips highest in importance (Figure 19 and Appendix E – Tables 2, 4, and 6). Mutualist and pluralist orientations were similar in having higher interest in taking wildlife viewing trips, feeding birds and other wildlife and in having wildlife viewing opportunities near their home compared to utilitarian and distanced orientations (Figures 20 – 22 and Appendix E – Tables 7 – 10).

Table 6. Summary of ANOVA and chi-square analyses comparing South Dakota citizens' participation in fishing, hunting, and wildlife viewing and demographic variables with their Wildlife Value Orientations (*see Appendix E*).

Type of Questions	**Number of Questions**	**Number Significant ANOVA**	**Eta^2 Values**		
			Small	**Moderate**	**Strong**
Fishing, Hunting, & Viewing	5	5	3	2	0
Demographic Variables	2	2	2	0	0
Total	7	7	5	2	0
Percent		**100%**	**71%**	**29%**	**0%**
Type of Questions	**Number of Questions**	**Number Significant Chi-Square**	**Cramer's V**		
			Small	**Moderate**	**Strong**
Fishing, Hunting, & Viewing	9	7	0	1	6
Demographic Variables	8	2	1	0	1
Total	17	9	1	1	7
Percent		**53%**	**11%**	**11%**	**78%**
Total	24	16	6	3	7
Percent		**67%**	**38%**	**19%**	**44%**

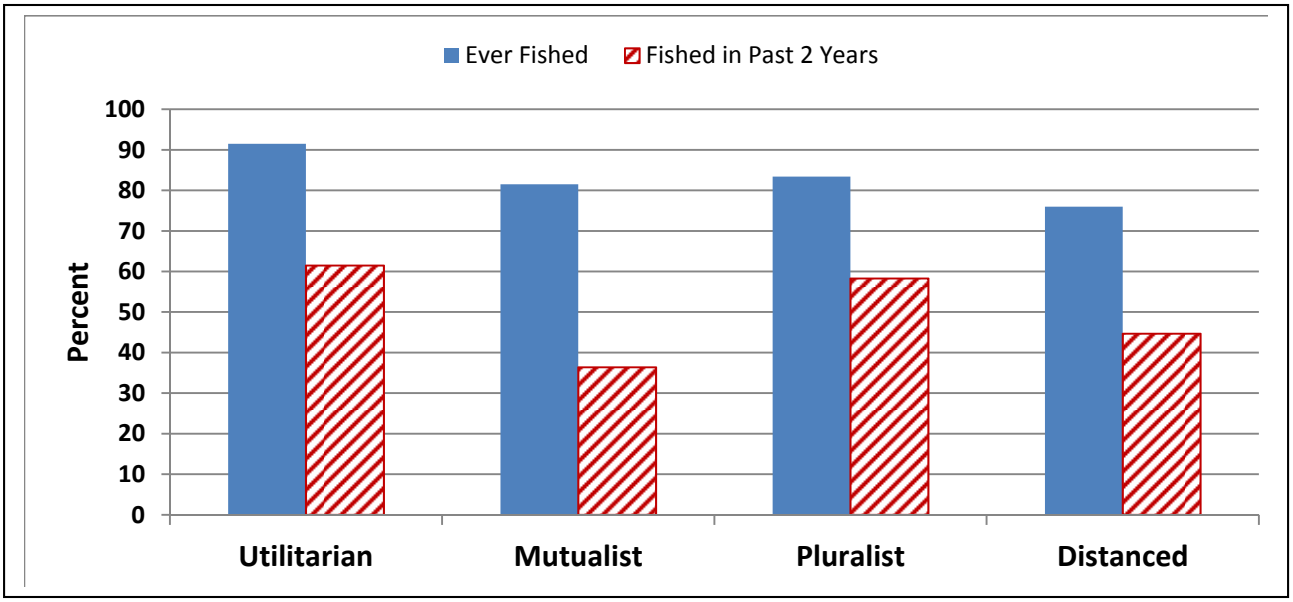


Figure 16. Participation in fishing analyzed by Wildlife Values Orientations.

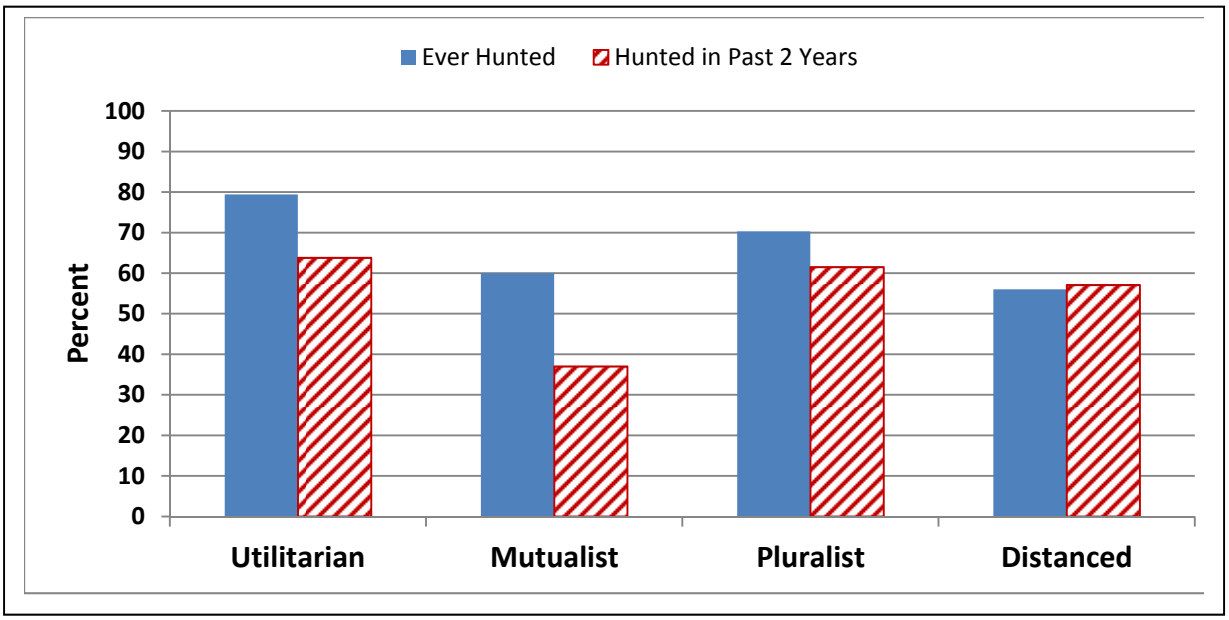


Figure 17. Participation in hunting analyzed by Wildlife Values Orientations.

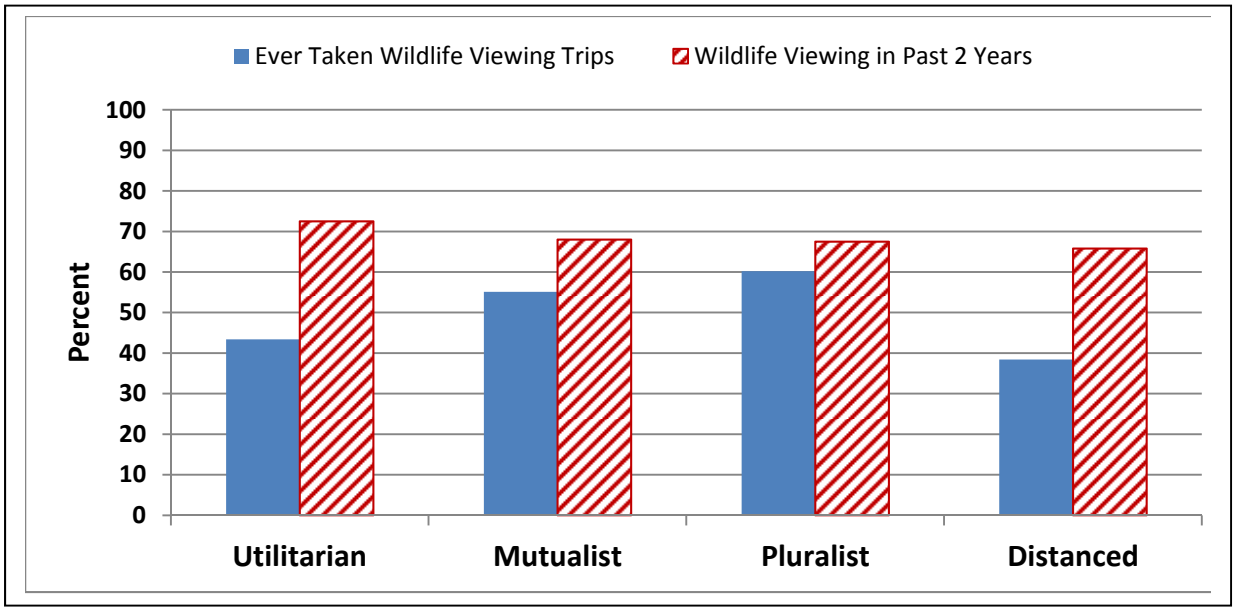


Figure 18. Primary wildlife viewing trips analyzed by Wildlife Values Orientations.

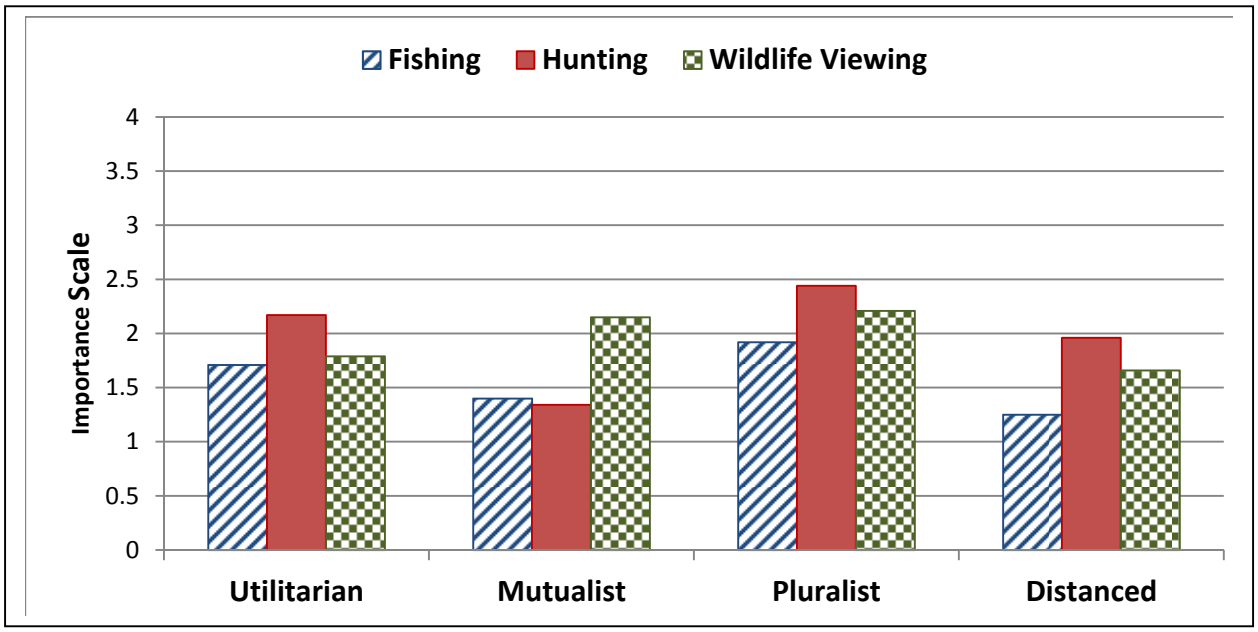


Figure 19. Participants' rating of the importance of the activity analyzed by Wildlife Value Orientations. Importance scale: 0=Not Important, 1=Slightly Important, 2=Moderately Important, 3=Very Important, 4=Most Important Activity.

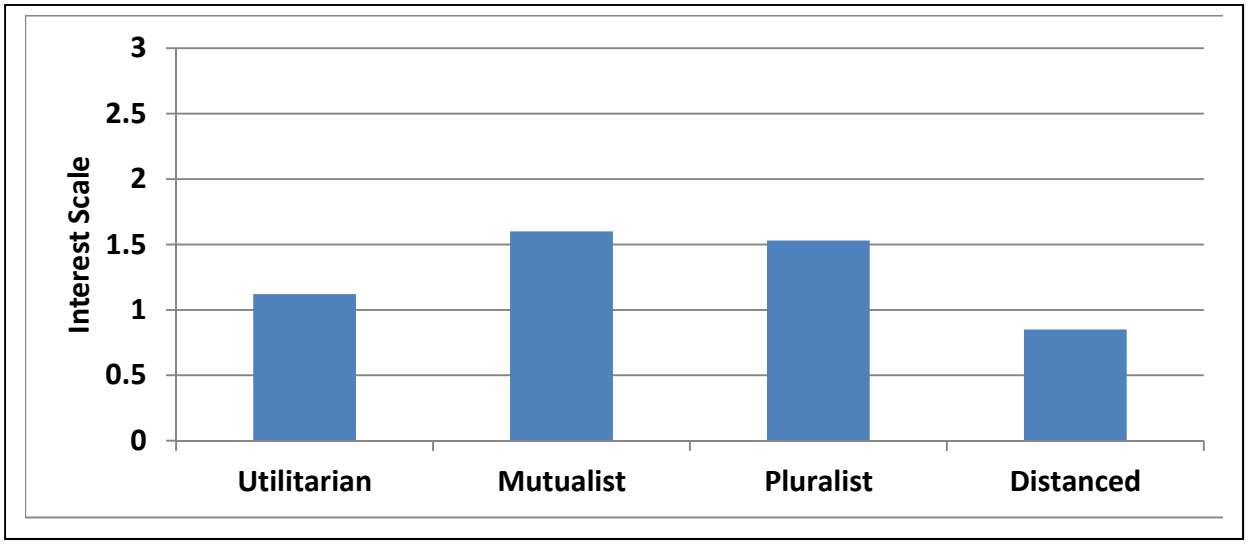


Figure 20. "How interested are you in taking recreational trips in the future for which fish and wildlife viewing is the primary purpose of the trip?" analyzed by Wildlife Value Orientations. Interest scale: 0=Not Interested, 1=Slightly Interested, 2=Moderately Interested, 3=Very Interested.

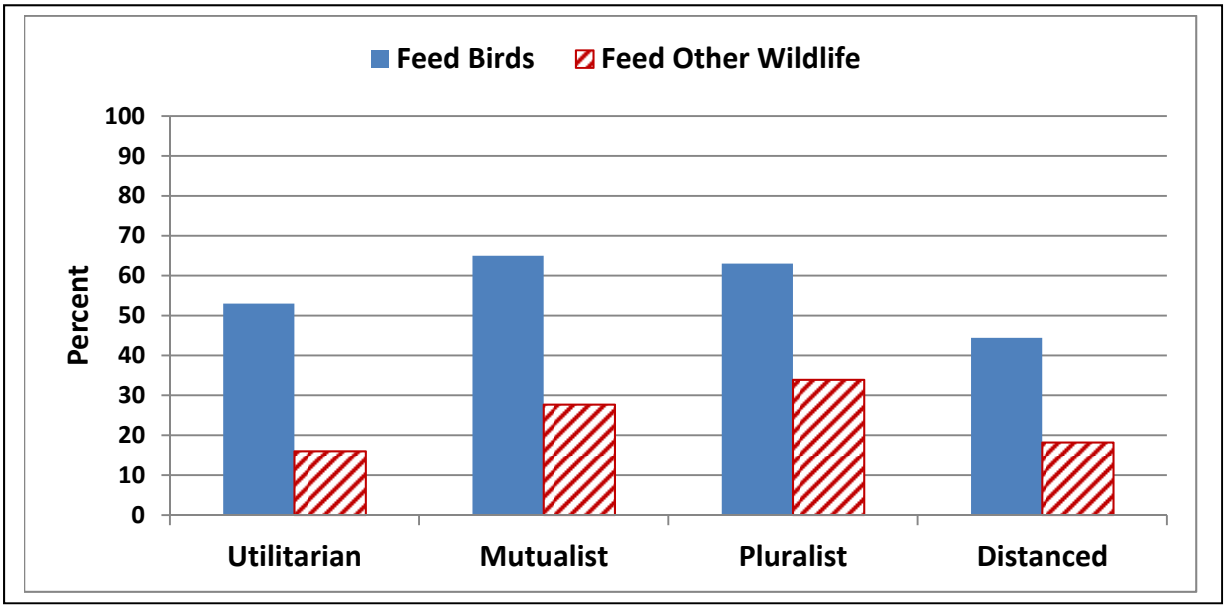


Figure 21. Feeding birds and other wildlife analyzed by Wildlife Value Orientations.

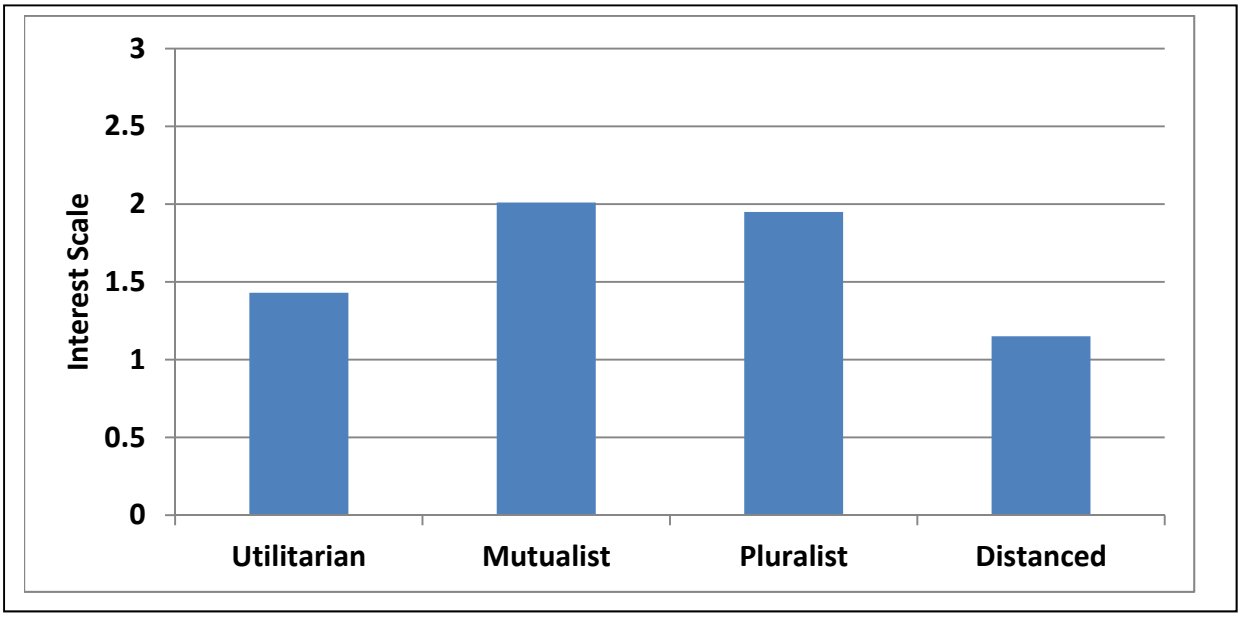


Figure 22. "How important is it to have wildlife viewing opportunities near your home?" analyzed by Wildlife Value Orientations. Importance scale: 0=Not Important, 1=Slightly Important, 2=Moderately Important, 3=Very Important.

Wildlife Value Orientations were significantly related to sex, mean age, mean years of living in South Dakota and farming/ranching. A high percent of mutualists were female (68%) compared to utilitarians (45%), pluralists (47%) and distanced (49%) (Figure 23 and Appendix E – Table 11). The differences in mean age and mean years living in South Dakota were small (Appendix E – Tables 11 and 12). Pluralists had the highest percent of farmers/ranchers (20%) and distanced orientations the lowest percent (7%) (Figure 24 and Appendix E – Table 14). Type of residence (rural, small town, city), location of residence in State, owning rural land, and size of community where raised were not significantly related to Wildlife Value Orientations (Appendix E – Tables 12 – 15).

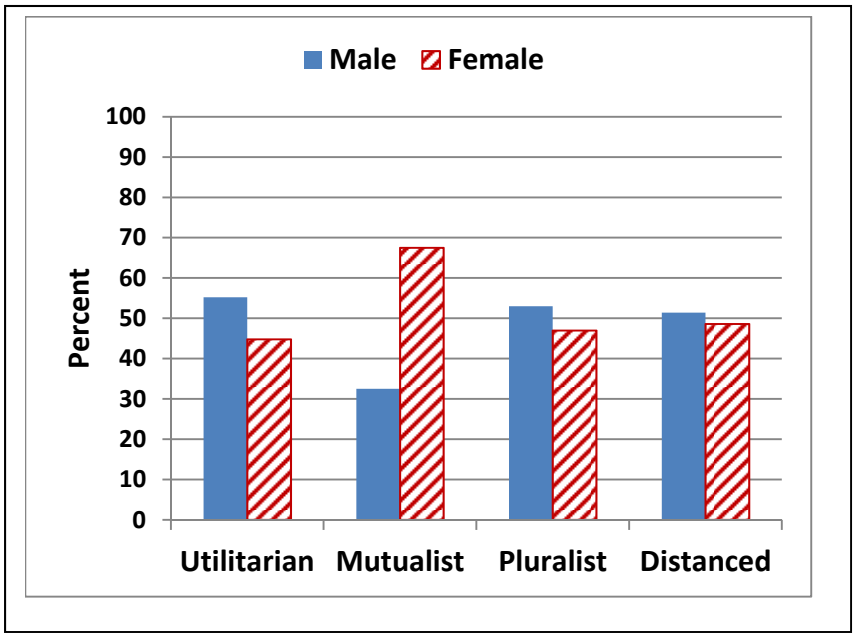


Figure 23. Sex analyzed by Wildlife Value Orientations.

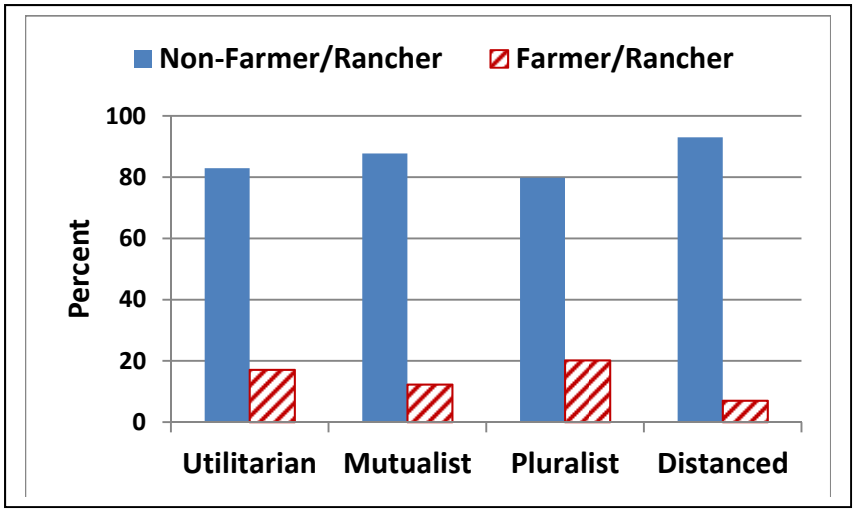


Figure 24. Farming/Ranching analyzed by Wildlife Value Orientations.

Discussion

The Wildlife Values Orientation (WVO) model is a measure of peoples' core values in how they think about wildlife and environmental issues. South Dakota citizens' WVO has been relatively stable since first measured in 2004. As a group South Dakota citizens are more utilitarian compared to most other western states. The WVO model provides an understanding of why many wildlife issues are controversial, namely that people have very different core values that are used to evaluate specific wildlife and environmental issues. The practical value of the WVO model is that it is relatively good at predicting how people may respond to various wildlife and environmental issues. In other words, knowledge of the proportion of WVO types or the utilitarian and mutualism scale values for a group of people can be used to make a prediction of how people would react to various specific wildlife and environmental issues. In addition the model provides a basic understanding of why people react in specific ways to wildlife and environmental issues, which can be used to help find common ground and reach compromise solutions to controversial issues.

References

Gigliotti, L. M., Teel, T. L., & Dietsch, A. 2009. Black Hills residents' attitudes towards place and wildlife: Preview of selected results. Report ID#: HD-9-09.AMS. South Dakota Game, Fish & Parks. Pierre, SD.

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 Report 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.

Teel, T. L., & Manfredo, M. J. 2010. Understanding the diversity of public interests in wildlife conservation. *Conservation Biology, 24(1),* 128–139.

Appendix A

Copy of Version 1 of the mail questionnaire for the 2012 wildlife and environmental attitudes of South Dakota citizen survey.

[8 pages: 32 – 39]

Copy of Version 1 of the mail questionnaire for the 2012 wildlife and environmental attitudes of South Dakota citizen survey.

[8 pages: 40 – 47]

Copy of cover letters and post card reminders used for the 2012 wildlife and environmental attitudes of South Dakota citizen survey.

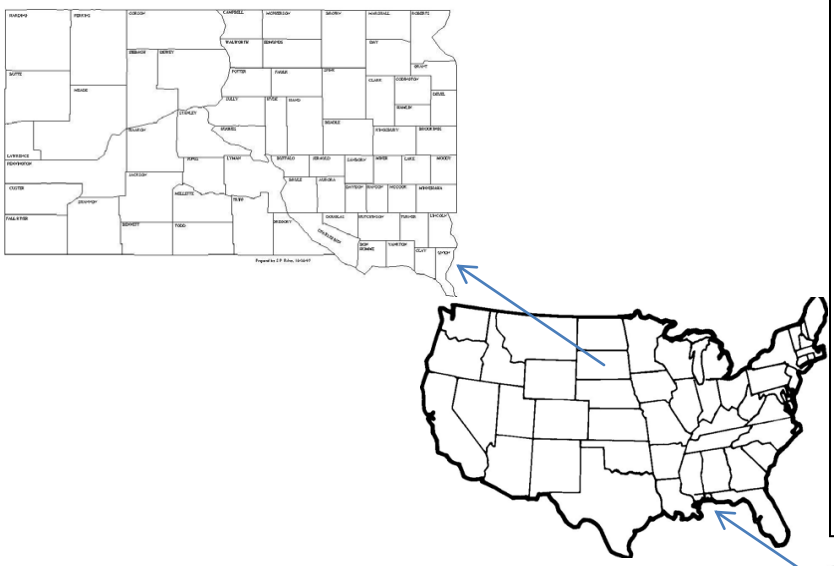
[3 pages: 48 – 50]

WILDLIFE AND ENVIRONMENTAL ATTITUDES OF SOUTH DAKOTA CITIZENS – A 2012 SURVEY

Dear South Dakota Resident,

South Dakota State University on behalf of Game, Fish & Parks (GFP), is conducting a research study aimed at understanding how people feel about wildlife, wildlife management and environmental issues in the South Dakota. This survey is part of GFP five-year revision of South Dakota's Wildlife Action Plan. Information about the South Dakota Wildlife Action Plan and this survey can be found on the GFP website at:

http://gfp.sd.gov/wildlife/management/plans/wildlife-action-plan.aspx



For this study we are requesting your participation in this survey. Any adult residing at this address can complete the survey. The survey is designed to take approximately 15-20 minutes to complete. It is important to us that your survey be completed and returned in order to ensure that the results will truly represent the target population for this study. **Even if you have little knowledge about or interest in wildlife in South Dakota, your opinions are important to us.**

S.D. Citizen Survey – Wildlife Action Plan
Attention: Larry Gigliotti
South Dakota State University
Box 2140B, SNP 201C
Brookings, SD 57007

Survey Version 1:

General Questions about Fish & Wildlife Management in South Dakota

Please circle one number for your response to each question.

1. South Dakota has a great diversity (variety) of fish and wildlife. How important is it to you that South Dakota conserves/protects as much fish and wildlife as possible where appropriate?

Not Important	Slightly Important	Moderately Important	Very Important	No Opinion
1	2	3	4	5

2. How important do you think healthy fish and wildlife populations are to the economy and well-being of South Dakota residents?

Not Important	Slightly Important	Moderately Important	Very Important	No Opinion
1	2	3	4	5

3. How strongly do you disagree or agree with the following statement?

The diversity of fish and wildlife in an area is a sign of the quality of the natural environment.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral or No Opinion	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

4. In general, how would you rate (GFP's) efforts to conserve and protect the diversity (variety) of fish and wildlife in South Dakota?

GFP's focus on wildlife diversity issues is…

Far too Little	Moderately too Little	Slightly too Little	Just About the Right Amount	Slightly too Much	Moderately too Much	Far too Much	No Opinion
1	2	3	4	5	6	7	8

5. Compared to other places where you could consider living, how would you rate life in South Dakota?

Would you say that life in South Dakota is…

Very Much Worse	Moderately Worse	Slightly Worse	About the Same	Slightly Better	Moderately Better	Very Much Better	No Opinion
1	2	3	4	5	6	7	8

6. In general, how much does fish and wildlife detract or contribute to a high "quality of life" for you?

Detracts Greatly	Detracts Moderately	Detracts Slightly	Neither	Contributes Slightly	Contributes Moderately	Contributes Greatly	No Opinion
1	2	3	4	5	6	7	8

Wildlife Value Orientation

Below are statements representing different ways that people might think about fish and wildlife. We are interested in knowing **your views about fish and wildlife**.
Please circle one number for your response to each question.

How strongly do you disagree or agree with…?	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neither**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
Humans should manage fish and wildlife populations so that humans benefit.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Animals should have rights similar to the rights of humans.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
We should strive for a world where there is an abundance of fish and wildlife for hunting and fishing.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I view all living things as part of one big family.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Hunting does not respect the lives of animals.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I feel a strong emotional bond with animals.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
The needs of humans should take priority over fish and wildlife protection.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I care about animals as much as I do other people.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Fish and wildlife are on earth primarily for people to use.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Hunting is cruel and inhumane to the animals.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
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**
I value the sense of companionship I receive from animals.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Wildlife are like my family and I want to protect them.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
People who want to hunt should be provided the opportunity to do so.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Situation 1. Prairie wildlife conservation faces different challenges in different regions of South Dakota. In eastern South Dakota, where most of the prairie has been converted to cropland, one of the challenges is finding and conserving large enough landscapes of prairie vegetation and its associated wildlife. In western South Dakota, where there still are large tracks of native grasslands, the current challenges are more related to the specific needs of certain species like black-footed ferrets, swift fox, black-tailed prairie dogs, and sage grouse. *Please circle <u>one</u> number for your response to each question.*

Do you disagree or agree that…	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neutral or No Opinion**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
Maintaining a healthy native prairie ecosystem in South Dakota is important to me.	1	2	3	4	5	6	7
Prairie dogs are an important component of native prairie ecosystems and need some degree of protection.	1	2	3	4	5	6	7
Prairie dogs are a destructive agricultural pest that should be eliminated from South Dakota.	1	2	3	4	5	6	7
I support using some money from hunting license fees for projects designed to conserve and enhance native prairie ecosystems and their associated wildlife.	1	2	3	4	5	6	7
I am concerned about the accelerated conversion of native prairie habitat.	1	2	3	4	5	6	7

Situation 2. Thirteen species of bats are found in South Dakota. Bats roost (rest/sleep) in trees, buildings, caves, mines, and crevices. Bats play an important role in nature because they feed on insects. Places where bats feed and roost are vulnerable to disturbance and destruction.

Do you disagree or agree that…	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neutral or No Opinion**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
Maintaining healthy populations and diversity of bat species in South Dakota is important to me.	1	2	3	4	5	6	7
Bats pose an unacceptable health risk to people.	1	2	3	4	5	6	7
Bats are important and should have some legal protection from harm.	1	2	3	4	5	6	7
I would enjoy having bats living and feeding near my house.	1	2	3	4	5	6	7
I am concerned about the impact of diseases, such as white nose syndrome, on bat populations.	1	2	3	4	5	6	7

Questions about Mountain Lions (Cougars) in South Dakota:

Do you disagree or agree with the following?	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neutral or No Opinion**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
Having a healthy, viable population of mountain lions in South Dakota is important to me.	1	2	3	4	5	6	7
I am concerned about mountain lions killing too many game (hunted) animals.	1	2	3	4	5	6	7
Having any mountain lions in South Dakota is too dangerous a risk to people.	1	2	3	4	5	6	7

	Strongly Oppose	**Moderately Oppose**	**Slightly Oppose**	**Neutral or No Opinion**	**Slightly Favor**	**Moderately Favor**	**Strongly Favor**
Do you oppose or favor a regulated mountain lion season in South Dakota?	1	2	3	4	5	6	7

Wildlife Management in South Dakota – Miscellaneous Questions

Do you disagree or agree with the following?	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neutral or No Opinion**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
I would support requirements to use non-toxic bullets for shooting prairie dogs to reduce lead poisoning of eagles, hawks and other wildlife.	1	2	3	4	5	6	7
I am concerned about feral (wild), free ranging house cats killing native birds.	1	2	3	4	5	6	7
I would support regulations to control commercial harvest and unregulated take of turtles, lizards, snakes, frogs and toads if information showed that their populations were declining to unacceptable levels.	1	2	3	4	5	6	7
Rattlesnakes are an important component of South Dakota's assemblage of wildlife and should not be killed indiscriminately.	1	2	3	4	5	6	7
In general, efforts should be made to reduce predator numbers to help increase the numbers of game animals for hunters.	1	2	3	4	5	6	7

Hunting & Fishing Participation (*Please check your responses for each question*).

Have you ever participated in recreational fishing? ❑ No ❑ Yes

→ If Yes,

a) Did you do any fishing during the past 2 years? ❑ No ❑ Yes

b) How important is <u>fishing</u> in relation to all your other types of recreation?

- ❑ 1. my MOST important recreational activity
- ❑ 2. VERY important, but not the most important
- ❑ 3. MODERATELY important
- ❑ 4. SLIGHTLY important
- ❑ 5. NOT important
- ❑ 6. No Opinion

Have you ever participated in recreational hunting? ❑ No ❑ Yes

→ If Yes,

a) Did you do any hunting during the past 2 years? ❑ No ❑ Yes

b) How important is <u>hunting</u> in relation to all your other types of recreation?

- ❑ 1. my MOST important recreational activity
- ❑ 2. VERY important, but not the most important
- ❑ 3. MODERATELY important
- ❑ 4. SLIGHTLY important
- ❑ 5. NOT important
- ❑ 6. No Opinion

Wildlife Viewing (*Please check your responses for each question*).

Have you ever taken any recreational trips for which fish and wildlife viewing was the primary purpose of the trip? ❑ No ❑ Yes

→ If Yes,

a) Did you take any recreational trips during the past 2 years for which fish and wildlife viewing was the primary purpose of the trip? ❑ No ❑ Yes

b) Were these wildlife viewing trips during the past 2 years…

❑ in South Dakota ❑ outside South Dakota ❑ Both

c) How important is taking wildlife viewing trips in relation to all your other types of recreation?

❑ 1. my MOST important recreational activity
❑ 2. VERY important, but not the most important
❑ 3. MODERATELY important
❑ 4. SLIGHTLY important
❑ 5. NOT important
❑ 6. No Opinion

	Not at all Interested	**Slightly Interested**	**Moderately Interested**	**Very Interested**
How interested are you in taking recreational trips in the future for which fish and wildlife viewing is the primary purpose of the trip?	1	2	3	4

Do you feed birds near your home for viewing purposes? ❑ No ❑ Yes

Do you feed other wildlife near your home for viewing purposes? ❑ No ❑ Yes

	Not at all Important	**Slightly Important**	**Moderately Important**	**Very Important**
How important is it to have wildlife viewing opportunities near your home?	1	2	3	4

Information about Yourself

The following demographic information will be used to help make general conclusions about South Dakota residents. Your responses will remain completely confidential.

1. What is your age and gender? _____years ☐ MALE ☐ FEMALE

2. About how long have you lived in South Dakota? _____ Years OR ❑ Less than one year
   (Write response or check box ☑ indicating less than one year.)

3. Which South Dakota county do you live in? _____

4. Is your current residence: ❑ RURAL
   ❑ SMALL TOWN
   ❑ CITY (greater than 10,000) (the following S.D. cities are greater than10,000: Sioux Falls, Rapid City, Aberdeen, Watertown, Brookings, Pierre-Ft.Pierre, Mitchell, Yankton, Huron, Vermillion)

5. Do you own land outside town/city? ❑ No ❑ Yes

6. Are you a farmer/rancher? ❑ No
   ❑ Yes – but retired
   ❑ Yes – Part-time
   ❑ Yes – Full-time

7. How would you describe the community in which you were raised?
   If more than one area, please check the place where you lived the longest while growing up.

   ❑ 1. a large city with 250,000 or more people
   ❑ 2. a city with 100,000 to 249,999 people
   ❑ 3. a small city with 50,000 to 99,999 people
   ❑ 4. a town with 10,000 to 49,999 people
   ❑ 5. a small town/village with less than 10,000 people
   ❑ 6. a farm/ranch or rural area

THANK YOU VERY MUCH FOR YOUR VALUABLE TIME COMPLETING THIS SURVEY.

Please return your questionnaire using the addressed, pre-paid return envelope provided.

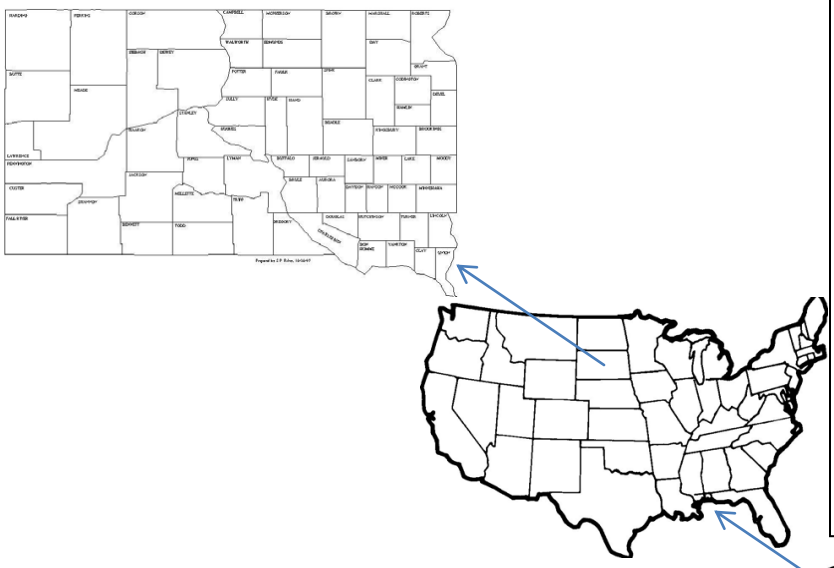
Summarized results from this survey will be posted on GFP's Web-site.

WILDLIFE AND ENVIRONMENTAL ATTITUDES OF SOUTH DAKOTA CITIZENS – A 2012 SURVEY

Dear South Dakota Resident,

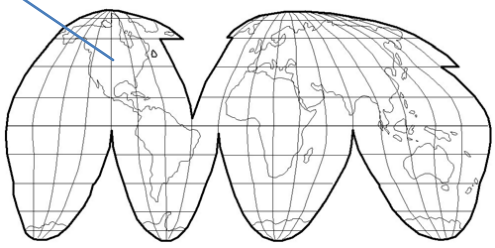
South Dakota State University on behalf of Game, Fish & Parks (GFP), is conducting a research study aimed at understanding how people feel about wildlife, wildlife management and environmental issues in the South Dakota. This survey is part of GFP five-year revision of South Dakota's Wildlife Action Plan. Information about the South Dakota Wildlife Action Plan and this survey can be found on the GFP website at:

http://gfp.sd.gov/wildlife/management/plans/wildlife-action-plan.aspx



For this study we are requesting your participation in this survey. Any adult residing at this address can complete the survey. The survey is designed to take approximately 15-20 minutes to complete. It is important to us that your survey be completed and returned in order to ensure that the results will truly represent the target population for this study. **Even if you have little knowledge about or interest in wildlife in South Dakota, your opinions are important to us.**

S.D. Citizen Survey – Wildlife Action Plan
Attention: Larry Gigliotti
South Dakota State University
Box 2140B, SNP 201C
Brookings, SD 57007



Survey Version 2:

General Questions about Fish & Wildlife Management in South Dakota

Please circle one number for your response to each question.

1. South Dakota has a great diversity (variety) of fish and wildlife. How important is it to you that South Dakota conserves/protects as much fish and wildlife as possible where appropriate?

Not Important	Slightly Important	Moderately Important	Very Important	No Opinion
1	2	3	4	5

2. How important do you think healthy fish and wildlife populations are to the economy and well-being of South Dakota residents?

Not Important	Slightly Important	Moderately Important	Very Important	No Opinion
1	2	3	4	5

3. How strongly do you disagree or agree with the following statement?

The diversity of fish and wildlife in an area is a sign of the quality of the natural environment.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral or No Opinion	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

4. In general, how would you rate (GFP's) efforts to conserve and protect the diversity (variety) of fish and wildlife in South Dakota?

GFP's focus on wildlife diversity issues is…

Far too Little	Moderately too Little	Slightly too Little	Just About the Right Amount	Slightly too Much	Moderately too Much	Far too Much	No Opinion
1	2	3	4	5	6	7	8

5. Compared to other places where you could consider living, how would you rate life in South Dakota?

Would you say that life in South Dakota is…

Very Much Worse	Moderately Worse	Slightly Worse	About the Same	Slightly Better	Moderately Better	Very Much Better	No Opinion
1	2	3	4	5	6	7	8

6. In general, how much does fish and wildlife detract or contribute to a high "quality of life" for you?

Detracts Greatly	Detracts Moderately	Detracts Slightly	Neither	Contributes Slightly	Contributes Moderately	Contributes Greatly	No Opinion
1	2	3	4	5	6	7	8

Wildlife Value Orientation

Below are statements representing different ways that people might think about fish and wildlife. We are interested in knowing **your views about fish and wildlife**.
Please circle one number for your response to each question.

How strongly do you disagree or agree with…?	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neither**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
Humans should manage fish and wildlife populations so that humans benefit.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Animals should have rights similar to the rights of humans.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
We should strive for a world where there is an abundance of fish and wildlife for hunting and fishing.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I view all living things as part of one big family.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Hunting does not respect the lives of animals.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I feel a strong emotional bond with animals.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
The needs of humans should take priority over fish and wildlife protection.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I care about animals as much as I do other people.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Fish and wildlife are on earth primarily for people to use.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Hunting is cruel and inhumane to the animals.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
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**
I value the sense of companionship I receive from animals.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Wildlife are like my family and I want to protect them.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
People who want to hunt should be provided the opportunity to do so.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Situation 1. There has been a lot of talk recently about climate change (global warming) and its potential impacts. Climate change refers to changes occurring over approximately the past 100 years, not changes in climate over geological time periods. We are interested in learning **your views about climate change**.

Do you disagree or agree with the following?	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neutral or No Opinion**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
I believe that climate change is currently affecting South Dakota.	1	2	3	4	5	6	7
I believe that climate change is a serious threat that requires changes in current life styles.	1	2	3	4	5	6	7
I support regulations to reduce carbon emissions to address climate change.	1	2	3	4	5	6	7
I don't believe that climate change will result in any negative impact on wildlife populations in South Dakota.	1	2	3	4	5	6	7

Beliefs concerning the causes of climate change generally range from totally natural causes to totally human activities or some approximate combination of both. Please indicate your personal belief about the causes of climate change (check this box ❑ if you have no opinion).

Climate change is due to natural cyclic changes in weather.			About half of each.			Climate change is the result of activities by humans.
❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	❑ 6	❑ 7

Situation 2. Finding and developing alternative sources of energy as well as concerns over associated impacts of these activities on wildlife and the environment are often topics of discussion in South Dakota. We are interested in learning **your views about energy development in South Dakota**.

Do you disagree or agree with the following?	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neutral or No Opinion**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
Wildlife impacts and grassland habitat loss should be considered when increasing biofuel production.	1	2	3	4	5	6	7
I support efforts to increase ethanol production in South Dakota.	1	2	3	4	5	6	7
Negative impacts on wildlife should be considered when developing wind energy in South Dakota.	1	2	3	4	5	6	7
I think people worry too much about possible environmental problems associated with pipelines for transporting oil across South Dakota.	1	2	3	4	5	6	7

Situation 3. Some wildlife management issues place wildlife managers in conflicting roles of making decisions to increase numbers of rare species while also providing satisfactory numbers of game animals and game fish for hunters and anglers; below are a couple of examples. We are interested in learning **your views**.

Do you disagree or agree with the following?	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neutral or No Opinion**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
I would be concerned about River Otters taking too many game fish if their populations were to increase.	1	2	3	4	5	6	7
I would support releasing River Otters into suitable habitats in South Dakota.	1	2	3	4	5	6	7
I support efforts by GFP to increase Osprey numbers in South Dakota.	1	2	3	4	5	6	7
I would be concerned about Osprey taking too many game fish if their populations were to increase.	1	2	3	4	5	6	7
The Missouri River should not be managed for threatened or endangered species, such as terns and plovers, if it would in any way decrease game fish populations.	1	2	3	4	5	6	7

	Favor Game Species			**Balanced Approach**	**Favor Rare Wildlife Species**		
	Strongly	**Moderately**	**Slightly**		**Slightly**	**Moderately**	**Strongly**
In general, should wildlife management decisions favor game animals/fish OR rare wildlife species.	1	2	3	4	5	6	7

Wetlands perform many functions: please rate the importance of each function to you.

How important is…	**Not Important**	**Slightly Important**	**Moderately Important**	**Very Important**
Reducing flood events	0	1	2	3
Providing wildlife habitat	0	1	2	3
Providing recreational opportunities	0	1	2	3
Providing clean water	0	1	2	3
Providing economic opportunity	0	1	2	3

Hunting & Fishing Participation (*Please check your responses for each question*).

Have you ever participated in recreational fishing? ❑ No ❑ Yes

→ If Yes,

a) Did you do any fishing during the past 2 years? ❑ No ❑ Yes

b) How important is <u>fishing</u> in relation to all your other types of recreation?

- ❑ 1. my MOST important recreational activity
- ❑ 2. VERY important, but not the most important
- ❑ 3. MODERATELY important
- ❑ 4. SLIGHTLY important
- ❑ 5. NOT important
- ❑ 6. No Opinion

Have you ever participated in recreational hunting? ❑ No ❑ Yes

→ If Yes,

a) Did you do any hunting during the past 2 years? ❑ No ❑ Yes

b) How important is <u>hunting</u> in relation to all your other types of recreation?

- ❑ 1. my MOST important recreational activity
- ❑ 2. VERY important, but not the most important
- ❑ 3. MODERATELY important
- ❑ 4. SLIGHTLY important
- ❑ 5. NOT important
- ❑ 6. No Opinion

Wildlife Viewing (*Please check your responses for each question*).

Have you ever taken any recreational trips for which fish and wildlife viewing was the primary purpose of the trip? ❑ No ❑ Yes

→ If Yes,

a) Did you take any recreational trips during the past 2 years for which fish and wildlife viewing was the primary purpose of the trip? ❑ No ❑ Yes

b) Were these wildlife viewing trips during the past 2 years…

❑ in South Dakota ❑ outside South Dakota ❑ Both

c) How important is taking wildlife viewing trips in relation to all your other types of recreation?

❑ 1. my MOST important recreational activity
❑ 2. VERY important, but not the most important
❑ 3. MODERATELY important
❑ 4. SLIGHTLY important
❑ 5. NOT important
❑ 6. No Opinion

	Not at all Interested	**Slightly Interested**	**Moderately Interested**	**Very Interested**
How interested are you in taking recreational trips in the future for which fish and wildlife viewing is the primary purpose of the trip?	1	2	3	4

Do you feed birds near your home for viewing purposes? ❑ No ❑ Yes

Do you feed other wildlife near your home for viewing purposes? ❑ No ❑ Yes

	Not at all Important	**Slightly Important**	**Moderately Important**	**Very Important**
How important is it to have wildlife viewing opportunities near your home?	1	2	3	4

Information about Yourself

The following demographic information will be used to help make general conclusions about South Dakota residents. Your responses will remain completely confidential.

1. What is your age and gender? _____years □ MALE □ FEMALE

2. About how long have you lived in South Dakota? _____ Years
Please round your answer to the nearest whole number of years (if less than 6 months, enter 0).

3. Which South Dakota county do you live in? _____

4. Is your current residence:
❑ RURAL
❑ SMALL TOWN
❑ CITY (greater than 10,000) (the following S.D. cities are greater than10,000: Sioux Falls, Rapid City, Aberdeen, Watertown, Brookings, Pierre-Ft.Pierre, Mitchell, Yankton, Huron, Vermillion)

5. Do you own land outside town/city? ❑ No ❑ Yes

6. Are you a farmer/rancher?
❑ No
❑ Yes – but retired
❑ Yes – Part-time
❑ Yes – Full-time

7. How would you describe the community in which you were raised?
If more than one area, please check the place where you lived the longest while growing up.

❑ 1. a large city with 250,000 or more people
❑ 2. a city with 100,000 to 249,999 people
❑ 3. a small city with 50,000 to 99,999 people
❑ 4. a town with 10,000 to 49,999 people
❑ 5. a small town/village with less than 10,000 people
❑ 6. a farm/ranch or rural area

THANK YOU VERY MUCH FOR YOUR VALUABLE TIME COMPLETING THIS SURVEY.

Please return your questionnaire using the addressed, pre-paid return envelope provided.

Summarized results from this survey will be posted on GFP's Web-site.

Dear South Dakota Resident,

South Dakota State University on behalf of Game, Fish & Parks (GFP), is conducting a research study aimed at understanding how people feel about wildlife, wildlife management and environmental issues in the South Dakota. This survey is part of GFP's five-year revision of South Dakota's Wildlife Action Plan. Information about the South Dakota Wildlife Action Plan and this survey can be found on the GFP website at: **http://gfp.sd.gov/wildlife/management/plans/wildlife-action-plan.aspx**.

For this study we are requesting your participation in the survey included in this mailing. Any adult residing at this address can complete the survey. The survey is designed to take approximately 15-20 minutes to complete. It is important to us that your survey be completed and returned in order to ensure that the results will truly represent the target population for this study. **Even if you have little knowledge about or interest in wildlife in South Dakota, your input is important to us.**

Your participation in this survey is voluntary (returning a blank survey will let us know that you do not want to participate and we will not send any reminders or follow-up requests to participate in this survey). You may leave any question or portion of the survey blank that you do not want to answer. Your responses will remain **completely confidential**. Your name and contact information will never in any way be released or associated with your responses in reporting of the data. In addition, there are no known risks or direct personal benefits associated with your participation.

In accordance with federal regulations, the SDSU Human Research Committee has reviewed and approved this study. If you have *questions about your rights as a participant in this research*, you may contact the SDSU Research Compliance Coordinator at (605) 688-6975. The questionnaire has an identification number affiliated with it to ensure that we do not bother you with subsequent mailings or phone calls related to this study effort.

We would be happy to answer any *questions you might have regarding the study*. Please feel free to contact us by phone or email (details provided below). Thank you very much for your assistance.
Sincerely,

Larry Gigliotti (*for questions about the survey*)
South Dakota State University
Box 2140B, SNP 201C
Brookings, SD 57007
(605) 688-6717
Larry.Gigliotti@sdstate.edu

Eileen Dowd Stukel (*for questions about the plan*)
523 E. Capitol
Pierre, SD 57501
(605) 773-4229
eileen.dowdstukel@state.sd.us

Dear South Dakota Resident,

South Dakota State University on behalf of Game, Fish & Parks (GFP), is conducting a research study aimed at understanding how people feel about wildlife, wildlife management and environmental issues in the South Dakota. This survey is part of GFP's five-year revision of South Dakota's Wildlife Action Plan. Information about the South Dakota Wildlife Action Plan and this survey can be found on the GFP website at: **http://gfp.sd.gov/wildlife/management/plans/wildlife-action-plan.aspx**.

Not long ago, we mailed your household a survey for this study. As of today, we have not yet received your completed questionnaire. If you have already completed and returned it to us, please disregard this notice and accept our sincere thanks. Enclosed is another copy of the survey which is designed to take approximately 15-20 minutes to complete and should be filled out by someone at least 18 years of age. It is important to us that your survey be completed and returned in order to ensure that the results will truly represent the target population for this study. **Even if you have little knowledge about or interest in wildlife in South Dakota, <u>your input is important to us.</u>**

Your participation in this survey is voluntary (returning a blank survey will let us know that you do not want to participate and we will not send any reminders or follow-up requests to participate in this survey). You may leave any question or portion of the survey blank that you do not want to answer. Your responses will remain **completely confidential**. Your name and contact information will never in any way be released or associated with your responses in reporting of the data. In addition, there are no known risks or direct personal benefits associated with your participation.

In accordance with federal regulations, the SDSU Human Research Committee has reviewed and approved this study. If you have *questions about your rights as a participant in this research*, you may contact the SDSU Research Compliance Coordinator at (605) 688-6975. The questionnaire has an identification number affiliated with it to ensure that we do not bother you with subsequent mailings or phone calls related to this study effort.

Deadline for returning your survey is March 23. Thank you very much for your assistance.

Sincerely,

Larry Gigliotti (*for questions about the survey*)
South Dakota State University
Box 2140B, SNP 201C
Brookings, SD 57007
(605) 688-6717
Larry.Gigliotti@sdstate.edu

Eileen Dowd Stukel (*for questions about the plan*)
523 E. Capitol
Pierre, SD 57501
(605) 773-4229
eileen.dowdstukel@state.sd.us

Post Card Reminder:

February 15, 2012

Last week I mailed you a survey about wildlife and environmental issues. This postcard reminder is being sent to ask you to complete and return your survey as soon as possible using the pre-paid return envelope provided. If you have already completed and returned it to us, please accept our sincere thanks.

YOUR response is needed to provide an accurate assessment of opinions held by South Dakota citizens. When the survey is completed a report f summarized results will be posted on the South Dakota Game, Fish and Parks web-site.

Please try to respond to the first mailing of the survey by February 27. If by some chance you did not receive the questionnaire, or if it got misplaced, don't worry (just wait and watch your mail) as a second questionnaire will be mailed to you in a couple of weeks if we don't receive your completed questionnaire in the mail.

Larry Gigliotti

Appendix B. Question items and directions for computing the Wildlife Value Orientations.

Questions – Page 3 in the survey questionnaires	**Code**
Humans should manage fish and wildlife populations so that humans benefit.	**W1**
Animals should have rights similar to the rights of humans.	**W2**
We should strive for a world where there is an abundance of fish and wildlife for hunting and fishing.	**W3**
I view all living things as part of one big family.	**W4**
Hunting does not respect the lives of animals. **[RECODED]**	**W5**
I feel a strong emotional bond with animals.	**W6**
The needs of humans should take priority over fish and wildlife protection.	**W7**
I care about animals as much as I do other people.	**W8**
Fish and wildlife are on earth primarily for people to use.	**W9**
Hunting is cruel and inhumane to the animals. **[RECODED]**	**W10**
We should strive for a world where humans and fish and wildlife can live side by side without fear.	**W11**
I value the sense of companionship I receive from animals.	**W12**
Wildlife are like my family and I want to protect them.	**W13**
People who want to hunt should be provided the opportunity to do so.	**W14**

Note: W3 was dropped due to low scale reliability.

Belief Items:

Domination/Utilitarian		**Mutualism**	
Appropriate Use	**Hunting**	**Social Affiliation**	**Caring**
W1, W7, W9	W5R, W10R, W14	W4, W2, W11, W13	W6, W8, W12

Computing the dimensions for the WVO:

```
Compute use = mean(W1, W7, W9).
Compute hunting = mean(W5R, W10R, W14).
Compute mutual = mean(W4, W2, W11, W13).
Compute caring = mean(W6, W8, W12).

Compute usehunt = mean(use, hunting).
Compute mutualcare = mean(mutual, caring).

*Create crosstabulated scale using both mutualcare and usehunt (4 categories: Utilitarian,
Mutualist, Pluralist, Distanced).

Compute usebymutual = 9.
Missing values usebymutual (9).
Value labels usebymutual
1 'Utilitarian'
2 'Mutualist'
3 'Pluralist'
4 'Distanced'.
If usehunt > 4.50 and mutualcare <= 4.50 usebymutual = 1.
If usehunt <= 4.50 and mutualcare > 4.50 usebymutual = 2.
If usehunt > 4.50 and mutualcare > 4.50 usebymutual = 3.
If usehunt <= 4.50 and mutualcare >= 4.50 usebymutual = 4.
If usehunt = 9 or mutualcare = 9 usebymutual = 9.

Compute usebymutual = WVO.
```

Coding instructions were provided by Dr. Tara Teel, Department of Human Dimensions of Natural Resources, Warner College of Natural Resources, Colorado State University

Appendix C – Tables: Mean wildlife and environmental attitudes analyzed by Wildlife Value Orientations.

General Questions about Fish & Wildlife Management in South Dakota

Appendix C – Table 1. South Dakota has a great diversity (variety) of fish and wildlife. How important is it to you that South Dakota conserves/protects as much fish and wildlife as possible where appropriate?

Wildlife Value Orientation	Mean Importance[1]	95% C.I.	Number
Utilitarian	2.67	2.62 – 2.72	539
Mutualist	2.87	2.80 – 2.94	138
Pluralist	2.86	2.81 – 2.91	262
Distanced	2.58	2.45 – 2.71	97
ANOVA: F	11.973		
***p*-value**	<.001		
Eta^2	.034		

[1]Importance Scale: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important

Appendix C – Table 2. How important do you think healthy fish and wildlife populations are to the economy and well-being of South Dakota residents?

Wildlife Value Orientation	Mean Importance[1]	95% C.I.	Number
Utilitarian	2.71	2.67 – 2.76	542
Mutualist	2.85	2.78 – 2.91	138
Pluralist	2.87	2.82 – 2.91	263
Distanced	2.64	2.53 – 2.76	98
ANOVA: F	8.934		
***p*-value**	<.001		
Eta^2	.025		

[1]Importance Scale: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important

Appendix C – Table 3. How strongly do you disagree or agree with the following statement? The diversity of fish and wildlife in an area is a sign of the quality of the natural environment.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	1.98	1.88 – 2.08	543
Mutualist	2.39	2.21 – 2.57	139
Pluralist	2.40	2.27 – 2.53	263
Distanced	1.79	1.54 – 2.04	101
ANOVA: F	13.832		
***p*-value**	<.001		
Eta^2	.038		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 4. In general, how would you rate Game, Fish and Parks' (GFP) efforts to conserve and protect the diversity (variety) of fish and wildlife in South Dakota?

Wildlife Value Orientation	Mean Focus[1]	95% C.I.	Number
Utilitarian	0.06	-0.03 – 0.14	496
Mutualist	-0.34	-0.54 – -0.13	115
Pluralist	-0.07	-0.20 – 0.05	232
Distanced	0.00	-0.19 – 0.19	89
ANOVA: F	5.459		
***p*-value**	.001		
Eta^2	.017		

[1]Focus Scale: -3=Far Too Little; -2=Moderately Too Little; -1=Slightly Too Little; 0=Just About the Right Amount; 1=Slightly Too Much; 2=Moderately Too Much; 3=Far Too Much; (No Opinion=missing)

Appendix C – Table 5. Compared to other places where you could consider living, how would you rate life in South Dakota?

Wildlife Value Orientation	Mean Rating[1]	95% C.I.	Number
Utilitarian	1.93	1.82 – 2.04	526
Mutualist	1.74	1.47 – 2.01	132
Pluralist	1.91	1.76 – 2.06	254
Distanced	1.41	1.14 – 1.68	98
ANOVA: F	4.814		
***p*-value**	.002		
Eta^2	.014		

[1]Rating Scale: -3=Very Much Worse; -2=Moderately Worse; -1=Slightly Worse; 0=About the Same; 1=Slightly Better; 2=Moderately Better; 3=Very Much Better

Appendix C – Table 6. In general, how much does fish and wildlife detract or contribute to a high "quality of life" for you?

Wildlife Value Orientation	Mean Contribution	95% C.I.	Number
Utilitarian	1.82	1.72 – 1.91	534
Mutualist	2.17	2.01 – 2.34	126
Pluralist	2.12	1.98 – 2.25	260
Distanced	1.23	1.00 – 1.47	95
ANOVA: F	18.822		
***p*-value**	<.001		
Eta^2	.053		

[1]Contribution Scale: -3=Detracts Greatly; -2=Detracts Moderately; -1=Detracts Slightly; 0=Neither; 1=Contributes Slightly; 2=Contributes Moderately; 3=Contributes Greatly

Prairie Ecosystem Issues

How strongly do you disagree or agree with each statement?

Appendix C – Table 7-A. Maintaining a native prairie ecosystem in South Dakota is important to me.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	1.52	1.37 – 1.68	271
Mutualist	2.05	1.75 – 2.34	65
Pluralist	2.28	2.13 – 2.44	137
Distanced	1.26	0.81 – 1.70	47
ANOVA: F	15.549		
***p*-value**	<.001		
Eta[2]	.083		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 7-B. Prairie dogs are an important component of native ecosystems and need some degree of protection.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.47	-0.67 – -0.26	271
Mutualist	1.11	0.70 – 1.52	65
Pluralist	0.67	0.40 – 0.95	137
Distanced	0.34	-0.09 – 0.77	47
ANOVA: F	24.112		
***p*-value**	<.001		
Eta[2]	.123		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 7-C. Prairie dogs are a destructive agricultural pest that should be eliminated from South Dakota.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.14	-0.36 – 0.09	271
Mutualist	-1.18	-1.36 – -0.74	65
Pluralist	-0.80	-1.08 – -0.52	137
Distanced	-0.43	-0.86 – 0.01	47
ANOVA: F	8.157		
***p*-value**	<.001		
Eta[2]	.045		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 7-D. I support using some money from hunting license fees for projects designed to conserve and enhance native prairie ecosystems and their associated wildlife.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	1.02	0.83 – 1.21	271
Mutualist	1.92	1.62 – 2.23	65
Pluralist	1.51	1.27 – 1.76	136
Distanced	0.81	0.37 – 1.25	47
ANOVA: F	9.377		
***p*-value**	<.001		
Eta^2	.052		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 7-E. I am concerned about the accelerated conversion of native prairie habitat.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.81	0.64 – 0.98	270
Mutualist	1.38	1.07 – 1.70	65
Pluralist	1.19	0.93 – 1.45	137
Distanced	0.34	-0.11 – 0.79	47
ANOVA: F	6.797		
***p*-value**	<.001		
Eta^2	.038		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

South Dakota Bats

How strongly do you disagree or agree with each statement?

Appendix C – Table 8-A. Maintaining healthy populations and diversity of bat species in South Dakota is important to me.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.34	0.13 – 0.54	270
Mutualist	1.37	1.02 – 1.73	64
Pluralist	0.92	0.65 – 1.19	136
Distanced	0.43	0.06 – 0.79	47
ANOVA: F	9.352		
***p*-value**	<.001		
Eta^2	.052		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 8-B. Bats pose an unacceptable health risk to people.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.41	-0.63 – -0.20	270
Mutualist	-1.42	-1.81 – -1.02	65
Pluralist	-0.60	-0.89 – -0.32	136
Distanced	-0.45	-0.85 – -0.04	47
ANOVA: F	6.269		
***p*-value**	<.001		
Eta^2	.035		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 8-C. Bats are important and should have some legal protection from harm.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.12	-0.31 – 0.08	269
Mutualist	1.09	0.69 – 1.49	65
Pluralist	0.74	0.51 – 0.98	137
Distanced	0.21	-0.21 – 0.63	47
ANOVA: F	15.926		
***p*-value**	<.001		
Eta^2	.085		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 8-D. I would enjoy having bats living and feeding near my house.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.54	-0.78 – -0.30	270
Mutualist	0.32	-0.19 – 0.83	65
Pluralist	-0.03	-0.36 – 0.30	135
Distanced	-0.55	-1.01 – -0.09	47
ANOVA: F	4.680		
***p*-value**	.003		
Eta[2]	.027		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 8-E. I am concerned about the impact of diseases, such as white nose syndrome, on bat populations.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.39	0.20 – 0.57	270
Mutualist	0.95	0.62 – 1.29	65
Pluralist	0.71	0.48 – 0.94	135
Distanced	0.34	-0.03 – 0.71	47
ANOVA: F	3.797		
***p*-value**	.010		
Eta[2]	.022		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Mountain Lions in South Dakota

How strongly do you disagree or agree with each statement?

Appendix C – Table 9-A. Having a healthy, viable population of mountain lions in S.D. is important to me.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.25	-0.48 – -0.03	271
Mutualist	1.29	0.90 – 1.68	65
Pluralist	0.80	0.49 – 1.10	137
Distanced	0.23	-0.22 – 0.69	47
ANOVA: F	18.471		
***p*-value**	<.001		
Eta[2]	.097		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 9-B. I am concern about mountain lions killing too many game (hunted) animals.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.72	0.49 – 0.94	271
Mutualist	-0.48	-0.95 – 0.00	65
Pluralist	0.48	0.17 – 0.79	137
Distanced	0.02	-0.48 – 0.52	47
ANOVA: F	8.229		
***p*-value**	<.001		
Eta[2]	.046		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 9-C. Having any mountain lions in South Dakota is too dangerous a risk to people.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.48	-0.72 – -0.24	270
Mutualist	-1.57	-1.99 – -1.15	65
Pluralist	-0.80	-1.12 – -0.48	137
Distanced	-0.38	-0.90 – 0.14	47
ANOVA: F	6.079		
***p*-value**	<.001		
Eta[2]	.034		

[1]Attitude Scale: -3=Strongly Disagree; -2=Moderately Disagree; -1=Slightly Disagree; 0=Neutral or No Opinion; 1=Slightly Agree; 2=Moderately Agree; 3=Strongly Agree.

Appendix C – Table 9-D. Do you oppose or favor a regulated mountain lion season in South Dakota?

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	1.95	1.79 – 2.11	265
Mutualist	0.72	0.24 – 1.19	64
Pluralist	1.64	1.39 – 1.89	135
Distanced	1.39	0.98 – 1.78	47
ANOVA: F	13.207		
***p*-value**	<.001		
Eta^2	.072		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Wildlife Management Issues: Rare Non-game Species vs. Game Animals/Fish

How strongly do you disagree or agree with each statement?

Appendix C – Table 10-A. I would be concerned about River Otters taking too many game fish if their populations were to increase. Results of South Dakota citizen surveys conducted in 2012.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.12	-0.28 – 0.04	272
Mutualist	-0.46	-0.82 – -0.10	74
Pluralist	0.10	-0.17 – 0.36	125
Distanced	-0.37	-0.70 – -0.04	54
ANOVA: F	2.959		
***p*-value**	.032		
Eta^2	.017		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 10-B. I would support releasing River Otters into suitable habitats in South Dakota. Results of South Dakota citizen surveys conducted in 2012.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.32	0.15 – 0.49	272
Mutualist	1.16	0.83 – 1.49	74
Pluralist	0.52	0.25 – 0.78	124
Distanced	0.69	0.43 – 0.94	54
ANOVA: F	7.524		
***p*-value**	<.001		
Eta^2	.042		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 10-C. I support efforts by GFP to increase Osprey numbers in South Dakota. Results of South Dakota citizen surveys conducted in 2012.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.46	0.30 – 0.63	272
Mutualist	1.38	1.03 – 1.73	74
Pluralist	0.77	0.50 – 1.04	122
Distanced	0.63	0.35 – 0.91	54
ANOVA: F	8.488		
***p*-value**	<.001		
Eta^2	.047		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 10-D. I would be concerned about Osprey taking too many game fish if their populations were to increase. Results of South Dakota citizen surveys conducted in 2012.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.20	-0.36 – -0.04	272
Mutualist	-0.57	-0.98 – -0.16	74
Pluralist	-0.22	-0.46 – 0.03	123
Distanced	-0.41	-0.74 – -0.08	54
ANOVA: F	1.548		
***p*-value**	.201		
Eta^2	.009		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 10-E. The Missouri River should not be managed for threatened or endangered species, such as terns and plovers, if it would in any way decrease game fish populations. Results of South Dakota citizen surveys conducted in 2012.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.08	-0.10 – 0.26	273
Mutualist	-0.57	-0.99 – -0.14	74
Pluralist	0.05	-0.23 – 0.33	122
Distanced	-0.59	-1.00 – -0.19	54
ANOVA: F	5.411		
***p*-value**	.001		
Eta[2]	.030		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 10-F. In general, should wildlife management decisions favor game animals/fish OR rare wildlife species. Results of South Dakota citizen surveys conducted in 2012.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.50	-0.65 – -0.34	270
Mutualist	0.45	0.12 – 0.78	74
Pluralist	-0.20	-0.46 – 0.05	122
Distanced	-0.06	-0.39 –0.27	53
ANOVA: F	10.289		
***p*-value**	<.001		
Eta[2]	.057		

[1]Attitude Scale: -3=Strongly Favor Game Species; -2=Moderately Favor Game Species; -1=Slightly Favor Game Species; 0=Balanced Approach; 1=Slightly Favor Rare Wildlife Species; 2=Moderately Favor Rare Wildlife Species; 3=Strongly Favor Rare Wildlife Species

Wildlife Management in South Dakota: Miscellaneous

How strongly do you disagree or agree with each statement?

Appendix C – Table 11-A. I would support requirements to use non-toxic bullets for shooting prairie dogs to reduce lead poisoning of eagles, hawks and other wildlife.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.12	-0.13 – 0.37	270
Mutualist	1.37	0.95 – 1.79	65
Pluralist	1.17	0.86 – 1.48	136
Distanced	0.87	0.42 – 1.32	47
ANOVA: F	13.468		
***p*-value**	<.001		
Eta^2	.073		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 11-B. I am concerned about feral (wild), free ranging house cats killing native birds.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.48	0.25 – 0.71	270
Mutualist	0.55	0.14 – 0.95	64
Pluralist	0.74	0.47 – 1.00	136
Distanced	0.53	0.16 – 0.91	47
ANOVA: F	0.648		
***p*-value**	.585		
Eta^2	.004		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 11-C. I would support regulations to control commercial harvest and unregulated take of turtles, lizards, snakes, frogs and toads if information showed that their populations were declining to unacceptable levels.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.72	0.52 – 0.92	270
Mutualist	1.94	1.64 – 2.24	65
Pluralist	1.41	1.18 – 1.65	136
Distanced	0.85	0.45 – 1.25	47
ANOVA: F	14.532		
***p*-value**	<.001		
Eta^2	.078		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 11-D. Rattlesnakes are an important component of South Dakota's assemblage of wildlife and should not be killed indiscriminately.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.59	-0.81 – -0.36	270
Mutualist	0.91	0.48 – 1.34	65
Pluralist	0.55	0.25 – 0.86	136
Distanced	0.04	-0.42 – 0.50	47
ANOVA: F	18.971		
***p*-value**	<.001		
Eta^2	.100		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 11-E. In general, efforts should be made to reduce predator numbers to help increase the numbers of game animals for hunters.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.54	0.33 – 0.74	269
Mutualist	-1.09	-1.54 – -0.64	65
Pluralist	0.76	0.46 – 1.07	136
Distanced	-0.17	-0.63 – 0.29	47
ANOVA: F	19.845		
***p*-value**	<.001		
Eta^2	.104		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Climate Change

How strongly do you disagree or agree with each statement?

Appendix C – Table 12-A. I believe that climate change is currently affecting South Dakota.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.06	-0.28 – 0.17	277
Mutualist	1.42	1.07 – 1.77	74
Pluralist	0.74	0.43 – 1.04	125
Distanced	0.61	0.17 – 1.05	54
ANOVA: F	15.835		
***p*-value**	<.001		
Eta^2	.083		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 12-B. I believe that climate change is a serious threat that requires changes in current life styles.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	-0.35	-0.58 – -0.12	277
Mutualist	1.30	0.92 – 1.67	74
Pluralist	0.65	0.34 – 0.96	125
Distanced	0.70	0.25 – 1.16	54
ANOVA: F	20.595		
***p*-value**	<.001		
Eta^2	.105		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 12-C. I support regulations to reduce carbon emissions to address climate change.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.18	-0.05 – 0.40	277
Mutualist	1.85	1.52 – 2.19	74
Pluralist	1.12	0.81 – 1.43	125
Distanced	0.83	0.38 – 1.29	54
ANOVA: F	20.792		
***p*-value**	<.001		
Eta^2	.106		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 12-D. I don't believe that climate change will result in any negative impacts on wildlife populations in South Dakota.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.00	-0.22 – 0.22	276
Mutualist	-1.08	-1.51 – -0.65	74
Pluralist	-0.49	-0.81 – -0.17	125
Distanced	-0.83	-1.27 – -0.40	54
ANOVA: F	9.052		
***p*-value**	<.001		
Eta[2]	.049		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 12-E. Beliefs concerning the causes of climate change generally range from totally natural causes to totally human activities or some approximate combination of both. On this scale of 1 (all climate change is due to natural causes to 7 (all climate change is from human activities), please indicate your personal belief about the causes of climate change.

Wildlife Value Orientation	Mean Belief[1]	95% C.I.	Number
Utilitarian	-0.54	-0.74 – -0.34	253
Mutualist	0.56	0.18 – 0.94	68
Pluralist	0.06	-0.25 – 0.36	109
Distanced	0.66	0.15 – 1.17	41
ANOVA: F	13.214		
***p*-value**	<.001		
Eta[2]	.078		

[1]Belief Scale (-3 → +3): -3=Climate change is dues to natural cyclic changes in weather; 0=About Half of Each; +3=Climate change is the result of activities by humans

Energy Development in South Dakota

How strongly do you disagree or agree with each statement?

Appendix C – Table 13-A. Wildlife impacts and grassland habitat loss should be considered when increasing biofuel production. Results of South Dakota citizen surveys conducted in 2012.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.93	0.75 – 1.11	275
Mutualist	2.03	1.76 – 2.30	73
Pluralist	1.53	1.28 – 1.77	125
Distanced	0.67	0.26 – 1.08	54
ANOVA: F	16.172		
***p*-value**	<.001		
Eta^2	.085		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 13-B. I support efforts to increase ethanol production in South Dakota. Results of South Dakota citizen surveys conducted in 2012.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.62	0.42 – 0.83	277
Mutualist	0.69	0.29 – 1.09	74
Pluralist	0.74	0.40 – 1.09	125
Distanced	0.20	-0.26 – 0.66	54
ANOVA: F	1.190		
***p*-value**	.313		
Eta^2	.007		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 13-C. Negative impacts on wildlife should be considered when developing wind energy in South Dakota. Results of South Dakota citizen surveys conducted in 2012.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.49	0.30 – 0.68	277
Mutualist	1.68	1.35 – 2.01	74
Pluralist	0.27	0.65 – 1.28	125
Distanced	0.29	-0.21 – 0.62	54
ANOVA: F	13.431		
***p*-value**	<.001		
Eta[2]	.071		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Appendix C – Table 13-D. I think people worry too much about possible environmental problems associated with pipelines for transporting oil across South Dakota. Results of South Dakota citizen surveys conducted in 2012.

Wildlife Value Orientation	Mean Attitude[1]	95% C.I.	Number
Utilitarian	0.65	0.42 – 0.89	277
Mutualist	-0.65	-1.15 – -0.14	74
Pluralist	0.33	-0.06 – 0.71	125
Distanced	-0.22	-0.78 – 0.34	54
ANOVA: F	8.927		
***p*-value**	<.001		
Eta[2]	.048		

[1]Attitude Scale: -3=Strongly Oppose; -2=Moderately Oppose; -1=Slightly Oppose; 0=Neutral or No Opinion; 1=Slightly Favor; 2=Moderately Favor; 3=Strongly Favor.

Importance of Wetland Functions

Wetlands preform many functions: How important is…

Appendix C – Table 14-A. … reducing flood events.

Wildlife Value Orientation	Mean Importance[1]	95% C.I.	Number
Utilitarian	2.20	2.10 – 2.30	274
Mutualist	2.35	2.18 – 2.52	74
Pluralist	2.45	2.32 – 2.58	125
Distanced	2.17	1.96 – 2.37	54
ANOVA: F	3.496		
***p*-value**	.015		
Eta^2	.020		

[1]Importance Scale: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important

Appendix C – Table 14-B. … providing wildlife habitat.

Wildlife Value Orientation	Mean Importance[1]	95% C.I.	Number
Utilitarian	2.26	2.17 – 2.34	274
Mutualist	2.65	2.52 – 2.77	74
Pluralist	2.57	2.45 – 2.68	125
Distanced	2.09	1.90 – 2.29	54
ANOVA: F	12.817		
***p*-value**	<.001		
Eta^2	.068		

[1]Importance Scale: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important

Appendix C – Table 14-C. … providing recreational opportunities.

Wildlife Value Orientation	Mean Importance[1]	95% C.I.	Number
Utilitarian	1.98	1.88 – 2.09	274
Mutualist	1.91	1.68 – 2.13	74
Pluralist	2.22	2.08 – 2.37	125
Distanced	1.80	1.60 – 2.00	54
ANOVA: F	4.000		
***p*-value**	.008		
Eta^2	.022		

[1]Importance Scale: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important

Appendix C – Table 14-D. … providing clean water.

Wildlife Value Orientation	Mean Importance[1]	95% C.I.	Number
Utilitarian	2.67	2.60 – 2.74	274
Mutualist	2.78	2.66 – 2.91	74
Pluralist	2.70	2.58 – 2.81	125
Distanced	2.67	2.51 – 2.83	54
ANOVA: F	0.753		
***p*-value**	.521		
Eta^2	.004		

[1]Importance Scale: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important

Appendix C – Table 14-E. … providing economic opportunity.

Wildlife Value Orientation	Mean Importance[1]	95% C.I.	Number
Utilitarian	2.03	1.93 – 2.13	273
Mutualist	1.80	1.57 – 2.03	74
Pluralist	2.26	2.10 – 2.41	125
Distanced	1.83	1.60 – 2.06	54
ANOVA: F	5.276		
***p*-value**	.001		
Eta^2	.029		

[1]Importance Scale: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important

Appendix D – Tables: Wildlife and environmental attitudes analyzed by Wildlife Value Orientations.

General Questions about Fish & Wildlife Management in South Dakota

Appendix D – Table 1. South Dakota has a great diversity (variety) of fish and wildlife. How important is it to you that South Dakota conserves/protects as much fish and wildlife as possible where appropriate?

Importance	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Not Important	9	1.7%	1	0.7%	1	0.4%	2	2.0%
Slightly Important	21	3.9%	1	0.7%	3	1.1%	2	2.0%
Moderately Important	109	20.0%	13	9.4%	28	10.6%	31	31.0%
Very Important	400	73.4%	123	88.5%	230	87.5%	62	62.0%
No Opinion	6	1.1%	1	0.7%	1	0.4%	3	3.0%
Total	545	100%	139	100%	263	100%	100	100%
*Chi-Square: X^2=45.460; df=9; p<.001; Cramer's V = .121								

*Chi-square analysis does not include the "No Opinion" response category

Appendix D – Table 2. How important do you think healthy fish and wildlife populations are to the economy and well-being of South Dakota residents?

Importance	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Not Important	5	0.9%	0	0.0%	0	0.0%	0	0.0%
Slightly Important	13	2.4%	1	0.7%	3	1.1%	4	4.0%
Moderately Important	114	20.9%	19	13.7%	29	11.0%	27	26.7%
Very Important	410	75.2%	118	84.9%	231	87.5%	67	66.3%
No Opinion	3	0.6%	1	0.7%	1	0.4%	3	3.0%
Total	545	100%	139	100%	264	100%	101	100%
*Chi-Square: X^2=30.742; df=9; p<.001; Cramer's V = .099								

*Chi-square analysis does not include the "No Opinion" response category

Appendix D– Table 3. How strongly do you disagree or agree with the following statement? The diversity of fish and wildlife in an area is a sign of the quality of the natural environment.

Attitude	**Wildlife Value Orientations**							
	Utilitarian		**Mutualist**		**Pluralist**		**Distanced**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Strongly Disagree	6	1.1%	2	1.4%	2	0.8%	0	0.0%
Moderately Disagree	4	0.7%	1	0.7%	2	0.8%	2	2.0%
Slightly Disagree	5	0.9%	0	0.0%	2	0.8%	1	1.0%
Neutral / No Opinion	39	7.2%	5	3.6%	13	4.9%	19	18.8%
Slightly Agree	76	14.0%	8	5.8%	13	4.9%	11	10.9%
Moderately Agree	209	38.5%	37	26.6%	63	24.0%	29	28.7%
Strongly Agree	204	37.6%	86	61.9%	168	63.9%	39	38.6%
Total	543	100%	139	100%	263	100%	101	100%
Chi-Square: X^2=92.580; df=18; p<.001; Cramer's V = .172								

Appendix D – Table 4. In general, how would you rate Game, Fish and Parks' (GFP) efforts to conserve and protect the diversity (variety) of fish and wildlife in South Dakota?

Attitude	**Wildlife Value Orientations**							
	Utilitarian		**Mutualist**		**Pluralist**		**Distanced**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Far too little	5	0.9%	5	3.6%	4	1.5%	2	2.0%
Moderately too little	16	2.9%	9	6.5%	15	5.7%	3	3.0%
Slightly too little	63	11.6%	27	19.6%	27	10.3%	6	6.0%
Just about right	325	59.7%	63	45.7%	152	58.2%	67	67.0%
Slightly too much	47	8.6%	3	2.2%	21	8.0%	6	6.0%
Moderately too much	29	5.3%	6	4.3%	9	3.4%	3	3.0%
Far too much	11	2.0%	2	1.4%	4	1.5%	2	2.0%
No Opinion	48	8.8%	23	16.7%	29	11.1%	11	11.0%
Total	544	100%	138	100%	261	100%	100	100%
*Chi-Square: X^2=36.029; df=18; p=.007; Cramer's V = .114								

*Chi-square analysis does not include the "No Opinion" response category

Appendix D – Table 5. Compared to other places where you could consider living, how would you rate life in South Dakota?

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Very Much Worse	2	0.4%	2	1.4%	0	0.0%	0	0.0%
Moderately Worse	10	1.8%	6	4.3%	2	0.8%	3	3.0%
Slightly Worse	23	4.2%	7	5.1%	15	5.7%	6	5.9%
About the Same	38	7.0%	11	8.0%	23	8.7%	18	17.8%
Slightly Better	63	11.6%	17	12.3%	31	11.8%	15	14.9%
Moderately Better	168	30.8%	29	21.0%	76	28.9%	33	32.7%
Very Much Better	222	40.7%	60	43.5%	107	40.7%	23	22.8%
No Opinion	19	3.5%	6	4.3%	9	3.4%	3	3.0%
Total	545	100%	138	100%	263	100%	101	100%
*Chi-Square: X^2=37.579; df=18; p=.004; Cramer's V = .111								

*Chi-square analysis does not include the "No Opinion" response category

Appendix D – Table 6. In general, how much does fish and wildlife detract or contribute to a high "quality of life" for you?

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Detracts Greatly	2	0.4%	0	0.0%	0	0.0%	0	0.0%
Detracts Moderately	0	0.0%	0	0.0%	2	0.8%	1	1.0%
Detracts Slightly	7	1.3%	0	0.0%	2	0.8%	1	1.0%
Neither	76	13.9%	10	7.2%	27	10.2%	31	30.7%
Contributes Slightly	91	16.7%	15	10.9%	26	9.8%	18	17.8%
Contributes Moderately	181	33.2%	44	31.9%	79	29.9%	30	29.7%
Contributes Greatly	177	32.4%	57	41.3%	124	47.0%	14	13.9%
No Opinion	12	2.2%	12	8.7%	4	1.5%	6	5.9%
Total	546	100%	138	100%	264	100%	101	100%
*Chi-Square: X^2=72.390; df=18; p<.001; Cramer's V = .154								

*Chi-square analysis does not include the "No Opinion" response category

Prairie Ecosystem Issues

How strongly do you disagree or agree with each statement?

Appendix D – Table 7-A. Maintaining a native prairie ecosystem in South Dakota is important to me.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	7	2.6%	0	0.0%	0	0.0%	1	2.1%
Moderately Disagree	2	0.7%	2	3.1%	1	0.7%	3	6.4%
Slightly Disagree	8	3.0%	0	0.0%	0	0.0%	1	2.1%
Neutral / No Opinion	32	11.8%	5	7.7%	7	5.1%	6	12.8%
Slightly Agree	58	21.4%	10	15.4%	11	8.0%	15	31.9%
Moderately Agree	104	38.4%	17	26.2%	50	36.5%	9	19.1%
Strongly Agree	60	22.1%	31	47.7%	68	49.6%	12	25.5%
Total	271	100%	65	100%	137	100%	47	100%
Chi-Square: X^2=72.571; df=18; p<.001; Cramer's V = .216								

Appendix D – Table 7-B. Prairie dogs are an important component of native ecosystems and need some degree of protection.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	50	18.5%	4	6.2%	10	7.3%	3	6.4%
Moderately Disagree	36	13.3%	2	3.1%	6	4.4%	3	6.4%
Slightly Disagree	42	15.5%	3	4.6%	10	7.3%	4	8.5%
Neutral / No Opinion	44	16.2%	9	13.8%	26	19.0%	13	27.7%
Slightly Agree	67	24.7%	18	27.7%	43	31.4%	15	31.9%
Moderately Agree	26	9.6%	14	21.5%	25	18.2%	7	14.9%
Strongly Agree	6	2.2%	15	23.1%	17	12.4%	2	4.3%
Total	271	100%	65	100%	137	100%	47	100%
Chi-Square: X^2=83.310; df=18; p<.001; Cramer's V = .231								

Appendix D – Table 7-C. Prairie dogs are a destructive agricultural pest that should be eliminated from South Dakota.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	38	14.0%	19	29.2%	29	21.2%	3	6.4%
Moderately Disagree	34	12.5%	14	21.5%	20	14.6%	9	19.1%
Slightly Disagree	49	18.1%	13	20.0%	30	21.9%	9	19.1%
Neutral / No Opinion	49	18.1%	10	15.4%	25	18.2%	18	38.3%
Slightly Agree	39	14.4%	2	3.1%	24	17.5%	3	6.4%
Moderately Agree	31	11.4%	2	3.1%	3	2.2%	2	4.3%
Strongly Agree	31	11.4%	5	7.7%	6	4.4%	3	6.4%
Total	271	100%	65	100%	137	100%	47	100%
Chi-Square: X^2=53.310; df=18; p<.001; Cramer's V = .185								

Appendix D – Table 7-D. I support using some money from hunting license fees for projects designed to conserve and enhance native prairie ecosystems and their associated wildlife.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	17	6.3%	0	0.0%	4	2.9%	3	6.4%
Moderately Disagree	7	2.6%	1	1.5%	4	2.9%	1	2.1%
Slightly Disagree	11	4.1%	1	1.5%	2	1.5%	1	2.1%
Neutral / No Opinion	39	14.4%	9	13.8%	16	11.8%	12	25.5%
Slightly Agree	86	31.7%	9	13.8%	31	22.8%	16	34.0%
Moderately Agree	67	24.7%	16	24.6%	40	29.4%	8	17.0%
Strongly Agree	44	16.2%	29	44.6%	39	28.7%	6	12.8%
Total	271	100%	65	100%	136	100%	47	100%
Chi-Square: X^2=46.634; df=18; p<.001; Cramer's V = .173								

Appendix D – Table 7-E. I am concerned about the accelerated conversion of native prairie habitat.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	10	3.7%	1	1.5%	4	2.9%	2	4.3%
Moderately Disagree	7	2.6%	0	0.0%	4	2.9%	4	8.5%
Slightly Disagree	15	5.6%	1	1.5%	3	2.2%	4	8.5%
Neutral / No Opinion	88	32.6%	16	24.6%	39	28.5%	19	40.4%
Slightly Agree	55	20.4%	16	24.6%	22	16.1%	6	12.8%
Moderately Agree	62	23.0%	15	23.1%	31	22.6%	8	17.0%
Strongly Agree	33	12.2%	16	24.6%	34	24.8%	4	8.5%
Total	270	100%	65	100%	137	100%	47	100%
Chi-Square: X^2=32.539; df=18; p=.019; Cramer's V = .145								

South Dakota Bats

How strongly do you disagree or agree with each statement?

Appendix D – Table 8-A. Maintaining healthy populations and diversity of bat species in South Dakota is important to me.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	31	11.5%	0	0.0%	7	5.1%	0	0.0%
Moderately Disagree	14	5.2%	3	4.7%	7	5.1%	3	6.4%
Slightly Disagree	10	3.7%	3	4.7%	6	4.4%	4	8.5%
Neutral / No Opinion	83	30.7%	12	18.8%	31	22.8%	22	46.8%
Slightly Agree	67	24.8%	12	18.8%	25	18.4%	11	23.4%
Moderately Agree	40	14.8%	17	26.6%	39	28.7%	2	4.3%
Strongly Agree	25	9.3%	17	26.6%	21	15.4%	5	10.6%
Total	270	100%	64	100%	136	100%	47	100%
Chi-Square: X^2=58.476; df=18; p<.001; Cramer's V = .194								

Appendix D – Table 8-B. Bats pose an unacceptable health risk to people.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	42	15.6%	21	32.3%	23	16.9%	5	10.6%
Moderately Disagree	37	13.7%	17	26.2%	22	16.2%	5	10.6%
Slightly Disagree	52	19.3%	8	12.3%	25	18.4%	9	19.1%
Neutral / No Opinion	62	23.0%	11	16.9%	30	22.1%	19	40.4%
Slightly Agree	36	13.3%	4	6.2%	20	14.7%	6	12.8%
Moderately Agree	19	7.0%	3	4.6%	12	8.8%	2	4.3%
Strongly Agree	22	8.1%	1	1.5%	4	2.9%	1	2.1%
Total	270	100%	65	100%	136	100%	47	100%
Chi-Square: X^2=36.905; df=18; p=.005; Cramer's V = .154								

Appendix D – Table 8-C. Bats are important and should have some legal protection from harm.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	36	13.4%	3	4.6%	5	3.6%	3	6.4%
Moderately Disagree	16	5.9%	1	1.5%	6	4.4%	1	2.1%
Slightly Disagree	41	15.2%	6	9.2%	9	6.6%	6	12.8%
Neutral / No Opinion	80	29.7%	11	16.9%	31	22.6%	21	44.7%
Slightly Agree	55	20.4%	16	24.6%	43	31.4%	10	21.3%
Moderately Agree	28	10.4%	12	18.5%	34	24.8%	1	2.1%
Strongly Agree	13	4.8%	16	24.6%	9	6.6%	5	10.6%
Total	269	100%	65	100%	137	100%	47	100%
Chi-Square: X^2=79.346; df=18; p<.001; Cramer's V = .226								

Appendix D – Table 8-D. I would enjoy having bats living and feeding near my house.

Attitude	**Wildlife Value Orientations**							
	Utilitarian		**Mutualist**		**Pluralist**		**Distanced**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Strongly Disagree	73	27.0%	10	15.4%	22	16.3%	6	12.8%
Moderately Disagree	28	10.4%	3	4.6%	13	9.6%	8	17.0%
Slightly Disagree	29	10.7%	8	12.3%	16	11.9%	9	19.1%
Neutral / No Opinion	54	20.0%	15	23.1%	28	20.7%	13	27.7%
Slightly Agree	37	13.7%	8	12.3%	20	14.8%	7	14.9%
Moderately Agree	25	9.3%	6	9.2%	24	17.8%	2	4.3%
Strongly Agree	24	8.9%	15	23.1%	12	8.9%	2	4.3%
Total	270	100%	65	100%	135	100%	47	100%
Chi-Square: X^2=37.725; df=18; p=.004; Cramer's V = .156								

Appendix D – Table 8-E. I am concerned about the impact of diseases, such as white nose syndrome, on bat populations.

Attitude	**Wildlife Value Orientations**							
	Utilitarian		**Mutualist**		**Pluralist**		**Distanced**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Strongly Disagree	18	6.7%	1	1.5%	5	3.7%	2	4.3%
Moderately Disagree	11	4.1%	1	1.5%	2	1.5%	1	2.1%
Slightly Disagree	21	7.8%	3	4.6%	9	6.7%	2	4.3%
Neutral / No Opinion	106	39.3%	25	38.5%	47	34.8%	27	57.4%
Slightly Agree	52	19.3%	10	15.4%	35	25.9%	8	17.0%
Moderately Agree	37	13.7%	15	23.1%	22	16.3%	3	6.4%
Strongly Agree	25	9.3%	10	15.4%	15	11.1%	4	8.5%
Total	270	100%	65	100%	135	100%	47	100%
Chi-Square: X^2=23.170; df=18; p=.184; Cramer's V = .122								

Mountain Lions in South Dakota

How strongly do you disagree or agree with each statement?

Appendix D – Table 9-A. Having a healthy, viable population of mountain lions in S.D. is important to me.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	58	21.4%	2	3.1%	11	8.0%	3	6.4%
Moderately Disagree	26	9.6%	2	3.1%	8	5.8%	3	6.4%
Slightly Disagree	23	8.5%	5	7.7%	10	7.3%	7	14.9%
Neutral / No Opinion	51	18.8%	7	10.8%	22	16.1%	15	31.9%
Slightly Agree	60	22.1%	18	27.7%	29	21.2%	8	17.0%
Moderately Agree	39	14.4%	12	18.5%	32	23.4%	8	17.0%
Strongly Agree	14	5.2%	19	29.2%	25	18.2%	3	6.4%
Total	271	100%	65	100%	137	100%	47	100%
Chi-Square: X^2=73.537; df=18; p<.001; Cramer's V = .217								

Appendix D – Table 9-B. I am concern about mountain lions killing too many game (hunted) animals.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	18	6.6%	13	20.0%	12	8.8%	2	4.3%
Moderately Disagree	24	8.9%	11	16.9%	13	9.5%	7	14.9%
Slightly Disagree	29	10.7%	9	13.8%	12	8.8%	12	25.5%
Neutral / No Opinion	41	15.1%	10	15.4%	24	17.5%	9	19.1%
Slightly Agree	56	20.7%	9	13.8%	33	24.1%	6	12.6%
Moderately Agree	40	14.8%	9	13.8%	22	16.1%	6	12.6%
Strongly Agree	63	23.2%	4	6.2%	21	15.3%	5	10.6%
Total	271	100%	65	100%	137	100%	47	100%
Chi-Square: X^2=41.037; df=18; p=.002; Cramer's V = .162								

Appendix D – Table 9-C. Having any mountain lions in South Dakota is too dangerous a risk to people.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	60	22.2%	29	44.6%	36	26.3%	6	12.8%
Moderately Disagree	42	15.6%	12	18.5%	22	16.1%	7	14.9%
Slightly Disagree	44	16.3%	6	9.2%	22	16.1%	11	23.4%
Neutral / No Opinion	33	12.2%	8	12.3%	19	13.9%	10	21.3%
Slightly Agree	35	13.0%	7	10.8%	21	15.3%	6	12.8%
Moderately Agree	25	9.3%	1	1.5%	7	5.1%	2	4.3%
Strongly Agree	31	11.5%	2	3.1%	10	7.3%	5	10.6%
Total	270	100%	65	100%	137	100%	47	100%
Chi-Square: X^2=31.601; df=18; p=.024; Cramer's V = .142								

Appendix D – Table 9-D. Do you oppose or favor a regulated mountain lion season in South Dakota?

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Oppose	5	1.9%	8	12.5%	3	2.2%	0	0.0%
Moderately Oppose	1	0.4%	3	4.7%	3	2.2%	1	2.1%
Slightly Oppose	4	1.5%	1	1.6%	2	1.5%	4	8.5%
Neutral / No Opinion	29	10.9%	13	20.3%	20	14.8%	8	17.0%
Slightly Favor	41	15.5%	13	20.3%	29	21.5%	8	17.0%
Moderately Favor	58	21.9%	14	21.9%	25	18.5%	15	31.9%
Strongly Favor	127	47.9%	12	18.8%	53	39.3%	11	23.4%
Total	265	100%	64	100%	135	100%	47	100%
Chi-Square: X^2=61.319; df=18; p<.001; Cramer's V = .200								

Wildlife Management Issues: Rare Non-game Species vs. Game Animals/Fish

How strongly do you disagree or agree with each statement?

Appendix D – Table 10-A. I would be concerned about River Otters taking too many game fish if their populations were to increase.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	12	4.4%	10	13.5%	6	4.8%	5	9.3%
Moderately Disagree	39	14.3%	10	13.5%	14	11.2%	6	11.1%
Slightly Disagree	34	12.5%	10	13.5%	16	12.8%	5	9.3%
Neutral / No Opinion	105	38.6%	28	37.8%	47	37.6%	26	48.1%
Slightly Agree	54	19.9%	10	13.5%	19	15.2%	12	22.2%
Moderately Agree	22	8.1%	2	2.7%	14	11.2%	0	0.0%
Strongly Agree	6	2.2%	4	5.4%	9	7.2%	0	0.0%
Total	272	100%	64	100%	125	100%	54	100%
Chi-Square: X^2=31.407; df=18; p=.026; Cramer's V = .141								

Appendix D – Table 10-B. I would support releasing River Otters into suitable habitats in South Dakota.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	15	5.5%	2	2.7%	6	4.8%	0	0.0%
Moderately Disagree	15	5.5%	1	1.4%	6	4.8%	0	0.0%
Slightly Disagree	23	8.5%	0	0.0%	9	7.3%	3	5.6%
Neutral / No Opinion	95	34.9%	25	33.8%	46	37.1%	23	42.6%
Slightly Agree	76	27.9%	16	21.6%	22	17.7%	18	33.3%
Moderately Agree	35	12.9%	12	16.2%	24	19.4%	8	14.8%
Strongly Agree	13	4.8%	18	24.3%	11	8.9%	2	3.7%
Total	272	100%	74	100%	124	100%	54	100%
Chi-Square: X^2=51.743; df=18; p<.001; Cramer's V = .181								

Appendix D – Table 10-C. I support efforts by GFP to increase Osprey numbers in South Dakota.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	11	4.0%	2	2.7%	4	3.3%	0	0.0%
Moderately Disagree	13	4.8%	2	2.7%	5	4.1%	1	1.9%
Slightly Disagree	22	8.1%	1	1.4%	6	4.9%	1	1.9%
Neutral / No Opinion	100	36.8%	18	24.3%	45	36.9%	30	55.6%
Slightly Agree	63	23.2%	12	16.2%	22	18.0%	10	18.5%
Moderately Agree	45	16.5%	16	21.6%	20	16.4%	9	16.7%
Strongly Agree	18	6.6%	23	31.1%	20	16.4%	3	5.6%
Total	272	100%	74	100%	122	100%	54	100%
Chi-Square: X^2=53.743; df=18; p<.001; Cramer's V = .185								

Appendix D – Table 10-D. I would be concerned about Osprey taking too many game fish if their populations were to increase.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	14	5.1%	15	20.3%	8	6.5%	4	7.4%
Moderately Disagree	35	12.9%	10	13.5%	18	14.6%	8	14.8%
Slightly Disagree	46	16.9%	7	9.5%	13	10.6%	4	7.4%
Neutral / No Opinion	110	40.4%	27	36.5%	51	41.5%	30	55.6%
Slightly Agree	41	15.1%	4	5.4%	23	18.7%	6	11.1%
Moderately Agree	15	5.5%	7	9.5%	7	5.7%	2	3.7%
Strongly Agree	11	4.0%	4	5.4%	3	2.4%	0	0.0%
Total	272	100%	74	100%	123	100%	54	100%
Chi-Square: X^2=38.028; df=18; p=.004; Cramer's V = .156								

Appendix D – Table 10-E. The Missouri River should not be managed for threatened or endangered species, such as terns and plovers, if it would in any way decrease game fish populations.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	14	5.1%	15	20.3%	8	6.6%	10	18.5%
Moderately Disagree	29	10.6%	12	16.2%	12	9.8%	5	9.3%
Slightly Disagree	45	16.5%	7	9.5%	19	15.6%	5	9.3%
Neutral / No Opinion	92	33.7%	24	32.4%	44	36.1%	25	46.3%
Slightly Agree	40	14.7%	4	5.4%	14	11.5%	5	9.3%
Moderately Agree	32	11.7%	6	8.1%	16	13.1%	4	7.4%
Strongly Agree	21	7.7%	6	8.1%	9	7.4%	0	0.0%
Total	273	100%	74	100%	122	100%	54	100%
Chi-Square: X^2=39.409; df=18; p=.003; Cramer's V = .158								

Appendix D – Table 10-F. In general, should wildlife management decisions favor game animals/fish OR rare wildlife species.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Favor Game	27	10.0%	4	5.4%	12	9.8%	2	3.8%
Moderately Favor Game	38	14.1%	1	1.4%	14	11.5%	4	7.5%
Slightly Favor Game	24	8.9%	3	4.1%	4	3.3%	7	13.2%
Balanced Approach	149	55.2%	42	56.8%	67	54.7%	29	54.7%
Slightly Rare Species	20	7.4%	7	9.5%	11	9.0%	5	9.4%
Moderately Rare Species	8	3.3%	8	10.8%	10	8.2%	5	9.4%
Strongly Rare Species	3	1.1%	9	12.2%	4	3.3%	1	1.9%
Total	270	100%	74	100%	122	100%	53	100%
Chi-Square: X^2=49.955; df=18; p<.001; Cramer's V = .179								

Wildlife Management in South Dakota: Miscellaneous

How strongly do you disagree or agree with each statement?

Appendix D – Table 11-A. I would support requirements to use non-toxic bullets for shooting prairie dogs to reduce lead poisoning of eagles, hawks and other wildlife.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	56	20.7%	2	3.1%	7	5.1%	2	4.3%
Moderately Disagree	16	5.9%	3	4.6%	10	7.4%	2	4.3%
Slightly Disagree	23	8.5%	3	4.6%	8	5.9%	2	4.3%
Neutral / No Opinion	38	14.1%	13	20.0%	17	12.5%	13	27.7%
Slightly Agree	56	20.7%	7	10.8%	23	16.9%	9	19.1%
Moderately Agree	44	16.3%	14	21.5%	28	20.6%	13	27.7%
Strongly Agree	37	13.7%	23	35.4%	43	31.6%	6	12.8%
Total	270	100%	65	100%	136	100%	47	100%
Chi-Square: X^2=64.519; df=18; p<.001; Cramer's V = .204								

Appendix D – Table 11-B. I am concerned about feral (wild), free ranging house cats killing native birds.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	30	11.1%	3	4.7%	4	2.9%	0	0.0%
Moderately Disagree	24	8.9%	4	6.3%	8	5.9%	3	6.4%
Slightly Disagree	18	6.7%	6	9.4%	14	10.3%	4	8.5%
Neutral / No Opinion	53	19.6%	22	34.4%	35	25.7%	20	42.6%
Slightly Agree	54	20.0%	10	15.6%	28	20.6%	9	19.1%
Moderately Agree	41	15.2%	9	14.1%	27	19.9%	7	14.9%
Strongly Agree	50	18.5%	10	15.6%	20	14.7%	4	8.5%
Total	270	100%	64	100%	136	100%	47	100%
Chi-Square: X^2=32.232; df=18; p=.021; Cramer's V = .144								

Appendix D – Table 11-C. I would support regulations to control commercial harvest and unregulated take of turtles, lizards, snakes, frogs and toads if information showed that their populations were declining to unacceptable levels.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	19	7.0%	0	0.0%	4	2.9%	2	4.3%
Moderately Disagree	13	4.8%	0	0.0%	2	1.5%	1	2.1%
Slightly Disagree	18	6.7%	2	3.1%	3	2.2%	1	2.1%
Neutral / No Opinion	56	20.7%	9	13.8%	20	14.7%	13	27.7%
Slightly Agree	74	27.4%	9	13.8%	34	25.0%	15	31.9%
Moderately Agree	48	17.8%	16	24.6%	42	30.9%	11	23.4%
Strongly Agree	42	15.6%	29	44.6%	31	22.8%	4	8.5%
Total	270	100%	65	100%	136	100%	47	100%
Chi-Square: X^2=59.469; df=18; p<.001; Cramer's V = .196								

Appendix D – Table 11-D. Rattlesnakes are an important component of South Dakota's assemblage of wildlife and should not be killed indiscriminately.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	60	22.2%	4	6.2%	9	6.6%	4	8.5%
Moderately Disagree	40	14.8%	1	1.5%	13	9.6%	3	6.4%
Slightly Disagree	40	14.8%	10	15.4%	17	12.5%	7	14.9%
Neutral / No Opinion	52	19.3%	10	15.4%	21	15.4%	19	40.4%
Slightly Agree	35	13.0%	10	15.4%	29	21.3%	4	8.5%
Moderately Agree	23	8.5%	17	26.2%	25	18.4%	7	14.9%
Strongly Agree	20	7.4%	13	20.0%	22	16.2%	3	6.4%
Total	270	100%	65	100%	136	100%	47	100%
Chi-Square: X^2=75.514; df=18; p<.001; Cramer's V = .220								

Appendix D – Table 11-E. In general, efforts should be made to reduce predator numbers to help increase the numbers of game animals for hunters.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	14	5.2%	23	35.4%	9	6.6%	3	6.4%
Moderately Disagree	24	8.9%	7	10.8%	8	5.9%	8	17.0%
Slightly Disagree	38	14.1%	10	15.4%	16	11.8%	7	14.9%
Neutral / No Opinion	50	18.6%	12	18.5%	19	14.0%	14	29.8%
Slightly Agree	59	21.9%	6	9.2%	33	24.3%	9	19.1%
Moderately Agree	39	14.5%	5	7.7%	23	16.9%	3	6.4%
Strongly Agree	45	16.7%	2	3.1%	28	20.6%	3	6.4%
Total	269	100%	65	100%	136	100%	47	100%
Chi-Square: X^2=84.972; df=18; p<.001; Cramer's V = .234								

Climate Change

How strongly do you disagree or agree with each statement?

Appendix D – Table 12-A. I believe that climate change is currently affecting South Dakota.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	49	17.7%	1	1.4%	6	4.8%	2	3.7%
Moderately Disagree	28	10.1%	3	4.1%	13	10.4%	6	11.1%
Slightly Disagree	27	9.7%	5	6.8%	8	6.4%	2	3.7%
Neutral / No Opinion	44	15.9%	8	10.8%	23	18.4%	14	25.9%
Slightly Agree	65	23.5%	17	23.0%	27	21.6%	14	25.9%
Moderately Agree	43	15.5%	18	24.3%	27	21.6%	9	16.7%
Strongly Agree	21	7.6%	22	29.7%	21	16.8%	7	13.0%
Total	277	100%	74	100%	125	100%	54	100%
Chi-Square: X^2=61.379; df=18; p<.001; Cramer's V = .196								

Appendix D – Table 12-B. I believe that climate change is a serious threat that requires changes in current life styles.

Attitude	**Wildlife Value Orientations**							
	Utilitarian		**Mutualist**		**Pluralist**		**Distanced**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Strongly Disagree	63	22.7%	2	2.7%	8	6.4%	2	3.7%
Moderately Disagree	35	12.6%	4	5.4%	11	8.8%	4	7.4%
Slightly Disagree	22	7.9%	4	5.4%	12	9.6%	5	9.3%
Neutral / No Opinion	49	17.7%	10	13.5%	22	17.6%	13	24.1%
Slightly Agree	55	19.9%	16	21.6%	24	19.2%	14	25.9%
Moderately Agree	30	10.8%	16	21.6%	29	23.2%	5	9.3%
Strongly Agree	23	8.3%	22	29.7%	19	15.2%	11	20.4%
Total	277	100%	74	100%	125	100%	54	100%
Chi-Square: X^2=71.808; df=18; p<.001; Cramer's V = .213								

Appendix D – Table 12-C. I support regulations to reduce carbon emissions to address climate change.

Attitude	**Wildlife Value Orientations**							
	Utilitarian		**Mutualist**		**Pluralist**		**Distanced**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Strongly Disagree	41	14.8%	2	2.7%	6	4.8%	3	5.6%
Moderately Disagree	30	10.8%	1	1.4%	8	6.4%	2	3.7%
Slightly Disagree	15	5.4%	1	1.4%	6	4.8%	4	7.4%
Neutral / No Opinion	41	14.8%	9	12.2%	20	16.0%	14	25.9%
Slightly Agree	78	28.2%	10	13.5%	24	19.2%	11	20.4%
Moderately Agree	47	17.0%	17	23.0%	27	21.6%	9	16.7%
Strongly Agree	25	9.0%	34	45.9%	34	27.2%	11	20.4%
Total	277	100%	74	100%	125	100%	54	100%
Chi-Square: X^2=85.278; df=18; p<.001; Cramer's V = .232								

Appendix D – Table 12-D. I don't believe that climate change will result in any negative impacts on wildlife populations in South Dakota.

Attitude	**Wildlife Value Orientations**							
	Utilitarian		**Mutualist**		**Pluralist**		**Distanced**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Strongly Disagree	29	10.5%	25	33.8%	21	16.8%	10	18.5%
Moderately Disagree	32	11.6%	12	16.2%	21	16.8%	10	18.5%
Slightly Disagree	55	19.9%	8	10.8%	23	18.4%	11	20.4%
Neutral / No Opinion	56	20.3%	14	18.9%	22	17.6%	13	24.1%
Slightly Agree	33	12.0%	6	8.1%	17	13.6%	5	9.3%
Moderately Agree	40	14.5%	6	8.1%	13	10.4%	4	7.4%
Strongly Agree	31	11.2%	3	4.1%	8	6.4%	1	1.9%
Total	276	100%	74	100%	125	100%	54	100%
Chi-Square: X^2=39.462; df=18; p=.002; Cramer's V = .158								

Appendix D – Table 12-E. Beliefs concerning the causes of climate change generally range from totally natural causes to totally human activities or some approximate combination of both. On this scale of 1 (all climate change is due to natural causes to 7 (all climate change is from human activities), please indicate your personal belief about the causes of climate change.

Attitude → Climate Change is due to…	**Wildlife Value Orientations**							
	Utilitarian		**Mutualist**		**Pluralist**		**Distanced**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**
-3 → natural causes	39	15.4%	4	5.9%	10	9.2%	3	7.3%
-2	45	17.8%	3	4.4%	13	11.9%	2	4.9%
-1	28	11.1%	4	5.9%	4	3.7%	0	0.0%
0 → about half of each	83	32.8%	26	38.2%	45	41.3%	15	36.6%
1	24	9.5%	10	14.7%	16	14.7%	6	14.6%
2	28	11.1%	13	19.1%	13	11.9%	11	26.8%
3 → human activities	6	2.4%	8	11.8%	8	7.3%	4	9.8%
Total	253	100%	68	100%	109	100%	41	100%
Chi-Square: X^2=49.533; df=18; p<.001; Cramer's V = .187								

Energy Development in South Dakota

How strongly do you disagree or agree with each statement?

Appendix D – Table 13-A. Wildlife impacts and grassland habitat loss should be considered when increasing biofuel production.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	10	3.6%	0	0.0%	1	0.8%	1	1.9%
Moderately Disagree	15	5.5%	1	1.4%	4	3.2%	4	7.4%
Slightly Disagree	17	6.2%	1	1.4%	3	2.4%	5	9.3%
Neutral / No Opinion	41	14.9%	7	9.6%	22	17.6%	16	29.6%
Slightly Agree	89	32.4%	10	13.7%	23	18.4%	11	20.4%
Moderately Agree	66	24.0%	21	28.8%	34	27.2%	10	18.5%
Strongly Agree	37	13.5%	33	45.2%	38	30.4%	7	13.0%
Total	275	100%	73	100%	125	100%	54	100%
Chi-Square: X^2=70.648; df=18; p<.001; Cramer's V = .211								

Appendix D – Table 13-B. I support efforts to increase ethanol production in South Dakota.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	19	6.9%	4	5.4%	15	12.0%	6	11.1%
Moderately Disagree	23	8.3%	7	9.5%	6	4.8%	4	7.4%
Slightly Disagree	33	11.9%	6	8.1%	8	6.4%	3	5.6%
Neutral / No Opinion	36	13.0%	14	18.9%	21	16.8%	16	29.6%
Slightly Agree	63	22.7%	14	18.9%	22	17.6%	15	27.8%
Moderately Agree	63	22.7%	18	24.3%	23	18.4%	5	9.3%
Strongly Agree	40	14.4%	11	14.9%	30	24.0%	5	9.3%
Total	277	100%	74	100%	125	100%	54	100%
Chi-Square: X^2=31.859; df=18; p=.023; Cramer's V = .142								

Appendix D – Table 13-C. Negative impacts on wildlife should be considered when developing wind energy in South Dakota.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	21	7.6%	0	0.0%	10	8.0%	3	5.6%
Moderately Disagree	18	6.5%	2	2.7%	4	3.2%	5	9.3%
Slightly Disagree	27	9.7%	6	8.1%	9	7.2%	7	13.0%
Neutral / No Opinion	42	15.2%	7	9.5%	16	12.8%	15	27.8%
Slightly Agree	97	35.0%	13	17.6%	33	26.4%	14	25.9%
Moderately Agree	52	18.8%	17	23.0%	24	19.2%	7	13.0%
Strongly Agree	20	7.2%	29	39.2%	29	23.2%	3	5.6%
Total	277	100%	74	100%	125	100%	54	100%
Chi-Square: X^2=75.983; df=18; p<.001; Cramer's V = .219								

Appendix D – Table 13-D. I think people worry too much about possible environmental problems associated with pipelines for transporting oil across South Dakota.

Attitude	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Strongly Disagree	33	11.9%	25	33.8%	25	20.0%	10	18.5%
Moderately Disagree	23	8.3%	9	12.2%	10	8.0%	9	16.7%
Slightly Disagree	26	9.4%	5	6.8%	7	5.6%	4	7.4%
Neutral / No Opinion	20	7.2%	9	12.2%	11	8.8%	11	20.4%
Slightly Agree	57	20.6%	9	12.2%	24	19.2%	7	13.0%
Moderately Agree	59	21.3%	10	13.5%	25	20.0%	6	11.1%
Strongly Agree	59	21.3%	7	9.5%	23	18.4%	7	13.0%
Total	277	100%	74	100%	125	100%	54	100%
Chi-Square: X^2=43.594; df=18; p=.001; Cramer's V = .166								

Importance of Wetland Functions

Wetlands preform many functions: How important is…

Appendix D – Table 14-A. … reducing flood events.

Importance	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Not Important	10	3.6%	1	1.4%	3	2.4%	2	3.7%
Slightly Important	41	15.0%	9	12.2%	9	7.2%	5	9.3%
Moderately Important	108	39.4%	27	36.5%	42	33.6%	29	53.7%
Very Important	115	42.0%	37	50.0%	71	56.8%	18	33.3%
Total	274	100%	74	100%	125	100%	54	100%
Chi-Square: X^2=16.313; df=9; p=.061; Cramer's V = .102								

Appendix D – Table 14-B. … providing wildlife habitat.

Importance	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Not Important	5	1.8%	0	0.0%	0	0.0%	0	0.0%
Slightly Important	34	12.4%	2	2.7%	11	8.8%	11	20.4%
Moderately Important	121	44.2%	22	29.7%	32	25.6%	27	50.0%
Very Important	114	41.6%	50	67.6%	82	65.6%	16	29.6%
Total	274	100%	74	100%	125	100%	54	100%
Chi-Square: X^2=44.754; df=9; p<.001; Cramer's V = .168								

Appendix D – Table 14-C. … providing recreational opportunities.

Importance	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Not Important	17	6.2%	6	8.1%	4	3.2%	2	3.7%
Slightly Important	61	22.3%	19	25.7%	21	16.8%	15	27.8%
Moderately Important	106	38.7%	25	33.8%	43	34.4%	29	53.7%
Very Important	90	32.8%	24	32.4%	57	45.6%	8	14.8%
Total	274	100%	74	100%	125	100%	54	100%
Chi-Square: X^2=20.677; df=9; p=.014; Cramer's V = .114								

Appendix D – Table 14-D. … providing clean water.

Importance	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Not Important	2	0.7%	1	1.4%	1	0.8%	0	0.0%
Slightly Important	9	3.3%	1	1.4%	9	7.2%	3	5.6%
Moderately Important	66	24.1%	11	14.9%	17	13.6%	12	22.2%
Very Important	197	71.9%	61	82.4%	98	78.4%	39	72.2%
Total	274	100%	74	100%	125	100%	54	100%
Chi-Square: X^2=12.744; df=9; p=.175; Cramer's V = .090								

Appendix D – Table 14-E. … providing economic opportunity.

Importance	Wildlife Value Orientations							
	Utilitarian		Mutualist		Pluralist		Distanced	
	#	%	#	%	#	%	#	%
Not Important	14	5.1%	9	12.2%	5	4.0%	4	7.4%
Slightly Important	58	21.2%	18	24.3%	21	16.9%	12	22.2%
Moderately Important	107	39.2%	26	35.1%	35	28.2%	27	50.0%
Very Important	94	34.4%	21	28.4%	63	50.8%	11	20.4%
Total	273	100%	74	100%	124	100%	54	100%
Chi-Square: X^2=25.362; df=9; p=.003; Cramer's V = .127								

Appendix E – Tables: Fishing, hunting, and wildlife viewing participation and demographic variables analyzed by Wildlife Value Orientations.

Fishing Participation

Appendix E – Table 1. Have you ever participated in recreational fishing?

Ever fish?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
No	8.5%	18.5%	16.6%	24.0%
Yes	91.5%	81.5%	83.4%	76.0%
Total Number	539	135	259	100
Chi-Square: X^2=26.081; df=3; p<.001; Cramer's V= .159				
If Yes, did you do any fishing during the past 2 years?				
Fished during the past 2 years?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
No	38.5%	63.6%	41.7%	55.3%
Yes	61.5%	36.4%	58.3%	44.7%
Total Number	493	110	216	76
Chi-Square: X^2=27.582; df=3; p<.001; Cramer's V= .176				

Appendix E – Table 2. How important is fishing in relation to all your other types of recreation?[1]

Wildlife Value Orientation	**Mean Importance[2]**	**95% C.I.**	**Number**
Utilitarian	1.71	1.60 – 1.83	475
Mutualist	1.40	1.13 – 1.67	99
Pluralist	1.92	1.75 – 2.09	208
Distanced	1.25	0.96 – 1.54	68
ANOVA: F	6.705		
***p*-value**	<.001		
Eta^2	.023		

[1]People who never fished did not answer this question.
[2]Importance Scale: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important; 4=Most Important

Hunting Participation

Appendix E – Table 3. Have you ever participated in hunting?

Ever hunt?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
No	20.6%	40.0%	29.7%	44.0%
Yes	79.4%	60.0%	70.3%	56.0%
Total Number	539	135	259	100
Chi-Square: X^2=37.600; df=3; p<.001; Cramer's V= .191				
If Yes, did you do any hunting during the past 2 years?				
Hunted during the past 2 years?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
No	36.2%	63.0%	38.5%	42.9%
Yes	63.8%	37.0%	61.5%	57.1%
Total Number	428	81	182	56
Chi-Square: X^2=20.686; df=3; p<.001; Cramer's V= .166				

Appendix E – Table 4. How important is hunting in relation to all your other types of recreation?[1]

Wildlife Value Orientation	**Mean Importance[2]**	**95% C.I.**	**Number**
Utilitarian	2.17	2.05 – 2.29	421
Mutualist	1.34	1.04 – 1.64	73
Pluralist	2.44	2.24 – 2.64	178
Distanced	1.96	1.57 – 2.35	50
ANOVA: F	12.958		
***p*-value**	<.001		
Eta[2]	.051		

[1]People who never fished did not answer this question.
[2]Importance Scale: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important; 4=Most Important

Wildlife Viewing Trips

Appendix E – Table 5. Have you ever taken any trips for which fish and wildlife viewing was the primary purpose of the trip?

Ever take trips primarily for viewing fish & wildlife?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
No	56.6%	44.9%	39.8%	61.6%
Yes	43.4%	55.1%	60.2%	38.4%
Total Number	537	136	261	99
Chi-Square: X^2=26.247; df=3; p<.001; Cramer's V= .159				
If Yes, did you take any trips during the past two years for which fish and wildlife viewing was the primary purpose of the trip?				
Ever take trips primarily for viewing fish & wildlife?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
No	27.5%	32.0%	32.5%	34.2%
Yes	72.5%	68.0%	67.5%	65.8%
Total Number	233	75	157	38
Chi-Square: X^2=1.618; df=3; p=.655; Cramer's V= .057				
If Yes, were these wildlife viewing trips during the past 2 years…				
Where?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
In South Dakota	53.2%	45.2%	50.0%	48.4%
Outside South Dakota	9.0%	3.2%	7.8%	9.7%
Both in SD and outside SD	37.8%	51.6%	42.2%	41.9%
Total Number	201	62	128	31
Chi-Square: X^2=5.021; df=6; p=.541; Cramer's V= .077				

Appendix E – Table 6. How important is taking wildlife viewing trips in relation to all your other types of recreation?[1]

Wildlife Value Orientation	Mean Importance[2]	95% C.I.	Number
Utilitarian	1.79	1.68 – 1.96	222
Mutualist	2.15	1.93 – 2.38	71
Pluralist	2.21	2.05 – 2.37	142
Distanced	1.66	1.34 – 1.98	35
ANOVA: F	8.365		
***p*-value**	<.001		
Eta^2	.051		

[1]People who never fished did not answer this question.
[2]Importance Scale: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important; 4=Most Important

Appendix E – Table 7. How interested are you in taking recreational trips in the future for which fish and wildlife viewing is the primary purpose of the trip?

Wildlife Value Orientation	Mean Interest	95% C.I.	Number
Utilitarian	1.12	1.04 – 1.20	538
Mutualist	1.60	1.43 – 1.77	137
Pluralist	1.53	1.42 – 1.64	256
Distanced	0.85	0.68 – 1.02	98
ANOVA: F	24.146		
***p*-value**	<.001		
Eta^2	.066		

[1]Interest Scale: 0=Not Interested; 1=Slightly Interested; 2=Moderately Interested; 3=Very Interested

Appendix E – Table 8. Do you feed birds near your home for viewing purposes?

Feed Birds?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
No	47.0%	35.0%	37.0%	55.6%
Yes	53.0%	65.0%	63.0%	44.4%
Total Number	540	137	257	99
Chi-Square: X^2=17.011; df=3; p=.001; Cramer's V= .128				

Appendix E – Table 9. Do you feed other wildlife near your home for viewing purposes?

Feed Other Wildlife?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
No	84.0%	72.3%	66.1%	81.8%
Yes	16.0%	27.7%	33.9%	18.2%
Total Number	538	137	257	99
Chi-Square: X^2=35.578; df=3; p<.001; Cramer's V= .186				

Appendix E – Table 10. How important is it to have wildlife viewing opportunities near your home?

Wildlife Value Orientation	**Mean Importance**[1]	**95% C.I.**	**Number**
Utilitarian	1.43	1.35 – 1.51	540
Mutualist	2.01	1.86 – 2.17	135
Pluralist	1.95	1.84 – 2.06	257
Distanced	1.15	0.96 – 1.35	99
ANOVA: F	34.322		
***p*-value**	<.001		
Eta[2]	.091		

[2]Importance Scale: 0=Not Important; 1=Slightly Important; 2=Moderately Important; 3=Very Important

Demographic Information – Analyzed by Wildlife Value Orientations

Appendix E – Table 11. Gender and age of South Dakota residents analyzed by Wildlife Value Orientation (weighted by sex and age).

Sex	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
Male	55.2%	32.5%	53.0%	51.4%
Female	44.8%	67.5%	47.0%	48.6%
Total Number	562	160	219	107
Chi-Square: X^2=26.140; df=3; p<.001; Cramer's V= .158				

Wildlife Value Orientation	**Mean Age**	**95% C.I.**	**Number**
Utilitarian	46.2	44.8 – 47.5	562
Mutualist	48.9	46.2 – 51.7	161
Pluralist	51.8	49.3 – 54.3	219
Distanced	46.8	43.8 – 49.8	107
ANOVA: F	6.172		
***p*-value**	<.001		
Eta^2	.017		

Appendix E – Table 12. About how long have you lived in South Dakota and what type of residence do you currently have?

Type of Residence	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
Rural	27.6%	25.2%	29.4%	25.0%
Small Town	30.5%	33.8%	27.9%	37.0%
City	42.0%	41.0%	42.7%	38.0%
Total Number	548	139	262	100
Chi-Square: X^2=3.665; df=6; p=.722; Cramer's V= .042				

Wildlife Value Orientation	**Mean Years Lived in S.D.**	**95% C.I.**	**Number**
Utilitarian	44.6	42.8 – 46.3	544
Mutualist	45.8	42.1 – 49.4	139
Pluralist	48.6	45.9 – 51.3	263
Distanced	40.2	36.6 – 43.8	100
ANOVA: F	4.332		
***p*-value**	.005		
Eta^2	.012		

Appendix E – Table 13. Where do you live in South Dakota?

Live in S.D. (Locations)	Chi-Square	*p*-value	Craver's V
Regions 1 – 4	X^2=9.654	.379	.056
East River / West River	X^2=2.659	.447	.051
Black Hills / Other	X^2=2.699	.440	.051

Appendix E – Table 14. Do you own land outside town/city and are you a farmer/rancher?

Own Rural Land?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
NO	56.9%	60.0%	58.8%	69.0%
YES	43.1%	40.0%	41.2%	31.0%
Total Number	548	135	262	100
Chi-Square: X^2=5.159; df=3; *p*=.161; Cramer's V= .070				
Farmer/Rancher?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
NO	82.9%	87.7%	79.8%	93.0%
YES	17.1%	12.3%	20.2%	7.0%
Total Number	545	138	262	100
Chi-Square: X^2=11.157; df=3; *p*=.011; Cramer's V= .103				

Appendix E – Table 15. How would you describe the community in which you were raised?

Community where raised?	**Wildlife Value Orientation**			
	Utilitarian	**Mutualist**	**Pluralist**	**Distanced**
large city w/ 250,000+ people	3.1%	9.4%	5.0%	4.0%
city w/ 50,000 –249,000	11.2%	11.6%	13.4%	14.0%
town w/ 10,000 – 49,999	15.5%	16.7%	19.1%	15.0%
small town/village < 10,000	34.6%	35.5%	29.4%	39.0%
Farm/ranch or rural area	35.6%	26.8%	33.2%	28.0%
Total Number	547	138	262	100
Chi-Square: X^2=18.587; df=12; *p*=.099; Cramer's V= .077				