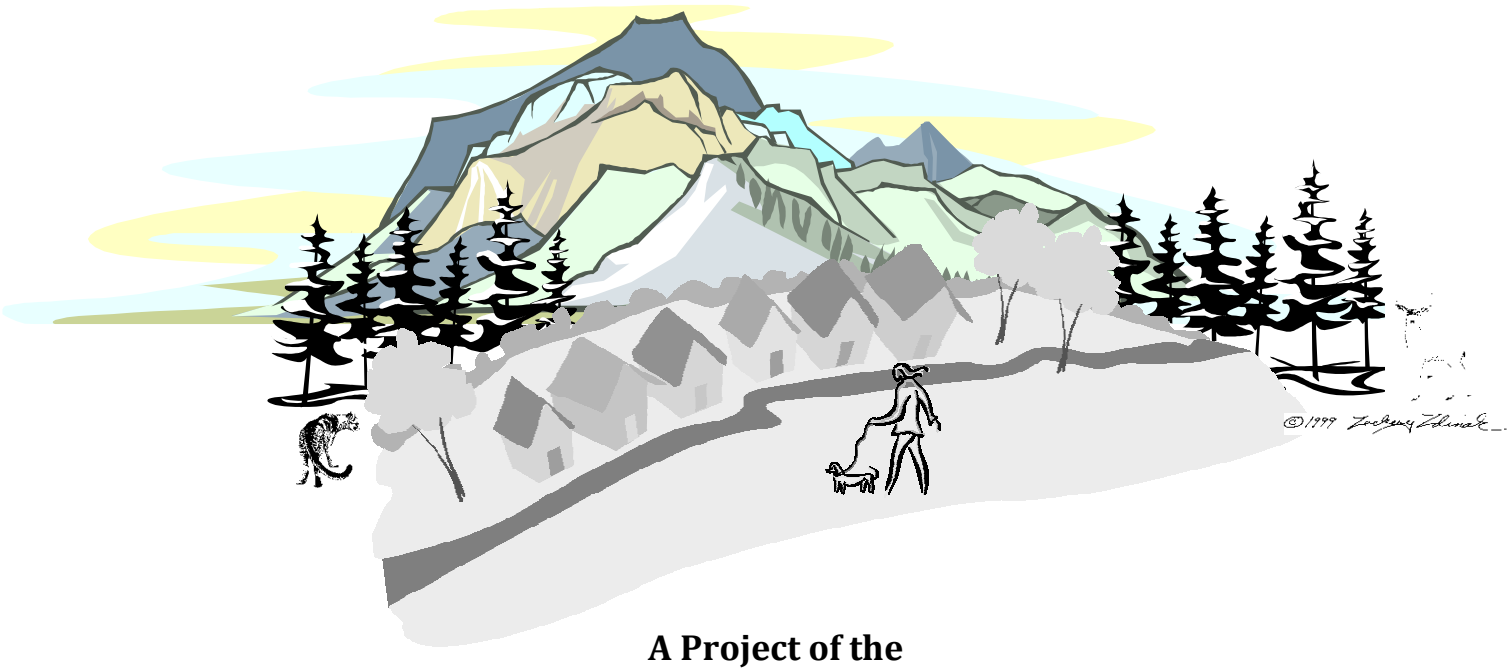
State Report for Washington

From the Research Project Entitled

Understanding People in Places



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FINAL REPORT

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Report Authors
This project report was produced by Alia Dietsch, Tara Teel, and Michael Manfredo of the Department of Human Dimensions of Natural Resources at Colorado State University in coordination with Sandra Jonker and Steve Pozzanghera of the Washington Department of Fish and Wildlife.

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EXECUTIVE SUMMARY

This report documents the results of a study assessing the attitudes and beliefs of residents living in the state of Washington toward the following: the place where they live and wildlife, including the wildlife near their homes; lethal control of coyotes and black bears; management actions addressing problem deer/elk and the recolonization of Washington by wolves; salmon recovery; and the importance of and willingness to pay for wildlife-related services. Levels of participation in outdoor and wildlife-related recreation as well as beliefs about access to land areas for recreational opportunities were also explored. Findings are part of the larger research program entitled *Understanding People in Places*, a multi-state study designed to demonstrate the utility of geographically-tied human dimensions information for fish and wildlife management and to introduce and test a spatially-explicit approach to depicting such data.

Data were collected using a mail-back survey administered to residents in Washington in the fall of 2009. Sampling was stratified by county to allow for generalizations at the county level in addition to the overall state level. Four thousand, one hundred and eighty-three surveys were returned, resulting in a 31.8% response rate for the mail-back survey. A telephone nonresponse survey was completed, and tests for differences between mail survey respondents and nonrespondents were conducted. Demographic comparisons between respondent data and U.S. census information were additionally conducted to determine if data were representative of the Washington public. Based on these tests and comparisons, data were weighted by gender to adjust for an underrepresentation of females in the sample. For reporting at the aggregate, statewide level, data were also weighted to accurately reflect the true proportions of the population represented by each county.

Key findings include:

- *People hold a diversity of wildlife value orientations in Washington.*

  The four wildlife value orientation types identified through previous research include Utilitarian, Mutualist, Pluralist, and Distanced. Utilitarians believe that wildlife should be used and managed primarily for human benefit and 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 (e.g., hunting, lethal removal) that result in death or harm to wildlife as acceptable. Mutualists view wildlife as capable of living in relationships of trust and caring with humans, as if part of an extended family, and as deserving of rights. They are less likely to support actions resulting in death or harm to wildlife and more likely to engage in welfare-enhancing behaviors for individual wildlife (e.g., feeding). Pluralists hold both utilitarian and mutualist wildlife value orientations, and the situation or context determines which orientation plays a role in their thinking. Distanced individuals do not have a well-formed value orientation toward wildlife, and they tend to be less interested in wildlife and wildlife-related issues. They are also more likely than the other value orientation 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). The distribution of these wildlife value orientation types in the state of Washington is as follows: Mutualist (34.9%), Utilitarian (33.3%), Distanced (17.8%), and Pluralist (13.9%). Counties with more than 50% of residents reporting

Utilitarian beliefs were located in the eastern portion of the state and in Lewis County in western Washington, while counties with more than 50% of residents reporting Mutualist beliefs were located in the northwest part of the state.

- *Comparison of results by wildlife value orientation type and by geographic location enhances understanding of public attitudes toward wildlife-related issues in Washington.*

Comparisons among the value orientation types on key variables of interest in this study allowed for a more thorough understanding of the diversity of public opinion on wildlife-related issues in Washington. While the Washington Department of Fish and Wildlife (WDFW) can target geographic areas (e.g., counties) in its communication and outreach efforts, it is more difficult for the agency to target specific wildlife value orientation types; however, by knowing the composition of wildlife value orientation types within an area, the agency is in a better position to anticipate how people in that area will respond to management decisions, as public attitudes toward wildlife-related issues are often rooted in more fundamental beliefs including wildlife value orientations. As an illustration, Mutualists were generally less accepting than Utilitarians of lethal control of coyotes, black bears, deer, elk, and wolves. Findings as a whole suggest that counties with higher percentages of Mutualists will have greater resistance to more traditional forms of management. Furthermore, we would expect greater stakeholder conflict in places with a greater mix of opposing value orientations (e.g., 50% Utilitarians, 50% Mutualists). By collecting and analyzing data at the county level, including spatial depictions of public attitudes and value orientations, conclusions could be made about where WDFW can anticipate high levels of conflict in the form of mixed public sentiment or resistance to proposed management strategies. These are areas where the agency may consider targeting its outreach and communication initiatives to reduce potential controversy over management decisions. When coupled with biological data (e.g., species distributions), findings offer a useful tool for addressing wildlife-related issues and public education at more local levels.

- *Washington residents have a multitude of views related to nature. However, residents primarily perceive nature as being accessible/inviting and in need of protection. Findings provide information useful in gauging people's thoughts on how the natural world, including wildlife, should be managed.*

Washington residents overwhelmingly found nature to be accessible/inviting (94.4%) and in need of protection (88.1%). Many residents also believed nature was limited/scarce (74.3%), fragile (60.5%), and unpredictable/chaotic (50.4%). Mutualists had the largest percentages of individuals viewing nature as fragile, limited/scarce, and in need of protection. These results regarding residents' perceptions of nature suggest that, of the value orientation types, Mutualists are more likely to prefer less intrusive management responses in their area. Residents in some counties (e.g., Garfield and Clark Counties) were more likely to view nature as durable and unlimited/abundant than fragile and limited/scarce, indicating that residents in these counties are more likely to support traditional, invasive management actions (e.g., lethal control) than residents in other counties.

- *Residents primarily perceive the area near their homes to be safe, beautiful/attractive, and unique.*

Residents largely considered the area near their homes to be beautiful/attractive (92.8%), safe (91.7%), and unique (63.3%), which suggests that Washington residents feel connected to the area near their homes. Residents with such beliefs may be more likely to participate in outdoor activities near their place of residence and to want their area managed in such a way that maintains the status quo. Distanced individuals and Utilitarians were more likely than other value orientation types to view the area near their homes as beautiful/attractive and safe. Distanced individuals were also more likely than the other wildlife value orientation types to consider the area near their homes as unique. Franklin County was the only county in which residents perceived the area near their homes to be common/generic rather than unique, and, while still constituting a majority, had the lowest percentage of people believing the area near their homes was beautiful/attractive.

- *Rates of participation in outdoor activities are high in Washington.*

The majority (81.6%) of Washington residents reported frequent participation in outdoor recreation near their homes. Many residents indicated that they participate in outdoor activities mainly for exercise (67.4%), while some were routinely required to be outside for their job (14.3%). Still others avoided participation in outdoor activities near where they live due to a fear of being harmed by wildlife (6.1%) or a fear of strangers (7.2%). Participation rates did not vary across the value orientation types (i.e., >80% of each value orientation type reported that they often participate). Although a relatively small proportion of Washington's residents indicated a fear of strangers or a fear of being harmed by wildlife as limiting factors in their participation in outdoor activities, there was some variation across the counties. For instance, Yakima County had almost 14% of residents indicating that a fear of strangers limited their participation, and Wahkiakum and Lincoln Counties had nearly 16% of their residents expressing a fear of being harmed by wildlife in the context of outdoor recreation.

- *Residents primarily participate in outdoor activities near their homes during the summer.*

Residents predominately spent time outside in the summer (89.2%), followed by participation in the spring (63.1%), fall (58.8%), and winter (22.1%) months. Less than six percent of residents indicated they did not participate at all in activities near their homes. Pluralists and Utilitarians, who often engage in activities like hunting and fishing, were more likely to participate in outdoor activities during the fall and winter than the other value orientation types. Except for during the summer when there were no reported differences among the value orientation types, Distanced individuals had the lowest rates of participation in each season. All counties in Washington had a majority of residents participating in outdoor activities in the summer, spring, and fall. In addition, Ferry County had a majority of residents indicating they participated in outdoor activities during the winter months. The largest percentage of people indicating they did *not* participate in outdoor activities near their homes during any season was found in Grant County (15.9%).

- *The most popular outdoor activities near the home among Washington residents include walking/hiking/running and gardening. Wildlife-viewing was the most popular activity of the three types of wildlife-related participation (i.e., wildlife-viewing, hunting, fishing).*

Participation in walking/hiking/running (82.2%) and gardening (80.7%) were the top most frequently-reported outdoor activities near the home for Washington residents. Of the three main wildlife-related activities, wildlife-viewing was most frequently reported (40.4%), followed by fishing (28.4%) and hunting (11.2%). Although the top two most popular activities were the same across value orientation types, the third most popular activity was biking for Distanced individuals, feeding wild birds for Mutualists, and fishing for Utilitarians and Pluralists. Variation was also found across counties. For example, residents in Benton (39.1%), King (44.6%), and Snohomish Counties (34.5%) indicated biking as their third most popular activity, whereas a similar percentage of Adams County residents (42.2%) indicated they participated in fishing near their homes (the third most popular activity).

- *Residents in certain counties want more access to land areas near their homes for outdoor recreation. Findings help in identifying areas that could be targeted for purposes of providing greater access in the future (e.g., by working with private landowners or through partnerships with other agencies and organizations).*

Approximately 42% of Washington residents wanted more access to land areas near their homes in which to participate in outdoor activities. Of the value orientation types, Pluralists were most likely and Distanced individuals were least likely to want more access to land areas near their homes. Five counties (Cowlitz, Lewis, Pacific, Pierce, and Skagit) had more than 50% of residents indicating they wanted more access to land areas, suggesting that these may be areas WDFW could target for greater access provision in the future.

- *Residents are generally not willing to pay a fee for more access to land areas near their homes for outdoor recreation.*

At the state-wide level, Washington residents were not willing to pay a fee for access to more land areas near their homes; however, there was some variation across the value orientation types and counties. For example, Mutualists were the most willing of the value orientation types to pay for more access (41.1%), whereas Utilitarians were the least likely to want to contribute funds for this purpose (24.5%). The largest percentages of people who were willing to pay a fee for more access to land areas near their homes were found in Cowlitz and Pierce Counties (>40%).

- *Limited access to land areas is not the primary factor limiting participation in outdoor activities near the homes of residents.*

Washington residents, as a whole, disagreed that limited access was the primary reason they did not participate in outdoor activities near their homes; however, Pluralists were more likely than the other value orientation types to indicate that limited access was the primary factor limiting their participation (22.0%). In addition, some counties had relatively higher percentages of people who agreed that limited access was the main reason for why they did not participate in outdoor activities. The largest percentage of residents feeling this way was found in Cowlitz County (31.0%).

- *Residents in some counties believe that WDFW should work with private landowners to provide more access to land areas near their homes.*

Approximately 41% of Washington residents agreed that WDFW should work with private landowners to provide more access to land areas near their homes. Although it may not be feasible to target specific population segments based on their value orientations in WDFW's efforts to secure more land access for residents, it is worth noting that Pluralists were more accepting than the other value orientation types of WDFW working with private landowners for this purpose. This could indicate that access to local lands is most important to this segment of the Washington population. Support for WDFW working with private landowners to improve access was additionally important to a majority of residents in seven counties (Asotin, Columbia, Cowlitz, Franklin, Lewis, Pacific, and Skagit).

- *Washington residents believe climate change is currently affecting the area near their homes. Results have implications for communicating with the public about climate change issues in that they serve to highlight areas where certain beliefs about climate change impacts (or the lack thereof) are prevalent.*

Over 50% of all residents indicated that climate change is currently affecting the area near their homes. Some residents were neutral (12.9%), and others disagreed (33.5%) that climate change was having any localized impacts. Utilitarians were the only value orientation type with a majority of people believing that climate change was not currently affecting the area near their homes, and only two counties (Garfield and Lincoln Counties) had more than 50% of residents disagreeing that climate change was currently having an impact in their area.

- *Residents consider wildlife near their homes as enjoyable to have around and a valuable recreational opportunity.*

Many residents indicated that they consider the wildlife near their homes as enjoyable to have around (86.4%) and as a valuable opportunity for recreation (57.4%); however, some residents felt that the wildlife in their area were dangerous (18.7%) and a nuisance (23.5%). Twenty-four percent of all residents indicated they rarely observe wildlife near their homes. Mutualists and Pluralists were more likely than the other value orientation types to indicate that wildlife are enjoyable to have near their homes. Distanced individuals were less likely than the other types to believe that wildlife in their area provide valuable opportunities for recreation. Columbia, Pacific, and Lincoln Counties had the highest percentages of residents indicating that local wildlife serve as an important source of outdoor recreation (>80%).

- *Residents experience a variety of wildlife-related problems near their homes. Deer, raccoons, and coyotes are among the top most frequently-cited wildlife involved in problem incidents. Certain areas in the state are more likely to experience wildlife-related problems – these human-wildlife conflict "hotspots" are areas that WDFW may want to target in future management and public outreach efforts aimed at reducing the occurrence of conflict incidents.*

Approximately 30% of residents reported that they had experienced problems with wildlife over the past year. Incidents most commonly-reported on the survey included wildlife-caused damage to landscaping and agriculture; wildlife getting into residential gardens and pet food; and threats or attacks on domestic animals, including pets and chickens. Some people also

wrote on the survey that although wildlife may cause problems, they are a part of life and are still enjoyable to have around. Still others mentioned that they have taken personal measures to alleviate wildlife-related problems and/or that humans have contributed to these problems by moving into wildlife habitat. Deer were cited as the cause of problems by the highest percentage of residents (48.7% of those who indicated a particular wildlife-caused problem), followed by raccoons (22.4%) and coyotes (15.9%). Utilitarians were more likely than the other value orientation types to report having personally experienced problems with wildlife (35.0%) or that their neighbors had experienced such problems (35.4%). A majority of residents in Ferry, Jefferson, Pend Oreille, San Juan, and Stevens Counties (between 50.4% and 53.6% of residents) indicated that they have experienced wildlife-related problems near their homes, whereas only 5.3% of Franklin County residents reported a problem.

- *Elk cause localized problems for residents in some counties.*

Only about 6% of residents statewide reported having experienced a problem with elk in the last year; however, approximately 38% of residents in Wahkiakum County indicated elk had caused problems near their homes during that same timeframe. Additionally, Garfield and Cowlitz Counties had nearly 25% of residents reporting elk-related problems in their area. Understanding the severity and types of species-specific problems at the county level can help WDFW to target localized areas where agency action (e.g., public education campaigns to address certain types of conflicts, wildlife population control) may be necessary.

- *Lethal control of coyotes and black bears is more acceptable to residents when used to address more severe incidents of human-wildlife conflict and less acceptable in relatively benign incidents of human-wildlife conflict.*

Compared to nuisance situations or instances where an animal is seen near the home, Washington residents found lethal removal of coyotes and black bears more acceptable when applied to address attacks on pets and humans or to prevent potential disease transmission. Consensus among residents over the acceptability of lethal removal was lowest for nuisance interactions (e.g., the animal is getting into trash or pet food), suggesting that the use of lethal control in this scenario is likely to be highly contentious. Mutualists were generally less accepting than the other value orientation types of lethal control of coyotes and black bears. San Juan and Jefferson Counties, which also had a majority of Mutualists, had the lowest percentages of residents who were accepting of lethal removal of these species in nuisance situations (only Pacific County had a lower percentage of residents for the nuisance black bear scenario). These areas represent “hotspots” in Washington where human-wildlife conflict is likely to elevate *social* conflict if traditional management techniques are used.

- *Washington residents are more accepting of preventative measures than lethal control or damage compensation schemes for addressing problem deer or elk.*

Most Washington residents found it unacceptable to capture and lethally remove a problem deer or elk (54.9%) or to compensate landowners for damage (greater than $10,000) caused by deer or elk (58.9%). In contrast, a vast majority of residents indicated that it was acceptable for WDFW to use devices designed to scare deer or elk away (80.8%) or to require landowners to accept at least half of the responsibility for addressing problem animals (74.4%). Some residents were also accepting of WDFW contributing funds to a landowner

cost-share program to build fences around property that has been damaged by deer or elk (44.5%). Mutualists were less accepting than the other value orientation types of lethal control for addressing deer/elk-related problems. Four counties (i.e., King, Kitsap, Benton, and Spokane Counties) had more than 80% of residents who indicated that it was acceptable for WDFW to require landowners to accept 50% of responsibility for handling these kinds of issues, whereas a majority of residents in one county (Garfield County) found this requirement unacceptable.

- *The re-establishment of wolves on their own in the state of Washington is generally acceptable to residents; however, certain areas of the state are less supportive of having wolves return. Wolf recolonization in these areas is likely to be controversial, posing challenges for wolf recovery in the future.*

Washington residents generally found it acceptable for wolves to recolonize the state on their own (74.5%). Once wolves have become established in the state, residents also found it acceptable for WDFW to assist with recovery by moving wolves from one area in Washington where they have become established on their own to another part of the state to help build wolf populations (73.7%). Utilitarians and Pluralists were less accepting than the other value orientation types of such recovery efforts. A significant amount of variability was also noted across counties, highlighting the importance of relying on county-level data to understand public response to wildlife-related issues such as wolf management. As an example, King, San Juan, and Snohomish Counties had over 80% of residents indicating that wolves should be allowed to recolonize Washington on their own, while approximately 32% of residents from two counties (Asotin and Garfield Counties) found this to be acceptable. In general, residents in western Washington were more accepting than residents in eastern Washington of having WDFW assist with wolf recovery once wolves have become established in the state on their own.

- *Residents, particularly those living in the eastern half of Washington, are by and large accepting of wolf control measures that limit wolf populations.*

Washington residents were generally accepting of the following: lethal removal of wolves that cause loss of livestock (65.9%); limiting the number of wolves in certain areas if they are causing localized declines in deer or elk (69.8%); and a hunting season on wolves once they have exceeded WDFW recovery goals (63.5%). Utilitarians and Pluralists were more accepting than the other value orientation types of these control measures. Residents of counties in the most eastern portion of Washington were more likely than residents in the northwestern region of the state to find it acceptable for WDFW to limit wolf numbers if causing localized declines in deer and elk and to support a recreational hunt of wolves once wolves have reached a certain population size.

- *Residents are less accepting of landowner compensation schemes compared to other possible management strategies for addressing potential wolf-related livestock losses.*

Approximately 45% of Washington residents found it acceptable to compensate landowners for loss of livestock caused by wolves. When asked more specifically whether it was acceptable to use certain sources of funds for compensation programs, residents were more supportive of using dollars from the sale of hunting and fishing licenses (46.1%) as opposed

to state tax revenue (40.3%) for this purpose. Among the value orientation types, Distanced individuals were the least accepting of compensation schemes and Mutualists were more accepting of using hunting/fishing license funds to support compensation programs. Residents of many counties in eastern Washington (except Douglas County) were more likely than residents in the northwest portion of the state to rate landowner compensation for loss of livestock due to wolves as an acceptable WDFW strategy.

- *Wild salmon and salmon recovery efforts are important to Washington residents.*

A large majority of residents believed salmon are important to local economies (84.1%) and are important to the quality of life in Washington (78.1%). There was also a high level of support for WDFW continuing its salmon recovery efforts (91.6%). There was less support for WDFW focusing more of its attention on the introduction of *hatchery-raised* salmon to enhance fishing opportunities (56.2%). At the statewide level, approximately 8% of residents indicated their support for salmon recovery efforts has decreased over the last five years, whereas 45.8% reported increased support and 46.3% indicated their support of salmon recovery has remained the same in the 5-year period. While the value orientation types did not differ much with regard to their beliefs about the importance of salmon in Washington, Utilitarians and Pluralists, who are generally more likely to engage in activities like hunting and fishing, were more supportive than the other value orientation types of WDFW focusing more of its efforts on the introduction of *hatchery-raised* salmon to enhance fishing opportunities. At the county level, at least 76% of residents in each county indicated that their support of salmon recovery has either remained the same or increased over the last five years.

- *Residents generally believe that current population levels for coyotes, black bears, deer, elk, and cougars in Washington are acceptable; however, many would like to see an increase in deer and elk numbers in the state. Areas where a significant proportion of the public would like to see a decrease in predator populations are places where predator conservation initiatives are likely to generate controversy in the future.*

Over 50% of residents indicated a preference for populations of coyotes, black bears, and cougars to remain at their current levels in Washington. While nearly half of all residents were also accepting of current population sizes for deer and elk, a large percentage expressed a desire for increased numbers of these species (47.7% for elk; 40.9% for deer). Utilitarians were more likely than the other value orientation types to prefer a decrease in predator populations, whereas Mutualists were more likely to want an increase in these populations. Compared to the other value orientation types, Pluralists were most likely to desire an increase in deer and elk numbers. Preferred population levels for coyotes, black bears, deer, elk, and cougars did not drastically differ across the counties, suggesting that local population levels for these five species are acceptable.

- *A number of different wildlife-related services are important to Washington residents and many residents believe WDFW is responsible for providing such services. Findings offer ideas that could inform possible future directions for WDFW and/or public outreach aimed at clarifying, and in some cases raising awareness of, the agency's role.*

Residents were asked to consider a variety of "example services" that WDFW could provide, some of which are currently offered by the agency and others that would require new

activities or partnerships with other organizations to offer in the future. On average, all wildlife-related services included on the survey were evaluated by residents as being of moderate or higher importance. The majority of residents also felt that each of these services should be WDFW's responsibility to provide. The service with the highest importance rating was *protection and recovery of threatened or endangered species*, and approximately 88% of residents believed WDFW has the responsibility to provide this service. Utilitarians and Pluralists were most likely to assign importance to *hunting and fishing opportunities*, whereas Mutualists were most likely to rate the following two services as important: *protection and recovery of threatened or endangered species* and *programs that help local governments plan for protection of open space and wildlife populations in urban areas*. Variation existed across the counties as well. Garfield County residents, for example, assigned the lowest ratings of importance (slight to moderate, on average) out of any of the counties for more than half of the services included on the survey. Approximately 8% of residents wrote in additional "other" services that were important to them, including *law enforcement* and *access to land areas* (the top two most often cited "other" services).

- *Residents are generally not willing to pay for wildlife-related services. However, certain segments of the public indicated a higher willingness to pay for particular services. These are groups that WDFW may consider targeting in the future to help generate additional funds to support its programs.*

Among the eight example services included on the survey, residents were most willing to pay for *protection and recovery of endangered or threatened species* and *outdoor educational programs that connect youth/family to nature.* Less than 50% of residents were willing to pay for any of the other services included on the survey. Mutualists were more likely than the other value orientation types to indicate a willingness to pay for all services except two (*hunting and fishing opportunities* and *response to complaints about wildlife in urban areas*). A number of differences were noted across counties, with some services more likely than others to have a majority of residents who were willing to pay for it. As an example, residents from nineteen counties were willing to pay for *hunting and fishing opportunities* and residents from seventeen counties indicated they were willing to pay for *outdoor educational programs to connect youth/families to nature*, while residents in only four counties indicated a willingness to pay for the service *incentives to private landowners who restore wildlife habitat.*

- *Many residents indicate past participation in wildlife-related recreation activities (i.e., hunting, fishing, wildlife viewing). Furthermore, future interest in these activities exceeds current rates of participation. Findings highlight particular segments of the population that may be considered by WDFW as possible targets for future recruitment efforts.*

Residents' interest in future participation in wildlife-related recreation activities, including hunting, fishing, and wildlife viewing, exceeds current participation rates (defined by participation in the last 12 months). Overall, current levels of participation were highest for wildlife viewing. Mutualists were more likely than the other value orientation types to report participation in this activity, while Utilitarians and Pluralists were most likely to have participated in hunting and to indicate a future interest in this activity. This trend was true for fishing as well, although overall percentages were higher for fishing than for hunting across all value orientation types. Current participation rates for wildlife-related recreation varied

considerably across the counties. Reported participation levels for hunting and fishing were lower, for example, in counties near the Seattle metropolitan area. Some counties, such as Adams and Klickitat, had higher *latent demand* for hunting (i.e., higher percentages of residents indicating they do not currently participate, but have an interest in future participation) than other counties. More generally, at the statewide level, latent demand was further defined by sociodemographic characteristics, with women more likely than other population subgroups to indicate they do not currently participate in hunting, but have a future interest in doing so.

This summary serves only to give a very high-level overview of findings. Comparisons and differences among counties have been minimized for the sake of providing a sense of general conclusions. Detailed information, available for comparison by county, wildlife value orientation type, demographic characteristics, and participation in wildlife-related recreation is provided in the corresponding project report.

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SECTION I. INTRODUCTION AND OVERVIEW

This report is one of a series from a research project entitled *Understanding People in Places*. The research project was a collaboration of the Western Association of Fish and Wildlife Agencies (WAFWA) Human Dimensions Committee with Colorado State University (CSU) and four WAFWA-member state fish and wildlife agencies (Arizona Department of Game and Fish; Montana Fish, Wildlife, and Parks; South Dakota Game, Fish and Parks; and Washington Department of Fish and Wildlife). The overall purpose of this study was to demonstrate the utility of geographically-tied human dimensions information for fish and wildlife management and to introduce and test a spatially-explicit approach to depicting such data.

Understanding People in Places is a unique research program that addresses both state and region-specific issues of concern related to fish and wildlife management through the use of a geographically-specific approach. Data were collected in such a way as to allow each participating state to assess its publics' responses to state-specific issues at a finer degree of resolution (i.e., region, county, or census block group level) and compare similar item sets across the participating states. The focus of this report is to provide results specific to Washington residents. In an effort to understand localized issues and to inform the Washington Department of Fish and Wildlife's (WDFW's) strategic planning process, the Commission and WDFW staff have been very involved in defining the direction and outcomes of this state's portion of the project. Specific issues of interest identified by the Commission and WDFW staff as important to examine in this effort include the following: beliefs about wildlife and experience with wildlife-related problems near residents' homes; levels of public acceptance for lethal control of coyotes and black bears; acceptability of management actions addressing problem deer/elk and the recolonization of Washington by wolves; support for salmon recovery; public preferences and willingness to pay for wildlife-related services; and wildlife acceptance capacities (i.e., preferences for species population levels) for coyotes, deer, elk, black bears, and cougars. Also of interest to identify were levels of public participation in outdoor and wildlife-related recreation as well as beliefs about access to land areas for recreational opportunities.

An important emphasis of the *Understanding People in Places* project is to provide information that can be used to understand and address human-wildlife conflict issues at local levels. The adaptability of humans to wildlife (and vice versa) in conflict situations depends on people's knowledge, attitudes, and values. Certainly, experience plays an important role in this relationship; by living at a particular location over time, and through trial and error, residents will presumably find ways to prevent or reduce the severity of conflict situations. An examination of this dynamic process of human-wildlife interaction can benefit from an understanding of different segments of the broader population of Washington residents. Knowing how different population subgroups (e.g., groups defined by demographics, value orientation, recreational use) are distributed across the landscape and at various geographic scales (e.g., county) will be a very important tool for managers in attempting to plan for and address human-wildlife conflict and public education efforts at more local levels. Additionally, the success of specific management actions depends on the level of local public support for such actions as well as their impacts on local communities. Information about public reactions to potential management strategies can be useful for anticipating and addressing the *social* conflict that can arise with local implementation of these strategies. With these considerations in mind, results are

presented in this report using maps that depict the distribution of public sentiment regarding wildlife and wildlife-related issues in areas throughout Washington.

A. STUDY OBJECTIVES

This report offers findings from the *Understanding People in Places* project for Washington. In addition to overall study goals, each participating state agency had unique study objectives which address state-specific management issues of interest. Consistent objectives across the multi-state project include Objectives 1-5 below, whereas Washington-specific interests are outlined in Objective 6.

1. To develop an approach for collecting and displaying geographically-tied human dimensions of wildlife information.

2. To improve the use of human dimensions data by integrating additional sources of information (e.g., census data, habitat and species distribution overlays) consistent with Objective 1.

3. To extend the applicability of the "wildlife value orientations" concept in a wildlife management context.

4. To understand people's perceptions of nature and the area near their homes, including residents' beliefs about local wildlife and experiences with wildlife-related problems.

5. To determine levels of participation in outdoor activities near the home as well as past, current, and future interest in participation in wildlife-related recreation.

6. To assess residents' attitudes and beliefs regarding a variety of wildlife-related issues, including:
    - Access to land areas near the home for recreational opportunities
    - Lethal removal of coyotes and black bears under different conflict scenarios
    - Management actions to address problem deer or elk
    - Management actions related to wolves in Washington
    - Salmon recovery
    - Desired population levels for coyotes, deer, elk, black bears, and cougars
    - The importance of and willingness to pay for wildlife-related services

B. STUDY APPROACH

An important focus of this multi-state project is on improving the utility of human dimensions (HD) information for fish and wildlife management, as current HD approaches are typically limited in their application due to a lack of geographic specificity. HD information, or information about human values, attitudes, and behaviors, would be more useful if examined at more local levels, in the context of a specific community, or in the location of a particular resource problem. To address the need for information adequate in responding to localized wildlife-related issues in Washington, data were collected via a mail-back questionnaire

administered to residents in each of Washington's 39 counties in the fall of 2009. A total of 4,183 residents participated, resulting in an overall response rate of 31.8%. This response rate was much higher than anticipated and allowed for greater confidence in results at the county level than was expected. When reporting results at the statewide level for the entire sample of Washington residents, assuming maximum possible variance on a dichotomous (i.e., two category) variable, the margin of error was ±2% at the 99% confidence level. For reporting at the county level, we targeted for a minimum of 68 completed surveys per county to achieve a margin of error within ±10% at the 90% confidence level. This level of confidence is adequate for making generalizations about the public at the county level and for testing the utility of geographically-linked HD information. Samples sizes exceeded the minimum target of *n*=68 in all counties, providing an even greater degree of precision for study findings reported at the county level (Table I.B.1).

Table I.B.1. Margin of error for Washington counties at the 90% confidence level.

County	Sample Size	Margin of Error	County	Sample Size	Margin of Error
Adams	83	9.0	Lewis	86	8.9
Asotin	128	7.3	Lincoln	125	7.4
Benton	92	8.6	Mason	97	8.4
Chelan	99	8.3	Okanogan	110	7.8
Clallam	124	7.4	Pacific	96	8.4
Clark	106	8.0	Pend Oreille	125	7.4
Columbia	141	6.9	Pierce	80	9.2
Cowlitz	116	7.6	San Juan	114	7.7
Douglas	81	9.1	Skagit	123	7.4
Ferry	105	8.0	Skamania	130	7.2
Franklin	78	9.3	Snohomish	84	9.0
Garfield	125	7.4	Spokane	111	7.8
Grant	94	8.5	Stevens	127	7.3
Grays Harbor	82	9.1	Thurston	119	7.5
Island	113	7.7	Wahkiakum	103	8.1
Jefferson	138	7.0	Walla Walla	115	7.7
King	92	8.6	Whatcom	118	7.6
Kitsap	100	8.2	Whitman	92	8.6
Kittitas	125	7.4	Yakima	82	9.1
Klickitat	124	7.4			

The margin of error was within ±5% at the 95% confidence level for data reported by specific subgroups of interest (i.e., wildlife value orientation types, wildlife-related recreation type) within the Washington sample for all groups (Table I.B.2). Margin of error estimates take into account unweighted sample sizes, population sizes for the sampling unit of interest, and estimated populations sizes for groups based on the proportions that the groups represent in the weighted sample.

Table I.B.2. Margin of error for population subgroups at the 95% confidence level.

Population subgroups	Margin of Error
Wildlife value orientation type	
Utilitarian	± 2.6%
Pluralist	± 4.1%
Mutualist	± 2.6%
Distanced	± 3.6%
Recreation type	
Current hunter/angler/wildlife viewer	± 4.4%
Past hunter/angler/wildlife viewer	± 4.0%
Non-hunter/angler/wildlife viewer	± 5.2%

An extensive non-respondent phone survey was conducted to assist in evaluating the extent to which the sample was representative of the Washington population. Results of comparisons allowed through the non-response check indicated only marginal variation between respondents and non-respondents. Data were also explored in relation to U.S. Census and other independent sources of information (e.g., the National Survey on Fishing, Hunting, and Wildlife-Associated Recreation) to determine if weighting was necessary. Based on results of these comparisons, data were weighted by gender at the county level to account for an underrepresentation of females in the sample. For reporting at the aggregate, statewide level, data have also been weighted to accurately reflect the true proportions of the population represented by each county.

C. ORGANIZATION OF THE REPORT

Sections II and III (i.e., wildlife value orientations, demographic and lifestyle characteristics) identify particular ways in which Washington residents can be characterized to further understand how specific population segments may respond to wildlife-related issues. Sections IV through VIII present results related to the study objectives by each of the following categories:

- State
- Wildlife value orientation
- County

In addition to the descriptive results presented by the above categories throughout this report, results of more in-depth analyses, including comparisons by demographic and lifestyle characteristics (e.g., age, gender, participation in wildlife-related recreation), are presented in

certain sections for specific issues identified by WDFW staff as important to the management of the state's fish and wildlife. These issues include land access (Section VI); management of coyotes and black bears, deer and elk, wolves, and salmon (Section VII); wildlife acceptance capacity (Section VII); and wildlife-related services (Section VIII). In these sections, the degree to which population subgroups differ on responses to particular variables is discussed relative to the statistical significance as well as *practical* significance of findings. Effect sizes, an indicator of practical significance representing the strength of association among variables, are reported for this purpose, where .100 indicates a "small" effect, .243 indicates a "medium" effect, and .371 indicates a "large" effect (Cohen, 1988). Larger effect sizes denote a stronger relationship or more meaningful difference among subgroups on variables of interest.

This report concludes with a summary of pertinent findings and management implications. A list of cited references appears at the end of this document. Supporting tables for results presented throughout this report can be found in Appendices A-F. Detailed information on project methods and data weighting is reported in Appendix G. Appendix H provides a more thorough description of the wildlife value orientations concept discussed throughout this report. A copy of the mail survey instrument used in Washington for data collection is provided in Appendix I. Appendix J contains a copy of the non-response follow up phone survey instrument.

D. GUIDE FOR READING THE MAPS

Maps used in this report offer a spatial display of findings at the county level to aid in understanding the distribution of public response to wildlife-related issues throughout the state of Washington. A map depicting the location of each county is provided in Figure I.D.1.

Figure I.D.1. Map of Washington counties.

SECTION II. WILDLIFE VALUE ORIENTATIONS[1]

The purpose of this section is to explore the values and basic beliefs that Washington residents hold concerning wildlife and wildlife management. A study entitled *Wildlife Values in the West* that was completed in 2005 serves as the foundation for results reported in this section. The 2005 study was conducted by Colorado State University, in cooperation with the Western Association of Fish and Wildlife Agencies. The primary objectives of the investigation, involving a survey of residents in 19 western states, were: (1) to describe the current array of public values toward wildlife and identify their distribution across states; (2) to segment publics on the basis of their values toward wildlife and understand their sociodemographic and lifestyle characteristics; and (3) to begin to understand how and why wildlife values are changing and determine the possible implications of a value shift for wildlife management.

Findings related to these objectives are documented in a report by Teel et al. (2005). Further, the report (along with subsequent publications, including Teel & Manfredo [2009]) provides a thorough description of the history and utility of understanding wildlife values, the development of the concept of wildlife value orientations, and more information about Washington's place in the regional distribution of public values toward wildlife. Additional background information, including the survey items used to measure Washington residents' wildlife values, can also be found in Appendix I of this report.

A. BRIEF OVERVIEW OF THE WILDLIFE VALUE ORIENTATION CONCEPT

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

A useful way of summarizing information about wildlife value orientations is to identify different "types" of people on the basis of their orientations. Characterizing segments of the public in this manner allows for a better understanding of the diversity of public thought that exists as well as anticipation of how different groups of people will respond to proposed management strategies and programs. The *Wildlife Values in the West* study identified the following four population subgroups:

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

[1]Some of the content appearing in this section has been extracted from Teel et al. (2005) and subsequent reports/publications, including Teel and Manfredo (2009).

utilitarian terms and to rate actions (e.g., hunting, lethal removal) that result in death or harm to wildlife as acceptable.

2. ***Mutualist Wildlife Value Orientation Type.*** Mutualists view wildlife as capable of living in relationships of trust and caring with humans, as if part of an extended family, and as deserving of rights. 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.

3. ***Pluralist Wildlife Value Orientation Type.*** Pluralists hold both a mutualism and a utilitarian value orientation toward wildlife. The name for this group was taken from Tetlock's (1986) Value Pluralism Model, which describes how people can endorse values that have conflicting evaluative implications for specific issues. Drawing upon this model, the influence of the two value orientations is believed to be situationally-contingent, meaning that the role of a specific orientation can vary depending 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.

4. ***Distanced Wildlife Value Orientation Type.*** Distanced individuals do not hold either a mutualism or a utilitarian orientation. As their label suggests, they tend to be less interested in wildlife and wildlife-related issues. The Distanced group is also more likely than the other value orientation types to express fear, or a 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).

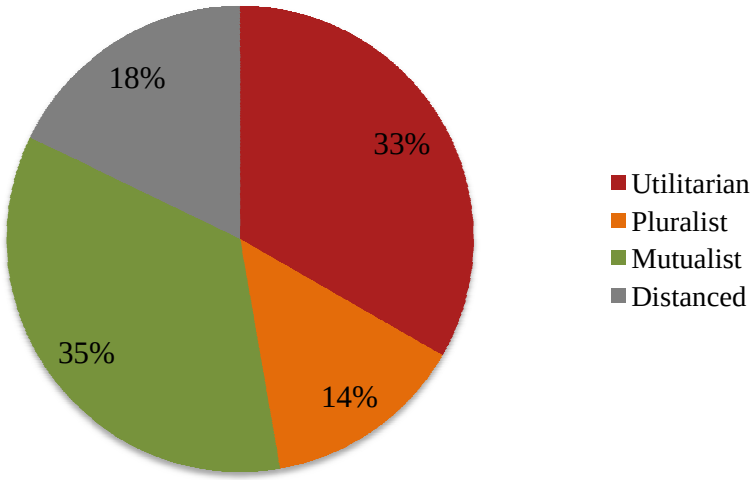
The *Wildlife Values in the West* study revealed that Utilitarians and Pluralists possess certain similar sociodemographic and lifestyle characteristics, which differ from those of Mutualists and Distanced individuals (Teel et al., 2005). Utilitarians and Pluralists, for example, are more likely than the other two value orientation types to be male and also tend to be slightly older on average and to have lived in the state for a longer period of time. The types were also found to differ in their responses to wildlife-related issues and participation in wildlife-related recreation (Teel et al., 2005). As an illustration, Mutualists and Distanced individuals are less likely to indicate past and current involvement in hunting and are also less likely than the other two groups to express interest in participating in this activity in the future. Mutualists are more likely than the other types to participate in wildlife viewing and to express interest in future participation in this activity.

B. SEGMENTATION OF WASHINGTON RESIDENTS ON THE BASIS OF THEIR WILDLIFE VALUE ORIENTATIONS

The *Wildlife Values in the West* study classified residents in the 19-state region as follows: 34% Utilitarian, 20% Pluralist, 33% Mutualist, and 13% Distanced. Washington state-specific results from the same study classified residents as 33% Utilitarian, 18% Pluralist, 37% Mutualist, and 12% Distanced. In comparison, the distribution of wildlife value orientation types in Washington revealed by the current investigation (*Understanding People in Places*) is as follows: 33% Utilitarian, 14% Pluralist, 35% Mutualist, and 18% Distanced (Figure II.B.1). Results from the

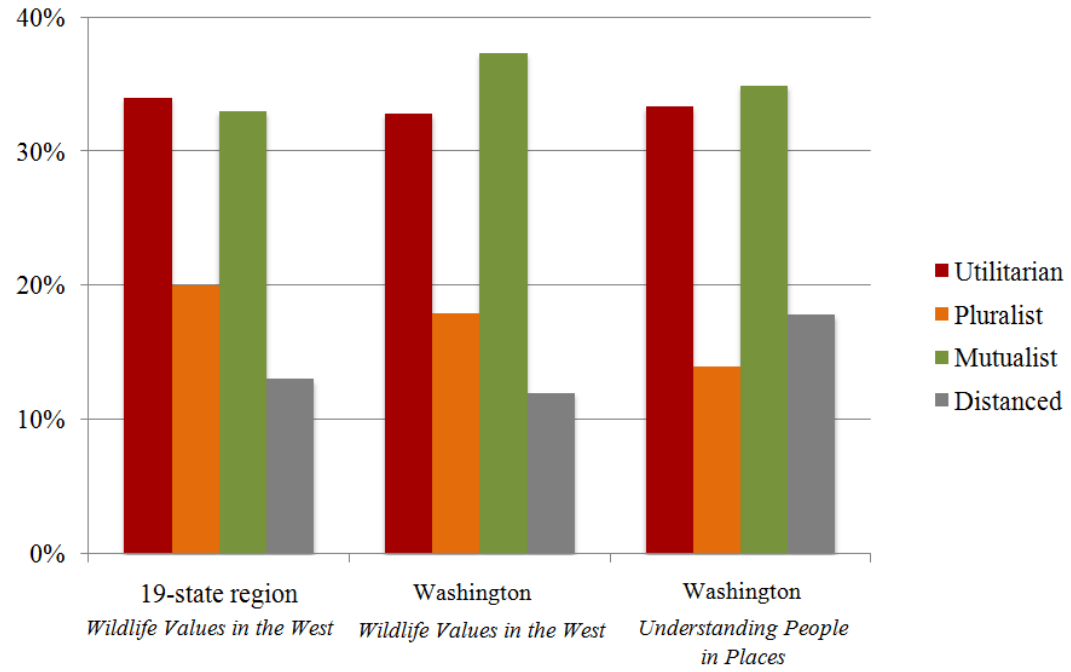
2005 *Wildlife Values in the West* study are presented alongside current findings from the *Understanding People in Places* investigation in Figure II.B.2. Percentages for Washington are relatively comparable across studies, providing further confirmation of findings reported in the earlier 19-state study. In addition, results of these comparisons revealing similar patterns over a relatively short timeframe are consistent with expectations given that value orientation changes are believed to occur *intergenerationally*. There is roughly a 5-year gap between data collection for the two projects, and a longer timeframe would be needed to detect a potential change in the composition of value orientations in the state. A slightly smaller percentage of Pluralists and a slightly larger percentage of Distanced individuals was detected in the current study as compared to results of the *Wildlife Values in the West* project.[2]

Figure II.B.1. Distribution of wildlife value orientation types in Washington from the current investigation, *Understanding People in Places*.



[2] Interpretation of findings from this comparison should be made with caution for a few reasons. First, the items used to measure wildlife value orientations differed somewhat between the two studies – a reduced set of items was extracted from the *Wildlife Values in the West* survey for use in the *Understanding People in Places* study. Second, the *Wildlife Values in the West* project used data that were weighted by demographic and lifestyle variables to adequately represent populations of interest in each participating state, whereas the current study made adjustments on the basis of gender at the county level and population within each county at the state level.

Figure II.B.2. Distribution of wildlife value orientation types found by two different studies.



Results by county. Spatial depictions of the distribution of each wildlife value orientation type by county are presented in Figures II.B.3 – II.B.6. The percent of Utilitarians across counties ranged from 21.6% in San Juan County to 61.4% in Columbia County; Pluralists from 7.2% in Garfield County to 28.0% in Grays Harbor County; Mutualists from approximately 13.6% in Columbia County to 52.3% in San Juan County; and Distanced from 7.2% in Pacific County to 27.0% in Island County. See Table A-1 for percentages of wildlife value orientation types in each county.

Figure II.B.7 displays the ratio of Utilitarians to Mutualists in Washington (i.e., the number of Utilitarians for every one Mutualist). A number greater than 1 on the map signifies that there are more Utilitarians than Mutualists in the county, whereas a number less than 1 indicates that there are more Mutualists than Utilitarians. Washington has a higher concentration of Utilitarians in the southern and eastern portions of the state, whereas the northwest portion of the state generally has higher percentages of Mutualists. Social conflict regarding wildlife management actions (e.g., actions resulting in harm or death to individual wildlife) is most likely to occur in areas where there are equal numbers of residents holding divergent value orientations (e.g., 50% Utilitarians, 50% Mutualists). This type of stakeholder conflict is likely to exist in the following counties: Clallam, Franklin, Pacific, Pierce, and Yakima. Alternatively, areas predominately

comprised of individuals having the same value orientation are more likely to be in consensus regarding their responses to particular management strategies. For example, residents from Columbia County, where there are approximately four or five Utilitarians for every one Mutualist, are likely to have greater consensus on wildlife-related issues compared to other counties. Pluralists, while not constituting a majority in any county, were found in higher concentrations in the coastal areas of Grays Harbor and Pacific Counties. Although the county with the highest percentage of Distanced individuals was Island County, locations with relatively high percentages of Distanced individuals when compared to other counties were found in the more urban areas near Seattle. This finding is consistent with prior research suggesting that Distanced individuals are somewhat more likely than the other value orientation types to live in urban areas (Teel & Manfredo, 2009).

Figure II.B.3. Distribution of Utilitarians.

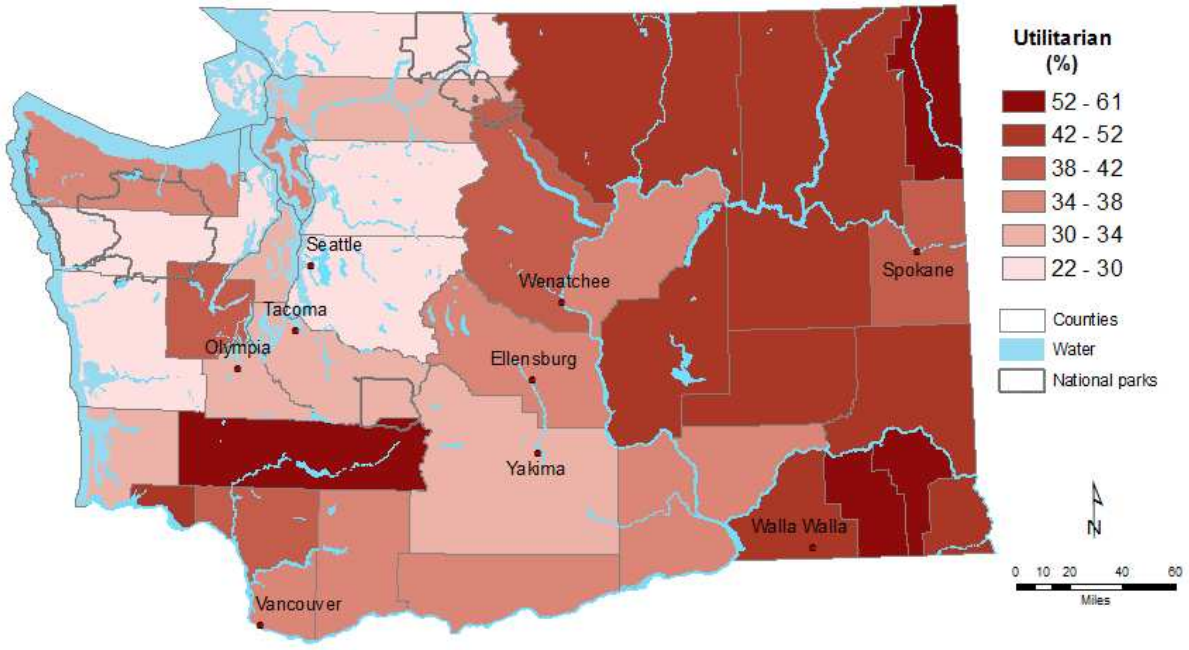


Figure II.B.4. Distribution of Mutualists.

Figure II.B.5. Distribution of Pluralists.

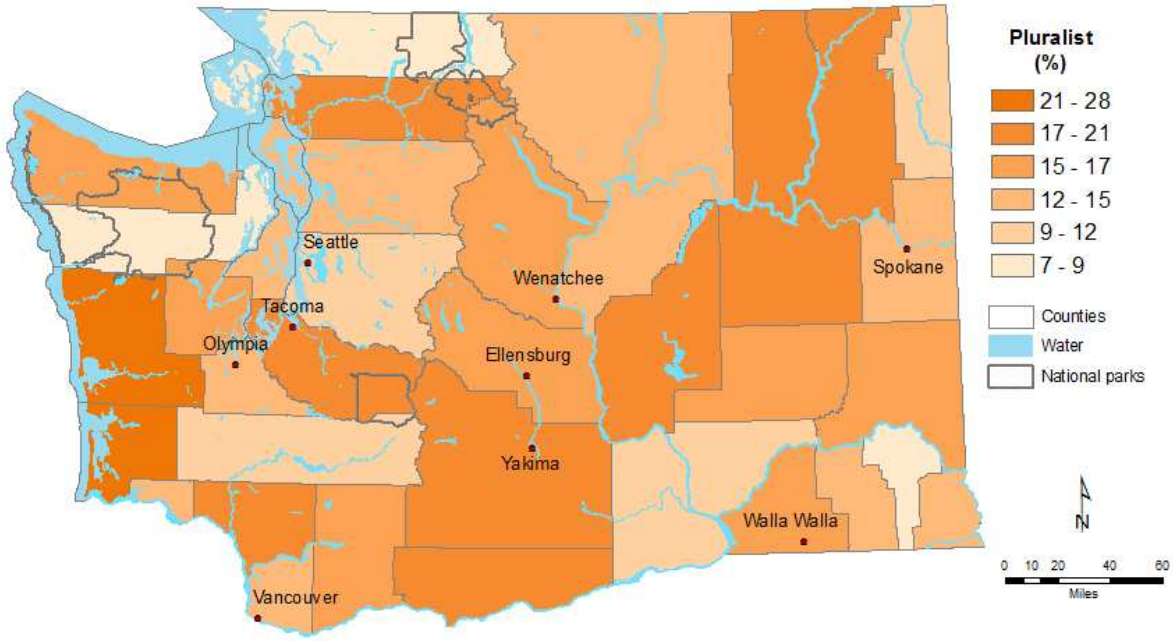


Figure II.B.6. Distribution of Distanced individuals.

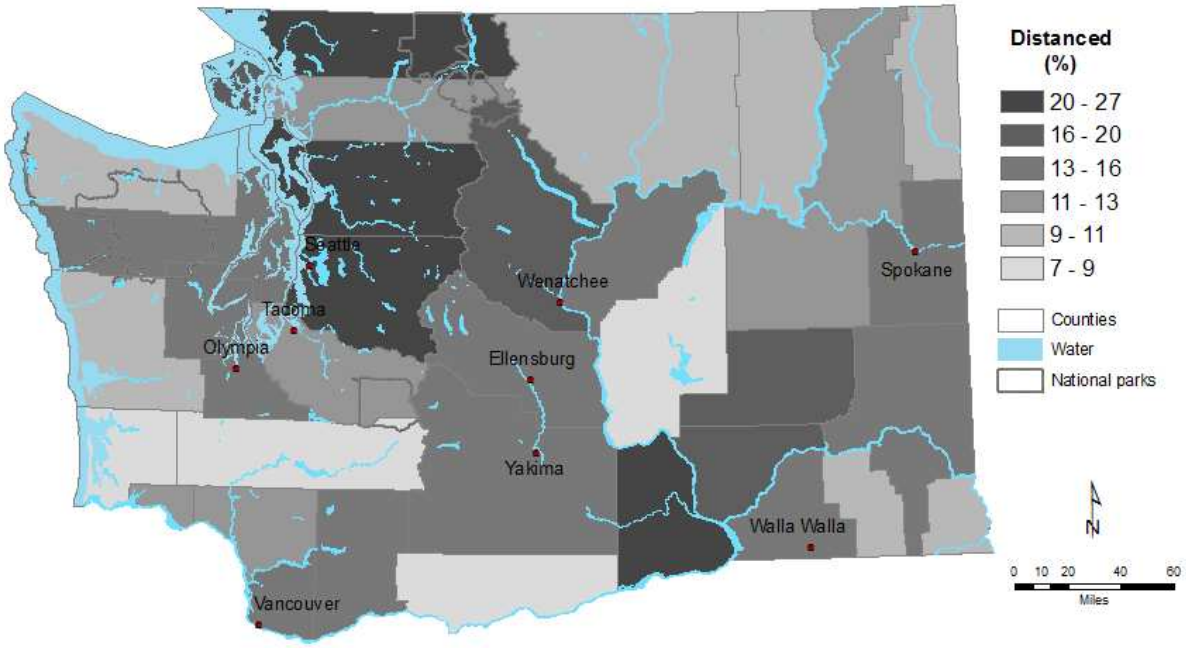
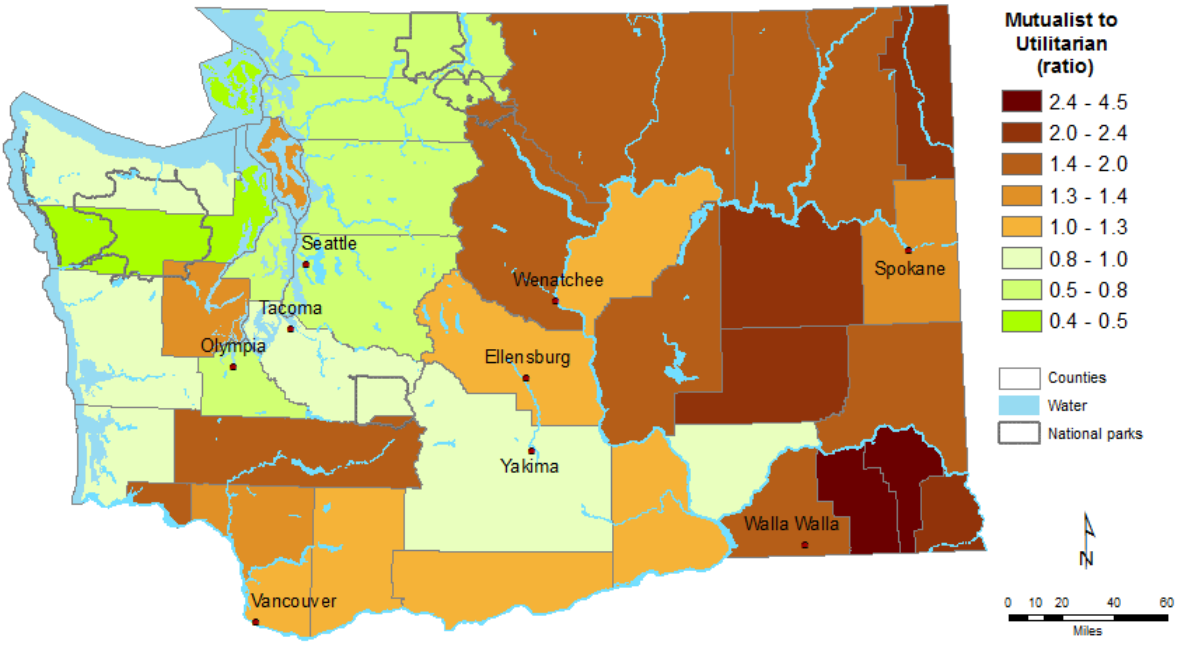


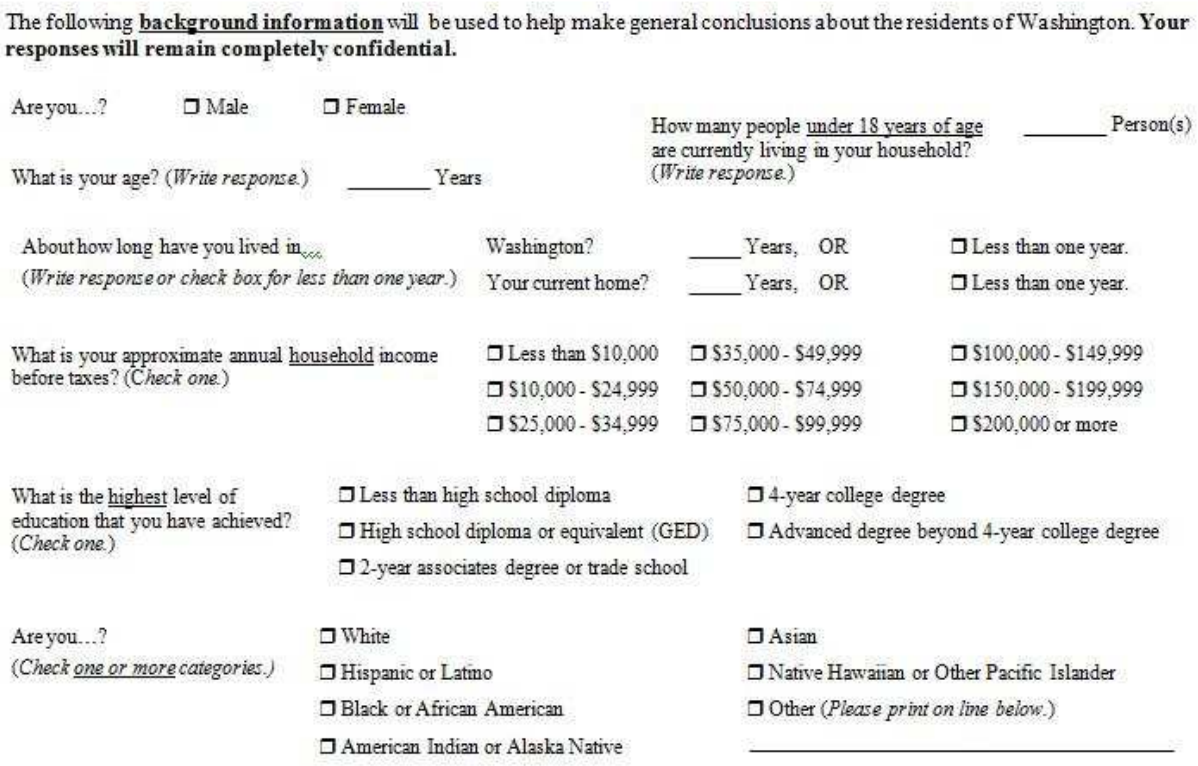
Figure II.B.7. Ratio of Mutualists to Utilitarians.[1]



[1] For every one Mutualist, there are X number of Utilitarians.

SECTION III. DEMOGRAPHIC AND LIFESTYLE CHARACTERISTICS

This section explores demographic and lifestyle characteristics of Washington residents, including gender, age, number of people under the age of 18 years living at home, length of residence, income, education, and ethnicity or racial background. This section also explores Washington residents' participation in wildlife-related recreation activities. In addition to providing information useful in characterizing Washington residents, data reported in this section can help in determining the overall representativeness of our study sample. Although we obtained a very large sample size from which to draw conclusions overall, we had a relatively small number of non-white respondents, limiting our ability to make generalizations about specific ethnic or racial groups. Alternative approaches to data collection are recommended to elicit responses from diverse audiences who tend to be underrepresented in mail surveys. For example, as part of this overall multi-state project (*Understanding People in Places*) we obtained a more accurate representation of Hispanics in Tucson, Arizona using a door-to-door data collection procedure. Such an approach in Washington would have been financially prohibitive given the agency's interest in collecting data to represent all counties in the state, but alternative methodologies may be beneficial in future efforts aimed at obtaining results specific to certain racial/ethnic groups or for more localized geographic areas. Demographic characteristics can also be useful in the context of identifying factors that may be linked to shifts in wildlife value orientations occurring at the state or more localized levels. Supporting tables for results reported in this section can be found in Appendix A (Table A-2 to A-8). Items used in this section are below.



The following **background information** will be used to help make general conclusions about the residents of Washington. **Your responses will remain completely confidential.**

Are you…? ❒ Male ❒ Female

What is your age? (*Write response.*) _____ Years

How many people under 18 years of age are currently living in your household? (*Write response.*) _____ Person(s)

About how long have you lived in… (*Write response or check box for less than one year.*)

Washington? ____ Years, OR ❒ Less than one year.

Your current home? ____ Years, OR ❒ Less than one year.

What is your approximate annual household income before taxes? (*Check one.*)

❒ Less than $10,000
❒ $10,000 - $24,999
❒ $25,000 - $34,999
❒ $35,000 - $49,999
❒ $50,000 - $74,999
❒ $75,000 - $99,999
❒ $100,000 - $149,999
❒ $150,000 - $199,999
❒ $200,000 or more

What is the highest level of education that you have achieved? (*Check one.*)

❒ Less than high school diploma
❒ High school diploma or equivalent (GED)
❒ 2-year associates degree or trade school
❒ 4-year college degree
❒ Advanced degree beyond 4-year college degree

Are you…? (*Check one or more categories.*)

❒ White
❒ Hispanic or Latino
❒ Black or African American
❒ American Indian or Alaska Native
❒ Asian
❒ Native Hawaiian or Other Pacific Islander
❒ Other (*Please print on line below.*)
_____

Results by state. Respondents were primarily of white ethnicity (94.8%), had an average age of 57 years, lived in Washington a significant portion of their lives (36.4 years), and spent on average more than a decade residing in their current home (14.6 years). There was an average of 0.52 people under the age of 18 years living at home. This can also be interpreted to mean that, on average, approximately every other household reported one person under the age of 18 years living at home. Residents also reported an average household income between $50,000 and $74,999 and had an average of two-four years of post high school education (equivalent to an associate's degree or trade school and a four-year degree).

Results by wildlife value orientation. Mutualists and Distanced individuals were more likely to be female, whereas Utilitarians and Pluralists were more likely to be male. Mutualists and Pluralists were less likely to indicate people under the age of 18 years were living at home. Pluralists were also more likely than the other value orientation types to be older, to have lived in Washington for a longer period of time, and to report the lowest levels of education and income of the value orientation types. Distanced individuals reported that they have lived the fewest number of years in their current residence when compared to the number of years reported by the other value orientation types.

Results by county. The average age of respondents ranged from 55-63 years across the counties. Franklin County residents reported the highest number of people under the age of 18 years living at home (~0.75, on average), whereas San Juan County residents reported the lowest number of household residents under the age of 18 years (~0.24). San Juan and King County residents had lived in Washington the least amount of time (~309 years), whereas Yakima and Grant County residents had lived in Washington the longest (~50 years). Garfield County residents reported the longest length of residency in their current homes (~22 years), whereas Pierce County residents reported the shortest length of home occupancy (~12 years). Compared to all other counties, King County residents reported the highest levels of income ($75,000-$99,999), and Asotin County residents reported the lowest levels of income ($25,000-$34,999). San Juan County residents had the highest levels of education (on average, a 4-year degree), whereas Wahkiakum County residents reported the lowest levels of education (on average, less than a 2-year associates degree or trade school).

A. WILDLIFE-RELATED RECREATION PARTICIPATION

This section examines participation in the following three wildlife-related recreation activities: hunting, fishing, and wildlife viewing. Differences and similarities in responses to select survey items are explored between current, past, and non-participants in these three activities. Current participants are defined as those who reported participation in the respective activity within the past 12 months, past participants are those who reported participation in the past (but did not indicate current participation), and non-participants indicated they had not participated at all.

Similarities and differences in responses to select survey items are also explored between residents who are current hunters and those residents who are categorized as the "latent demand" group. This latent demand group consists of people who indicated they had a future interest in the activity, but were not current participants. A large majority of people in the latent demand categories (87.3% of 552 hunters, 89.8% of 1,113 anglers) consisted of individuals who had participated in the past, but did not participate in the last 12 months. WDFW has had recent success in targeting such "lapsed" angling constituents (residents who no longer hold current licenses) in an effort to boost license sales. These efforts highlight the importance of understanding the geographic location and characteristics of residents classified in "latent demand" categories.

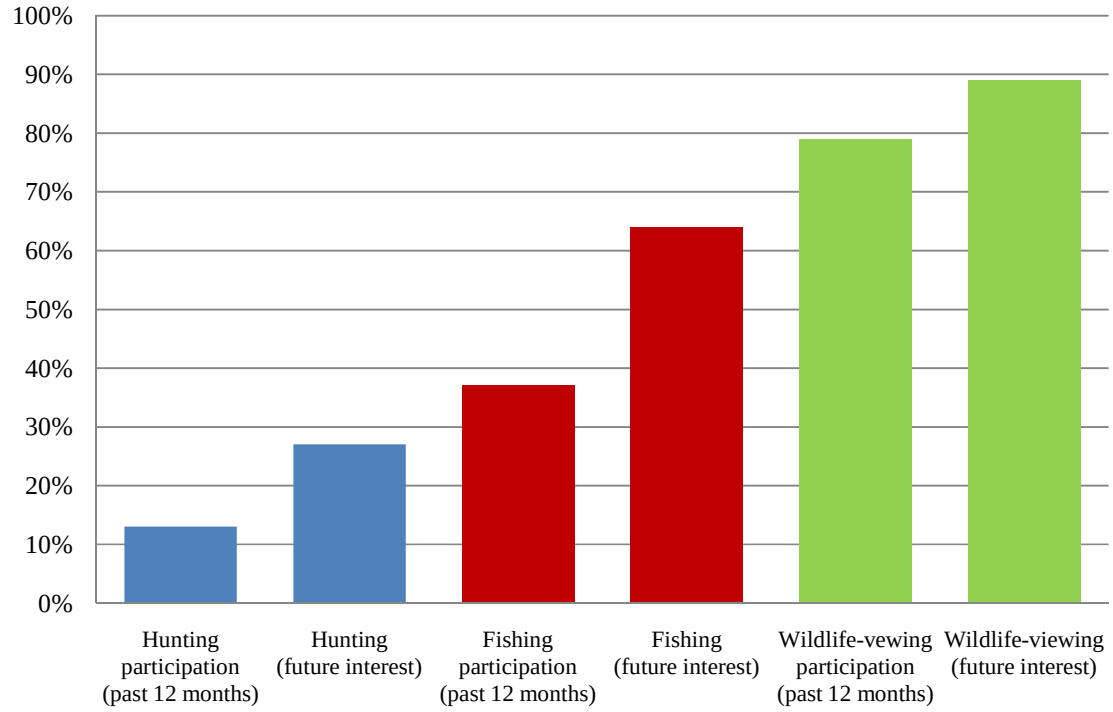
Items used in this section are below.

For each activity listed below, check one response for each of the three questions appearing to the right.

	Have you ever participated in…		**In the last 12 months, did you participate in…**		**Do you have an interest in future participation in…**	
…Hunting?	❒ Yes	❒ No	❒ Yes	❒ No	❒ Yes	❒ No
…Fishing (non-commercial)?	❒ Yes	❒ No	❒ Yes	❒ No	❒ Yes	❒ No
…Wildlife Viewing?	❒ Yes	❒ No	❒ Yes	❒ No	❒ Yes	❒ No

Results by state. For all three wildlife-related recreation activities, future interest exceeded current participation (Figure III.A.1). For hunting and fishing in particular, future interest was about double current participation rates. Women, who were less likely to currently participate in fishing and wildlife viewing, were more likely to be in the latent demand groups. Results presented here are a "snapshot" in time of participation rates that were collected in the fall of 2009. Current rates of participation determined by this project are likely to be inconsistent with the percentage of Washington residents who purchased a state hunting or fishing license for several reasons, including: (1) residents responding to the survey may have hunted or fished in 2008 or 2009; (2) some may not have bought a license to participate; and (3) residents may have hunted or fished in states other than Washington.

Figure III.A.1. Percent of residents indicating past participation and future interest in participation in three wildlife-related recreation activities.



Results by wildlife value orientation. Utilitarians and Pluralists reported the highest rates of hunting participation in the past and in the last 12 months, and had the highest percentages of people indicating future interest in hunting participation (Figure III.A.2). This trend was true for fishing as well, although overall percentages of people indicating participation in this activity were higher across all the value orientation types than they were for hunting (Figure III.A.3). Mutualists were more likely to indicate participation in wildlife viewing compared to the other value orientation types (Figure III.A.4). Overall participation rates were highest across the value orientation types for wildlife viewing.

Figure III.A.2. Percent wildlife value orientation indicating participation in *hunting*.

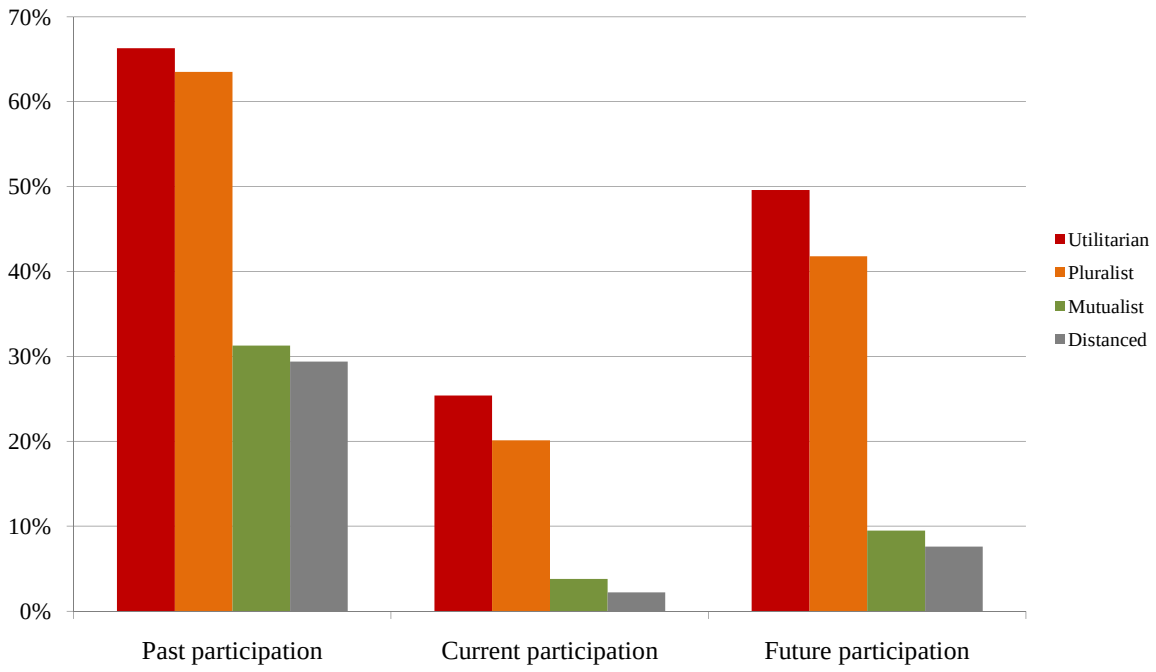


Figure III.A.3. Percent wildlife value orientation indicating participation in *fishing*.

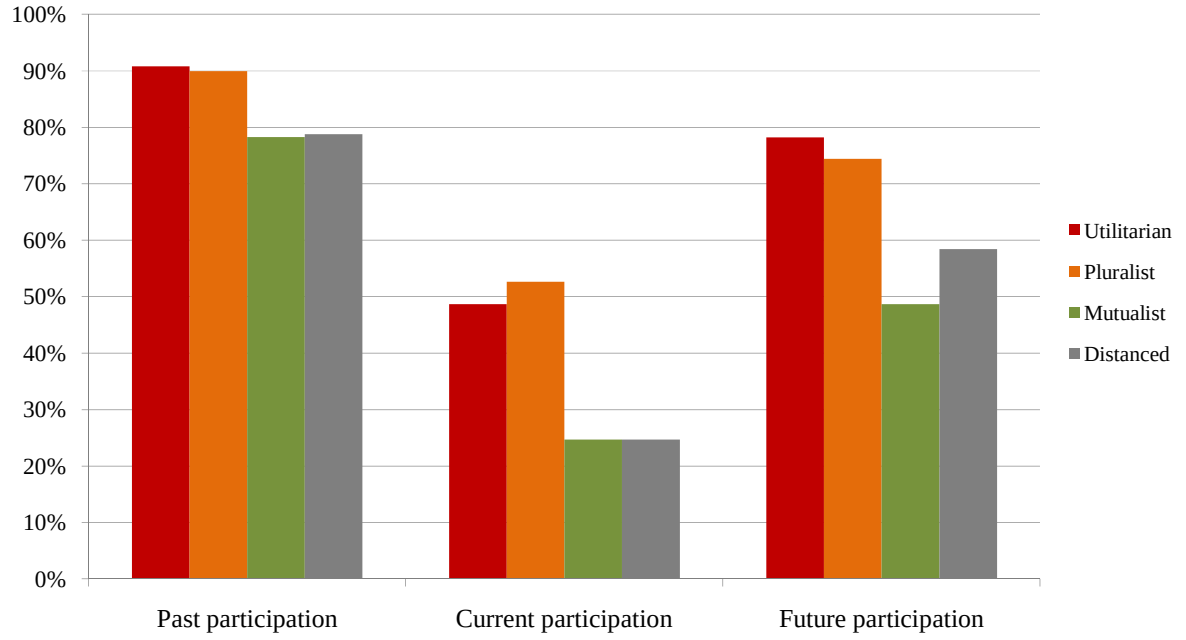
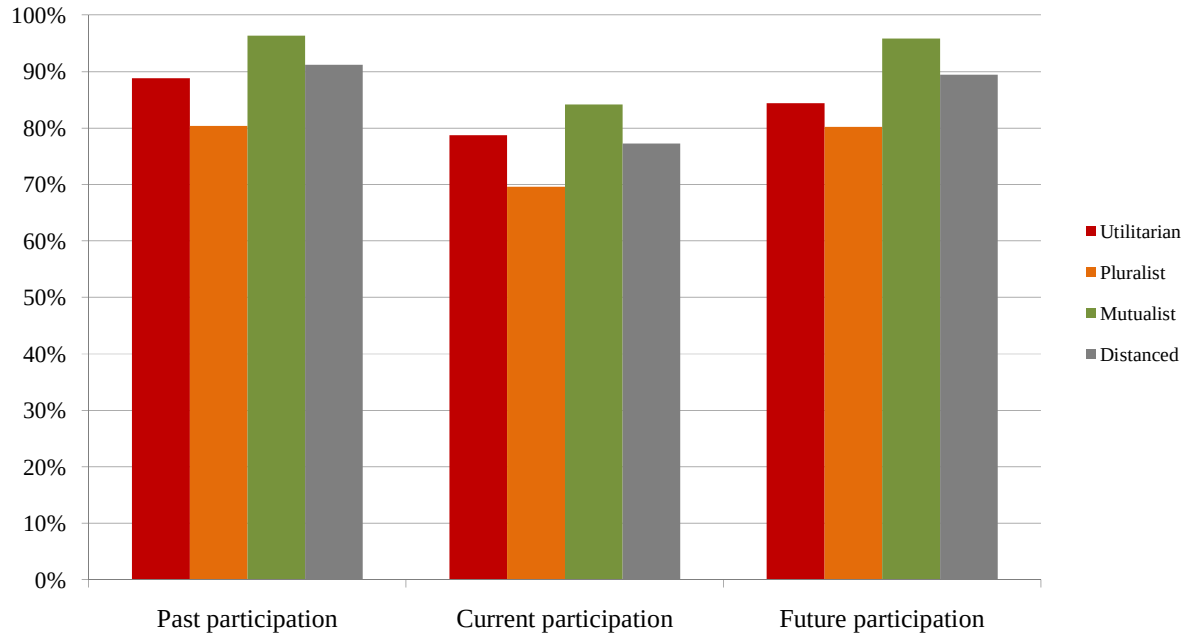


Figure III.A.4. Percent wildlife value orientation indicating participation in *wildlife-viewing*.



Results by county. Participation rates for wildlife-related recreation in the last 12 months varied considerably across the counties as compared to overall statewide results (Figures III.A.5 – III.A.7). Counties with the highest percentages of residents who participated in hunting were located in the far northeast and southeast portions of Washington, whereas high fishing and wildlife viewing participation rates appeared to vary across the state rather than being tied to a particular region of the state. Participation rates were relatively low in the Seattle metropolitan area for hunting and fishing when compared to other areas within the state.

Figure III.A.5. Percent of residents who participated in *hunting* in the last 12 months.

Figure III.A.6. Percent of residents who participated in *fishing* in the last 12 months.

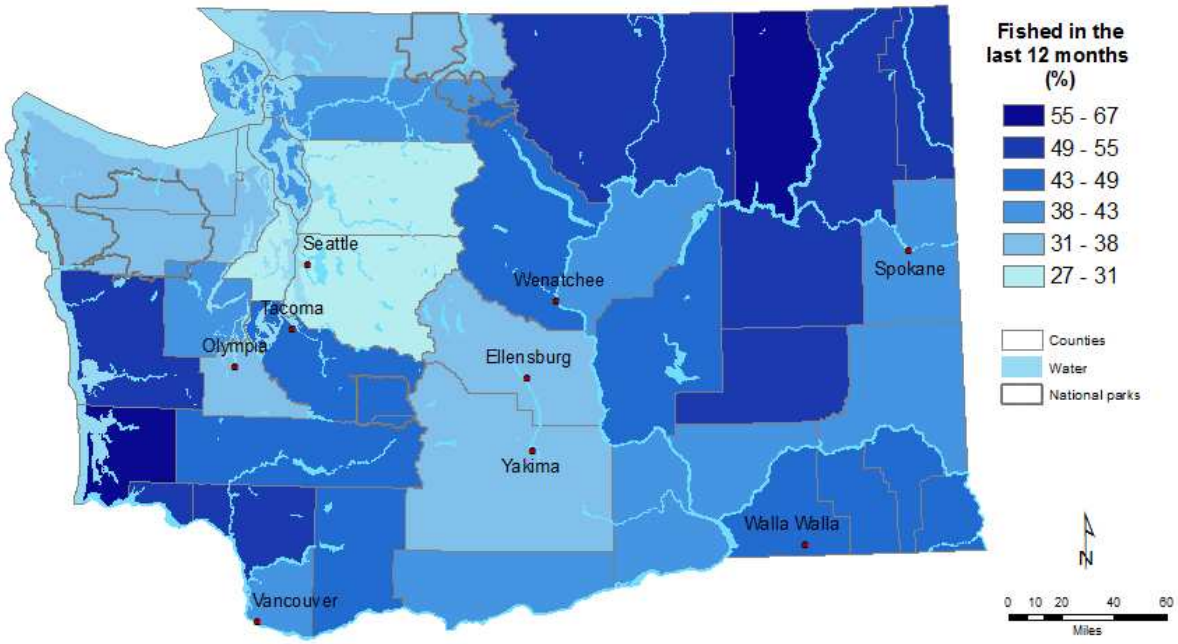
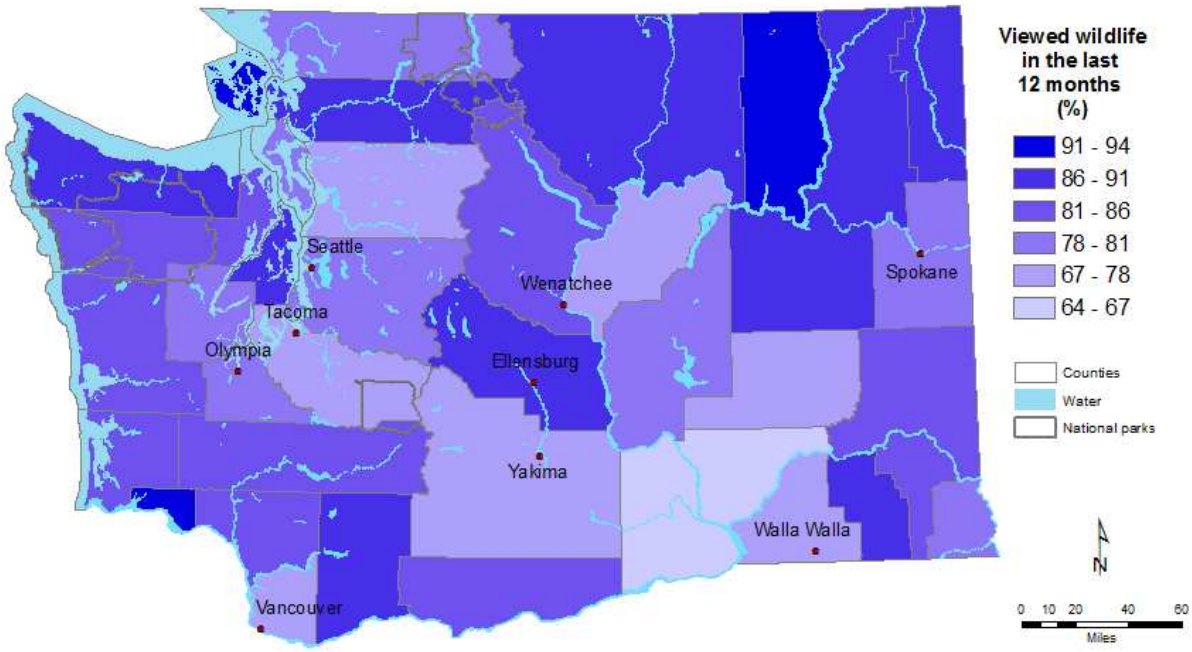
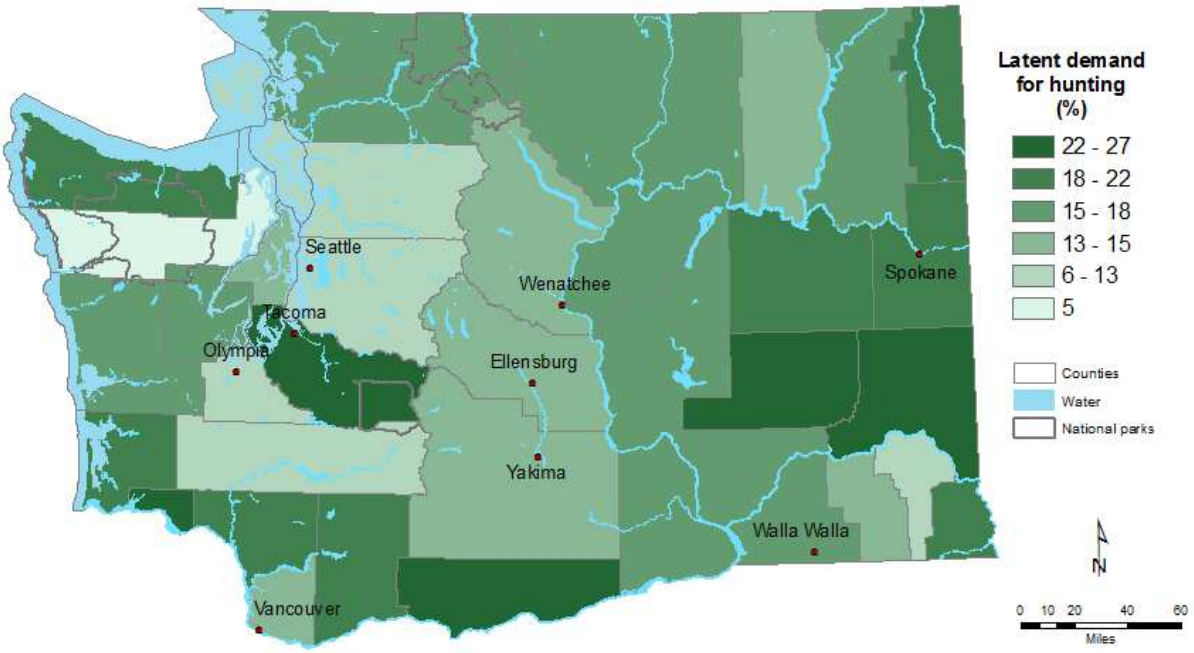


Figure III.A.7. Percent of residents who participated in *wildlife-viewing* in the last 12 months.



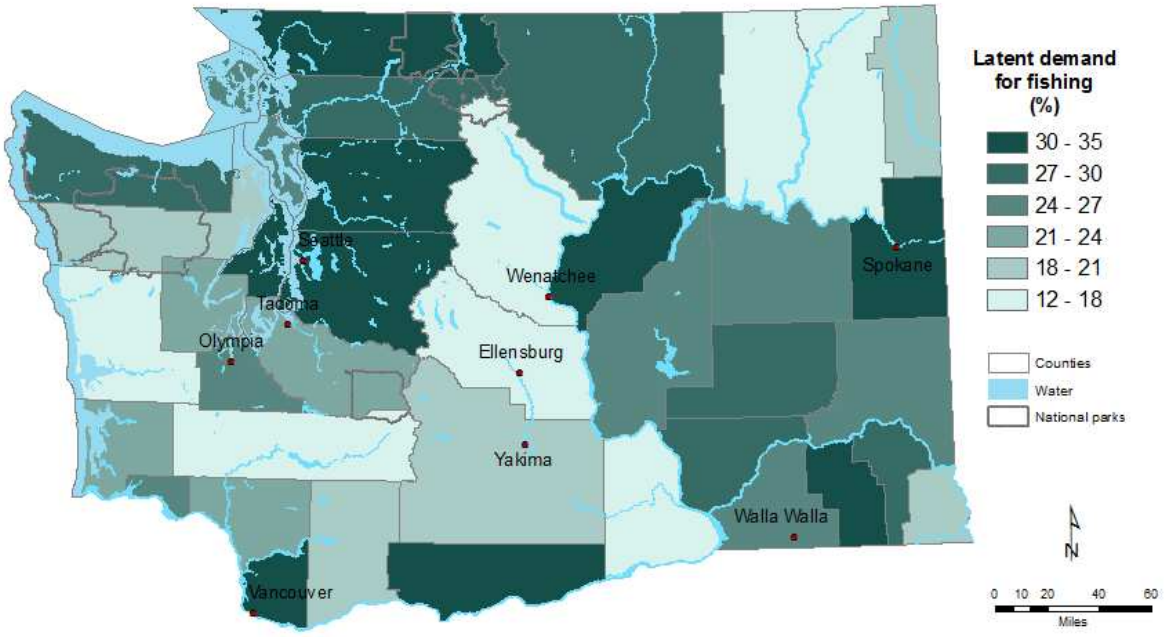
Residents in some counties may have obstacles that limit their ability to participate in certain wildlife-related recreation activities (e.g., less access to land areas), while other counties may be experiencing social changes (e.g., urbanization) that affect participation rates. For example, counties such as Adams and Klickitat had somewhat higher percentages of people in the hunting latent demand group (i.e., residents indicating they do not currently participate, but have an interest in future participation) compared to other counties (Figure III.A.8). It is possible that hunter recruitment programs may be more successful in areas with high levels of latent demand, particularly if these areas have a relatively high percentage of Utilitarians and Pluralists.

Figure III.A.8. Percent of residents in the *hunting* latent demand group.



Additionally, information on latent demand can be used in conjunction with information on whether limited access to land areas may be a constraint to participation in wildlife-related recreation in an effort to identify areas where WDFW may be more successful in increasing participation rates. For example, Cowlitz County had more residents than any other county who indicated that limited access to local lands affected their ability to participate in outdoor recreation. In comparison with other counties, nearby Clark County had a relatively high percentage of residents in the latent demand category for fishing (Figure III.A.9). WDFW may want to consider whether additional lands can be purchased or work with private landowners near this area to help provide more local recreation-related opportunities for residents.

Figure III.A.9. Percent of residents in the *fishing* latent demand group.



SECTION IV. PERCEPTIONS OF NATURE AND THE PLACE NEAR HOME

The purpose of this section is to explore the beliefs and attitudes of Washington residents regarding nature and the place near their homes. By categorizing people's broad perceptions of nature, resource managers can gain a better understanding of human-nature relationships, which can provide a foundation for understanding conflict among different people regarding natural resources and their use. For example, a person who believes nature is relatively limited and fragile may be more likely to oppose invasive management techniques such as lethal control of wildlife in their area than a person who believes that nature is robust and can take care of itself. Additionally, residents who are more active in the place where they live may have a greater awareness and knowledge of the natural environment (including the wildlife that may be present). This may further affect how people think about local natural resource issues and the myriad of agency responses possible to address them. In conjunction with information about wildlife value orientations (see Section II), this information can help gauge people's thoughts about how the natural world, including wildlife, should be managed in Washington.

A. EXPLORING HUMAN-NATURE RELATIONSHIPS

Survey items presented in this section stem from Douglas's (1992) "grid/group model" and the "myths of nature" (Douglas, 1992; Milton, 1996), with additional input from the literature on categorizations of nature and place (e.g., Relph, 1980; Tuan, 1974). Supporting tables can be found in Appendix B (Tables B-1 to B-5).

This survey begins with a list of paired phrases representing different ways that people might think about nature. We want to know which phrase out of each pair below best describes **how *you* think about nature**.

There are two parts to this question

PART 1. Circle one phrase for each pair below. **I think nature…**			PART 2. Circle one number for each phrase circled in Part 1. **To what extent does the phrase to the left represent how you think about nature?** Slightly	Moderately	Extremely
is fragile	or	is durable	1	2	3
is unlimited, abundant	or	is limited, scarce	1	2	3
is unpredictable, chaotic	or	is predictable, ordered	1	2	3
is remote, uninviting	or	is accessible, inviting	1	2	3
can take care of itself	or	needs to be protected	1	2	3

We are now interested in knowing more about **how you think about the area near your home** (including your place of residence and the area within a few miles of it).

There are two parts to this question

PART 1. Circle one word/phrase for each pair below. **I think the area near my home is…**			PART 2. Circle one number for each word/phrase circled in Part 1. **To what extent does the word/phrase to the left represent how you think about the area near your home?** Slightly	Moderately	Extremely
ugly, unattractive	or	beautiful, attractive	1	2	3
safe	or	dangerous	1	2	3
common	or	unique	1	2	3

This study served as a pilot for testing a new measurement approach to understanding human-nature relationships. A more detailed cluster analysis approach to grouping people based on their beliefs about nature was conducted separately from this report (see Dietsch, 2010 for more details). Generally, five patterns of beliefs regarding the way people think about nature (i.e., "myths of nature" groups) could be found in Washington: *Nature is Benign, Nature is Tolerant, Nature is Ephemeral, Nature is Capricious,* and *Nature is Resilient.* Adding to the role of the wildlife value orientation concept, categorizing people in this way can be useful in understanding the basis for and variation in public response to management issues. Below is a description of the five groups, along with an illustration of how the groups may differ in their reactions to wildlife-related issues. For purposes of this illustration, we report information about residents' responses to wolf recovery and wolf management measures examined on the survey.

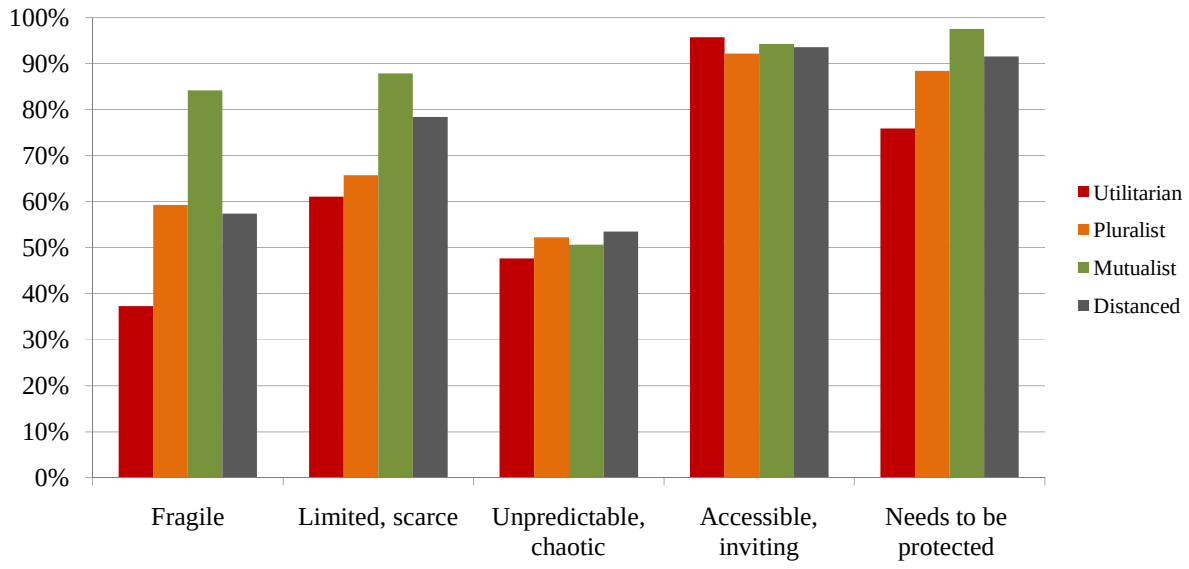
- *Nature is Benign* individuals (6%) thought nature was durable, unlimited/abundant, predictable/ordered, accessible/inviting, and able to take care of itself; this may further indicate that these residents are more likely to agree with traditional, invasive management actions. As an illustration, lethal control of wolves was acceptable for this group, while wolf recolonization in Washington was not.
- *Nature is Tolerant* individuals (16%) viewed nature as durable, predictable/ordered, accessible/inviting, and in need of protection. Residents in this group are likely to find traditional, invasive management actions acceptable. Again, as an illustration, lethal control of wolves was deemed acceptable by this group, whereas allowing wolves to recolonize in Washington was somewhat less acceptable.
- *Nature is Ephemeral* individuals (56%) viewed nature as fragile, limited/scarce, accessible/inviting, and in need of protection. This is a group that is likely to not want lethal control or other invasive management actions to be used and to support measures that restore the "natural state" of the planent. Residents in this category rated lethal control of wolves as unacceptable and wolf recolonization as highly acceptable.
- *Nature is Capricious* individuals (4%) thought nature was unpredictable/chaotic and remote/uninviting. According to the literature, this group will oftentimes reflect the beliefs of other categories, making it difficult to find a predictable and consistent pattern in their responses. Results showed that this segment of the population was typically supportive of lethal control of wildlife and was also much less likely to participate in outdoor activities compared to the other "myths of nature" groups.
- *Nature is Resilient* individuals (17%) thought nature was durable, unpredictable/chaotic, accessible/inviting, and in need of protection. This group is likely to be accepting of traditional management approaches that can result in harm or death to wildlife. Residents in this group found both lethal control of wolves and recolonization of the state by wolves to be acceptable.

Results presented in this report are largely descriptive and are intended to give a general understanding of the ways in which Washington residents view nature and the area near their homes.

Results by state. Washington residents overwhelmingly found nature to be *accessible/inviting* (94.4%) and *in need of protection* (88.1%). Residents also believed nature was *limited/scarce* (74.3%) and *fragile* (60.5%). Many people additionally thought nature was *unpredictable/chaotic* (50.4%). Residents believed the area near their homes was *beautiful/attractive* (92.8%), *safe* (91.7%), and *unique* (63.3%). Results largely indicate that Washington residents feel connected to the area near their homes and therefore may be inclined to want their local area managed in such a way that maintains the status quo.

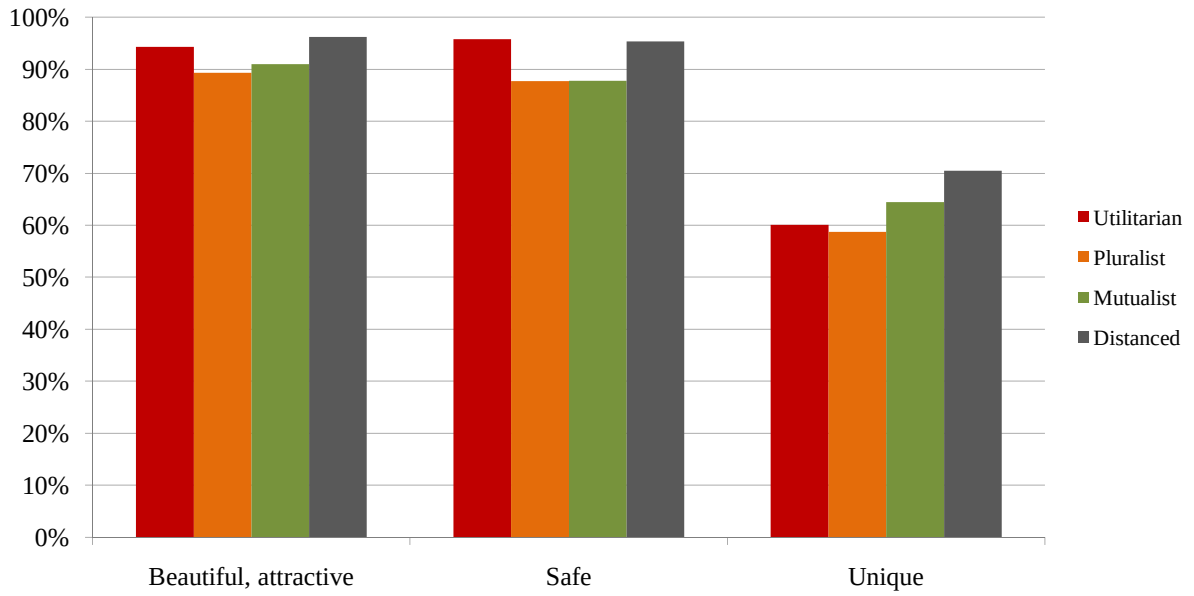
Results by wildlife value orientation. Mutualists were more likely to view nature as *fragile, limited/scarce* and *in need of protection*, whereas Utilitarians were least likely to hold these views (Figure IV.A.1). Such results indicate that Mutualists are less likely than Utilitarians to support invasive management actions resulting in harm or death to wildlife. There was no statistical difference among the value orientation types regarding the beliefs that nature was *unpredictable/chaotic* or *predictable/ordered*. Ninety percent or more of each value orientation type found nature to be *accessible/inviting*.

Figure IV.A.1. Percent of wildlife value orientation type agreeing with specific beliefs about nature.



Distanced individuals were most likely to find the area near their homes to be *unique* (Figure IV.A.2). Distanced individuals and Utilitarians were more likely to find the area near their homes *safe* and *beautiful/attractive*. Although statistical differences did exist on these variables, the effect size was small, indicating only marginal variation. Overall, all value orientation types found the area near their homes to be *beautiful/attractive* and *safe*.

Figure IV.A.2. Percent of wildlife value orientation type agreeing with specific beliefs about the area near their homes.



Results by county. The percent of people across counties who found nature to be *fragile* ranged from 36.6% in Garfield County to 67.4% in Kitsap County; *limited/scarce* from 58.2% in Garfield County to 81.8% in Benton County; *unpredictable/chaotic* from 32.0% in Walla Walla County to 59.3% in King County; *accessible/inviting* from 89.5% in Grays Harbor County to 100% in Kitsap and Douglas Counties; and *needs to be protected* from 69.2% in Pend Oreille County to 92.8% in Thurston County.

These perceptions of nature, in conjunction with wildlife value orientations, can help to explain why certain geographic areas may be more or less supportive of specific wildlife and wildlife management strategies. For example, residents in some areas such as Garfield County were much more likely to find nature *durable* and *unlimited/abundant* compared to residents in other areas. Residents from this county, which had a majority of residents holding Utilitarian values, were less tolerant of predator species and more likely to support limiting predator populations.

The percent of people across counties who found the area near their homes to be *beautiful/attractive* ranged from 77.8% in Franklin County to 100% in Columbia, Ferry, and Skamania Counties; *safe* from 82.1% in Yakima County to 98.2% in Skagit County; and *unique* from 44.3% in Franklin County to 95.4% in San Juan County. Residents from Franklin County were the only county residents who viewed the area near their homes as *common/generic*, whereas all other counties had more than 50% of residents believing the area near their homes was *unique*.

B. BELIEFS ABOUT PARTICIPATION IN OUTDOOR ACTIVITIES

People choose to engage or not engage in outdoor activities near where they live for a variety of reasons. Many people may simply enjoy being outdoors, while others may participate in outdoor activities mainly for exercise or because their job requires them to spend a lot of time outside. Potential barriers to participation in nature-based activities include a fear of being harmed by wildlife while participating and a fear of strangers near the home (e.g., see Louv, 2005). Furthermore, residents may be more or less likely to participate in outdoor activities near their homes during particular seasons of the year. Understanding these motivations, barriers, and preferred seasons of participation is important in gauging public opinion and anticipating demand relative to outdoor recreation. Survey items for this section are presented below, and supporting tables can be found in Appendix B (Table B-5 to B-8).

In this section, we're interested in knowing **whether you participate in outdoor activities near your home** and what factors might influence your participation. Again, for this survey, we're defining "near your home" as your place of residence and the area within a few miles of it. *Circle one number for each statement below.*

Do you disagree or agree with the following?	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
I often participate in outdoor activities near my home.	1	2	3	4	5	6	7
I avoid participation in outdoor activities near my home due to fear of strangers.	1	2	3	4	5	6	7
My job requires that I spend a lot of time outside near my home.	1	2	3	4	5	6	7
I participate in outdoor activities near my home **mainly** to get exercise.	1	2	3	4	5	6	7
I am afraid of being harmed by wildlife if I participate in outdoor activities near my home.	1	2	3	4	5	6	7

In which season(s) do you **spend the most time participating in outdoor activities near your home**? *If you spend a similar amount of time in more than one season, check all that apply, OR check the box indicating that you don't spend much time participating in outdoor activities near your home.*

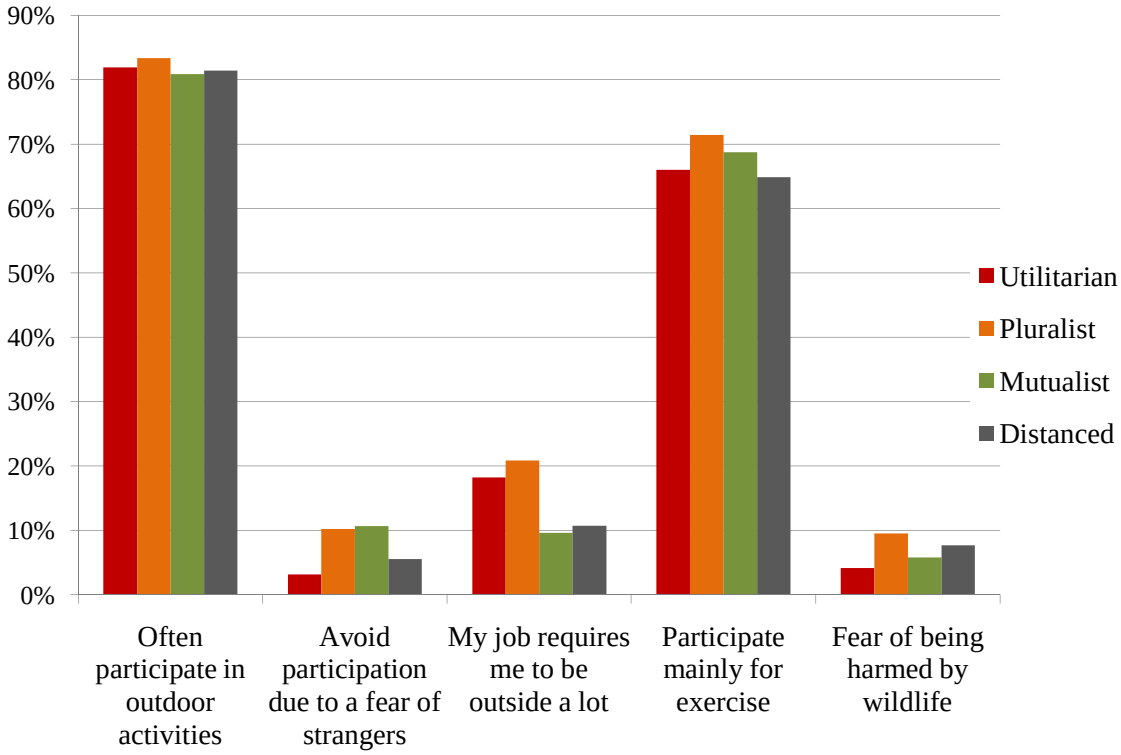
❒ Spring ❒ Summer ❒ Fall ❒ Winter ❒ I don't spend much time participating in outdoor activities near my home.

Results by state. The majority of Washington residents reported they often participate in outdoor recreation near their homes (81.6%). Residents indicated they participated in outdoor activities mainly for exercise (67.4%), and some reported that they are required to be outside for their job (14.3%). Still others avoided participation in outdoor activities near where they live due to a fear of being harmed by wildlife (6.1%) or a fear of strangers (7.2%). Some residents also wrote on the survey that they could no longer participate in outdoor activities near their homes due to old age or physical disabilities.

Participation in outdoor activities near residents' homes varied across seasons. Residents predominately participated in outdoor activities during the summer (89.2%), followed by participation in spring (63.1%), fall (58.8%), and winter (22.1%) months. Six percent of respondents said they did not spend much time participating in outdoor activities near their homes.

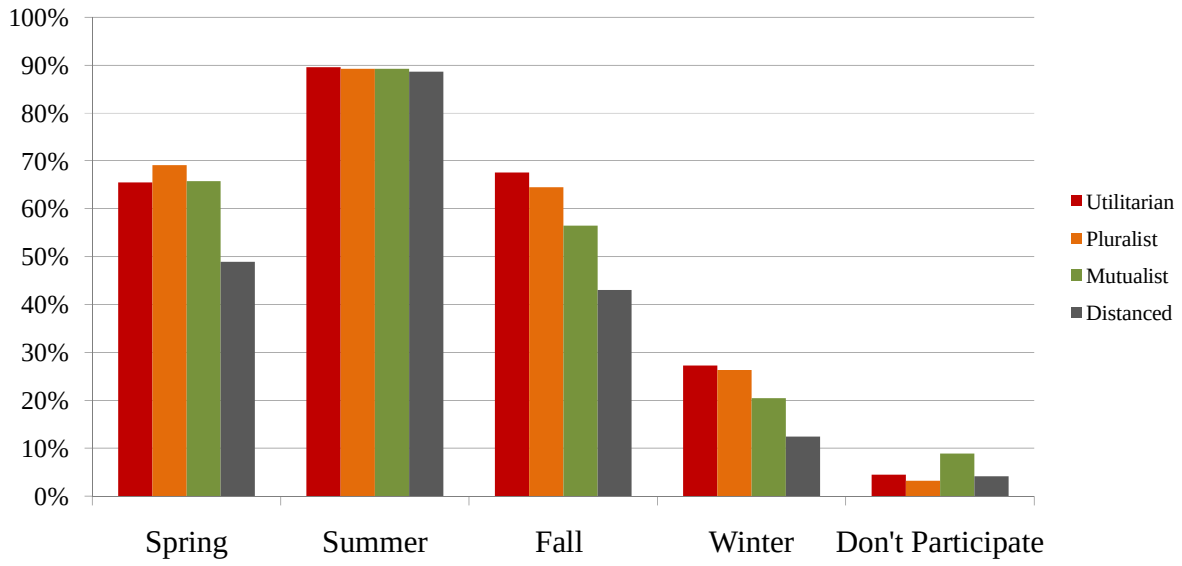
Results by wildlife value orientation. The percent of wildlife value orientation types agreeing with specific beliefs related to participation in outdoor activities near their homes is graphically depicted in Figure IV.B.1. There were no statistical differences among the value orientation types regarding levels of participation (i.e., all residents participated often in outdoor activities). Statistical differences were found at the $p < 0.05$ level on other variables; however, effect sizes indicated marginal variation for each. Pluralists were more likely than the other value orientation types to spend a lot of time outdoors because their job requires them to do so. Mutualists and Pluralists were more likely to avoid participation in outdoor activities due to a fear of strangers.

Figure IV.B.1. Percent of wildlife value orientation type agreeing with beliefs about participating in outdoor activities near their homes.



Pluralists and Utilitarians, who are more likely to engage in activities such as hunting and fishing, participated the most in outdoor activities during the fall and winter compared to Mutualists and Distanced individuals (Figure IV.B.2). Distanced individuals had the lowest participation rates of any of the value orientation types during all seasons, except summer when there was no statistical difference among the value orientation types.

Figure IV.B.2. Seasonal participation in outdoor activities near residents' homes by wildlife value orientation type.



Results by county. All counties had a majority of residents indicating they often participate in outdoor activities near their homes; however, Yakima County had the lowest percentage of residents who indicated participation in outdoor recreation (64.5%). Lincoln and Garfield Counties had a majority of residents with jobs that required them to be outside. All counties except Adams and Wahkiakum had a majority of residents indicating they participated in outdoor activities mainly for exercise. Although a relatively small number of Washington residents reported a fear of strangers or a fear of being harmed by wildlife as limiting factors in their participation in outdoor activities, variation did occur across the counties. For instance, less than 1% of Stevens and San Juan County residents indicated that a fear of strangers limited their participation, while Yakima County had almost 14% of residents who expressed this concern. Similarly, less than 1% of Whatcom and San Juan County residents indicated a fear of being harmed by wildlife in the context of outdoor recreation, whereas nearly 16% of residents in Wahkiakum and Lincoln Counties reported this as a concern.

Overall, seasonal participation rates ranged from 55.6% in King County to 77.9% in Skamania County during the spring; from 73.6% in Grant County to 94.2% in Skagit County during the summer; from 46.7% in King County to 82.0% in Pacific County during the fall; and, from 12.4% in King County to 51.5% in Ferry County during the winter. Less than two percent of residents in Skagit and San Juan Counties indicated they did not participate at all, whereas the largest percentage of non-participants was found in Grant County (15.9%).

C. PARTICIPATION IN OUTDOOR ACTIVITIES NEAR THE HOME

Results from the previous section indicated that Washington residents actively participate in outdoor activities near their homes. This section explores the types of outdoor activities in which residents currently participate, as well as what activities they currently participate in the most and are most likely to continue doing into the future. Supporting tables for results reported in this section are located in Appendix B (Table B-9 to B-14), and survey items are below.

Now we would like to learn about the **specific outdoor activities you participated in near your home in the last 12 months**. *Check all that apply in the list below.*

❒ Gardening	❒ Walking/Hiking/Running	❒ Feeding Wild Birds	❒ Fishing (non-commercial)	❒ Boating (motorized)
❒ Camping	❒ Horseback Riding	❒ Feeding Other Wildlife	❒ Dirt-Biking or OHV/ATV use	❒ Sailing (non-motorized)
❒ Climbing	❒ Nature Photography	❒ Hunting	❒ Downhill Skiing/Snowboarding	❒ Cross-Country Skiing
❒ Biking	❒ Wildlife Viewing	❒ Trapping	❒ Kayaking/Canoeing/Rafting	❒ Snowmobiling

❒ **OTHER (*describe*):** _____

❒ **NONE, I did not participate in outdoor activities near my home in the last 12 months.**

If you checked more than one activity above:

Which activity do you currently participate in **the most** near your home? (*write response*) _____

Which activity are you **most likely to continue** in the future near your home? (*write response*) _____

Results by state. Residents primarily participate in walking/hiking/running (82.2%) and gardening (80.7%) near their homes. Less than three percent of residents indicated they did not participate at all in outdoor activities in the last 12 months. Wildlife viewing, feeding birds, and biking were also popular activities at the statewide level. Walking/hiking/running was the activity in which people indicated they currently participate the most (34.0%) and are most likely to continue in the future near their homes (28.8%). Of the three main fish and wildlife-related recreation activities, wildlife viewing was most frequently reported (40.4%), followed by fishing (28.4%) and hunting (11.2%).

Results by wildlife value orientation. Although the top two activities people currently participate in the most were the same across value orientation types, the third most popular activity was biking for Distanced individuals, feeding wild birds for Mutualists, and fishing for Utilitarians and Pluralists.

Results by county. Across all counties, walking/hiking/running and gardening were the top two most popular outdoor activities in which people participated near the home. Thirty-one counties reported wildlife viewing as the third most popular activity (participation rates ranged from 40.2% to 74.4% of residents). Four counties reported feeding wild birds as the third most popular activity (Franklin, 37.7%; Pierce, 38.8%; Grays Harbor, 51.2%; Thurston, 54.6%). Three counties reported biking as the third most popular activity (Snohomish, 34.5%; Benton, 39.1%; King, 44.6%). One county reported fishing as the third most popular activity (Adams, 42.2%). Out of the 20 activities that were listed on the survey, wildlife viewing was among the top five in terms of highest participation rates in all but one county (Benton, where the rate of participation was 32.6%), and fishing was among the top five for 23 counties. Hunting participation rates, though not high enough to be within the top five most popular activities in any of the counties, ranged from 4.8% in Snohomish County to 41.6% in Garfield County.

D. BELIEFS ABOUT CLIMATE CHANGE IMPACTS NEAR THE HOME

Climate change is increasingly a concern for natural resource agencies; the potential effects on the natural environment, including wildlife and wildlife habitat, are multifaceted and the topic itself is often socially contentious. An understanding of residents' beliefs regarding climate change impacts can help to inform the approach that WDFW may take in future management efforts, including public outreach initiatives, to address climate change issues. Appendix B (Tables B-15 and B-16) presents results regarding residents' beliefs about the effects of climate change near their homes. The survey item used is presented below.

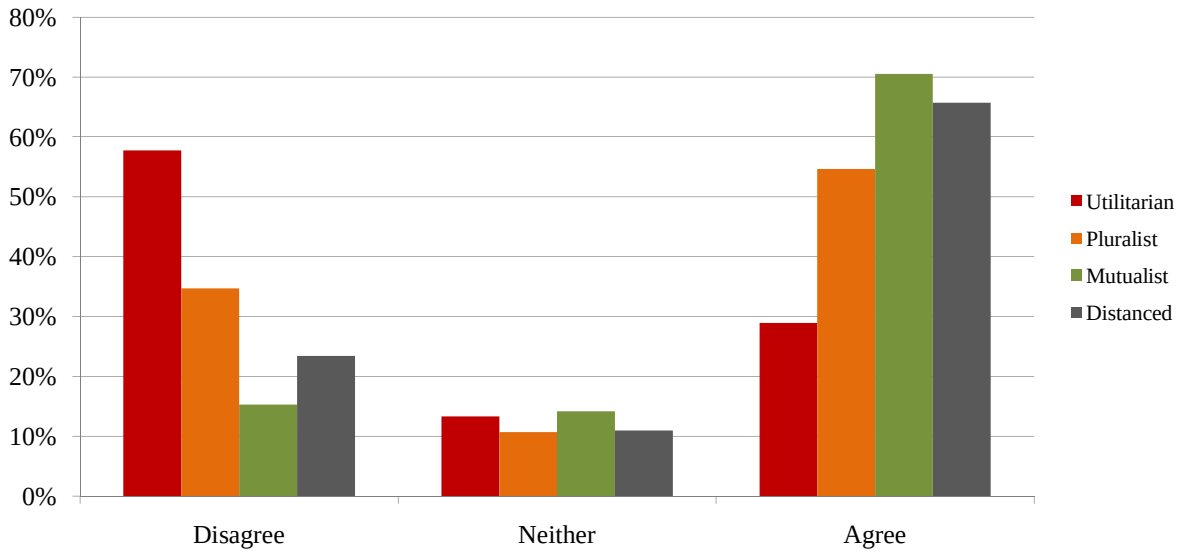
There's been a lot of talk recently about climate change and its potential impacts. We are interested in learning **your views about climate change in relation to the area near your home**. *Circle one number for the statement below.*

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
I believe that climate change is currently affecting the area near my home.	1	2	3	4	5	6	7

Results by state. Washington residents, as a whole, believe that climate change is currently affecting the area near their homes (53.6%). Some residents were neutral on the topic (12.9%), whereas others disagreed that climate change was having any localized effects (33.5%).

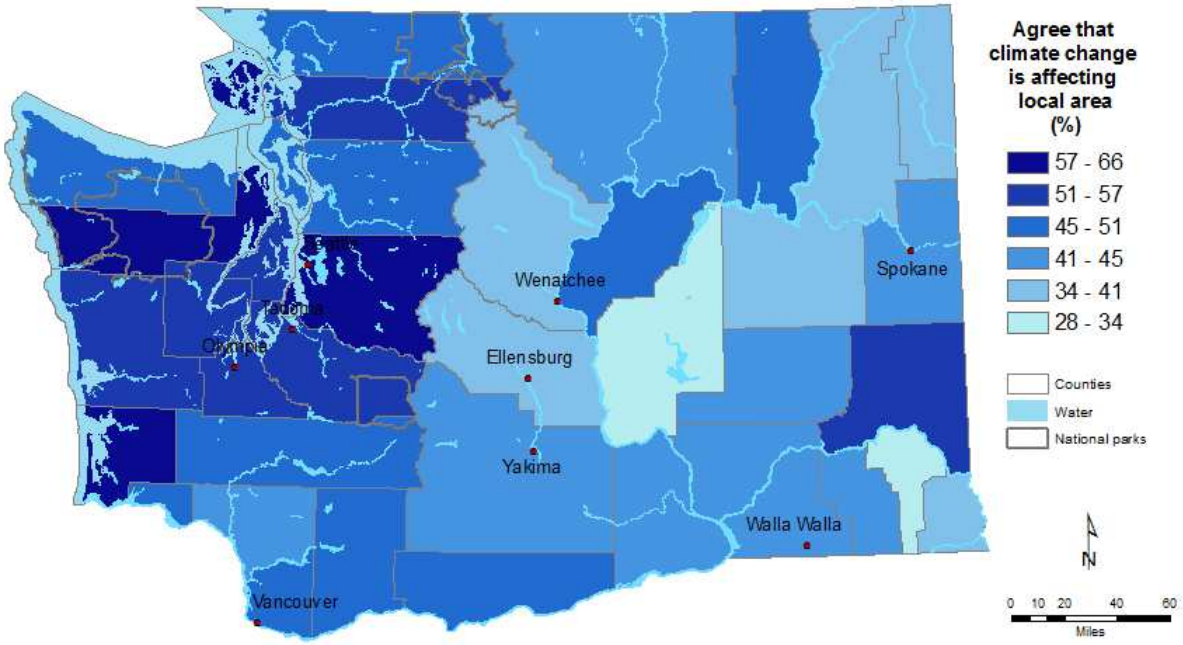
Results by wildlife value orientation. Approximately 58% of Utilitarians disagreed that climate change is currently affecting the area near their homes, whereas a majority of Mutualists (70.6%), Distanced (65.7%), and Pluralists (54.4%) agreed that climate change is having a local-level impact (Figure IV.D.1).

Figure IV.D.1. Percent of wildlife value orientation type disagreeing or agreeing that climate change is currently affecting the area near their homes.



Results by county. Twelve of Washington's 39 counties had more than 50% of residents agreeing that climate change is currently affecting the area near their homes, whereas only three counties had more than 50% that disagreed (Figure IV.D.2). The highest percentages of residents who disagreed that climate change was currently affecting the area near their homes were found in Garfield (62.4%), Lincoln (50.8%), and Chelan County (50.0%). San Juan, King, Pacific, and Jefferson County had more than 60% of residents agreeing that climate change was having localized effects.

Figure IV.D.2. Percent of residents agreeing that climate change is currently affecting the area near their homes.



SECTION V. WILDLIFE NEAR THE HOME

This section explores how people think more specifically about the wildlife near their homes and whether residents have experienced problems with local wildlife in the recent past. Combined with other sources of information such as residents' wildlife value orientations, results reported in this section offer additional background that can be useful in understanding public thought and how different segments of the population may respond to local management strategies. For example, those who perceive wildlife near their homes to generally be a nuisance or a threat and who have experienced wildlife-related problems may be more likely to support aggressive management responses to human-wildlife conflict situations. In addition, this information may be used to identify human-wildlife conflict "hotspots" (i.e., places with a higher incidence of reported problems). Supporting tables for results in this section can be found in Appendix C (Table C-1 to C-4).

A. GENERAL BELIEFS ABOUT WILDLIFE NEAR THE HOME

Residents were asked to rate their level of agreement with a series of statements representing beliefs about wildlife near their homes. Items used in this section are presented below.

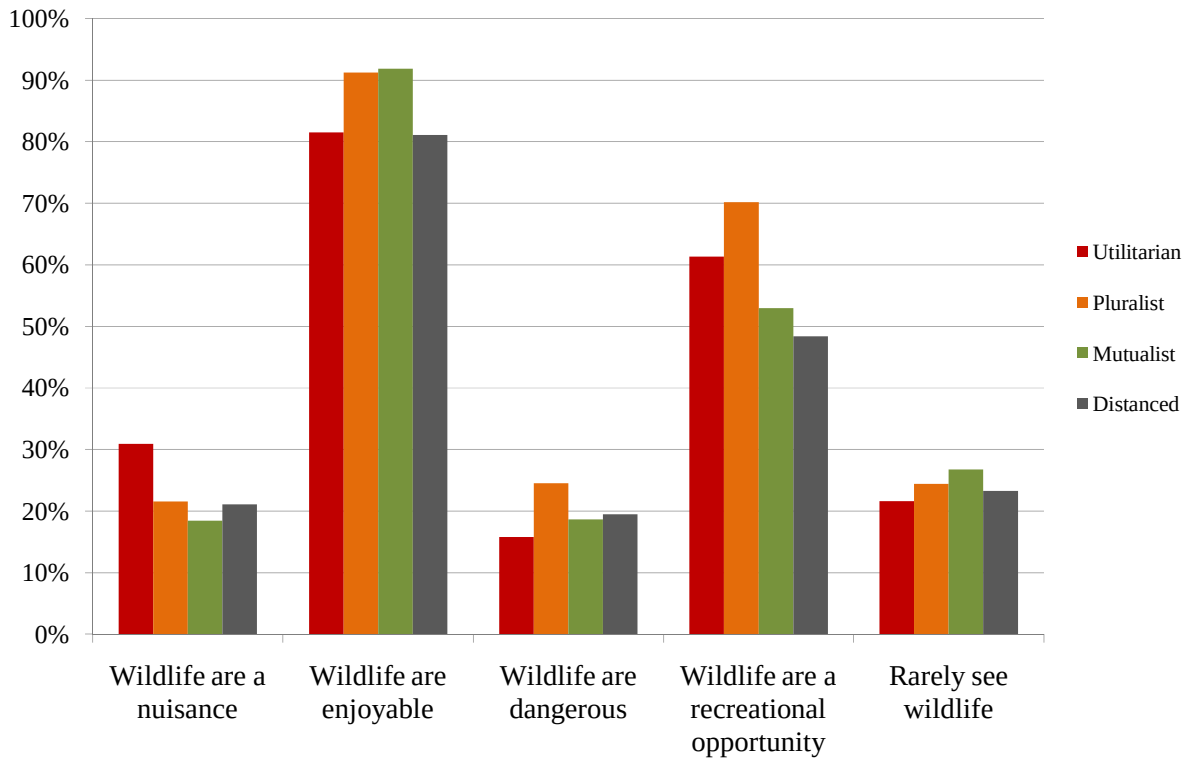
Now we're interested in **your views about the wildlife near your home**. *Circle one number for each statement below.*

The wildlife near my home…	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
…are generally a nuisance (cause problems).	1	2	3	4	5	6	7
…are enjoyable to have around.	1	2	3	4	5	6	7
…pose a dangerous risk to people.	1	2	3	4	5	6	7
…provide valuable opportunities for recreation.	1	2	3	4	5	6	7
I rarely see any wildlife near my home.	1	2	3	4	5	6	7

Results by state. Twenty-four percent of Washington residents indicated that they rarely observe wildlife near their homes. Many residents indicated they perceive wildlife near their homes as enjoyable to have around (86.4%) and as providing valuable opportunities for recreation (57.4%); however, some also considered the wildlife in their area to be dangerous (18.7%) and a general nuisance (23.5%).

Results by wildlife value orientation. Mutualists and Pluralists were more likely than the other value orientation types to view wildlife as enjoyable to have around their homes (Figure V.A.1); however, Mutualists were also more likely than the other value orientation types to indicate that they rarely see wildlife near their homes. Utilitarians had the highest percentage of people indicating that wildlife were a nuisance. Distanced individuals were less likely than the other value orientation types to agree that wildlife provide valuable recreation opportunities. There was no statistical difference among the value orientation types on the statement about wildlife near the home posing a dangerous risk to people.

Figure V.A.1. Percent of wildlife value orientation type agreeing with general beliefs about wildlife near their homes.



Results by county. Counties with higher percentages of residents reporting that they rarely see wildlife near their homes were primarily located in south-central Washington (Franklin, Yakima, Grant, Walla Wall, Benton, and Adams Counties) or near Seattle (Pierce, Snohomish, King, and Chelan Counties). This finding is not surprising given that these locations may be less suitable for many wildlife species; south-central Washington is predominately comprised of arid grassland, while Seattle is largely urban. Franklin and Yakima Counties, in south-central Washington, had the largest number of residents reporting that they rarely see wildlife near their homes (38%).

More than 82% of residents in all counties viewed wildlife near their homes as enjoyable to have around. The majority of residents in all counties disagreed that wildlife near their homes are a nuisance. San Juan County had the largest percentage of residents indicating wildlife were a nuisance (39.3%), while Franklin County had the smallest percentage of residents with this view (7.8%). Pend Oreille County had the largest percentage of residents indicating that wildlife near their homes pose a dangerous risk to people (28.7%), whereas Benton County had the least number of residents who felt this way (3.3%).

Columbia, Pacific, and Lincoln Counties had the highest percentages of residents believing that wildlife near their homes provide valuable opportunities for recreation (>80%). These counties also had relatively higher percentages of people who participated in hunting and fishing when compared to residents in many other counties. All counties except Snohomish had a majority of residents agreeing that wildlife near their homes are a valuable source of recreation.

B. SPECIFIC PROBLEMS WITH WILDLIFE NEAR THE HOME

Although Washington residents overwhelmingly find wildlife near their homes to be enjoyable (see previous section), different species may cause problems for some residents. Whereas many residents may learn to live with wildlife over time and adapt to the conflicts they experience, WDFW is often called upon to respond to particular nuisance situations. This section explores the species and types of problems that Washington residents have faced in the recent past. By providing information about the location and nature of wildlife-related problems that residents are experiencing, results can help WDFW target its efforts aimed at addressing human-wildlife conflict. Items used on the survey are below.

In the past 12 months, have you or your neighbors had **problems with wildlife**? *Check one box for each category below.*

I PERSONALLY have experienced problems near my home:	MY NEIGHBORS have experienced problems:
❒ yes ❒ no	❒ yes ❒ no ❒ I don't know

If you answered yes above for either category, **please briefly explain the problem(s)**, the wildlife that caused it, and how often it occurred (once during the year, once a month, once a week, etc.). *Write your response below.*

_____

_____

_____

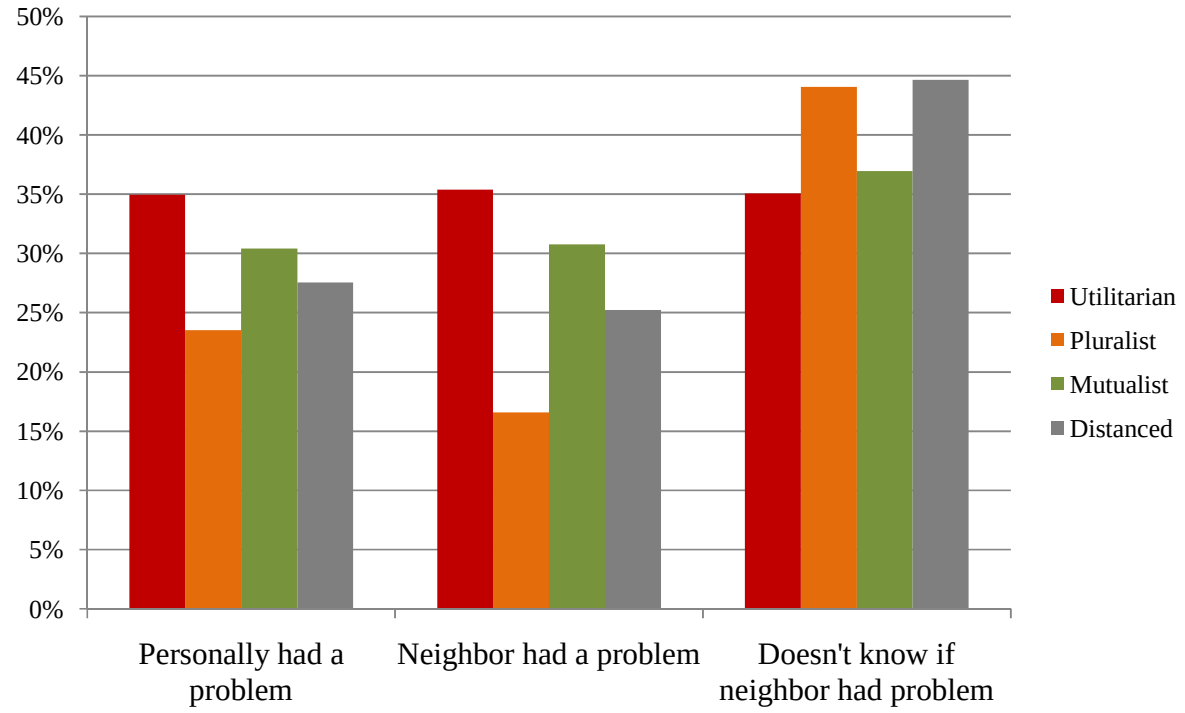
Results by state. Approximately 30% of Washington residents indicated they had experienced problems with wildlife near their homes in the past year and that their neighbors had experienced problems. Approximately 40% of residents were unsure as to whether their neighbors had experienced wildlife-related problems. Of those who reported having experienced problems with a particular species, deer were most often cited as the cause, followed by raccoons and coyotes. The top three problems associated with each of these species can be found in Table V.B.1. Cougars, black bears, and rodents were also frequently identified by residents as wildlife responsible for causing problems near their homes.

Table V.B.1. Top three most frequently cited problems by most frequently cited species.

Species & Problem	Percent of residents indicating problems with a particular species	Of those indicating a particular species, the percent of residents with a particular problem
Deer	48.7	
Damage landscaping		59.2
Get into garden (e.g., mostly food)		44.5
Damage agriculture (e.g., crops)		8.1
Raccoon	22.4	
Just a general nuisance		33.4
Get into pet food		14.9
Kills pets		10.3
Coyote	15.9	
Just a general nuisance		20.7
Threat/Harm to Pets		16.6
Kills Chickens		11.9

Results by wildlife value orientation. As depicted in Figure V.B.1, Utilitarians were more likely than the other value orientation types to report having personally experienced a problem with wildlife (35.0%) and to indicate that their neighbor had experienced wildlife-related problems (35.4%). Pluralists were least likely among the value orientation types to report that they or their neighbors had experienced problems with wildlife near the home.

Figure V.B.1. Percent of residents indicating they or their neighbors have experienced a wildlife-related problem near their homes.



Results by county. As depicted in Figure V.B.2, Ferry, Jefferson, Pend Oreille, San Juan, and Stevens Counties had the highest percentages of residents reporting recent experiences with wildlife-related problems near their homes (>50% of residents). Franklin County had the lowest number of residents who have experienced problems with wildlife (5.3%). It is important to consider this type of information in a spatial context, as wildlife can cause localized problems, and people may be more likely to perceive or report problems in certain areas. For instance, only 6.3% of residents statewide specifically commented that elk were a problem near their homes, whereas 37.5% of residents in Wahkiakum County reported elk-related problems. In addition, nearly 25% of residents in Garfield and Cowlitz Counties indicated having experienced some type of problem with elk near their homes.

Although the types of problems residents may experience can vary widely, other sources of information can be used in conjunction with these findings to better understand the nature and location of specific problems. For example, spatial depictions of wildlife-vehicle collisions can help in identifying areas where deer, elk, or other wildlife are a traffic hazard. Spatially-explicit data from 2009 that represent deer-vehicle collisions reported by the Washington State Department of Transportation (WSDOT) are reported in Figure V.B.3. The largest number of collisions occurred in Kittitas and Spokane Counties (10-16 collisions). Spatially-explicit data on vehicle collisions with elk and other wildlife (also from 2009 and reported by WSDOT) are displayed in Figures V.B.4 and V.B.5, respectively. The largest number of elk-vehicle collisions occurred in King and Kittitas Counties (6-7 collisions), whereas the number of collisions with other species was highest in Stevens and Yakima Counties (3-5 collisions). It is important to note that these data on wildlife-vehicle collisions likely do not represent all collisions that may have occurred in 2009 (e.g., collisions may go unreported). However, this type of information offers a baseline that, when integrated with other data such as those from the current investigation, can enhance understanding of wildlife-related problems that may be occurring across the landscape.

Figure V.B.2. Percent of residents indicating they have experienced a wildlife-related problem near their homes.

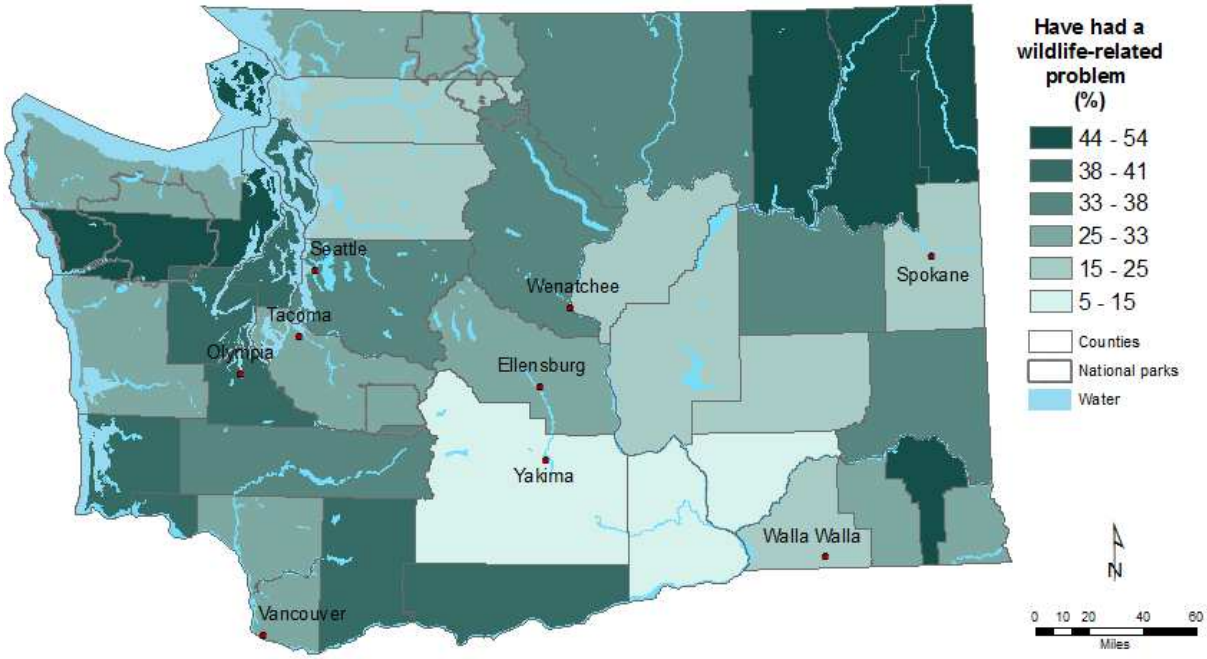
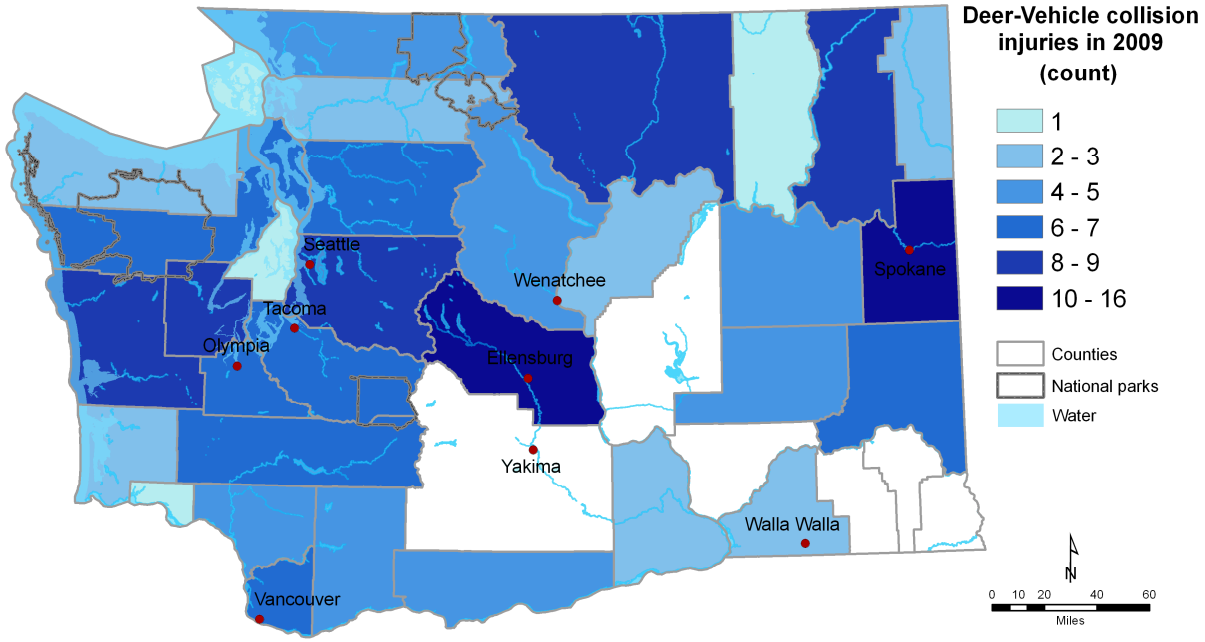
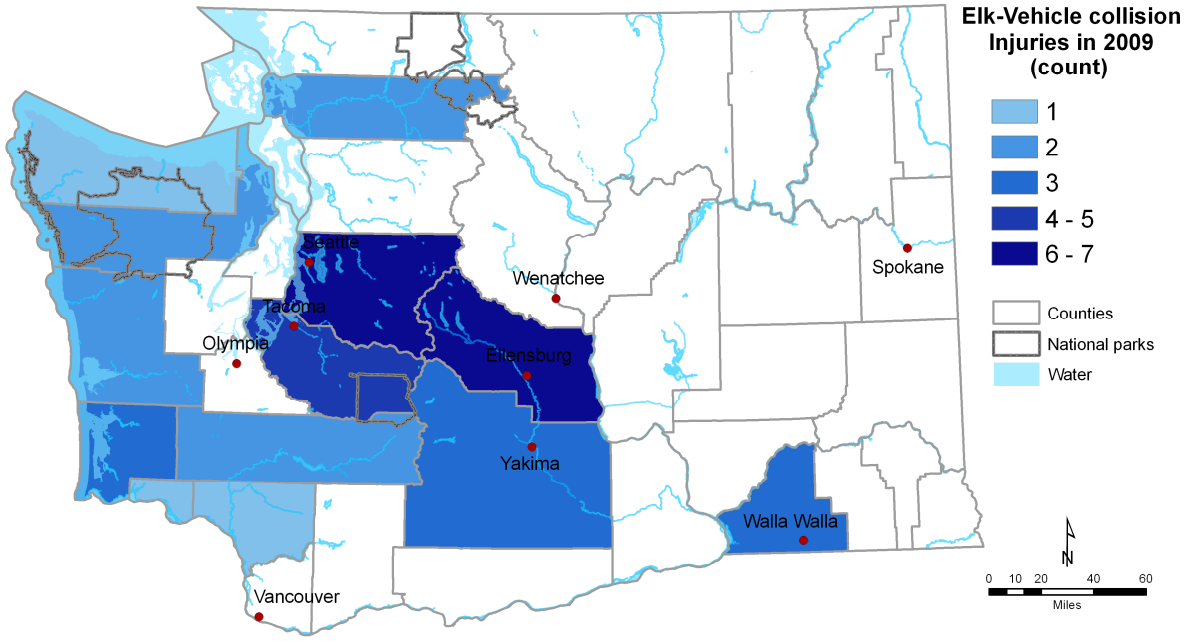


Figure V.B.3. Number of deer-vehicle collisions reported to WSDOT in 2009.[1]



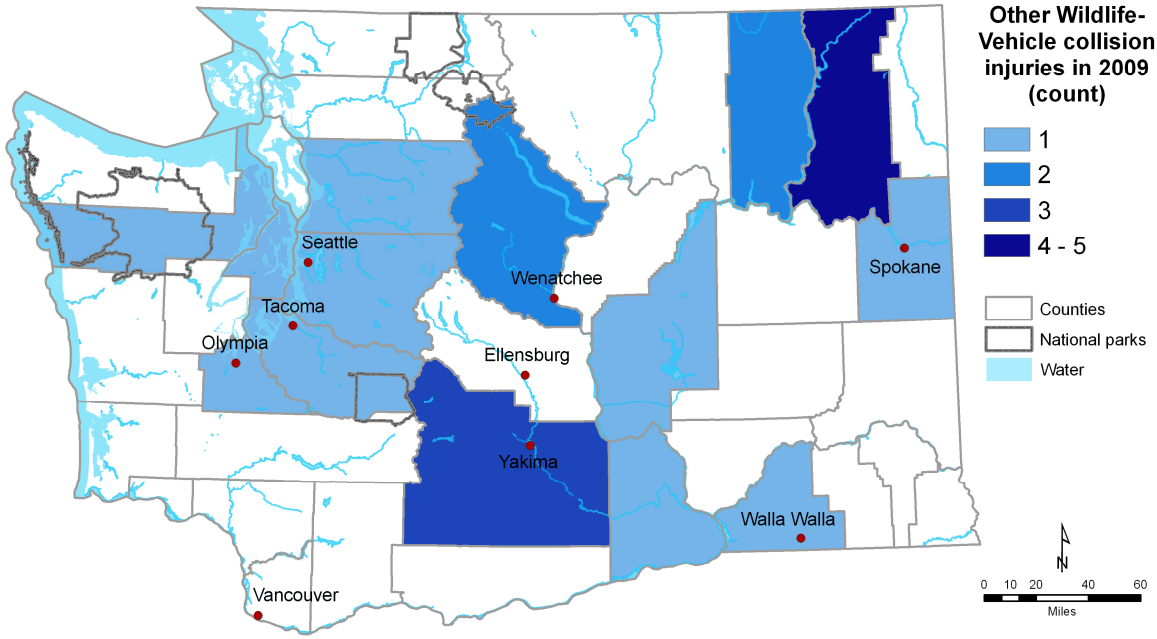
[1] Data provided by the Washington state Department of Transportation.

Figure V.B.4. Number of elk-vehicle collisions reported to WSDOT in 2009.[1]



[1] Data provided by the Washington state Department of Transportation.

Figure V.B.5. Number of other wildlife-vehicle collisions reported to WSDOT in 2009[1]



[1] Data provided by the Washington state Department of Transportation.

SECTION VI. LAND ACCESS

Land access is a concern for natural resource agencies attempting to ensure their constituents have ample opportunities to participate in outdoor activities. Some people may indicate a desire for more access because of *the value* they place on local land areas that provide recreation opportunities close to home. In some cases, residents' ability to engage in outdoor recreation may be constrained by *limited access* to these local land areas. In contrast, access to land for recreation purposes may be available, but residents in certain areas may want *more convenient or greater access* to the lands (e.g., better roads, more entrances). This section explores Washington residents' beliefs related to these land access issues. Supporting tables for this section can be found in Appendix D (Table D-1 to D-12). Survey items are presented below.

Below is a series of statements to learn more about **access to lands near your home**. *Circle one number for each statement.*

Do you disagree or agree with the following?	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neither**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
I wish I had access to more land areas near my home to participate in outdoor activities.	1	2	3	4	5	6	7
I would pay a fee to have access to more land areas near my home to participate in outdoor activities.	1	2	3	4	5	6	7
Limited access to land areas is the **primary** reason for why I do not participate in outdoor activities near my home often.	1	2	3	4	5	6	7
The Washington Department of Fish & Wildlife (WDFW) should work with **private landowners** to provide more access to land areas near my home for outdoor activities.	1	2	3	4	5	6	7

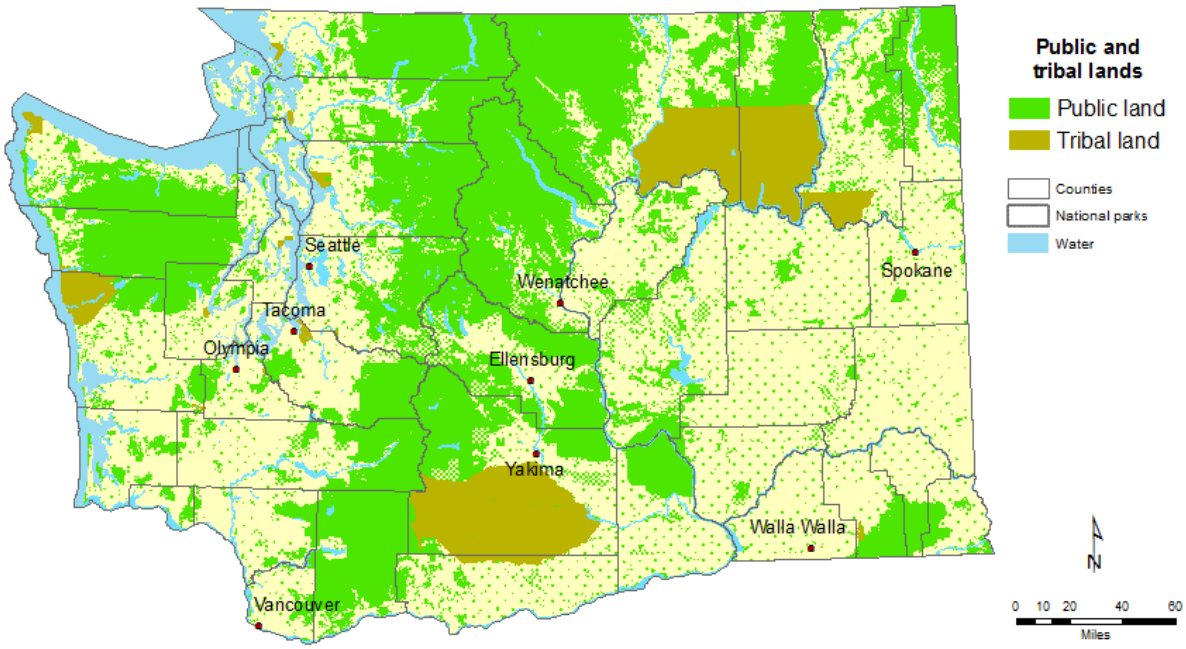
From the section related to activity participation (Section IV):

Are there any activities listed above that you **would** participate in near your home but don't due to limited access to local lands?

❒ Yes ❒ No *(if yes, write activities here)* _____

Results by state. Although many areas in Washington have public places available for recreation (Figure VI.1), almost forty-one percent of residents indicated they want more access to land areas near their homes to participate in outdoor activities. Many residents also indicated that WDFW should work with private landowners to provide more access to land areas near their homes (41.6%). Some residents were also willing to pay a fee to have greater access to local land areas (31.1%). Fourteen percent of residents indicated that limited access to land areas is the primary reason for why they don't participate in outdoor activities near their homes. In addition, nearly 17% of residents indicated that there are activities in which they would participate near their homes but don't due to limited access to local lands. For these respondents who indicated a particular activity in which they do not currently participate due to limited access, hunting was most often cited (34.0%), followed by dirt-biking or OHV/ATV use (14.4%).

Figure VI.1. Distribution of public and tribal lands in Washington.



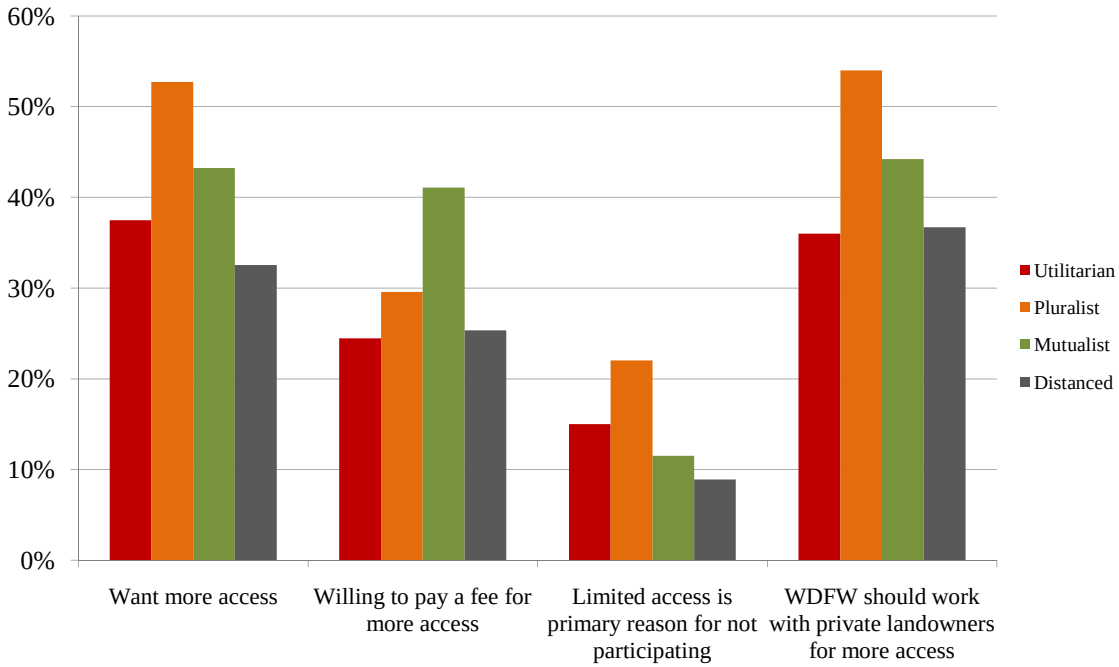
Results by demographic and lifestyle characteristics. Males were more likely than females to indicate that limited access was the primary reason for why they don't often participate in outdoor activities close to home and that WDFW should work with private landowners to provide more access. Older residents were less likely than their younger counterparts to want more access to land areas near their homes. Those with higher levels of education were less likely to indicate that limited access was the primary reason for their lack of frequent participation in outdoor activities near their homes. Small effect sizes were noted for most of the relationships between demographic variables and land access items, suggesting that demographics did not play a major role in explaining variation in responses to these items.

Current hunters were significantly more likely than those in the latent demand group to indicate a desire for more access to local land areas and for WDFW to work with private landowners to provide more access. Current hunters and anglers also scored significantly higher than past participants and non-participants on the statement indicating that limited access was the primary reason for why they weren't actively engaged in outdoor activities close to home. Current wildlife viewing participants were more likely than past participants and non-participants to express a willingness to pay a fee for more land access. Limited access to local land areas did not appear to be the primary factor keeping people in the latent demand category from participating in outdoor activities. Current hunters scored significantly higher than those in the latent demand group on this variable, indicating that limited access was more likely to affect participation for current hunters as compared to those who indicated an interest in the sport but weren't currently active. However, it is worth noting that both groups (i.e., current hunters and those in the latent demand group) generally disagreed that limited access was the primary reason for why they do not participate in outdoor activities near their homes.

Results by wildlife value orientation. As depicted in Figure VI.2, Pluralists were most likely among the value orientation types to want more access to land areas near their homes, but Mutualists were most willing to pay for that access. In contrast, Distanced individuals were the least likely of the value orientation types to indicate a desire for more access, and Utilitarians were the least likely to want to pay for more access. Generally, the majority of residents across all value orientation types were not willing to pay a fee for more access to land areas near their homes; however, the differences across the value orientation types on this variable indicated the most variation of all the survey items related to land access issues (effect size = 0.24, denoting a medium effect).

Although Pluralists disagreed overall that limited access was the primary reason for why they don't participate in outdoor activities close to home, they were more likely than the other value orientation types to indicate that limited access kept them from participating. Although it may not be feasible to target certain value orientation types in WDFW's efforts to secure more land access for Washington residents, it is worth noting that Pluralists were more accepting than the other value orientation types of WDFW working with private landowners for this purpose. This could indicate that access to local lands is most important to this segment of the Washington population. Pluralists also had the highest percentage of residents indicating that there were outdoor activities in which they would participate but don't due to limited access (23.3%), followed by Utilitarians (18.3%), Mutualists (16.0%), and Distanced individuals (9.3%). Despite these differences, residents by and large did not indicate that limited access was the primary factor affecting their participation.

Figure VI.2. Percent of wildlife value orientation type agreeing with particular beliefs related to land access.



Results by county. As shown in Figures VI.3 and VI.4, the largest percentages of people wanting more access to land areas near their homes were found in Lewis and Cowlitz Counties (>58% of residents). Pierce and Cowlitz Counties had the highest percentages of people indicating a willingness to pay a fee for greater access to local land areas for outdoor recreation (>40% of residents; Figures VI.5 and VI.6). A majority of residents in seven counties (Asotin, Columbia, Cowlitz, Franklin, Lewis, Pacific, and Skagit) wanted WDFW to work with private landowners to provide more access to local lands (Figure VI.7). Skagit County had the highest percentages of residents expressing support for this approach (57.7%). The percentage of residents who indicated that limited access to local land areas affected their ability to participate ranged from 5.4% in San Juan County to 31% in Cowlitz County. The percent of residents indicating they would participate in a particular recreation activity but don't due to limited access ranged from 6.6% in Chelan County to 31.2% in Lewis County.

Figure VI.3. Percent of residents favoring more land access to participate in outdoor activities near their homes.

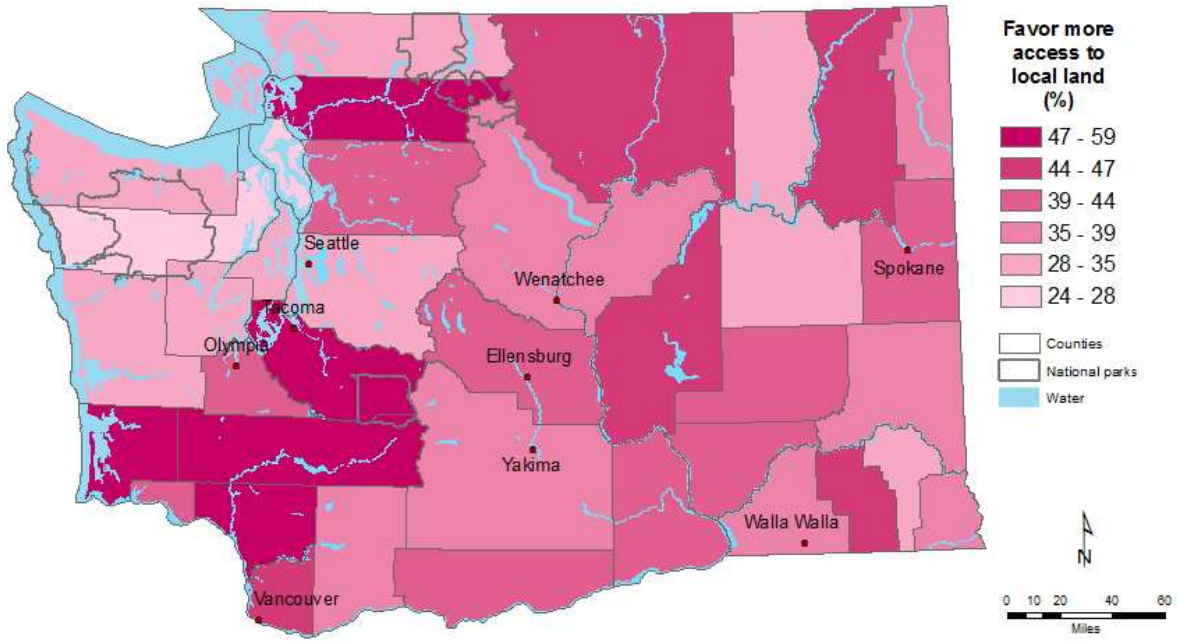


Figure VI.4. Overlay of public and tribal lands with percent of residents wanting more land access to participate in outdoor activities near their homes.

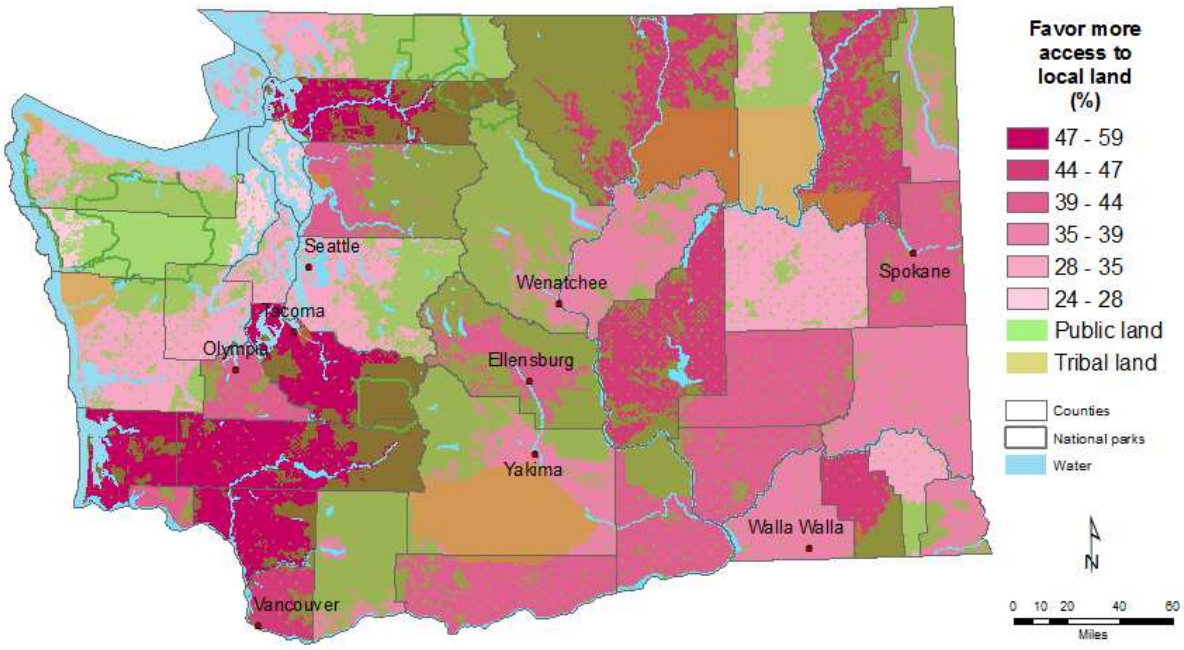


Figure VI.5. Percent of residents willing to pay a fee for more land access to participate in outdoor activities near their homes.

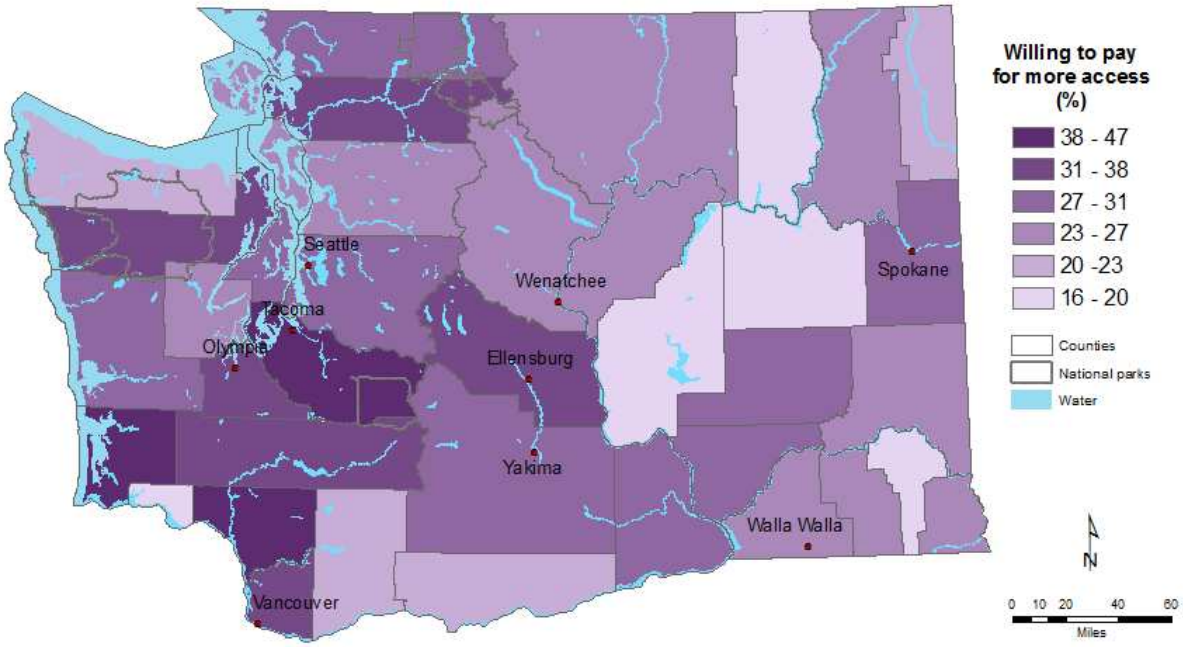


Figure VI.6. Overlay of public and tribal lands with percent of residents willing to pay a fee for more land access to participate in outdoor activities near their homes.

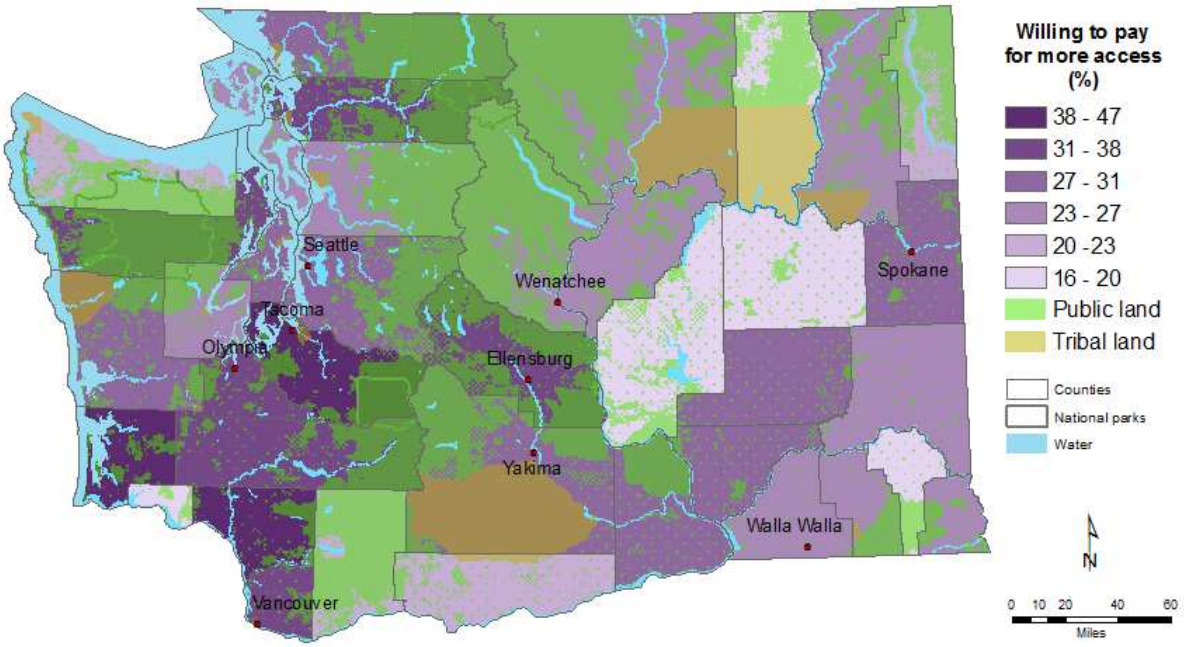
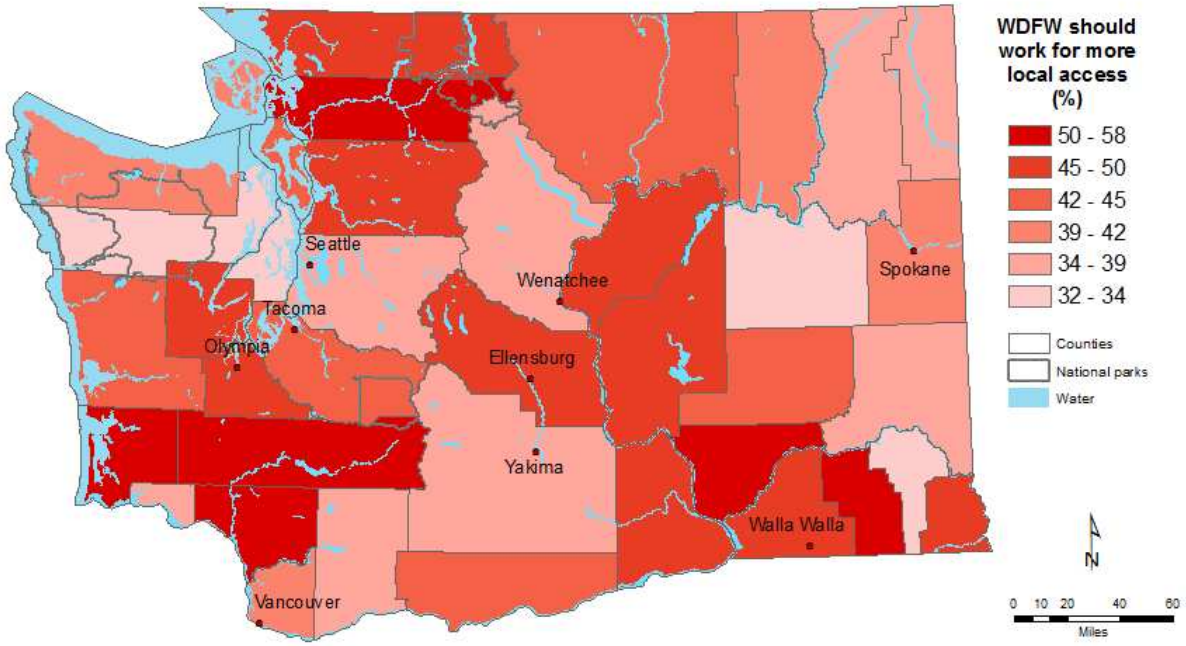


Figure VI.7. Percent of residents wanting WDFW to work with private landowners to provide more access to land areas near their homes.



Geographically-linked data on residents' beliefs about land access issues can help inform the identification of future locations for development of nature-based opportunities. For example, Cowlitz County had 58.6% of residents wanting access to more land areas near their homes; 40.9% of residents willing to pay for more access; and 31.0% of residents indicating that limited access was the primary reason for why they don't often participate in outdoor activities near their homes. These findings not only highlight a greater desire for more access in this region of the state but could also be suggestive of a greater willingness among residents there to support land acquisition programs or the use of conservation easements. Results may further suggest that residents are willing to pay for additional opportunities to use existing private lands through cooperative partnerships with WDFW. However, implementation of any new program, particularly if instituting a fee-based program, should be carefully considered by the agency and vetted through a stakeholder and public process.

SECTION VII. ATTITUDES TOWARD WILDLIFE AND WILDLIFE MANAGEMENT

This section explores public attitudes toward a number of wildlife species in Washington as well as certain management actions involving those species. Many of these management actions are specifically aimed at addressing human-wildlife conflict situations near residents' homes. Items in this section were designed to primarily measure public acceptability of management strategies intended to deal with coyotes and black bears, deer and elk, wolves, and salmon. Wildlife acceptance capacities, or residents' tolerance levels, for coyotes, black bears, deer, elk, and cougars were also examined.

A. COYOTE AND BLACK BEAR

Residents were asked to evaluate the acceptability of WDFW lethally removing a coyote or black bear in five hypothetical situations that could occur near residents' homes. The five situations included: the animal is seen near the home, is a nuisance, has a disease that may be spread to humans, attacks a pet, and attacks a human. Supporting tables for results reported in this section can be found in Appendix E (Table E-1 to E-18). Survey items for this issue are presented below.

We're interested in knowing under what circumstances (if any) you think it is acceptable for WDFW to **lethally remove a coyote or black bear**. *Circle one number for each statement below.*

Is it unacceptable or acceptable for WDFW to lethally remove a COYOTE if it…	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
…is seen near your home?	1	2	3	4	5	6	7
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	1	2	3	4	5	6	7
…has a disease that may be spread to humans?	1	2	3	4	5	6	7
…attacks a pet near your home?	1	2	3	4	5	6	7
…attacks a person near your home?	1	2	3	4	5	6	7
Is it unacceptable or acceptable for WDFW to lethally remove a BLACK BEAR if it…	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
…is seen near your home?	1	2	3	4	5	6	7
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	1	2	3	4	5	6	7
…has a disease that may be spread to humans?	1	2	3	4	5	6	7
…attacks a pet near your home?	1	2	3	4	5	6	7
…attacks a person near your home?	1	2	3	4	5	6	7

Results by state. Residents found lethal removal of coyotes and black bears less acceptable for more benign interactions (i.e., the animal is seen near home or is a nuisance) and more acceptable for addressing attacks on pets and humans and to prevent potential disease transmission. Acceptability results are presented graphically for the five scenarios in Figures VII.A.1 and VII.A.2 using the Potential for Conflict Index (PCI; see Manfredo et al., 2003). The center point of each bubble plotted against the y-axis represents the mean acceptability rating (1-7 scale) for lethal removal of a coyote or black bear in the given scenario. The corresponding PCI value, determining the size of each bubble, can range from 0 ("no conflict") to 1 ("maximum potential for conflict"). This PCI score represents the degree of consensus on the acceptability rating, taking into account the frequency distribution or amount of dispersion around the mean. Larger bubbles and PCI values indicate less consensus among residents over the acceptability of lethal removal, whereas smaller bubbles indicate greater consensus. Consensus was lowest for the nuisance interaction (e.g., the animal is getting into trash or pet food containers) for both coyotes and black bears, as indicated by the larger bubbles. Results reveal that the use of lethal removal in this scenario is likely to be highly contentious among Washington residents. An understanding of how public sentiment varies in this way, based on the severity of the situation, can help WDFW evaluate potential management strategies for addressing human-wildlife conflict and determine under what circumstances public communication efforts may be needed.

Figure VII.A.1. Potential for conflict index comparing the public's acceptability of lethal control of a *nuisance coyote*.

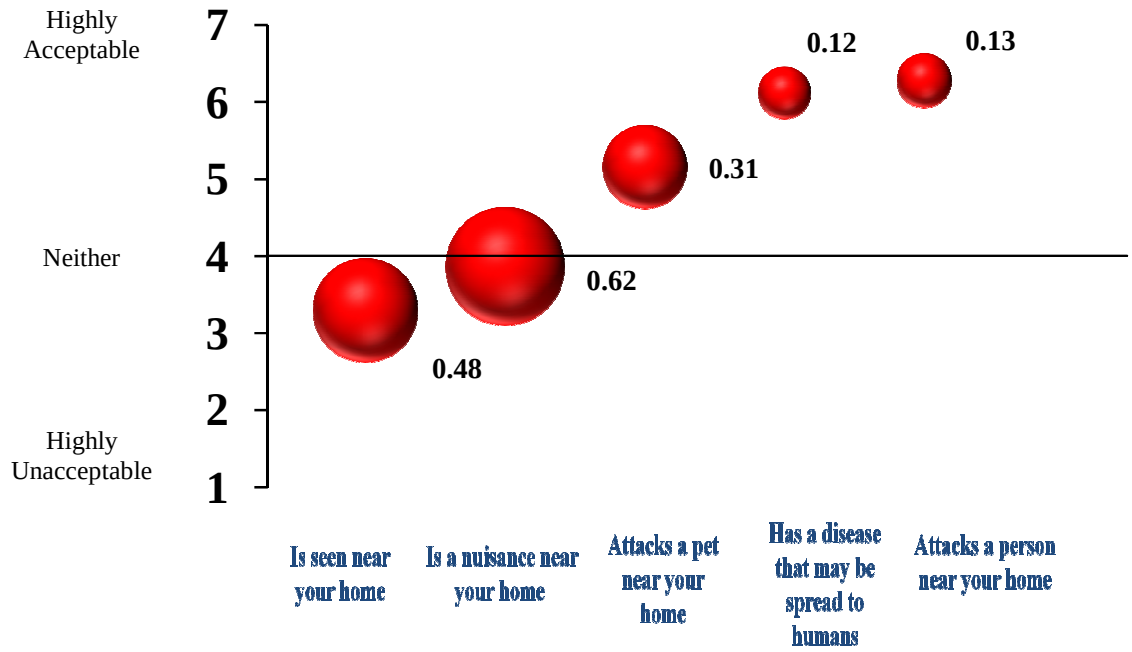
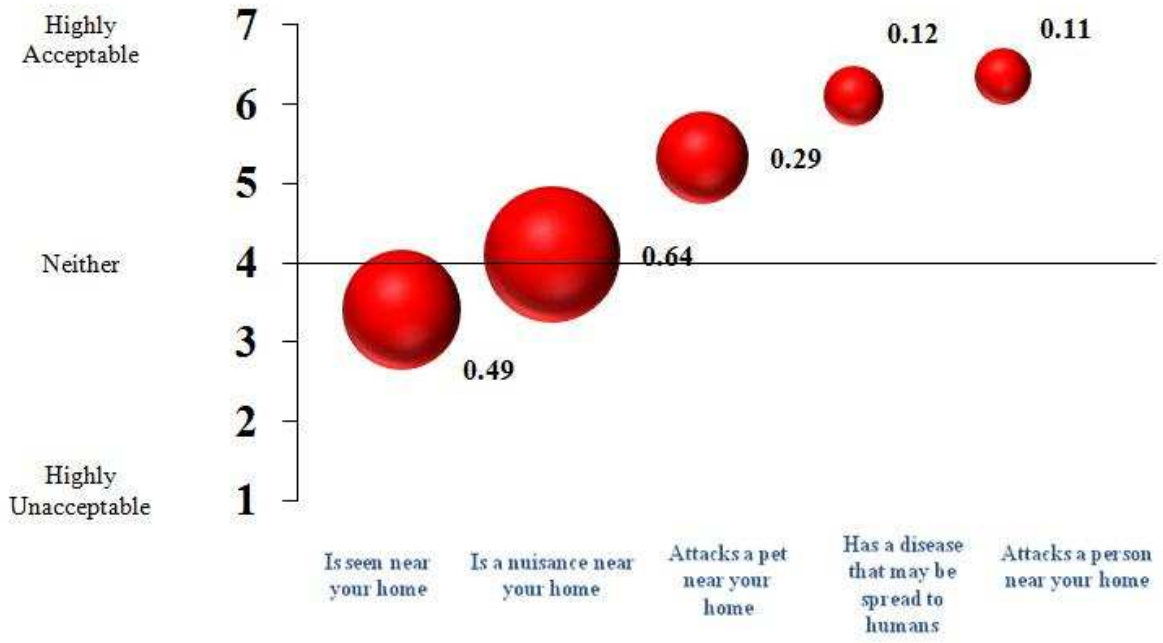


Figure VII.A.2. Potential for conflict index comparing the public's acceptability of lethal control of a *nuisance black bear*.



Results by demographic and lifestyle characteristics. As indicated by effect size measures, most of the demographic variables had little to no impact on attitudes toward lethal control of coyotes and black bears; however, a few of these relationships are worth noting. For example, length of residency in Washington appeared to have the largest effect (but still minimal overall) on residents' attitudes in the scenario involving a nuisance interaction. Specifically, those who had lived in the state and in their current home for a longer period of time were more likely to rate lethal removal as acceptable in this situation. In addition, males and those with lower levels of education and income were generally more accepting of lethal control.

Residents who currently participated in wildlife viewing were less accepting of lethal control compared to residents who had participated in the past or not at all. In general, hunters (whether past or current) were more accepting of lethal control than non-hunters, although the effect sizes indicated only marginal variation. Few statistical differences were found between current hunters and those residents constituting the latent demand group. Among the wildlife-related recreation variables, participation in fishing appeared to have the least effect on beliefs about lethal control.

Results by wildlife value orientation. As shown in Figures VII.A.3 and VII.A.4, Utilitarians and Pluralists were more likely than the other value orientation types to be accepting of lethal control in all five scenarios for coyotes and black bears. Results of these comparisons were statistically significant, with medium to large effect sizes, indicating that wildlife value orientations play an important role in explaining public variation in response to lethal control strategies. This trend was most apparent for the nuisance scenario, where differences among the value orientation types were most pronounced; for this scenario, Utilitarians had the highest ratings of acceptability and Mutualists scored the lowest. Results did not appear to differ much across species type, indicating that for both coyotes and black bears, Washington residents were generally more accepting of lethal control under more severe conflict-related circumstances.

Figure VII.A.3. Percent of wildlife value orientation type accepting of *lethal removal of a coyote*.

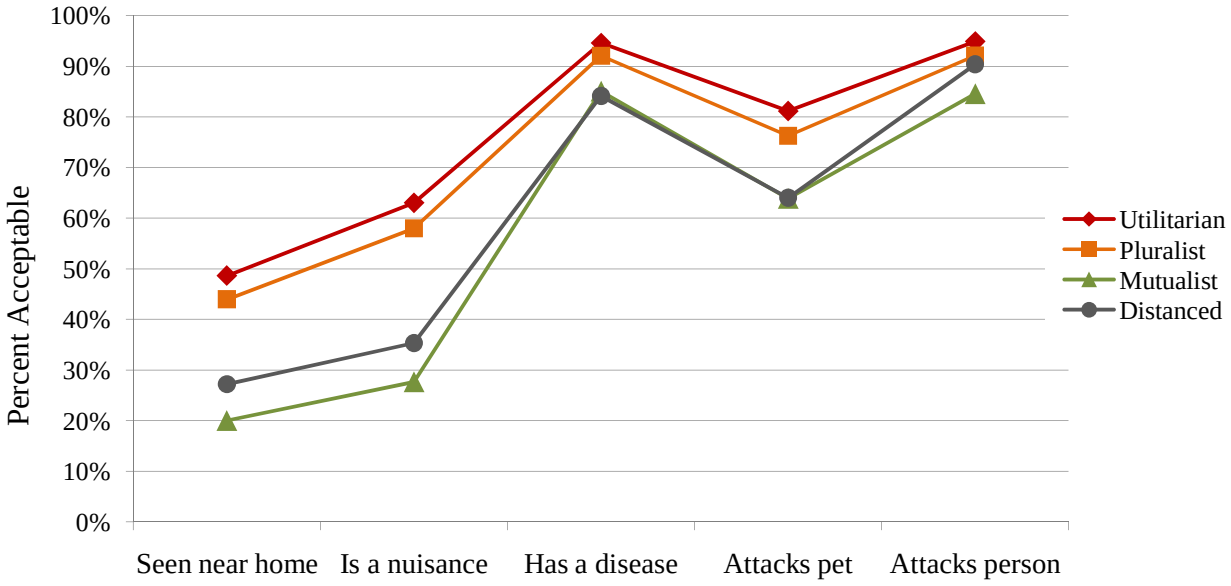
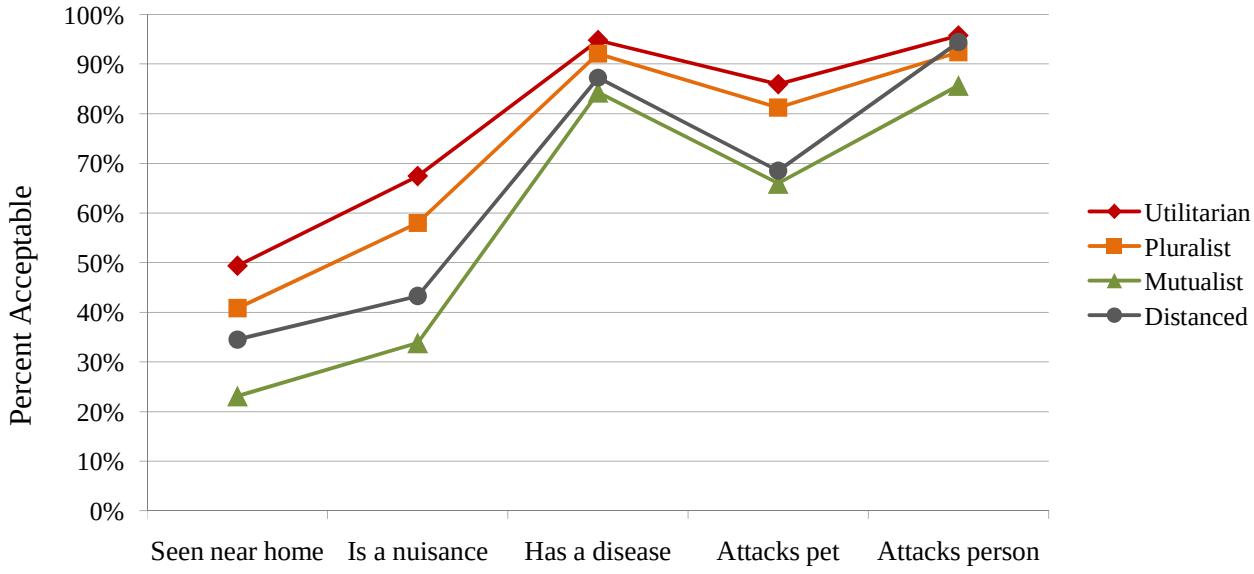


Figure VII.A.4. Percent of wildlife value orientation type accepting of *lethal removal of a black bear*.



Results by county. Results for the nuisance scenario, which had the least amount of consensus among residents regarding the acceptability of lethal control of coyotes and black bears, are spatially depicted in Figures VII.A.5 and VII.A.6. This scenario is particularly important to explore in a geographic context, as it can help WDFW better understand the divergence of public opinion on this issue by identifying localized areas where acceptability of lethal control is higher or lower. For example, thirteen counties had 50% or more of residents indicating that lethal removal of a nuisance coyote was acceptable, whereas San Juan County had less than 30% of residents that supported this action. Similarly, twenty-one counties had 50% or more of residents indicating lethal control of a nuisance black bear was acceptable, whereas residents in Jefferson (34.1%) and San Juan (32.1%) Counties again reported the lowest ratings of acceptability for this situation. Findings indicate that residents from the latter counties, which also had high percentages of Mutualists, are less accepting of invasive management strategies such as lethal control, suggesting that implementation of such strategies in these areas is likely to result in a heightened level of *social* conflict.

Figure VII.A.5. Percent of residents accepting of lethal removal of a *nuisance coyote*.

Figure VII.A.6. Percent of residents accepting of lethal removal of a *nuisance black bear*.

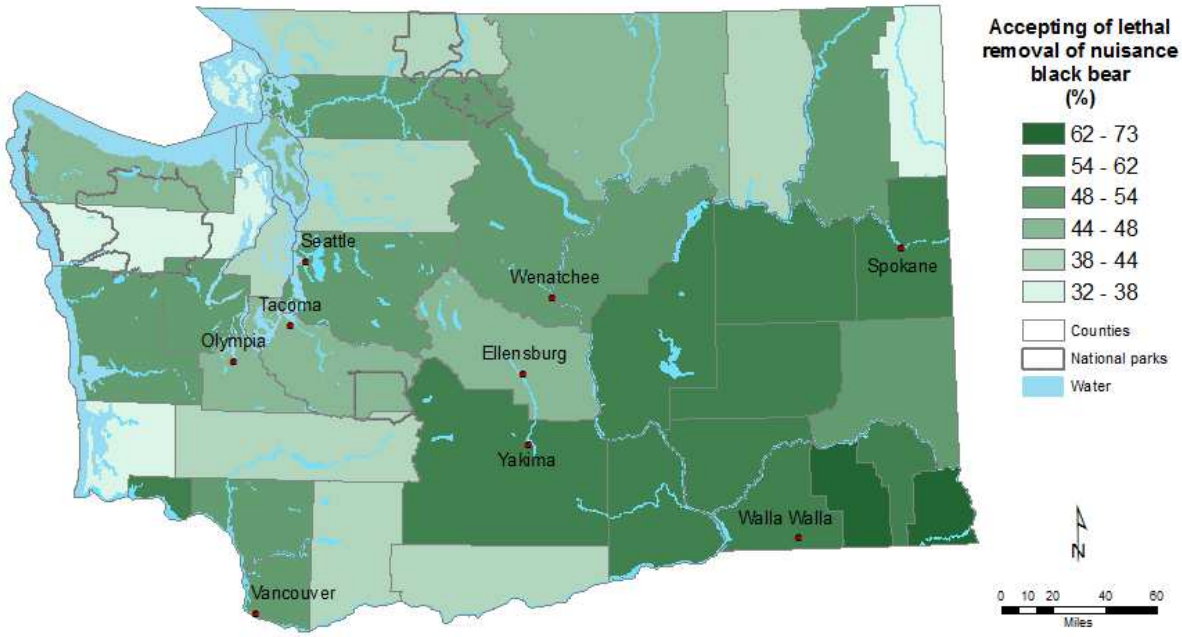
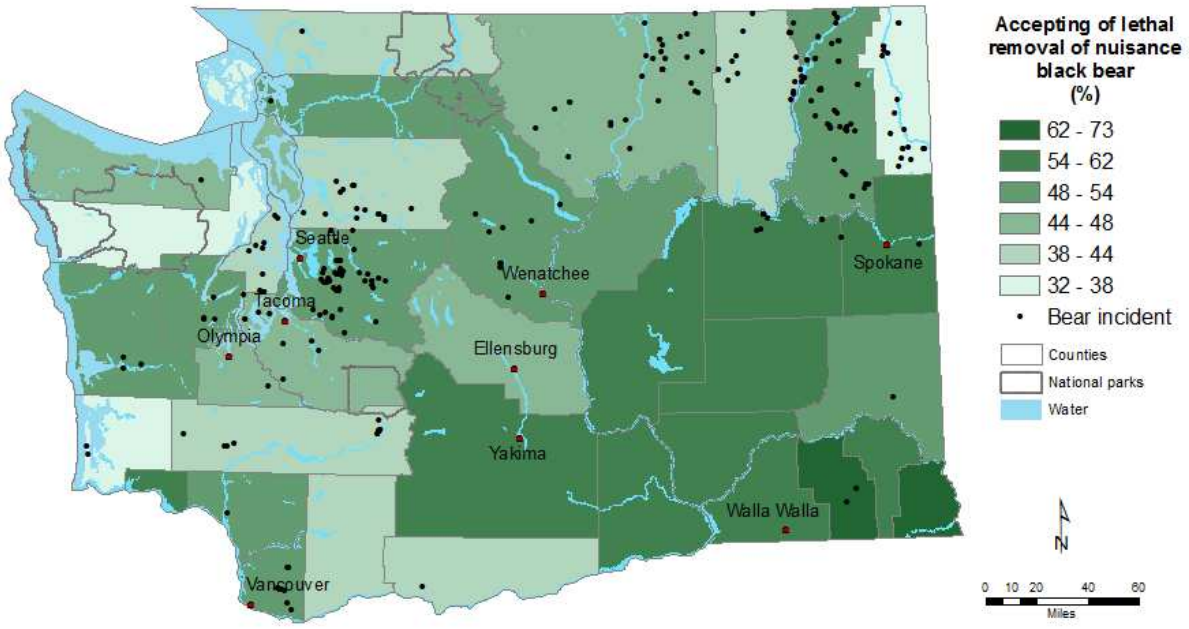


Figure VII.A.7 displays the percent of residents accepting of lethal removal of a black bear in a nuisance scenario along with additional spatial data showing locations where WDFW Law Enforcement responded to a report of a black bear. These incident reports from 2009 include instances where a bear raided crops or an orchard, was involved in some form of depredation, encountered a human, or was otherwise a nuisance. Although the data reflect only those incidents that were reported and to which WDFW Law Enforcement responded, as opposed to all incidents that may have occurred, it appears that tolerance of black bears was higher (as indicated by lower levels of support for lethal control) in many of the counties where a greater number of black bear incidents have been reported to WDFW. These findings highlight the importance of taking into account multiple sources of information (social as well as biological) in a geographic context to understand wildlife-related issues and public response to those issues. It is likely that a number of factors, including for example wildlife presence/abundance, prior experience with wildlife and wildlife-related problems, how the agency responds to wildlife situations, and wildlife value orientations, can impact how people react to these kinds of issues.

Figure VII.A.7. Overlay of incidents **to which WDFW Law Enforcement has responded** involving a black bear with the percent of residents accepting of lethal removal of a *nuisance black bear*. [1]



[1] Data source: WDFW, 2010. Each "bear incident" on this map reflects the location where WDFW Law Enforcement investigated a report that a black bear raided crops or an orchard, was involved in some form of depredation, encountered a human, was a general nuisance, or caused some unknown incident. All incidents occurred in 2009.

B. DEER AND ELK

Much of Washington has suitable habitat for different species of deer (Figure VII.B.1), and a large portion of Washington is also suitable for elk (Figure VII.B.2). As human populations expand, interactions between humans and deer/elk are likely to increase in Washington. Although some people enjoy seeing these animals and may also benefit from the recreational opportunities (e.g., hunting) they provide, interactions can sometimes result in problems such as damage to shrubbery, landscaping, and commercial crops. This section explores the acceptability of different management actions that could be used to respond to situations involving nuisance deer or elk. Supporting tables for results reported in this section can be found in Appendix E (Table E-19 to E-30). Items used in this section are below.

DEER AND ELK:

As human populations expand, interactions between humans and deer or elk are likely to increase in certain parts of Washington. Although some people enjoy seeing these animals, interactions can sometimes result in problems such as damage to shrubbery, landscaping, and commercial crops. Below we ask about the **acceptability of different management actions** that could be used to address these problems. *Circle one number for each statement below.*

Is it unacceptable or acceptable for WDFW to…	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
…capture and lethally remove problem deer or elk?	1	2	3	4	5	6	7
…use techniques designed to scare problem deer or elk away (examples: loud noises, rubber bullets)?	1	2	3	4	5	6	7
…use agency funds to compensate landowners for damage ($10,000 or more) caused by deer or elk?	1	2	3	4	5	6	7
…contribute agency funds to a landowner cost-sharing program supporting the construction of fences around property that has been damaged by deer or elk?	1	2	3	4	5	6	7
…require landowners to accept at least 50% of the responsibility in dealing with problem deer or elk?	1	2	3	4	5	6	7

Figure VII.B.1. Quality habitat for deer.

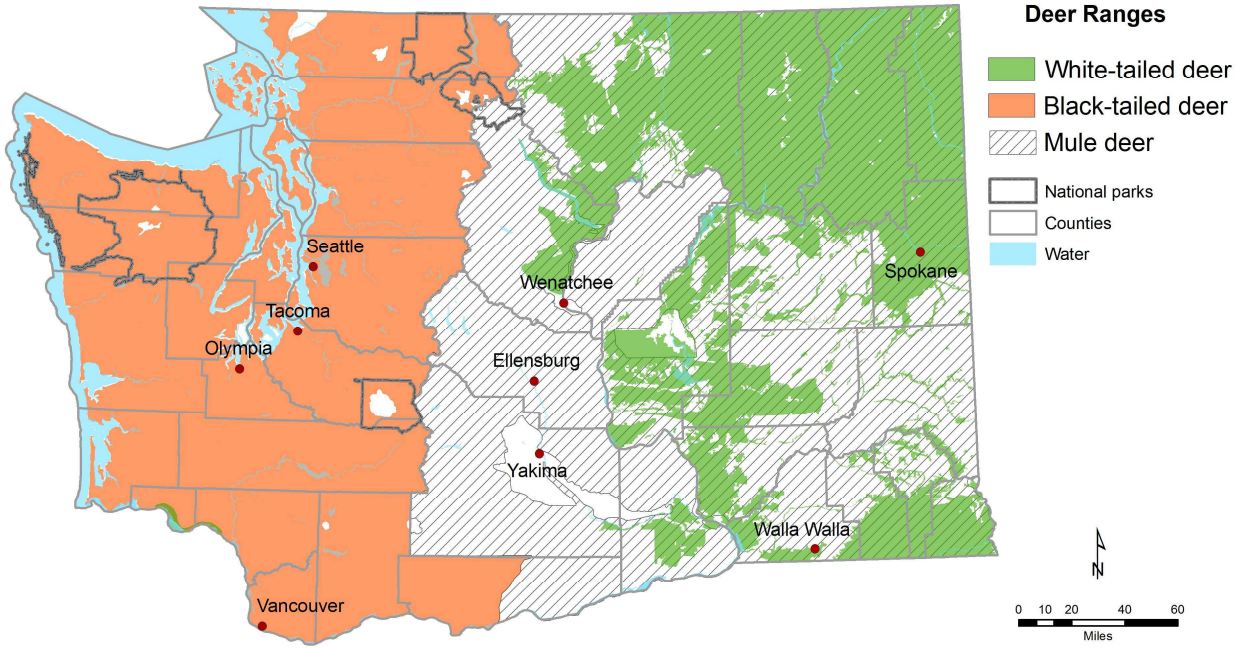


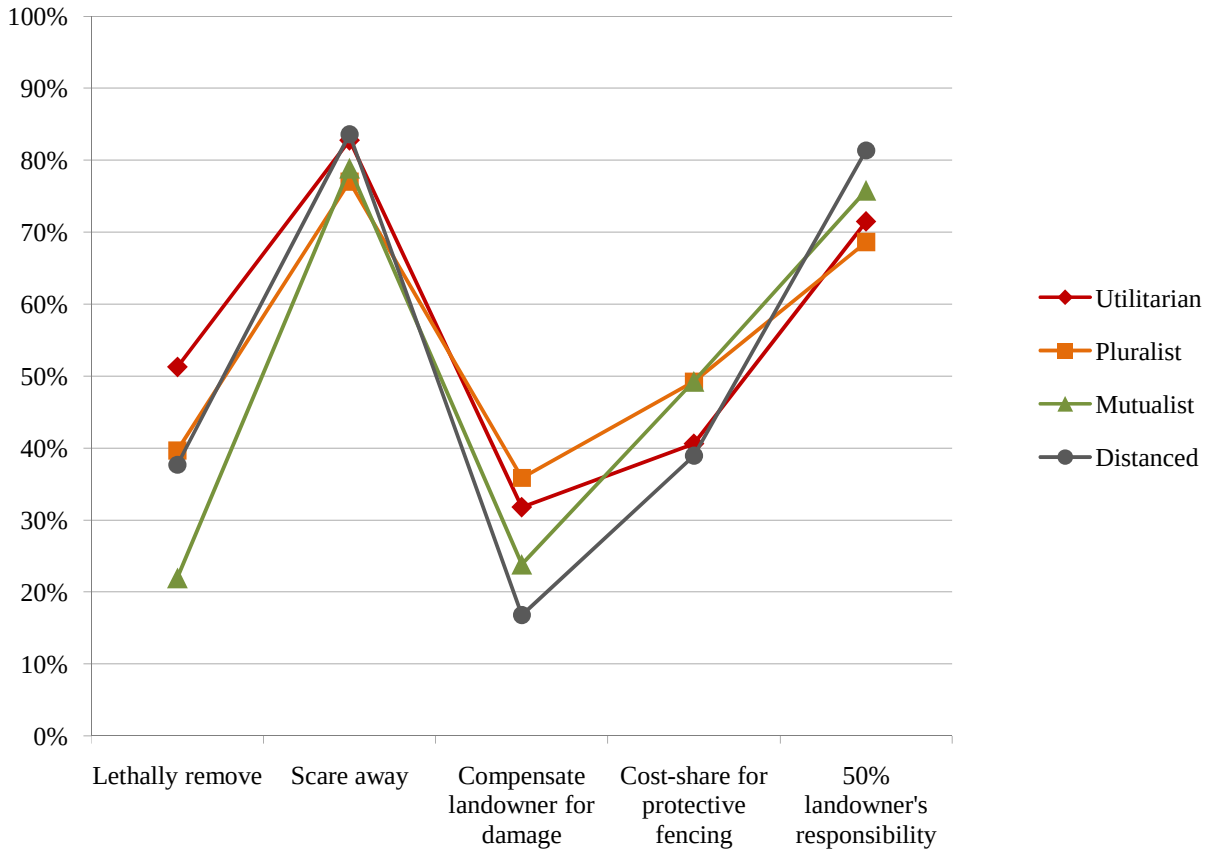
Figure VII.B.2. Quality habitat for elk.

Results by state. Washington residents generally found it unacceptable to capture and lethally remove a problem deer or elk (54.9%) and to compensate landowners for damage (greater than $10,000) caused by deer or elk (58.9%). Residents indicated that it was acceptable for WDFW to use devices designed to scare away problem deer or elk (80.8%) and to require landowners to accept 50% or more of the responsibility for dealing with deer/elk-related problems (74.4%). Residents also found it acceptable for WDFW to contribute funds to a cost-share program to build fences around property that has been damaged by deer or elk (44.5%).

Results by demographic and lifestyle characteristics. Demographic variables generally had a marginal effect on residents' acceptance of management actions aimed at addressing nuisance deer/elk situations. However, residents with higher levels of income were generally less accepting of using WDFW funds to compensate for deer/elk-related damage and contributing agency funds to construction of fences around damaged property. Current hunters were more accepting than non-hunters and past participants of WDFW managing for problem deer or elk (regardless of the technique) and were less accepting of requiring landowners to accept 50% or more of the responsibility for dealing with the problem. Current wildlife viewing participants were less likely to accept lethal removal of problem deer/elk, and residents who indicated past participation in wildlife viewing were more likely to believe that landowners should be held responsible for addressing problems on their own. Fishing participation had little to no impact on residents' reactions to deer/elk management actions.

Results by wildlife value orientation. Mutualists were less accepting of capturing and lethally removing a problem deer or elk, whereas Utilitarians were more accepting of this management action than the other value orientation types (Figure VII.B.3). Distanced individuals were least likely among the value orientation types to support landowner compensation schemes for damage (greater than $10,000) caused by deer or elk. Mutualists and Distanced individuals were most accepting of requiring landowners to take on at least 50% of the responsibility for dealing with nuisance situations; however, the effect size for this comparison indicated only marginal variation. The least amount of variation among the value orientation types occurred for the action involving a contribution of agency funds to a cost-share program supporting the construction of fences around damaged property.

Figure VII.B.3. Percent of wildlife value orientation type accepting of particular management actions for problem deer or elk.



Results by county. Results by county can help identify locations where public support of management actions may be higher or, alternatively, where actions are likely to generate a greater amount of controversy. Whereas the majority of Washington residents found landowner compensation to be an unacceptable strategy for addressing greater than $10,000 of deer/elk-related damage, the majority of residents in several counties in eastern Washington were supportive of this action (Figure VII.B.4). Certain counties where residents were opposed to compensation schemes had higher levels of support for initiatives like a cost-share program designed to help build fences around damaged properties (Figure VII.B.5). This could indicate that residents in these areas are likely to support more proactive strategies aimed at preventing future problems as opposed to reactive measures such as compensation. As an illustration, two areas in central Washington (Chelan, Douglas, and Grant Counties; Yakima and Klickitat Counties) who reported up to 10% of residents had elk-related problems at their home may wish to indicate that proactive measures would be beneficial in these areas. Figure VII.B.6 shows support for WDFW requiring landowners to accept at least 50% of the responsibility in dealing with problem deer or elk. Benton, King, and Spokane Counties indicated the most amount of residents in support of landowner responsibility. Results, however, do not indicate if residents think that problems with deer or elk are "just a part of life" and that landowners are largely responsible for their own property or whether residents think that accepting 50% of the responsibility means that landowners could handle the problems more directly (e.g., killing the nuisance animal) without agency oversight.

Figure VII.B.4. Percent of residents accepting of WDFW compensating landowners for damage ($10,000 or more) caused by deer or elk.

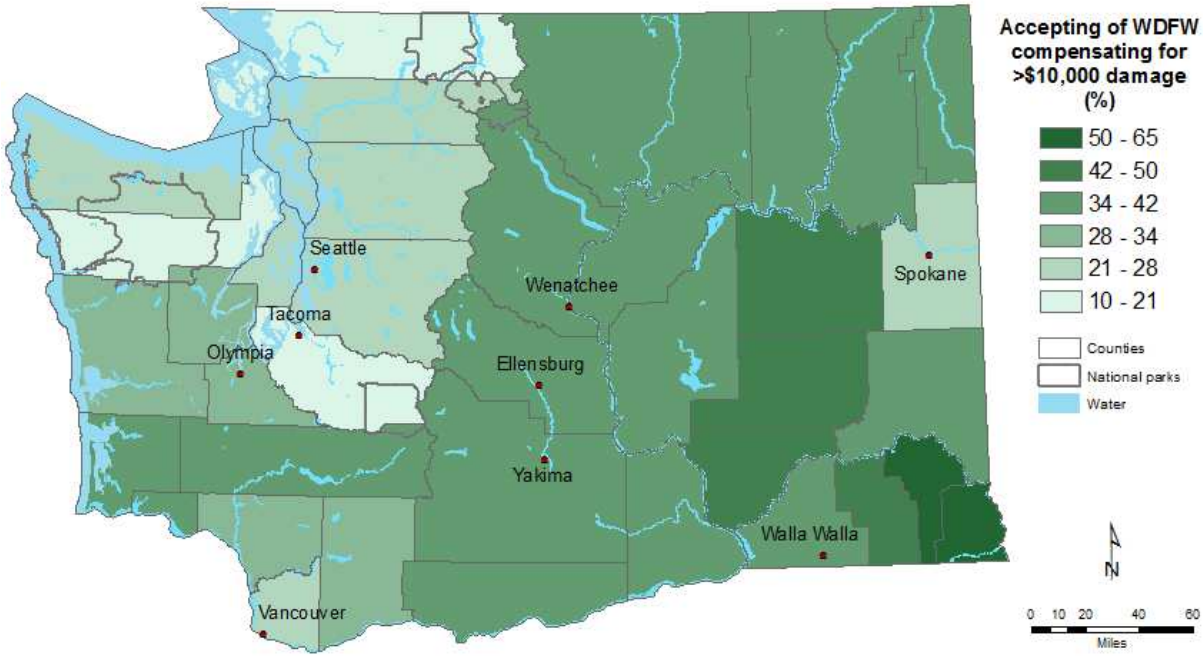


Figure VII.B.5. Percent of residents accepting of WDFW contributing agency funds to a cost-share program supporting the construction of fences around property that has been damaged by deer or elk.

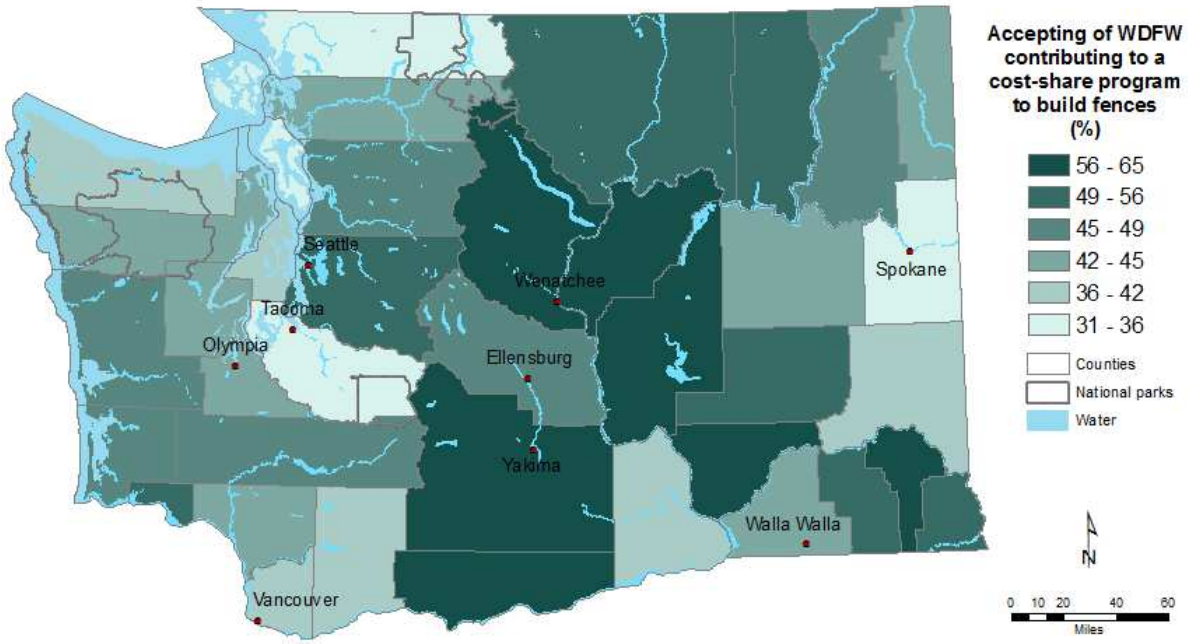
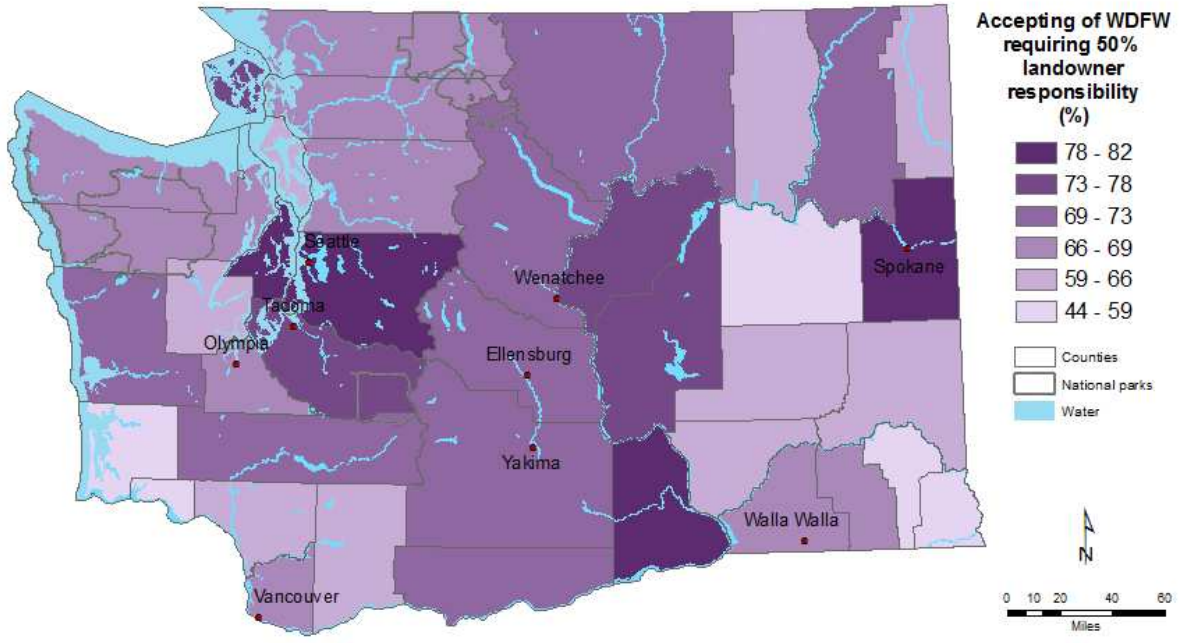


Figure VII.B.6. Percent of residents accepting of WDFW requiring landowners to accept at least 50% of the responsibility in dealing with problem deer or elk.



C. WOLVES

Wolves are a state and federal endangered species and have started to recolonize Washington from other surrounding states. There are a wide range of opinions and interests associated with wolves. Some residents may be concerned that an increase in wolves could lead to problems like attacks on livestock and population declines in certain game species (e.g., deer and elk). Others may be excited about the prospect of having wolves return to Washington (e.g., the opportunity to see wolves in the wild). This section explores the acceptability of different management actions that may be considered by WDFW in the future as wolves become reestablished in the state. Supporting tables for results reported in this section can be found in Appendix E (Table E-31 to E-46). Items used on the survey for this section are presented below.

WOLVES:

Wolves are a state and federal endangered species and have started to recolonize Washington from other surrounding states. There are a wide range of opinions and interests associated with wolves. Some residents are concerned that an increase in wolves could lead to problems like attacks on livestock and population declines in certain hunted species. Others are excited about the prospect of having wolves return to Washington (for example, the opportunity to see wolves in the wild). Below we ask about the **acceptability of different management actions** that may be considered in the future as wolves become reestablished in the state.
Circle one number for each statement below.

Is it unacceptable or acceptable for WDFW to…	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
…move wolves from one area in Washington where they've reached a certain population size to another area in the state to establish new wolf populations?	1	2	3	4	5	6	7
…allow wolves to recolonize and establish new populations on their own in Washington?	1	2	3	4	5	6	7
…limit the number of wolves if they cause declines in deer and elk populations *in certain areas*?	1	2	3	4	5	6	7
…capture and lethally remove a wolf if it is known to have caused loss of livestock?	1	2	3	4	5	6	7
…compensate landowners for loss of livestock caused by a wolf?	1	2	3	4	5	6	7
…use *a portion of WDFW hunting and fishing license dollars* to compensate landowners for loss of livestock caused by a wolf?	1	2	3	4	5	6	7
…use *a portion of state tax dollars* to compensate landowners for loss of livestock caused by a wolf?	1	2	3	4	5	6	7
…allow a recreational hunt of wolves once they have reached a certain population size that exceeds WDFW recovery goals?	1	2	3	4	5	6	7

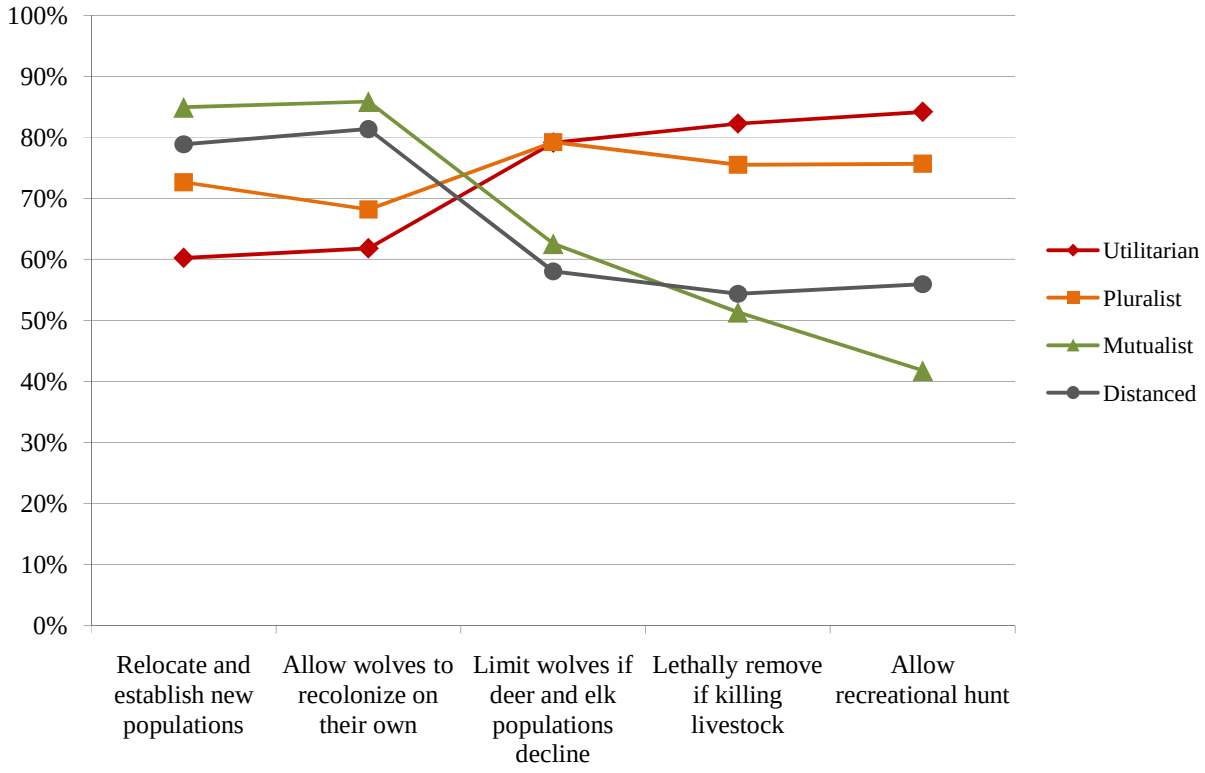
Results by state. Washington residents generally found natural recolonization of the state by wolves to be acceptable (74.5%). Residents also supported translocation of wolves by WDFW from one area in Washington where they have reached a certain population size to another area in the state to establish new wolf populations (73.7%). There was also a high level of support among residents for wolf control measures. Specifically, residents were accepting of lethal removal of wolves that have caused loss of livestock (65.9%), limiting the number of wolves in certain areas if they are contributing to localized declines in deer or elk (69.8%), and a limited hunting season on wolves once they have exceeded WDFW recovery goals (63.5%). Residents were less accepting of landowner compensation schemes for wolf-related livestock losses (44.8%), but were slightly more accepting of these strategies if the funds for compensation came from the sale of hunting and fishing licenses (46.1%) rather than from state tax dollars (40.3%).

Results by demographic and lifestyle characteristics. Generally, males were more accepting than females of invasive management actions such as lethal removal of wolves, whereas females were more accepting of wolf recolonization. Older residents and residents who have lived for a longer period of time in their current home or in the state of Washington were more likely to support lethal control of wolves involved in livestock depredation; these individuals were also less likely to support wolf recolonization.

Current hunters were highly supportive of limiting wolf numbers, both in terms of lethal removal of damage-causing animals and recreational hunting. Current hunters were also supportive of compensating landowners for livestock losses due to wolves, whereas non-hunters were generally opposed to this strategy. Non-hunters were significantly more supportive of wolf recolonization than were past or current hunters. Similar trends were noted for fishing participation, with current anglers expressing less support for wolf recolonization compared to non-anglers or past participants. Residents indicating they had participated in fishing in the past were more accepting of WDFW using hunting and fishing license dollars to compensate landowners for wolf-caused livestock losses. Wildlife viewing participants were generally supportive of letting wolves recolonize Washington on their own and were less supportive of invasive management techniques and compensation measures. Residents in the latent demand group differed significantly from current hunters on almost all of the wolf management variables except using hunting and fishing license dollars for landowner compensation. More specifically, compared to current hunters, those in the latent demand category were more supportive of wolf recolonization and less supportive of invasive wolf management techniques (though still supportive overall).

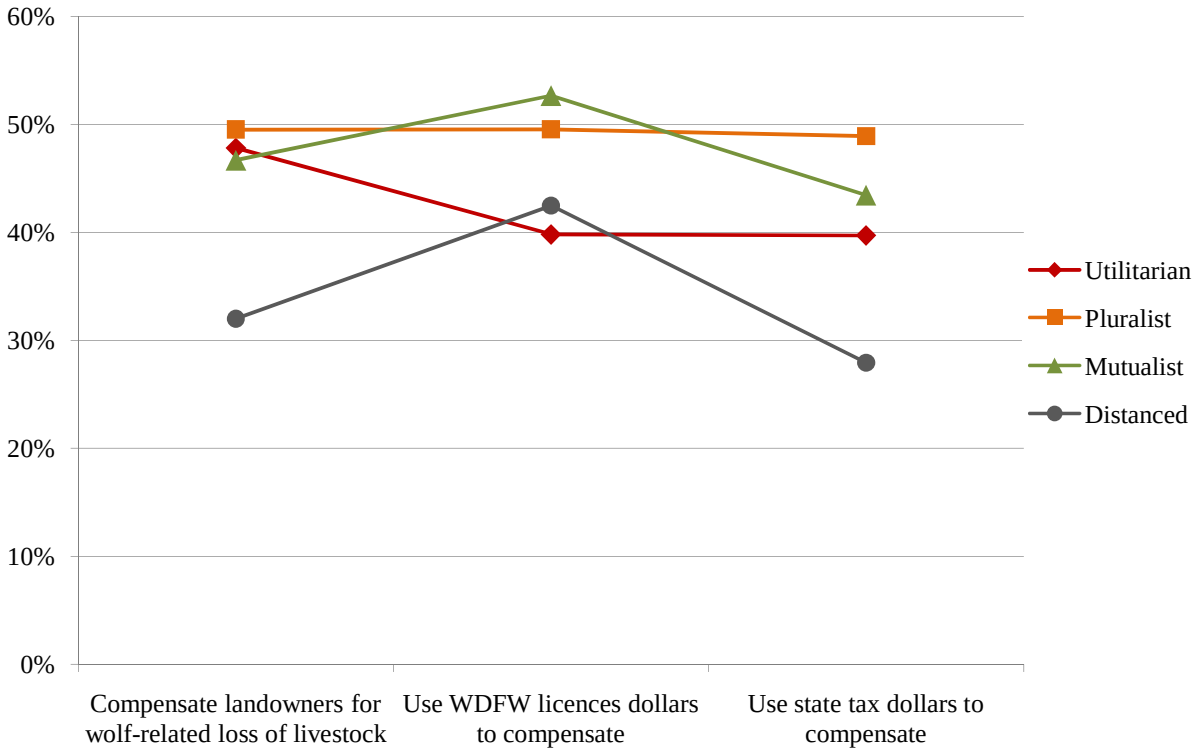
Results by wildlife value orientation. Utilitarians and Pluralists were less accepting than the other value orientation types of wolf recolonization in Washington. Utilitarians and Pluralists were also less accepting of WDFW assisting with wolf recovery by moving wolves from one area in Washington to another part of the state to help build populations (Figure VII.C.1). Utilitarians and Pluralists were more likely than the other value orientation types to support control measures resulting in death of wolves. Mutualists and Distanced individuals were less accepting of lethal removal of wolves that have caused losses to livestock and limiting wolf numbers to address localized declines in deer or elk. Mutualists also found it unacceptable for WDFW to allow a recreational hunt once wolves have exceeded the agency's recovery goals.

Figure VII.C.1. Percent of wildlife value orientation type accepting of *wolf-related management actions*.



As depicted in Figure VII.C.2, Distanced individuals had low levels of acceptability for compensating landowners for wolf-related livestock losses, particularly if it entailed using a portion of state tax dollars as the funding source. Mutualists and Pluralists were more accepting than the other value orientation types of using hunting and fishing license dollars for landowner compensation programs. Pluralists were consistent in their responses across the different compensation mechanisms – approximately 50% of Pluralists were accepting of compensation, regardless of the funding source (i.e., hunting/fishing license dollars v. state tax revenue). While close to 50% of Utilitarians found it acceptable to compensate landowners for wolf-related livestock losses, the percent of Utilitarians who supported the use of hunting and fishing dollars or state tax dollars to fund compensation programs decreased to about 40%. These divisions among segments of the population highlight the potential for a significant amount of controversy to be generated over the use of compensation measures as a wolf management tool in Washington.

Figure VII.C.2. Percent of wildlife value orientation type accepting of *wolf-related compensation measures*.



Results by county. Support for wolf recolonization in Washington varied widely across counties. As depicted in Figure VII.C.3, greater levels of support were found in counties in northwest Washington (e.g., the Seattle metropolitan area), whereas residents from counties in the east were less accepting. For example, Garfield and Asotin Counties had the lowest percentage of residents who thought wolves should be allowed to recolonize and establish populations on their own in Washington (~32%), while San Juan, and Snohomish Counties had approximately 85% of residents expressing support for recolonization. Generally, residents from eastern Washington were less accepting than residents in western Washington of WDFW assisting with wolf recovery by moving wolves from one part of the state where they have become established to another to build populations (Figure VII.C.4).

Residents from counties in far eastern Washington were much more likely to support WDFW compensating landowners for loss of livestock due to wolf predation; however, Yakima County residents were also supportive of compensation schemes (Figure VII.C.5). Residents from counties in the northwest portion of Washington were also less likely than other county residents to agree that WDFW should limit wolf numbers in certain areas if those wolves are causing localized declines in deer and elk populations (Figure VII.C.6). Similarly, residents in the far northwestern portion of Washington and in Douglas County were less supportive of a limited recreational hunt of wolves once they have exceeded WDFW recovery goals (Figure VII.C.7) than residents in other parts of the state. Results tend to coincide with the distribution of Utilitarians, who are more likely to support activities like hunting and lethal control. For example, about 86% of Garfield County residents (who are mostly Utilitarians) were accepting of WDFW capturing and lethally removing a wolf that has caused loss of livestock, whereas approximately 55% of residents in San Juan County (who are mostly Mutualist) were supportive of this action. Additionally, Garfield County residents were moderately to strongly in favor of limiting the number of wolves if they cause localized declines in deer and elk populations, whereas Kitsap County residents (who had a more even distribution of Utilitarians and Mutualists) were less accepting and had less consensus on this item. These findings highlight the utility of examining the distribution of different segments of the population (i.e., wildlife value orientation types) across the landscape to help in anticipating how people in certain areas are likely to respond to wildlife-related issues and management strategies. This kind of information can be particularly important in the context of issues such as those associated with wolf management that can generate a high level of public attention and controversy.

Figure VII.C.3. Percent of residents accepting of wolves being allowed to recolonize and establish new populations on their own in Washington.

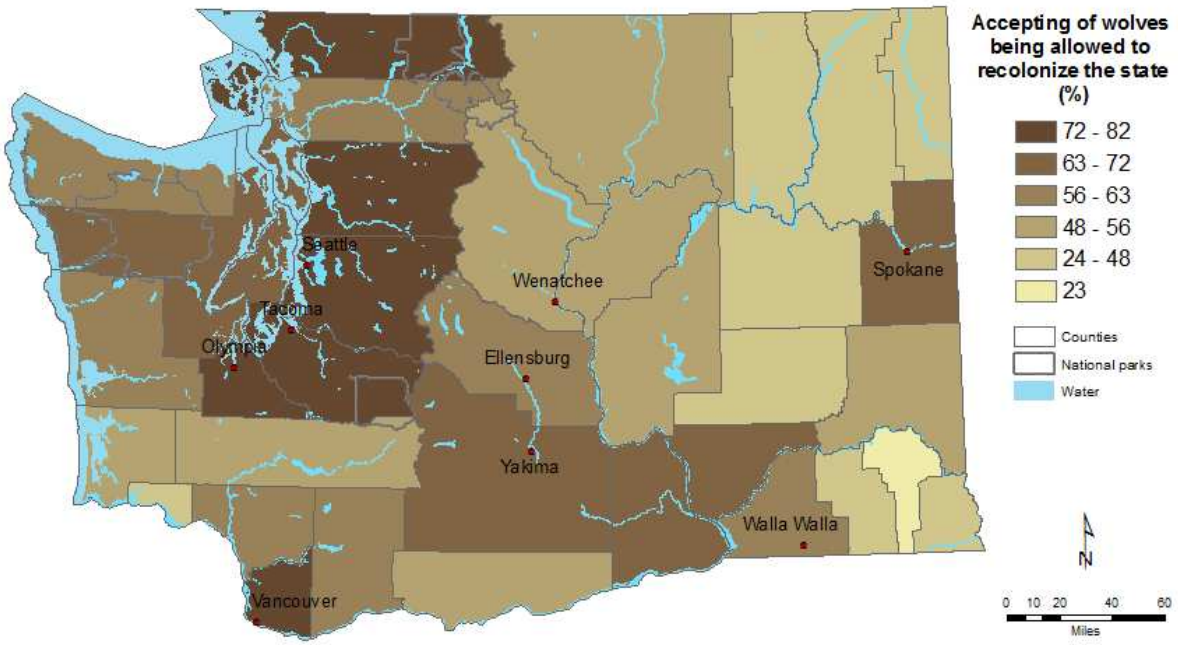


Figure VII.C.4. Percent of residents accepting of wolves being moved from one area in Washington where they have reached a certain population size to another area in the state to establish new wolf populations.

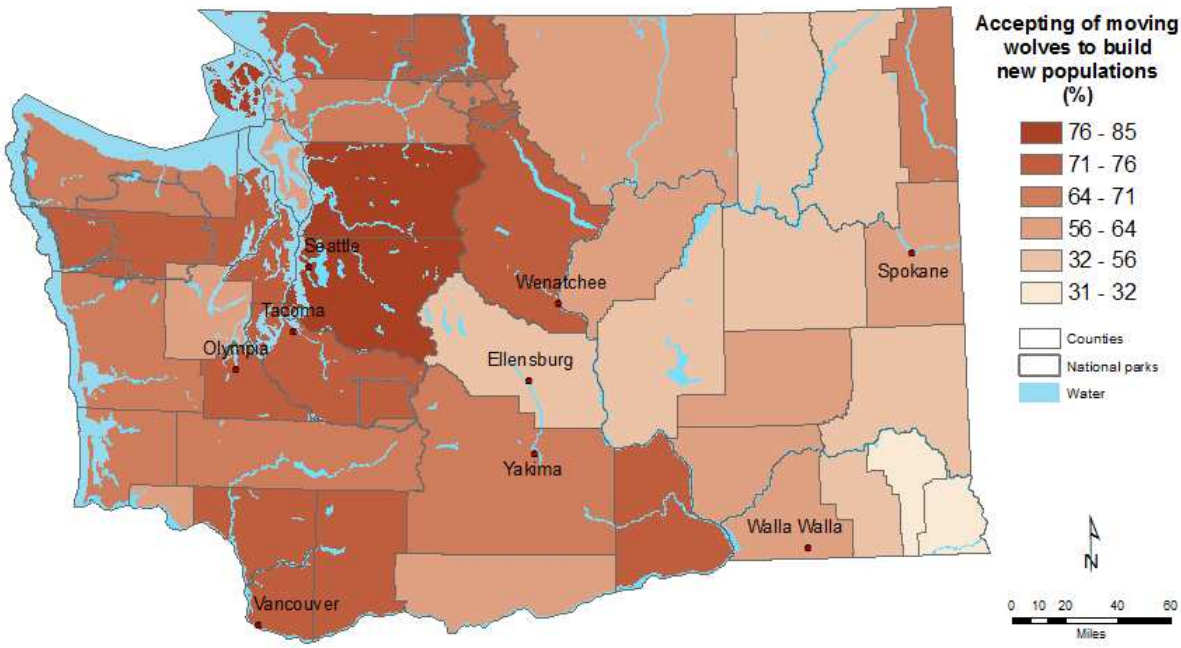


Figure VII.C.5. Percent of residents accepting of compensating landowners for loss of livestock caused by a wolf.

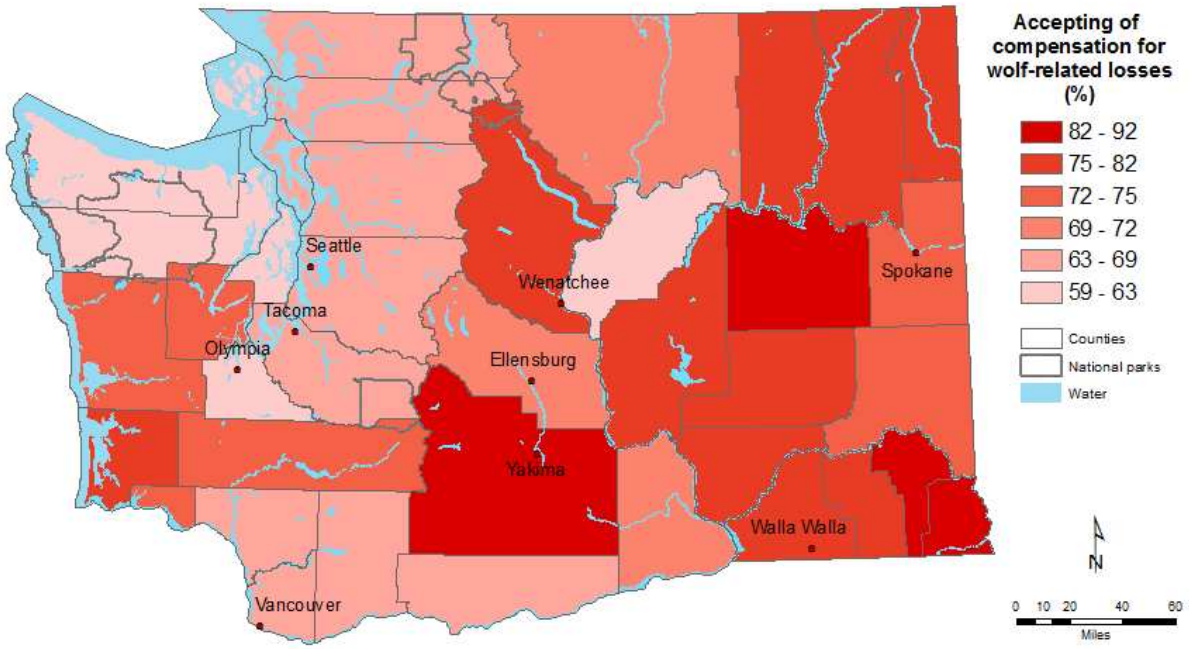


Figure VII.C.6. Percent of residents accepting of limiting the number of wolves if they cause declines in the deer and elk populations *in certain areas*.

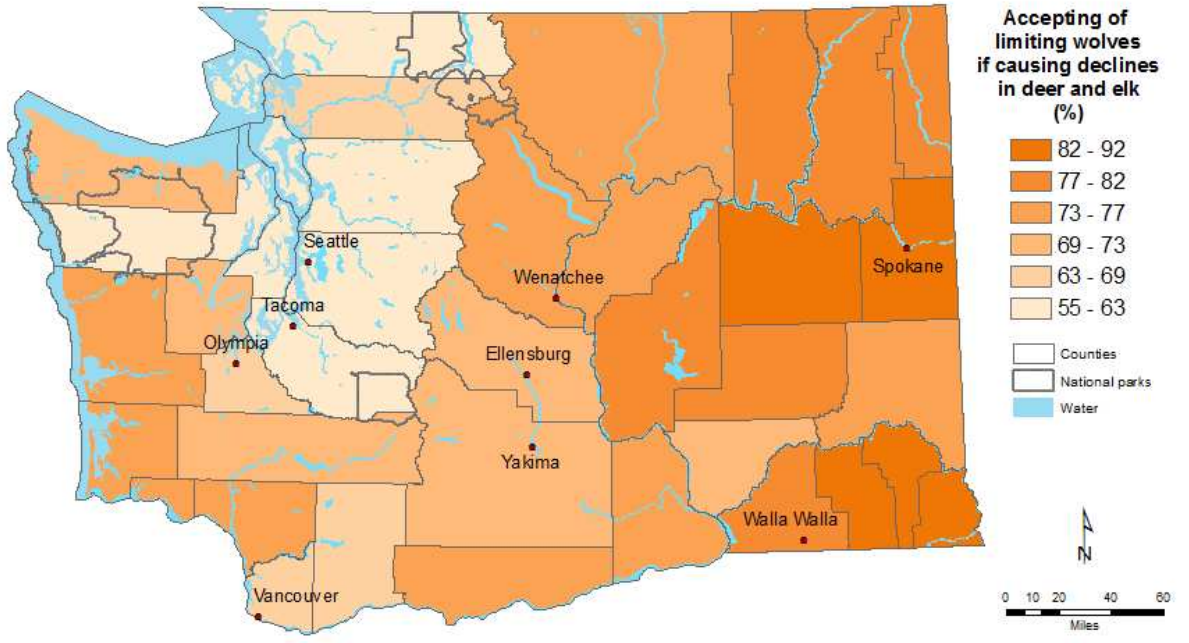
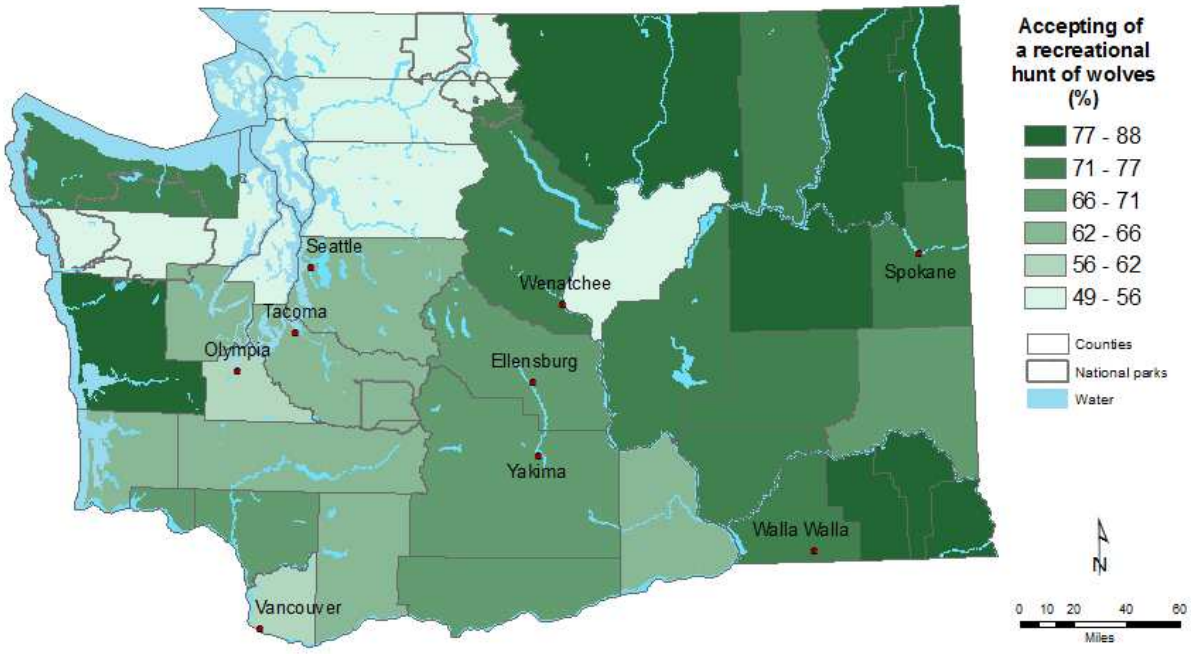


Figure VII.C.7. Percent of residents accepting of allowing a recreational hunt of wolves once they have reached a certain population size that exceeds WDFW recovery goals.



D. SALMON

Many salmon species are federally listed under the Endangered Species Act. Salmon are also considered a symbol of the Pacific Northwest. Federal, state, and tribal management efforts have focused on the recovery of wild salmon for many years, and salmon-related activities occur in a wide-variety of locations throughout Washington. While some people may feel that salmon recovery is important for the natural environment and local economies, others may feel that it can interfere with their livelihoods. This section explores residents' views about salmon and salmon recovery efforts in Washington. Supporting tables for results reported in this section can be found in Appendix E (Table E-47 to A-58). Items used in this section are presented below.

SALMON:

Many salmon are federally listed under the Endangered Species Act. Salmon are also a symbol of the Pacific Northwest. Federal, state, and tribal management efforts have focused on the recovery of wild salmon for many years, and a large percentage of Washington's geography is involved in salmon-related activities. While some people feel that salmon recovery is important for the natural environment and local economies, others feel that it may interfere with their livelihoods. We are interested in **your views about salmon in the state**. *Circle one number for each statement below.*

Do you disagree or agree with the following?	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Salmon are important to the local economy where I live.	1	2	3	4	5	6	7
Salmon are important to the quality of life for residents where I live.	1	2	3	4	5	6	7
WDFW should continue its efforts to recover *wild salmon* throughout the state.	1	2	3	4	5	6	7
WDFW should focus more of its efforts on introduction of *hatchery-raised salmon* to enhance fishing opportunities.	1	2	3	4	5	6	7

	Decreased Greatly	Decreased Some	Remained the Same	Increased Some	Increased Greatly	No Opinion
Over the past five years, would you say that your **support for salmon recovery** has increased, decreased, or remained the same? (*Circle one number OR check the box to indicate "no opinion".)*	1	2	3	4	5	☐

Results by state. A large majority of residents indicated that salmon are important to local economies (84.1%) and to the quality of life for people in Washington (78.0%). There was also a high level of support for WDFW continuing its salmon recovery efforts (91.6%). Less support was expressed for WDFW focusing more of its efforts on the introduction of *hatchery-raised* salmon to enhance fishing opportunities (56.2%). Approximately 8% of residents indicated that their support for salmon recovery has decreased over the last five years, whereas 46.3% indicated their support had remained the same, and 45.8% reported that their level of support had increased during that timeframe.

Results by demographic and lifestyle characteristics. Demographics had very little impact on beliefs about salmon, with the exception of how residents felt about the introduction of hatchery-raised salmon. Males and those in the lower income and education brackets were more supportive of WDFW focusing its efforts on introduction of hatchery-raised salmon to enhance recreational fishing opportunities. Current hunters and anglers as well as those who have never participated in wildlife viewing were also more supportive of this management action compared to other population subgroups.

Results by wildlife value orientation. Although results were statistically significant for all five salmon-related items when comparing value orientation types, the effect sizes indicated only marginal variation. The largest effect size (0.103) was found for residents' acceptance of WDFW focusing more of its efforts on introduction of hatchery-raised salmon to enhance fishing opportunities. Utilitarians and Pluralists, who are generally more likely to participate in activities such as fishing, were more supportive than the other value orientation types of this management action (Figure VII.D.1). Utilitarians were more likely to report having remained the same or to have experienced a decrease in their overall level of support for salmon recovery in the last five years (Figure VII.D.2).

Figure VII.D.1. Percent of wildlife value orientation type agreeing with beliefs about *salmon*.

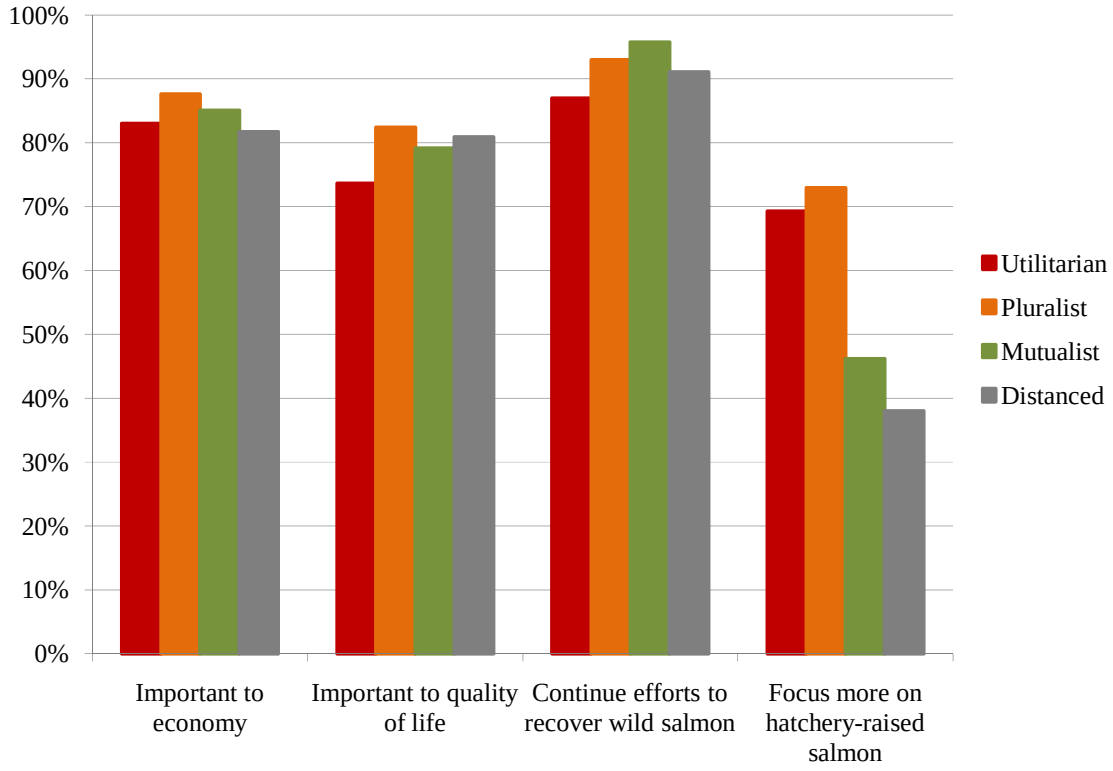
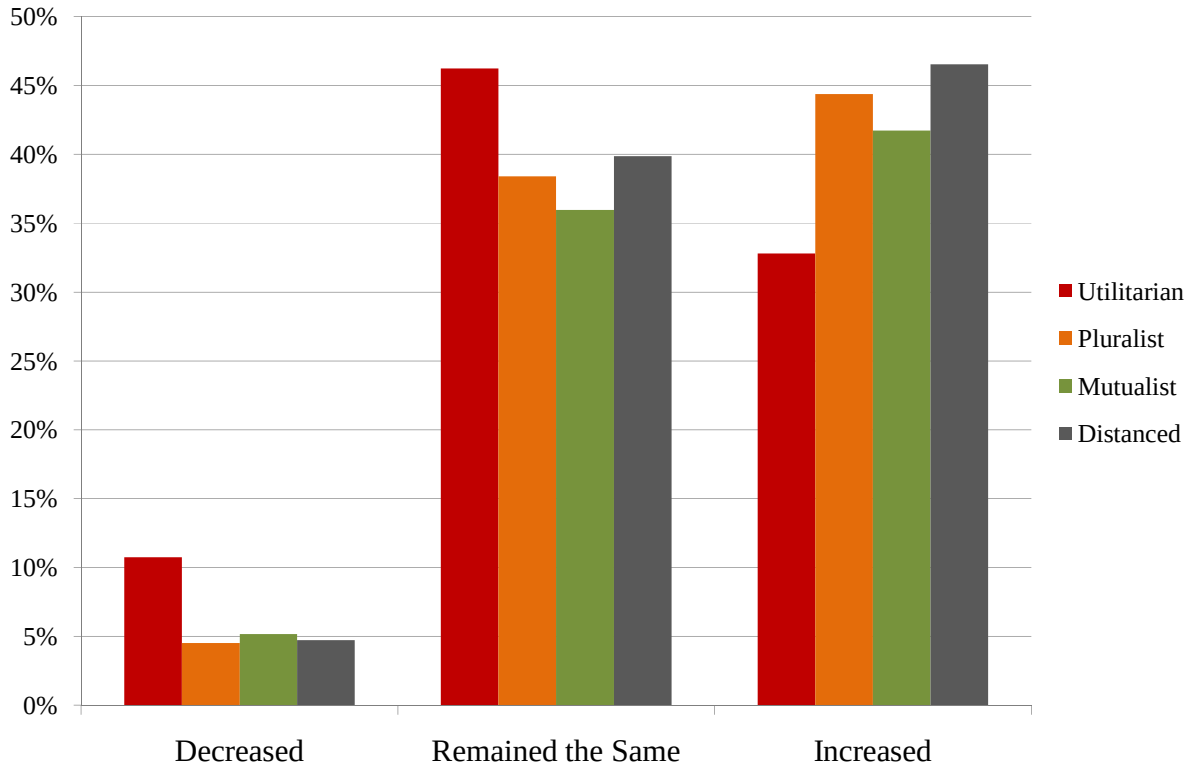


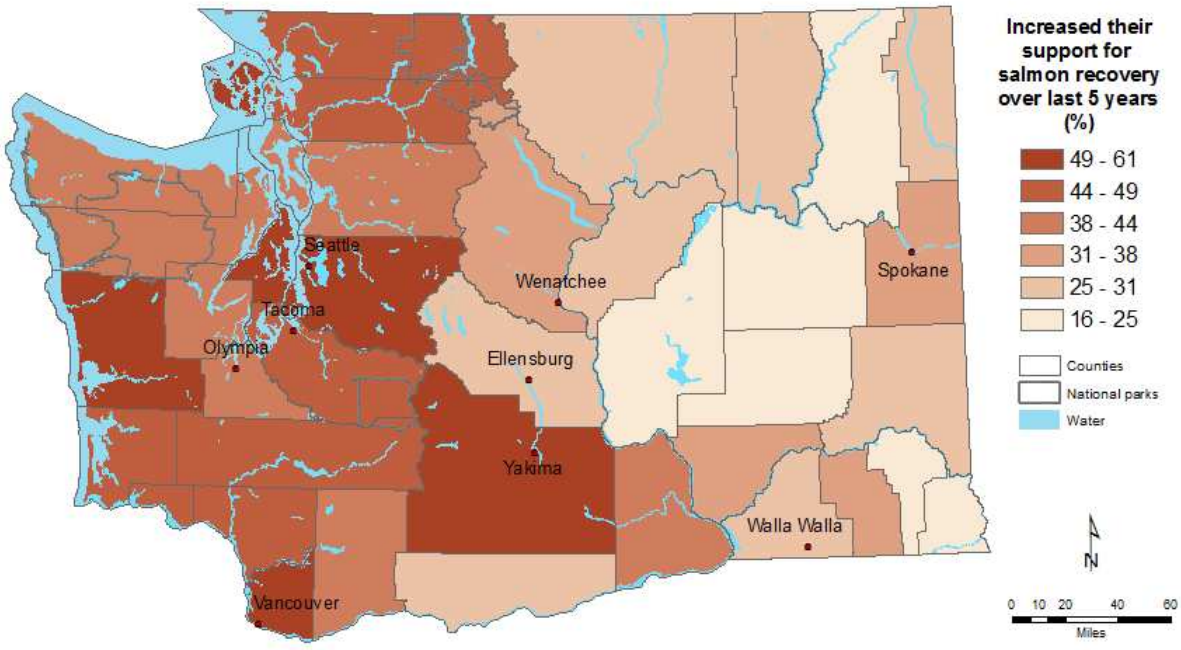
Figure VII.D.2. Support for salmon recovery over the past five years by wildlife value orientation type.



Results by county. The percentage of residents indicating that salmon are important to local economies ranged from 21.1% in Pend Oreille County to over 90% in fifteen of Washington's counties. The percentage of residents who agreed that salmon are important to the quality of life for people in Washington ranged from 22.9% in Ferry County to 95.9% in Pacific County. All Washington counties had more than 65% of residents indicating that WDFW should continue its wild salmon recovery efforts. Support for WDFW focusing more of its attention on introduction of hatchery-raised salmon to enhance fishing opportunities ranged from 42.4% of King County residents to 75.3% of Yakima County residents.

At least 75% of residents in all counties indicated that their support of salmon recovery has remained the same or increased over the last five years. Figure VII.D.3 displays the percentage of people by county who indicated their support for salmon recovery has *increased* during the last five years. Only two counties had a higher percentage of residents who indicated their support had decreased than those who indicated their support had increased. These two counties are Lincoln and Grant, which had 1.9% and 4.0% (respectively) *more people* indicating decreased support than increased support over the last five years. Overall, these results indicate that there is relatively strong support (particularly in the western counties) for salmon recovery efforts in Washington.

Figure VII.D.3. Percent of people indicating their level of support for salmon recovery has increased over the last five years.



E. WILDLIFE ACCEPTANCE CAPACITY

Prior research has shown variation in public preferences and tolerance for specific wildlife species. People desiring an increase in the population sizes of certain species may have an interest in greater opportunities for wildlife viewing, while others may want more of a particular game species to hunt. Some residents may want a reduction in the current population of a particular species because they are frustrated by problems that species may be causing. Beliefs about wildlife population levels are known as "wildlife acceptance capacities" (i.e., how much more or less of a particular species people find acceptable). An examination of these beliefs can help resource managers to understand public preferences and can be used as a tool in the development of wildlife managements plans for particular species (e.g., see Carpenter, Decker, & Lipscomb, 2000). The current investigation (*Understanding People in Places*) explored Washington residents' acceptance capacities for coyotes, black bears, deer, elk, and cougars. Additional in-depth analyses (i.e., correlations) were conducted to determine whether these acceptance capacities were related to residents' support of species-specific management actions presented earlier in this report. Supporting tables for results reported here can be found in Appendix E (Table E-59 to E-76). Items used in this section are presented below.

Would you like the following **wildlife populations in Washington** to increase, decrease, or remain at their current levels over the next five years? *Circle one number for each species below.*

	Eliminate This Species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Coyote	0	1	2	3	4	5
Black Bear	0	1	2	3	4	5
Deer	0	1	2	3	4	5
Elk	0	1	2	3	4	5
Mountain lion	0	1	2	3	4	5

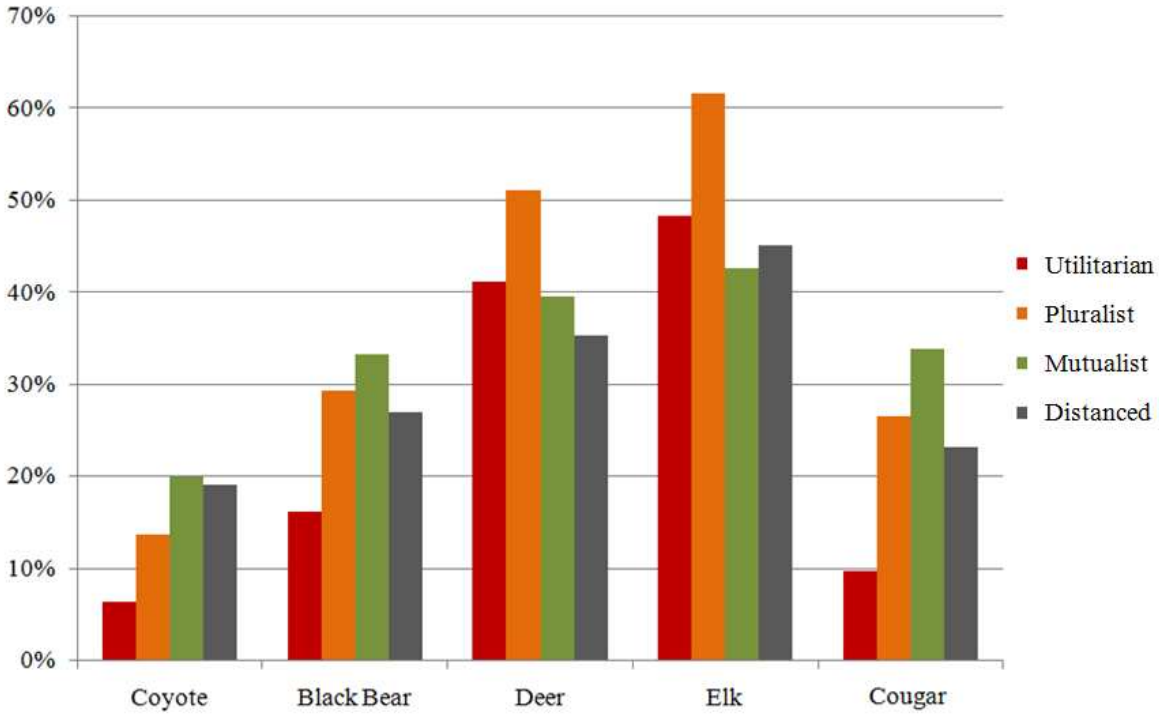
Results by state. More Washington residents wanted an *increase* in the elk population than for the population size for this species to remain the same or decrease. Residents generally wanted deer, cougar, coyote, and black bear populations to remain the same. People who wanted an increase in the coyote and black bear populations were less supportive of lethal control than residents who did not want an increase in these species. Effect sizes for relationships between wildlife acceptance capacity variables and the acceptability of lethal control for coyotes and black bears indicated medium to large effects. Wildlife acceptance capacities for deer and elk had little to no effect on residents' attitudes toward damage-related deer or elk management strategies.

Results by demographic and lifestyle characteristics. Residents with lower levels of education were more likely to desire an increase in deer and elk numbers and a decrease in predator populations in the state. Similarly, residents who had lived in Washington or their current home for a longer period of time were more likely to want fewer predators than people who had not lived there as long. Older residents were more likely to want a decrease in wildlife populations, whereas younger residents were more likely to prefer having higher numbers of all species. Males were more likely than females to prefer higher numbers of black bear, deer, and elk.

Current hunters and anglers were more likely than past participants and non-participants to want an increase in deer and elk populations (although the effect sizes were smaller for fishing participation). Those who currently participate in wildlife viewing were more likely to want increases in all wildlife species, except for deer where there were no statistical differences. Compared to current hunters, residents in the latent demand category were more likely to want increases in the coyote and cougar populations and less likely to want increases in the deer and elk populations.

Results by wildlife value orientation. Figure VII.E.1 displays the percent of each value orientation type preferring an *increase* in the five wildlife species in the state of Washington. Mutualists were more likely than the other value orientation types to desire an increase in predator populations. Utilitarians were more likely than the other value orientation types to want a decrease in the black bear and cougar populations. Pluralists were most likely to want increases in deer and elk populations compared to the other value orientation types. Generally, the largest percentages of people in each of the value orientation types wanted populations sizes to remain the same for all species, suggesting that population levels are acceptable in most of the state (with the exception of elk, for which residents desired an increase).

Figure VII.E.1. Percent of wildlife value orientation type preferring an *increase* in five wildlife species in the state of Washington.



Results by county. Although results for most of Washington's counties showed residents wanted coyote populations to remain the same, residents in Asotin and Wahkiakum Counties desired a decrease in coyote numbers (Figure VII.E.2). Similarly, residents in five counties (Asotin, Columbia, Ferry, Lincoln, and Stevens) preferred a decrease in cougar populations, while the remainder of counties wanted the populations to remain the same (Figure VII.E.3). All counties were accepting of current black bear numbers (Figure VII.E.4). Residents in 28 counties wanted deer populations to remain the same, whereas residents from 11 counties wanted deer populations to increase some (Figure VII.E.5). Most counties indicated a preference for the elk populations to increase some; however, Clallam, Jefferson, Kitsap, Kittitas, Jefferson, and Spokane Counties wanted elk populations to remain the same (Figure VII.E.6). Suitable elk habitat does not appear to have much of an association with people's acceptance capacities for this species (Figure VII.E.7), indicating that other factors (e.g., social variables) are likely influencing the beliefs of residents instead. Similarly, residents from four of the five counties that desire some reduction in cougar populations also have suitable cougar habitat (Figure VII.E.8), suggesting that residents may not know they live in these areas or other factors are at play.

Figure VII.E.2. Wildlife acceptance capacity for *coyote*.

Figure VII.E.3. Wildlife acceptance capacity for *black bear*.

Figure VII.E.4. Wildlife acceptance capacity for *deer*.

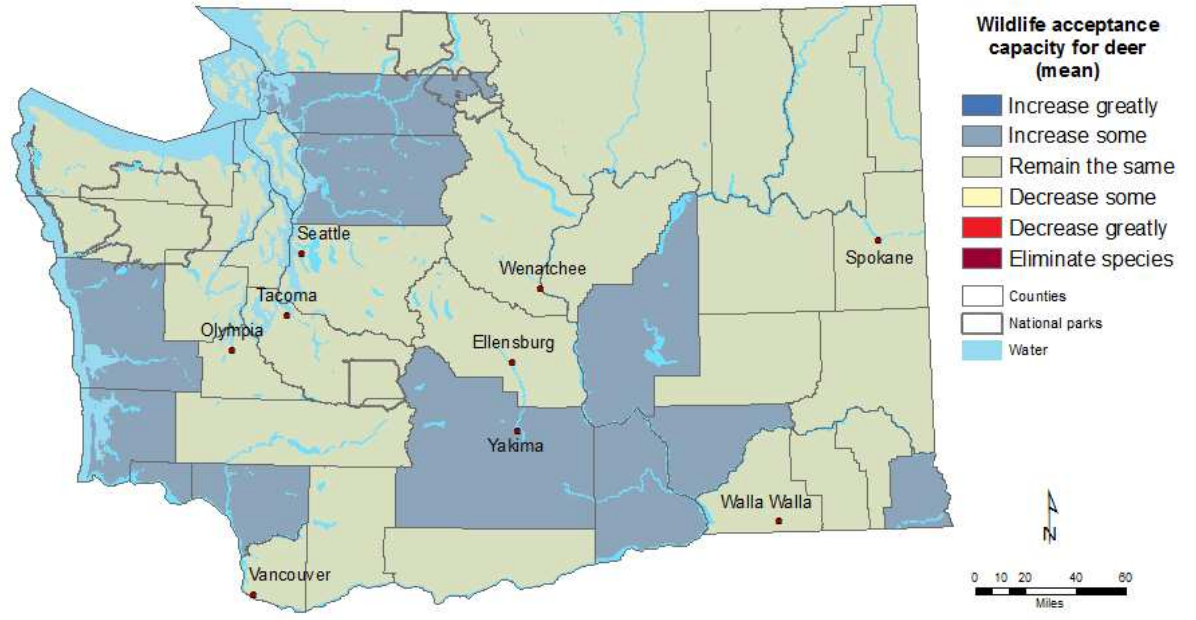


Figure VII.E.5. Wildlife acceptance capacity for *elk*.

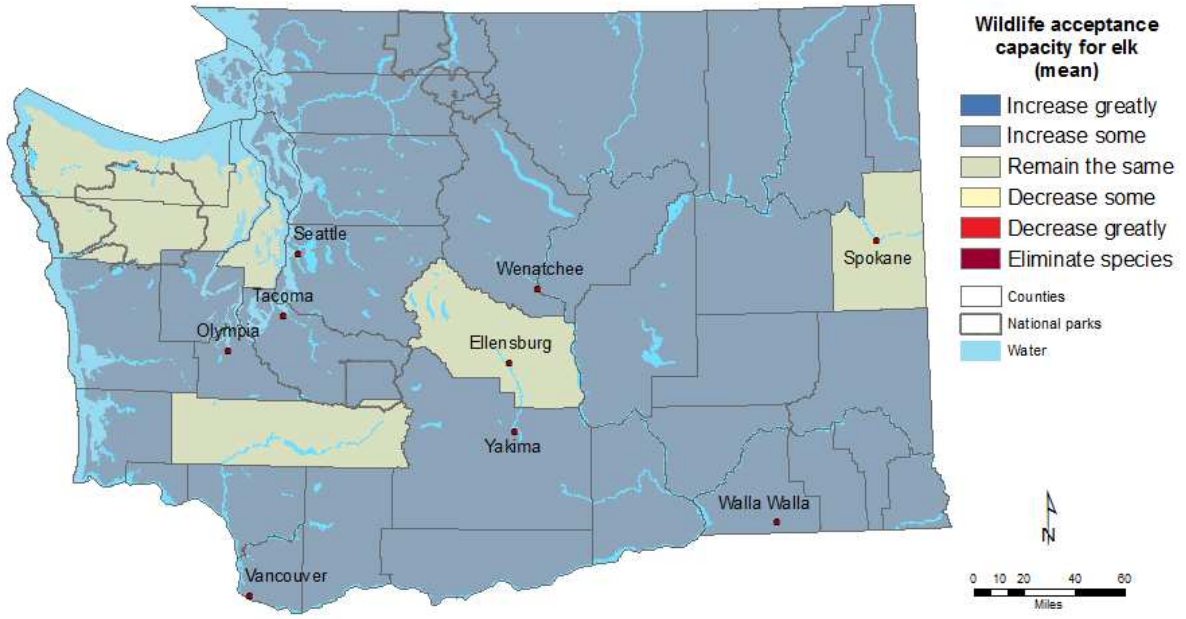


Figure VII.E.6. Wildlife acceptance capacity for *cougar*.

Figure VII.E.7. Overlay of elk habitat with wildlife acceptance capacity results.

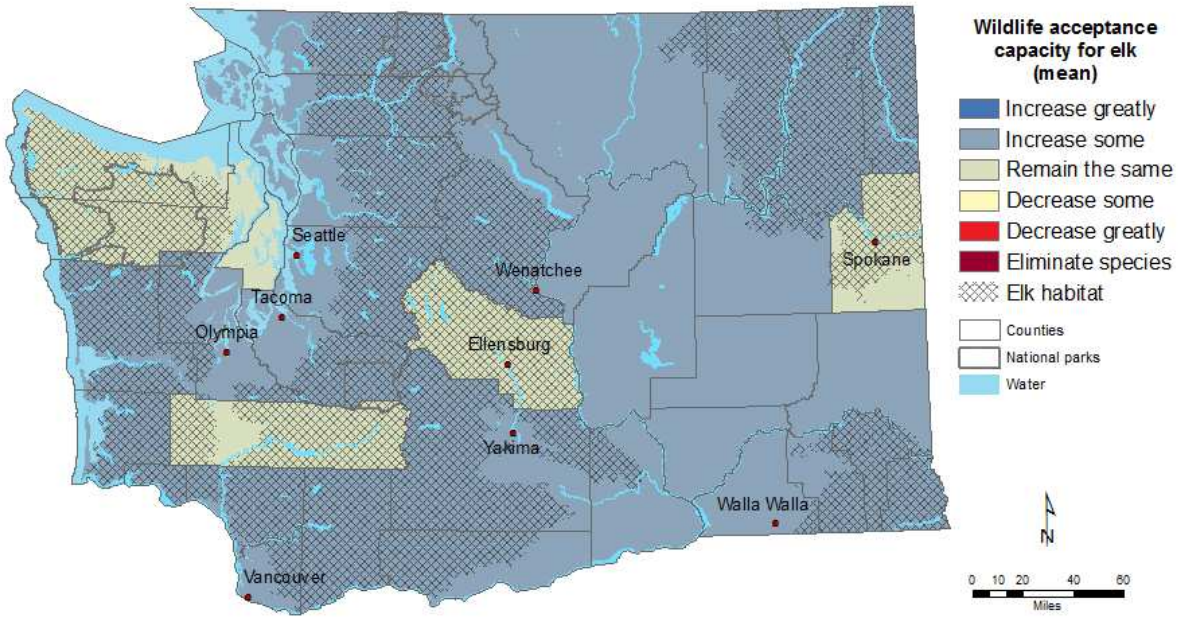


Figure VII.E.8. Overlay of cougar habitat with wildlife acceptance capacity results.

SECTION VIII. WILDLIFE-RELATED SERVICES

Information collected in this section was intended to help identify ways to augment traditional funding and develop non-traditional alternatives to long-term stable funding. Such funding must be secured to help WDFW maintain its efforts for conserving the state's wildlife resources and providing residents with wildlife-related recreation opportunities. The specific emphasis of this section was on identifying the importance of wildlife-related services to Washington residents, as well as which of these services people expect WDFW to provide. Residents' willingness to pay to help support these services was also explored. This type of information can help WDFW understand residents' perceptions relative to current agency priorities and inform possible future directions for agency activities. While some of the services included on the survey are currently offered by the agency, others would require new activities or partnerships with other organizations to offer in the future. In addition, new services may require WDFW to take funding away from other existing responsibilities.

Specific services were identified based on the interests of the Commission and agency staff, and were further explored in cooperation with CSU through a series of phone interviews with a small sample of Washington residents in the fall of 2008. Following a brief introduction, including a general description of what the agency does (e.g., mission, goals, basic programs) as well as an indication of the need to obtain public input on agency activities to inform future directions, interviews centered on two basic questions:

> (1) Thinking broadly, what kinds of fish and wildlife-related <u>services</u> do you expect WDFW to provide? (Prompt with examples to clarify what is meant by services, if necessary. Examples might include hunting, lands to use, protection of fish and wildlife, disease management, etc. – offer broad examples, not one specific issue.)
>
> (2) What are some examples of specific "<u>products" or opportunities</u> WDFW could offer in response to the different services identified in question 1?

In addition to obtaining input from resident interviews, CSU researchers conducted online and literature searches to inform survey development by: (1) exploring new directions that other agencies may be taking with respect to the services they provide; and (2) determining if prior human dimensions research had been conducted in this area. Cindi Jacobson (U.S. Fish and Wildlife Service), whose Ph.D. dissertation focused on agency funding issues, was also interviewed as part of this process to help with ideas. Input from the interviews and literature searches was used to generate a list of "example services" to be included on the questionnaire. Supporting tables for results reported in this section can be found in Appendix F (Table F-1 to F-11). Items used in this section are presented below.

The Washington Department of Fish and Wildlife (WDFW) has a variety of responsibilities when it comes to conserving the state's fish and wildlife resources and providing residents with fish and wildlife-related recreation opportunities. Below is a list of examples of services that WDFW may provide. Some of these services are currently offered by WDFW, while others are either new activities or ones provided by other organizations (for example, private businesses) that could be considered as possible future partnership opportunities for WDFW. New services may require WDFW to take funding away from other existing responsibilities. Given limited funds, we're interested in *your* **opinions about the importance of these services and whether you feel they should be WDFW's responsibility.**

There are multiple parts to this question. EXAMPLE SERVICES:	PART 1. How important is each of the following to you? *Circle one number for each service (A through I).* Not at all Important	Slightly Important	Moderately Important	Quite Important	Extremely Important	PART 2. Should it be WDFW's responsibility to provide...? *Check one box for each service.*	PART 3. Would you be willing to pay to support...? *Check one box for each service.*
A. Care for injured or orphaned wildlife.	1	2	3	4	5	☐ Yes ☐ No	☐ Yes ☐ No
B. Response to complaints about wildlife in urban areas.	1	2	3	4	5	☐ Yes ☐ No	☐ Yes ☐ No
C. Incentives to private landowners who restore wildlife habitat (example: tax breaks, reimbursement for expenses).	1	2	3	4	5	☐ Yes ☐ No	☐ Yes ☐ No
D. Protection and recovery of threatened or endangered species.	1	2	3	4	5	☐ Yes ☐ No	☐ Yes ☐ No
E. Outdoor educational programs to connect youth/families to nature.	1	2	3	4	5	☐ Yes ☐ No	☐ Yes ☐ No
F. Hunting and fishing opportunities.	1	2	3	4	5	☐ Yes ☐ No	☐ Yes ☐ No
G. Wildlife viewing opportunities (example: provide information on viewing areas, build viewing platforms/boardwalks).	1	2	3	4	5	☐ Yes ☐ No	☐ Yes ☐ No
H. Programs that help local governments plan for protection of open space and wildlife populations in urban areas.	1	2	3	4	5	☐ Yes ☐ No	☐ Yes ☐ No
I. **OTHER** (*write your response below*) _____ _____ _____	1	2	3	4	5	☐ Yes ☐ No	☐ Yes ☐ No

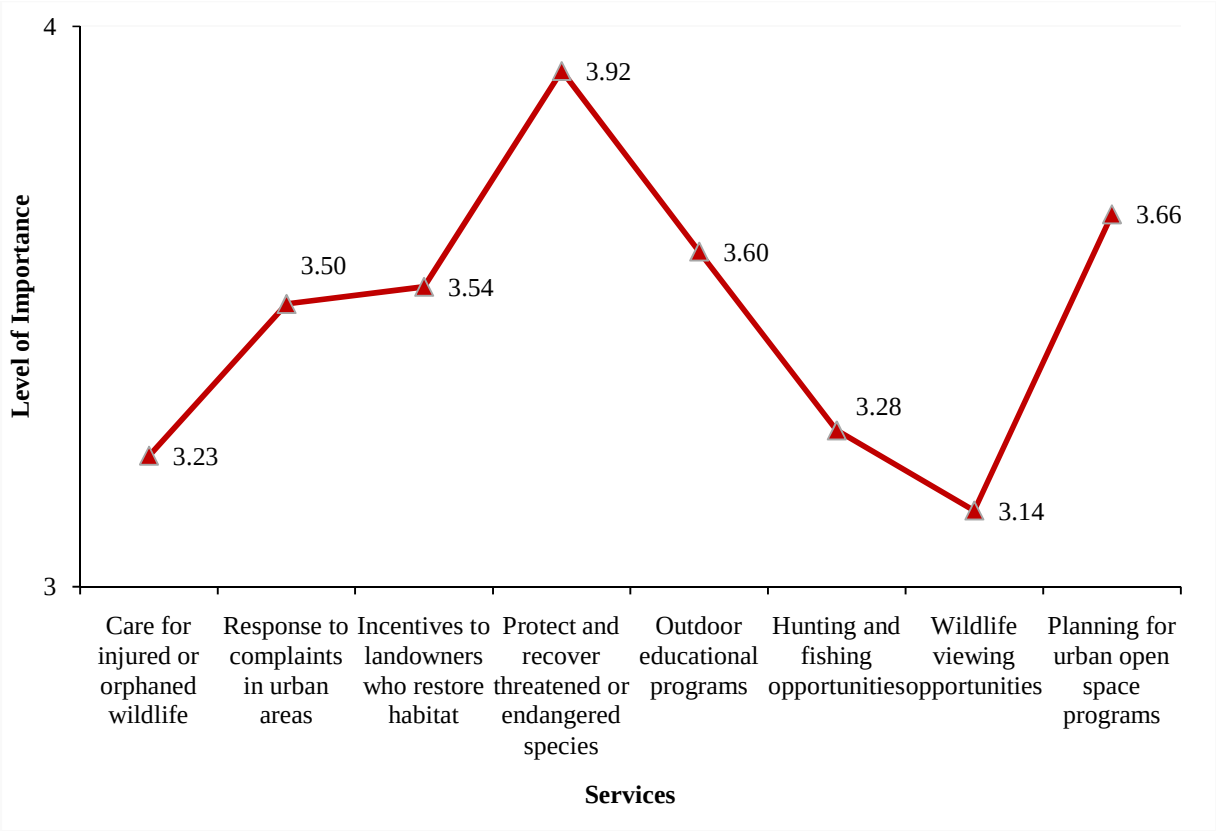
A. IMPORTANCE OF WILDLIFE-RELATED SERVICES

In an effort to better understand the importance of wildlife-related services to Washington residents, this section asked people to rate each of eight identified services on a scale from 1 "Not at all important" to 5 "Extremely important."

Results by state. All services received a mean score of at least "3," indicating overall that the listed services were of moderate or high importance (Figure VIII.A.1). Residents primarily found the service *protection and recovery of threatened or endangered species* to be the most important, with almost 40% of residents indicating that this service was extremely important. *Wildlife-viewing opportunities (example: provide information on viewing areas, building viewing platforms/boardwalks), care for injured or orphaned wildlife,* and *hunting opportunities* were deemed as less important to residents compared to other services included on the survey. Five

hundred and six service-related comments were hand-written by respondents in the "other" services section (i.e., those not already contained in the designated listed). These comments were grouped into 34 categories, of which *law enforcement* (8.5%) and *access to land areas* (8.1%) were the top two most often cited.

Figure VIII.A.1. Residents' mean level of importance for wildlife-related services.[1]



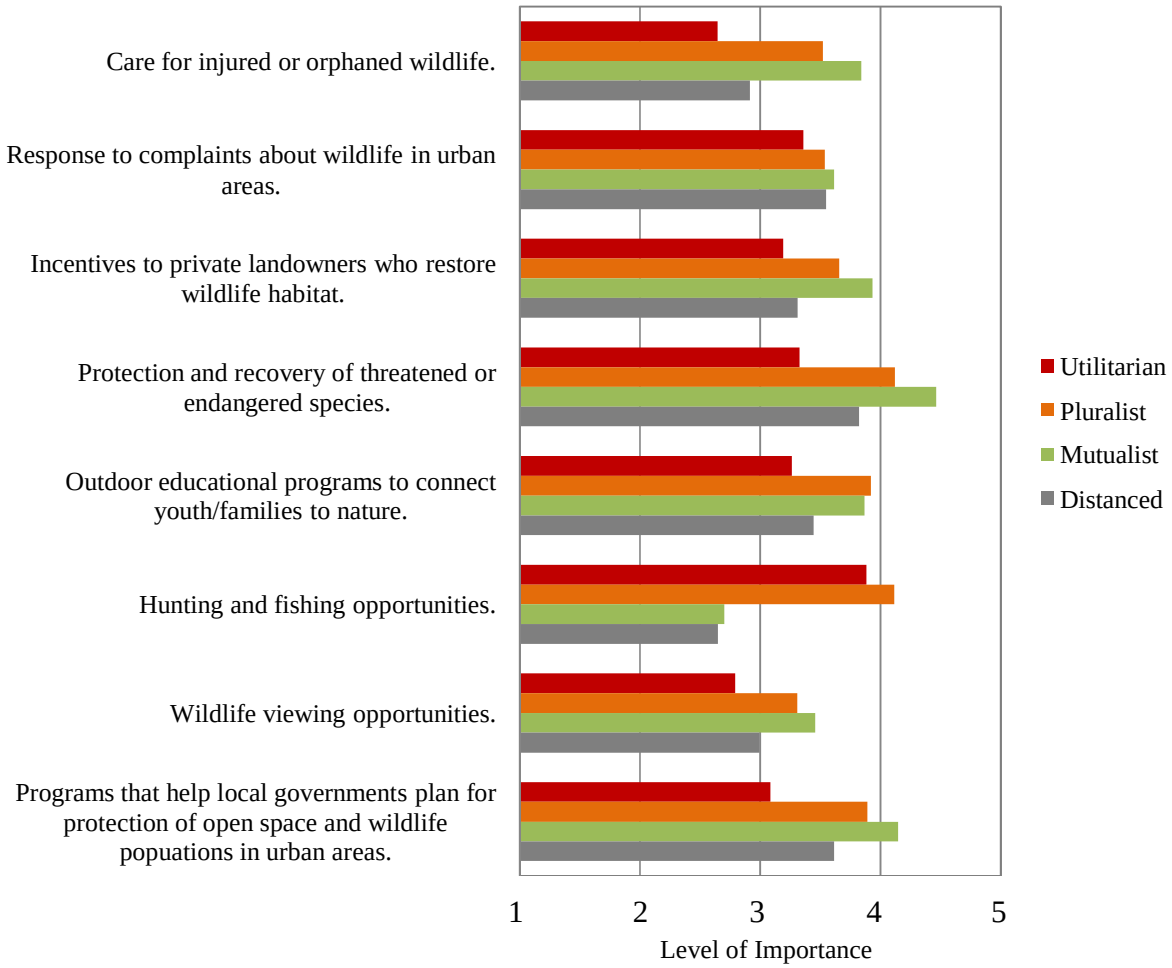
[1] The level of importance for services was measured on a scale ranging from 1 'Not at all important' to 5 'Extremely important;' however, the scale pictured here ranges from 3 to 4 to emphasize differences in the relatively high mean scores.

Results by demographic and lifestyle characteristics. Of the demographic variables, gender had the greatest influence on beliefs about the importance of wildlife-related services. Males were more likely than females to rate *hunting and fishing opportunities* as important. Females were more likely than males to find *care for injured or orphaned wildlife* and *response to complaints about wildlife in urban areas* as important. Residents with lower levels of education were more likely to rate *hunting and fishing opportunities* as important.

Current hunters were more likely than past hunters and non-participants to assign higher importance ratings to *hunting and fishing opportunities,* with an average mean of 4.5 on a 5-point scale. Current anglers also found this same service to be the most important, and scored an average of 4 on the same 5-point scale. Those who currently participate in wildlife viewing scored the highest of any group for *protection and recovery of threatened and endangered species*. Compared to current hunters, residents in the latent demand group were more likely to rate the services *care for injured or orphaned wildlife, response to complaints about wildlife in urban areas,* and *wildlife-viewing opportunities* as important and were less likely to indicate that the service *hunting and fishing opportunities* was important.

Results by wildlife value orientation. Differences among the value orientation types with regard to the importance of the services *hunting and fishing opportunities, care for injured or orphaned wildlife, protection and recovery of endangered species,* and *programs that help local governments plan for protection of open space and wildlife populations in urban areas* were all associated with a large effect size, indicating that beliefs related to these services varied widely across the value orientation types. Pluralists and Utilitarians had the largest percentages of residents who found the service *hunting and fishing opportunities* important (Figure VIII.A.2); however, Pluralists scored significantly higher than Utilitarians in their average rating of importance. Mutualists were most likely to find the following services important: *protection and recovery of threatened or endangered species* and *programs that help local governments plan for protection of open space and wildlife populations in urban areas*. Distanced individuals found the following services most important out of the other services: *protection and recovery of threatened or endangered species* and *programs that help local governments plan for protection of open space and wildlife populations in urban areas.*

Figure VIII.A.2. Mean level of importance for wildlife-related services by wildlife value orientation type.[1]



[1] The level of importance for services was measured on a scale ranging from 1 'Not at all important' to 5 'Extremely important.'

Results by county. Compared to residents in other areas, San Juan County residents reported the highest level of importance (moderate to quite) for the most services (*incentives to private landowners who restore wildlife habitat, protection and recovery of threatened or endangered species,* and *outdoor educational programs to connect youth/families to nature)*. Columbia County residents reported the highest level of importance for *hunting and fishing opportunities.* Thurston County residents indicated the highest level of importance of any county for the services *wildlife viewing opportunities* and *programs that help local governments plan for protection of open space and wildlife populations in urban areas.* Pacific County residents reported the highest importance level for the service *care for injured or orphaned wildlife.* King County residents had the highest level of importance of all the counties for the service *response to complaints about wildlife in urban areas.*

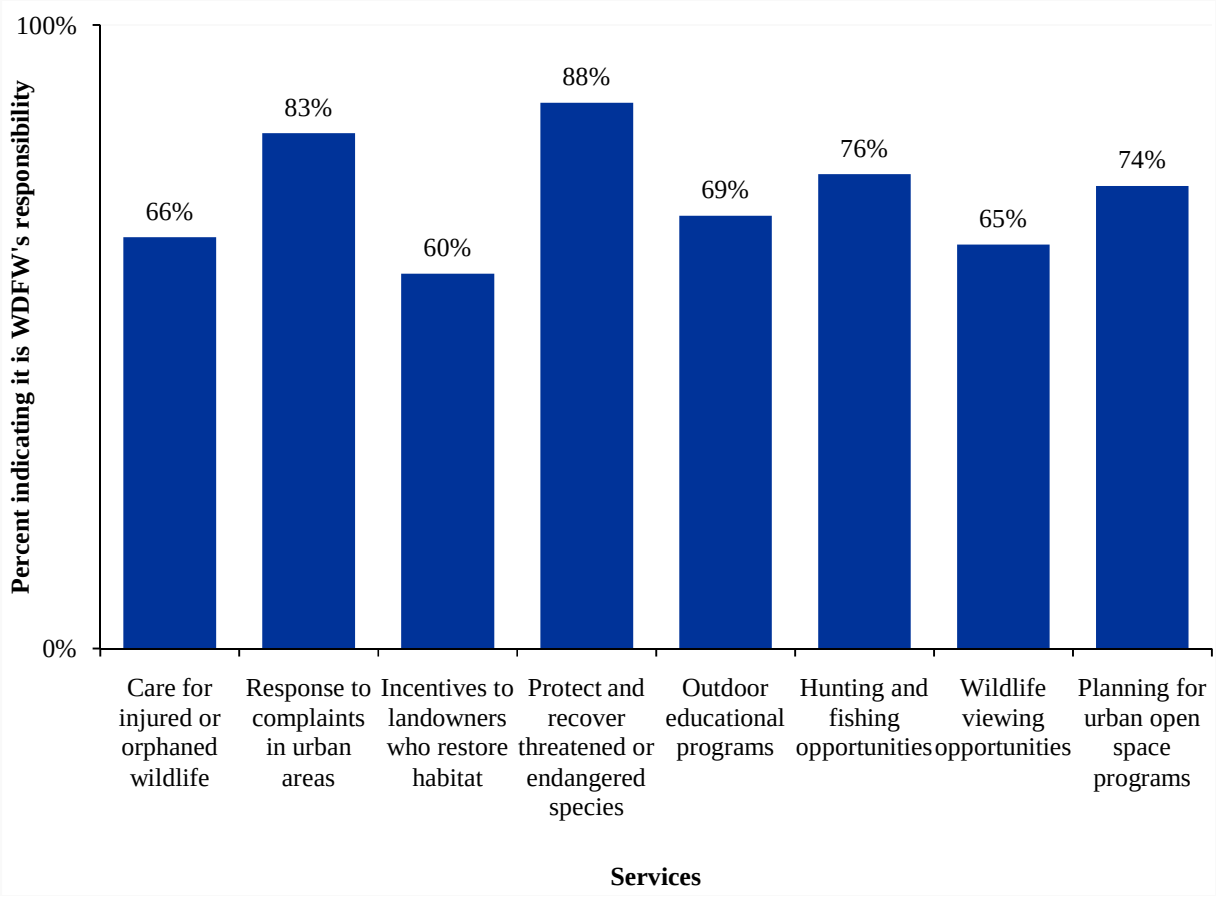
Of all the counties, Garfield County residents assigned the lowest ratings of importance (slight to moderate) to more than half of the services included on the survey (*care for injured or orphaned wildlife, protection and recovery of threatened or endangered species, outdoor educational programs to connect youth/families to nature, wildlife viewing opportunities,* and *programs that help local governments plan for protection of open space and wildlife populations in urban areas).* Stevens County residents were least likely to rate the service *response to complaints about wildlife in urban areas* as important, and Asotin County residents had the lowest rating of importance for the service *incentives to private landowners who restore wildlife habitat (example: tax breaks, reimbursement for expenses).* King County residents had the lowest score for *hunting and fishing opportunities.* The service *wildlife viewing opportunities* received the lowest level of importance out of all listed services by residents in 31 of 39 counties.

B. AGENCY'S RESPONSIBILITY TO PROVIDE WILDLIFE-RELATED SERVICES

Many wildlife-related services are considered important to Washington residents. To enhance understanding of public expectations of WDFW, residents were asked to indicate whether or not it was WDFW's responsibility to provide each of the eight identified services. This information with regard to public preferences and perceptions of responsibility was intended to help WDFW in the context of prioritizing its current activities and informing possible future directions. In addition, it could aid in identifying where public outreach may be needed to raise awareness to help clarify the agency's role.

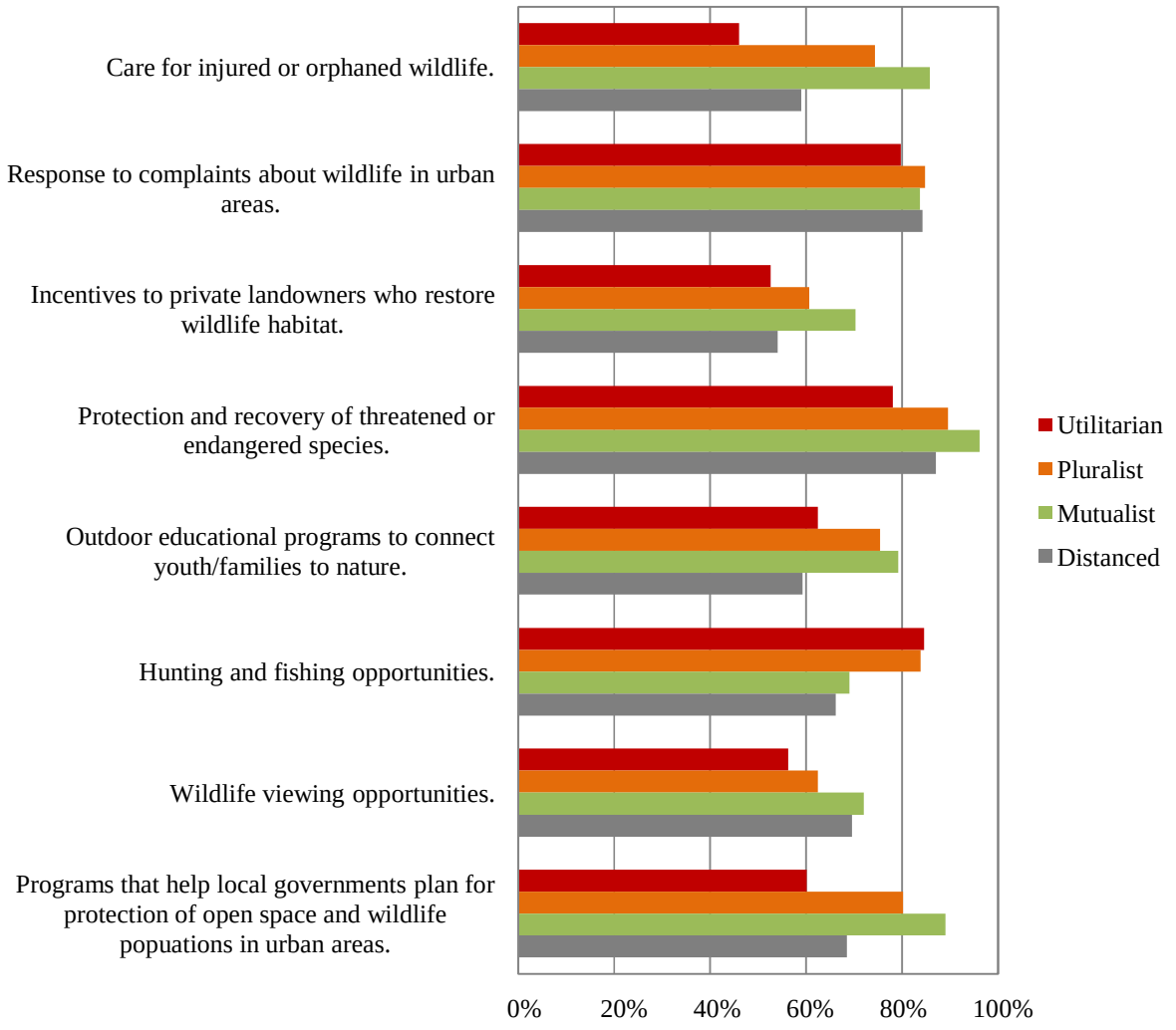
Results by state. Overall, more than 50% of residents indicated that all services were WDFW's responsibility to provide. The largest percentage of residents indicated that *protection and recovery of threatened or endangered species* was WDFW's responsibility to provide (Figure VIII.B.1). Many residents also indicated that it was WDFW's responsibility to provide the following services: *response to complaints about wildlife in urban areas* and *hunting and fishing opportunities*.

Figure VIII.B.1. Percent of residents indicating it is WDFW's responsibility to provide wildlife-related services.



Results by wildlife value orientation. Mutualists were more likely than the other value orientation types to indicate that WDFW should provide a number of services, including: *protection and recovery of threatened or endangered species, care for injured or orphaned wildlife, programs that help local governments plan for protection of open space and wildlife populations in urban areas,* and *incentives to private landowners to who restore wildlife habitat* (Figure VIII.B.2). Pluralists and Utilitarians were more likely than the other value orientation types to think it is WDFW's responsibility to provide *hunting and fishing opportunities.* Distanced individuals were more likely to indicate that the following services were WDFW's responsibility: *programs that help local governments plan for protection of open space and wildlife populations in urban areas* and *response to complaints about wildlife in urban areas.*

Figure VIII.B.2. Percent of wildlife value orientation type agreeing that wildlife-related services are *WDFW's responsibility to provide*.



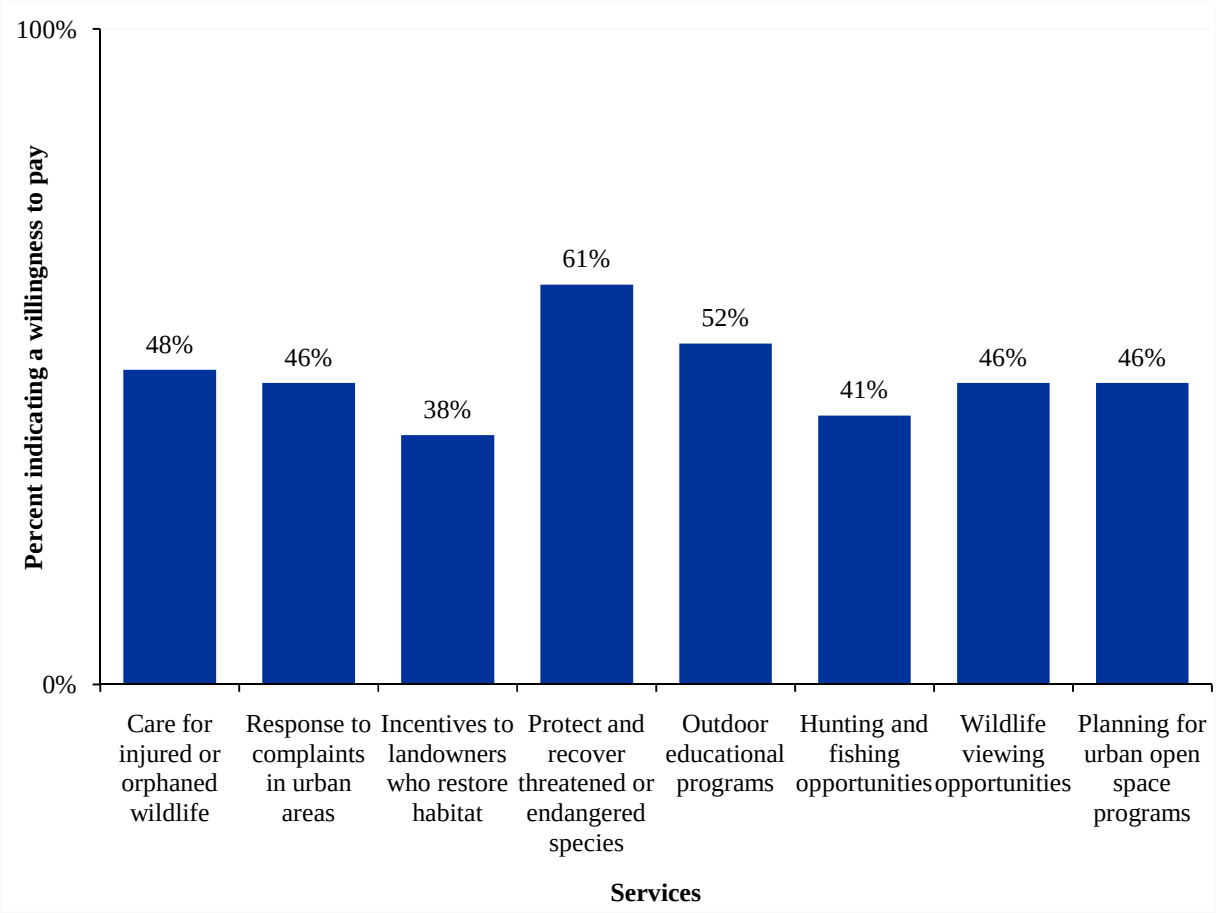
Results by county. All counties had more than 50% of residents indicating that the listed services were WDFW's responsibility to provide, except for the following instances where less than 50% of residents felt this way: San Juan County residents indicated that it was not WDFW's responsibility to provide the service *care for injured or orphaned wildlife*, residents in Clallam and Adams Counties felt that it was not WDFW's responsibility to provide the service *incentives to private landowners who restore wildlife habitat*, and residents in Garfield and Lincoln Counties indicated that it was not WDFW's responsibility to provide *wildlife viewing opportunities.*

C. WILLINGNESS-TO-PAY FOR WILDLIFE-RELATED SERVICES

To further assist in facilitating agency decisions regarding wildlife-related services, residents were asked to indicate whether or not they were willing to pay for each of the eight identified services.

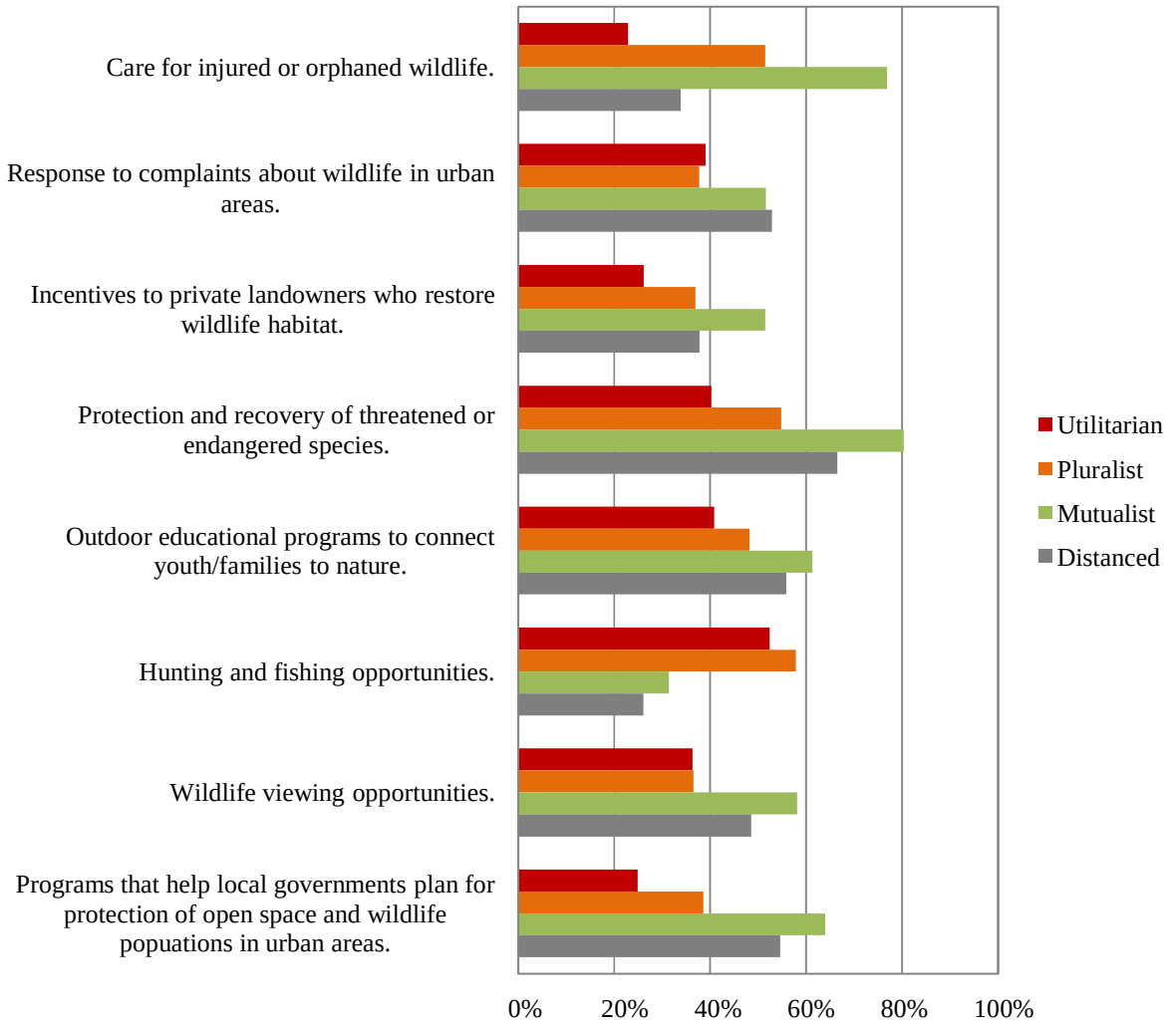
Results by state. As depicted in Figure VIII.C.1, residents were most willing to pay for the services *protection and recovery of endangered and threatened species* and *outdoor education programs that connect youth/family to nature.* Although the other services were also considered important, less than 50% of residents were willing to pay for those services.

Figure VIII.C.1. Percent of residents willing to pay for wildlife-related services.



Results by wildlife value orientation. Mutualists were most willing to pay for the following services: *protection and recovery of threatened or endangered species* and *care for injured or orphaned wildlife* (Figure VIII.C.2). Furthermore, Mutualists were more likely than the other value orientation types to indicate a willingness to pay for all services except two (*hunting and fishing opportunities* and *response to complaints about wildlife in urban areas*). Utilitarians and Pluralists were more likely than the other value orientation types to express interest in paying for *hunting and fishing opportunities*. Distanced individuals were more likely to indicate a willingness to pay for *protection and recovery of threatened or endangered species* over other services and were more likely than the other value orientation types to express interest in paying for *response to complaints about wildlife in urban areas.*

Figure VIII.C.2. Percent of wildlife value orientation type willing to pay for wildlife-related services.



Results by county. Twenty-five counties had more than 50% of residents willing to pay for the service *protection and recovery of threatened and endangered species*. Residents in nineteen counties were willing to pay for *hunting and fishing opportunities*, while residents in seventeen counties indicated they were willing to pay for *outdoor educational programs to connect youth/families to nature.* More than 50% of residents in twelve counties indicated they were willing to pay for the service *care for injured or orphaned wildlife.* Residents in eight counties were willing to pay for *wildlife viewing opportunities.* Residents in six counties were willing to pay for *programs that help local governments plan for protection of open space and wildlife populations in urban areas.* Jefferson, Klickatat, Skagit, and San Juan Counties had more than 50% of residents willing to pay for the service *incentives to private landowners who restore wildlife habitat.* Skagit and Snohomish Counties had more than 50% of residents willing to pay for the service *response to complaints about wildlife in urban areas.*

SECTION IX. CONCLUSION

The intent of the *Understanding People in Places* research program was to examine the utility of spatially-depicted data at varying degrees of resolution to facilitate solutions for a variety of wildlife-related issues pertinent to participating state agencies. Geographically-referenced data can enhance the applicability of human dimensions information to fish and wildlife management and help in anticipating public response to management strategies at more local scales. In addition, to enhance local-level understanding, a unique emphasis of this project was on exploring how residents feel about the place where they live and, more specifically, about the wildlife and wildlife-related issues and experiences they may face in that context (i.e., near the home).

For the Washington component of this project, data were collected in each of Washington's 39 counties to improve WDFW's ability to respond to localized issues and problems, and furthermore, to inform the agency's strategic planning process by ensuring county-level representation of public opinion and concerns. A total of 4,183 completed surveys (32% response rate) obtained in this investigation allowed for adequate numbers to generalize at the state and county levels as well as to specific population subgroups of interest (e.g., groups defined by their wildlife value orientations, demographic characteristics, and participation in wildlife-related recreation activities).

Findings from this investigation offer many examples of where county-level data can be more helpful than statewide results in depicting the attitudes of residents across a variety of issues. This type of information can be useful in understanding the variability in public response to wildlife-related issues and management strategies that can exist at finer scales, and it can also provide guidance as to where communication efforts may be needed to alleviate controversy and garner greater support for agency efforts in the future. A more detailed discussion of these implications in relation to key concepts and management issues of interest in this study is provided below.

A. PRELIMINARY IMPLICATIONS OF STUDY FINDINGS

- **Wildlife Value Orientations:** The distribution of wildlife value orientation types in Washington revealed by the current investigation is as follows: 35% Mutualist, 33% Utilitarian, 18% Distanced, and 14% Pluralist. These results provide confirmation of findings from an earlier study depicting Washington as having a relatively high percentage of people with a mutualism value orientation toward wildlife when compared to other western states (Teel et al., 2005). Mutualists view wildlife as capable of having relationships of caring and trust with humans, as if part of an extended family, and as deserving of rights. Compared to those with a more utilitarian orientation toward the resource, who believe wildlife should be used and managed primarily for human benefit, Mutualists are less likely to support traditional forms of management that can result in death or harm to wildlife (e.g., hunting, lethal control). As an illustration based on the results of the current study (*Understanding People in Places*), Mutualists were generally less accepting than Utilitarians of lethal control of coyotes, black bears, deer, elk, and wolves.

While the percentage of Mutualists in Washington relative to other states may be high, the state can also be characterized as having a mixed distribution of wildlife value orientation types, evidenced by the roughly equal distribution of Mutualists and Utilitarians identified in the current investigation – 33.3% Utilitarian, 13.9% Pluralist, 34.9% Mutualist, and 17.8% Distanced. This suggests that the potential for social conflict over wildlife-related issues at the overall state level is high. However, when examining the distribution of wildlife value orientation types by county, it becomes clearer as to where WDFW can anticipate higher levels of conflict in the form of mixed public sentiment or resistance to proposed management strategies. Yakima and Clallam Counties, for example, have a nearly 1 to 1 ratio of Utilitarians to Mutualists, suggesting that these are areas where the agency may want to consider targeting its outreach and communication initiatives to reduce potential controversy between people with different value orientations over management decisions in the future. Similarly, findings can be used to identify areas where greater consistency or consensus among publics on wildlife management issues is likely.

- **Beliefs about and Experiences with Local Wildlife:** Many residents indicated they consider the wildlife near their homes as enjoyable to have around (86.4%) and as a valuable opportunity for recreation (57.4%); however, some residents felt that the wildlife in their area were dangerous (18.7%) and a nuisance (23.5%). As an example of variation in beliefs about wildlife that was detected at the county level, Columbia, Pacific, and Lincoln Counties had the highest percentages of residents indicating that local wildlife serve as an important source of outdoor recreation (>80%), whereas Snohomish County had only 45.2% of residents who felt this way.

  Approximately 30% of Washington residents as a whole reported experiencing problems with wildlife near their homes over the past year. Incidents most commonly reported on the survey included wildlife-caused damage to landscaping and agriculture; wildlife getting into residential gardens and pet food; and threats or attacks on domestic animals, including pets and chickens. Among those reporting a problem, deer were cited as the cause by the highest percentage of residents (48.7%), followed by raccoons (22.4%) and coyotes (15.9%). A majority of residents in Ferry, Jefferson, Pend Oreille, San Juan, and Stevens Counties (between 50.4% and 53.6% of residents) indicated that they have experienced wildlife-related problems near their homes, whereas only 5.3% of Franklin County residents reported a problem. As another, more specific illustration of county-level differences, approximately 38% of residents in Wahkiakum County and almost 25% of residents in Cowlitz and Garfield Counties indicated elk had caused problems near their homes in the past year (compared to only about 6% of residents statewide reporting elk-related problems). These findings are helpful in being able to pinpoint areas in the state where human-wildlife conflict is most prevalent and to define the nature of the problems that are occurring there. This information can then be used by WDFW in conjunction with other sources of data (e.g., wildlife-vehicle collision reports, as depicted in the body of this report) to determine where to focus its management and communication efforts aimed at conflict mitigation. Given limited agency resources and funds available to address human-wildlife conflict incidents, identification of these “local target areas” becomes critical for ensuring greater management efficiency.

- **Land Access:** While at the statewide level less than 50% of Washington residents wanted more access to land areas near their homes in which to participate in outdoor activities, the majority of residents in certain counties (Cowlitz, Lewis, Pacific, Pierce, and Skagit) indicated a desire for greater access. Residents in some of these areas, despite the amount of public land currently available for recreation, were also more likely to indicate a willingness to pay a fee for access and to express support for WDFW working with private landowners to improve access to local land areas. Findings suggest that these are areas which could be targeted for purposes of providing greater access (e.g., through partnerships with local landowners and/or other agencies and organizations) to facilitate residents' participation in recreation activities in the future.

- **Lethal Control of Coyotes and Black Bears:** While the general public tends to find lethal control measures less acceptable than nonlethal techniques for addressing wildlife-related problems, lethal removal often becomes more acceptable to residents when it is used to address severe incidents of human-wildlife conflict. Findings from the current study, for example, indicate that Washington residents were more likely to support lethal control of coyotes and black bears when attacks on pets or humans have occurred or when there is a potential for disease transmission. Consensus among residents over the acceptability of lethal control was lowest for nuisance interactions (e.g., the animal is getting into trash or pet food), suggesting that the use of lethal control in this scenario is likely to be highly contentious. Certain areas, such as San Juan and Jefferson Counties, had lower percentage of residents who found lethal control of coyotes and black bears acceptable than other locations. These areas represent "hotspots" in Washington where the use of certain management techniques to deal with human-wildlife conflict is likely to result in a heightened level of public opposition.

  Overall, findings regarding public acceptance of lethal removal have implications for WDFW in terms of the agency's ability to anticipate where and under what circumstances controversy is more or less likely to develop over lethal control strategies. This information can be helpful in the context of evaluating which management alternatives should be pursued in a given area or situation, realizing that successful implementation of management strategies is oftentimes dependent upon public support. In addition, findings can offer guidance in terms of how and under what circumstances WDFW may need to communicate more readily with the public on these issues. For example, lethal removal is likely to generate greater controversy in situations perceived by the public as lacking a significant threat to human (or pet) safety, and communication aimed at providing a clear justification for lethal control may be especially import for these situations. As discussed in the body of this report, the applicability of these findings may be further enhanced by integrating the information with other sources of data, including, for example, reports identifying locations where WDFW has had to respond to specific conflict incidents involving black bears or coyotes.

- **Deer and Elk Management:** Washington residents as a whole were more accepting of preventative measures than lethal control or damage compensation schemes for addressing problem deer or elk. For example, a vast majority of residents indicated that it was acceptable for WDFW to use devices designed to scare deer or elk away or to require landowners to accept at least half of the responsibility for addressing problem animals. Approximately 45% of residents at the state level were also accepting of WDFW contributing funds to a

landowner cost-share program to build fences around property that has been damaged by deer or elk. Results by county suggest that there are certain locations in the state where levels of public acceptance of deer and elk management techniques do not fit the overall trend reported at the state level. For example, while the majority of Washington residents did not agree that WDFW should compensate landowners for deer or elk damage exceeding $10,000, several counties in eastern Washington (Garfield, Asotin, Columbia, and Franklin) were supportive of this strategy. These findings provide further evidence of the need to consider local-level factors, including the nature of wildlife-related problems and public response, when evaluating the effectiveness of possible management solutions.

- **Wolf Recovery:** Approximately 74% of Washington residents as a whole found it acceptable for wolves to recolonize the state on their own and for WDFW to move wolves from one area of the state where they've reached a certain population size to another area in Washington to help with wolf recovery. However, there was clearly a divergence of public opinion on this issue. Western Washington residents, for example, were generally more accepting than residents in eastern Washington of these actions. Furthermore, King, San Juan, and Snohomish Counties had more than 80% of residents indicating that wolves should be allowed to recolonize Washington on their own, while only 32% of residents in Asotin and Garfield Counties in the eastern portion of the state found this to be acceptable. As another illustration, residents of counties in the most eastern portion of Washington were more likely than residents in the northwestern region of the state to find it acceptable for WDFW to limit wolf numbers if causing localized declines in deer and elk and to support a recreational hunt of wolves once wolves have reached a certain population size. These findings highlight the importance of examining public response to controversial issues such as wolf management at more local levels as opposed to only relying on state-level data, which may be misleading if trying to generalize to certain regions of the state.

- **Salmon:** It is clear from this investigation that wild salmon and salmon recovery efforts are important to Washington residents. The vast majority believed salmon are important to local economies (84.1%) and are important to the quality of life in Washington (78.1%). Overall support among residents was high for WDFW continuing its salmon recovery efforts (91.6%), and at least 75% of residents in all Washington counties indicated that their support of salmon recovery has either remained the same or increased over the last five years.

- **Desired Population Levels for Wildlife Species:** Over 50% of residents indicated a preference for populations of coyotes, black bears, and cougars to remain at their current levels in Washington. While nearly half of all residents were also accepting of current population sizes for deer and elk, a significant percentage expressed a desire for increased numbers of these species (47.7% for elk; 40.9% for deer). Preferred population levels varied only slightly by county, with most residents wanting the populations to remain the same; however, many counties did indicate a desire for elk populations to increase some. Findings as a whole suggest a relatively high tolerance among the public for the various species. Exceptions to this trend were noted for specific population subgroups. For example, Utilitarians were more likely than the other value orientation types to prefer a decrease in predator populations, suggesting that this group may be less willing to support predator conservation initiatives in the future. This kind of information can help WDFW better

understand its audiences, including how different segments of the public may respond to future conservation and management strategies for specific species.

- **Wildlife-Related Services:** A number of different wildlife-related services were rated as important to Washington residents, and many residents believed WDFW had a responsibility to provide such services. While some of these services included on the survey are currently offered by the agency, others would require new activities or partnerships with other organizations to offer in the future. The service with the highest importance rating was *protection and recovery of threatened or endangered species*, and approximately 88% of residents believed WDFW had the responsibility to provide the service. Nearly 8% of residents indicated that there were additional "other" services that were important to them, including *law enforcement* and *access to land areas* (the top two most often cited "other" services). Variation in beliefs about services existed across the counties, particularly with respect to whether residents were willing to pay for certain services. As an example, residents from nineteen counties were willing to pay for *hunting and fishing opportunities* and residents from seventeen counties indicated they were willing to pay for *outdoor educational programs to connect youth/families to nature*, while residents in only four counties indicated a willingness to pay for the service *incentives to private landowners who restore wildlife habitat.* These types of findings provide an indication of public expectations and levels of support that can help WDFW in the context of prioritizing its current activities, informing possible future directions, and identifying where public outreach may be needed to raise awareness to help clarify the agency's role.

- **Wildlife-Related Recreation:** Many residents indicated past participation in wildlife-related recreation activities (i.e., hunting, fishing, wildlife viewing), and future interest in these activities exceeded current rates of participation (defined by participation in the last 12 months) at the state level. Current participation rates, which were highest for wildlife viewing, varied considerably across the counties. Reported participation levels for hunting and fishing were lower, for example, in counties near the Seattle metropolitan area. In addition, certain counties such as Adams and Klickitat had higher latent demand for hunting (defined by higher percentages of residents indicating they do not currently participate, but have an interest in future participation) compared to other counties. Geographically-tied data in this sense may help WDFW to identify locations such as Adams or Klickitat County where hunter recruitment programs may be more successful. This information can be linked to other sources of data, including land access that may serve as a constraint to participation in certain areas. It can also be looked at in conjunction with more in-depth analyses such as those included in the body of this report that attempt to identify the characteristics of people in the latent demand categories.

B. NEXT STEPS

Human dimensions data presented in this report are primarily descriptive in nature, and are intended to portray the variety of beliefs and attitudes residents have regarding wildlife and wildlife-related issues throughout the state of Washington. Implications of findings were illustrated in particular areas to highlight where WDFW efforts may be augmented through the use of human dimensions information collected at finer degrees of resolution. In order to more fully explore the utility of these data in terms of their application to planning and decision-making, WDFW staff will arrange a series of workshops, facilitated by CSU as needed, that focus on certain inquiries of interest (e.g., land access, wildlife-related services) and further investigate the larger array of management implications and potential recommendations stemming from this collaborative investigation. In addition, as part of the multi-state project *Understanding People in Places*, CSU is working with participating state agencies to develop a "regional" report that will explore specific management issues of interest in greater depth using more complex spatial analysis techniques and cross-state comparisons. The regional report will be released at a later date and is intended to further enhance the application of project findings to fish and wildlife management in the western region.

REEFERENCES

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Dietsch, A. M. (2010). Facilitating solutions to conservation management challenges through an understanding of human perceptions of nature and wildlife. (Unpublished master's thesis). Colorado State University, Fort Collins.

Douglas, M. (1992). *Risk and blame: Essays in cultural theory*. New York: Routledge.

Fulton, D. C., Manfredo, M. J., & Lipscomb, J. (1996). Wildlife value orientations: A conceptual and measurement approach. *Human Dimensions of Wildlife, 1*(2), 24-47.

Louv, R. (2005). *Last child in the woods: Saving our children from nature-deficit disorder*. Chapel Hill: Algonquin Books of Chapel Hill.

Manfredo, M. J., Vaske, J. J., Teel, T. L. (2003). The potential for conflict index: A graphic approach to practical significance of human dimensions research. *Human Dimensions of Wildlife, 8,* 219-228.

Milton, K. (1996). *Environmentalism and cultural theory: Exploring the role of anthropology in environmental discourse*. New York: Routledge.

Relph, E. (1980). *Place and placelessness*. London: Pion Limited.

Teel, T. L., Dayer, A. A., Manfredo, M. J., & Bright, A. D. (2005). *Regional results from the research project entitled "Wildlife Values in the West."* (Project Rep. No. 58). Project Report for the Western Association of Fish and Wildlife Agencies. Fort Collins, CO: Colorado State University, Human Dimensions in Natural Resources Unit.

Teel, T. L., & Manfredo, M. J. (2009). Understanding the diversity of public interests in wildlife conservation. *Conservation Biology, 24*(1), 128-139.

Tetlock, P. E. (1986). A value pluralism model of ideological reasoning. *Journal of Personality and Social Psychology, 50*, 819-827.

Tuan, Y. (1974). *Topophilia: a study of environmental perception, attitudes, and values*. Englewood Cliffs, N.J: Prentice-Hall.

APPENDIX A. SUPPORTING TABLES FOR WILDLIFE VALUE ORIENTATION AND DEMOGRAPHIC AND LIFESTYLE CHARACTERISTICS SECTIONS

Table A-1. Distribution of wildlife value orientations.

County	Utilitarian	Pluralist	Mutualist	Distanced
Adams	45.0	16.3	18.8	20.0
Asotin	51.6	14.1	25.0	9.4
Benton	36.3	9.9	28.6	25.3
Chelan	39.8	17.3	24.5	18.4
Clallam	37.0	15.1	37.8	10.1
Clark	38.3	14.0	31.8	15.9
Columbia	61.4	14.3	13.6	10.7
Cowlitz	39.7	19.0	30.2	11.2
Douglas	38.3	12.3	33.3	16.0
Ferry	47.6	19.0	23.8	9.5
Franklin	35.1	11.7	36.4	16.9
Garfield	60.8	7.2	16.8	15.2
Grant	45.6	18.9	26.7	8.9
Grays Harbor	29.3	28.0	32.9	9.8
Island	35.1	12.6	25.2	27.0
Jefferson	27.7	7.3	50.4	14.6
King	28.3	9.8	39.1	22.8
Kitsap	31.3	14.1	38.4	16.2
Kittitas	37.3	15.9	33.3	13.5
Klickitat	36.9	21.3	33.6	8.2
Lewis	53.6	10.7	27.4	8.3
Lincoln	50.0	18.3	20.6	11.1
Mason	41.1	15.8	28.4	14.7
Okanogan	49.5	13.8	26.6	10.1
Pacific	34.0	23.7	35.1	7.2
Pend Oreille	54.0	9.7	25.8	10.5
Pierce	32.5	21.3	33.8	12.5
San Juan	21.6	8.1	52.3	18.0
Skagit	31.5	19.4	37.1	12.1
Skamania	38.1	15.9	31.7	14.3
Snohomish	28.9	14.5	34.9	21.7
Spokane	41.8	14.5	30.0	13.6
Stevens	44.9	18.9	24.4	11.8
Thurston	33.3	12.8	40.2	13.7
Wahkiakum	47.1	12.7	28.4	11.8
Walla Walla	46.1	14.8	25.2	13.9
Whatcom	29.9	8.5	37.6	23.9
Whitman	44.9	15.7	24.7	14.6
Yakima	33.3	18.5	33.3	14.8
Washington	**33.3**	**13.9**	**34.9**	**17.8**

Table A-2. Residents' demographics.

County	Gender[1]	Age[2]	People <18 years of age in household[2]	Length of residence in WA (years)[2]	Length of residence in current home (years)[2]	Income[3]	Education[4]
Adams	49.0	58.85	0.62	46.73	20.84	3.31	1.95
Asotin	53.0	62.94	0.35	35.12	17.82	2.83	1.90
Benton	51.0	58.33	0.53	38.59	15.94	4.46	2.52
Chelan	51.0	59.92	0.49	41.62	15.58	3.82	2.44
Clallam	51.0	63.33	0.35	35.70	13.22	2.99	2.38
Clark	51.0	55.52	0.64	31.19	14.89	4.13	2.42
Columbia	52.0	57.84	0.45	43.33	14.45	3.04	1.97
Cowlitz	51.0	58.62	0.30	44.45	16.02	3.19	1.81
Douglas	51.0	59.99	0.46	44.90	18.18	3.78	1.87
Ferry	49.0	58.94	0.44	43.95	19.24	3.34	2.03
Franklin	47.0	57.29	0.75	37.18	13.83	3.45	2.02
Garfield	50.0	59.62	0.43	48.49	22.07	3.40	2.31
Grant	49.0	62.35	0.61	50.19	18.23	3.30	1.81
Grays Harbor	50.0	59.07	0.57	46.80	15.62	3.35	1.90
Island	52.0	61.61	0.39	37.64	14.85	3.47	2.21
Jefferson	51.0	63.21	0.27	33.13	12.78	3.71	2.61
King	50.0	54.51	0.57	29.66	13.32	4.76	2.85
Kitsap	50.0	59.77	0.48	35.20	14.92	4.02	2.36
Kittitas	50.0	59.61	0.52	46.79	18.54	3.35	2.55
Klickitat	51.0	62.02	0.38	36.45	14.93	3.32	2.22
Lewis	51.0	58.17	0.52	45.91	16.29	3.49	2.14
Lincoln	52.0	57.94	0.77	46.00	20.13	3.37	2.09
Mason	49.0	61.39	0.40	44.06	14.56	3.54	2.06
Okanogan	51.0	58.94	0.39	41.91	14.75	2.91	2.29
Pacific	51.0	59.07	0.45	39.87	14.07	3.16	1.83
Pend Oreille	51.0	58.60	0.48	39.41	16.63	3.01	2.16
Pierce	51.0	57.66	0.44	40.36	11.90	4.19	2.46
San Juan	52.0	62.03	0.24	28.82	13.98	4.05	2.95
Skagit	51.0	58.44	0.53	39.12	13.71	4.05	2.30
Skamania	50.0	58.70	0.51	34.95	17.27	3.42	1.95
Snohomish	50.0	56.11	0.66	38.33	17.20	4.30	2.46
Spokane	51.0	58.51	0.37	38.89	15.61	3.42	2.20
Stevens	51.0	57.71	0.60	36.74	14.85	3.34	1.96
Thurston	52.0	57.72	0.46	39.46	13.49	4.16	2.50
Wahkiakum	51.0	62.06	0.41	37.43	16.42	3.17	1.76
Walla Walla	50.0	59.18	0.62	40.27	16.62	3.77	2.40
Whatcom	51.0	57.33	0.54	38.48	14.47	4.04	2.60
Whitman	49.0	57.26	0.62	38.55	19.25	4.06	2.84
Yakima	51.0	59.11	0.44	49.79	17.88	3.22	1.97
Washington	50.6	57.07	0.52	36.48	14.59	4.14	2.49

[1] Cell entries represent the percent of respondents who are female.

[2] Cell entries represent the mean age in years.

[3] Cell entries represent the mean. The original response scale was as follows: 0 = <$10,000, 1 = $10,000-$24,999, 2 = $25,000-$34,999, 3 = $35,000-$49,999, 4 = $50,000-$74,999, 5 = $75,000-$99,999, 6 = $100,000-$149,000, 7 = $150,000-$199,999, and 8 = $200,000+.

[4] Cell entries represent the mean. The original response scale was as follows: 0 = <Less than high school education, 1 = High school education or GED, 2 = 2-years Associates degree or trade school, 3 = 4-year degree, 4 = Advanced degree.

Table A-3. Demographics by wildlife value orientation type.

	Gender[1]	Age[2]	People <18 years of age in household[2]	Length of residence in WA (years)[2]	Length of residence in current home (years)[2]	Income[3]	Education[4]
Utilitarian	0.32	57.23	0.64	38.61	16.04	4.34	2.39
Pluralist	0.38	60.35	0.42	40.82	16.60	3.32	2.10
Mutualist	0.68	57.54	0.35	35.07	13.51	4.13	2.61
Distanced	0.60	53.05	0.71	31.47	12.23	4.46	2.77

[1] Cell entries represent the percent of respondents who are female.

[2] Cell entries represent the mean age in years.

[3] Cell entries represent the mean. The original response scale was as follows: 0 = <$10,000, 1 = $10,000-$24,999, 2 = $25,000-$34,999, 3 = $35,000-$49,999, 4 = $50,000-$74,999, 5 = $75,000-$99,999, 6 = $100,000-$149,000, 7 = $150,000-$199,999, and 8 = $200,000+.

[4] Cell entries represent the mean. The original response scale was as follows: 0 = <Less than high school education, 1 = High school education or GED, 2 = 2-years Associates degree or trade school, 3 = 4-year degree, 4 = Advanced degree.

Table A-4. Percent of wildlife value orientation type indicating race and ethnicity.

	Utilitarian	Pluralist	Mutualist	Distanced
Race				
White	96.6	89.7	93.9	96.6
Black or African American	2.2	2.2	0.6	1.8
American Indian or Alaska Native	0.6	2.2	1.2	0.1
Asian	0.5	5.3	3.7	1.2
Native Hawaiian or other Pacific Islander	0.0	0.6	0.6	0.3
Ethnicity				
Hispanic/Latino	1.4	1.9	2.5	6.1

Table A-5. Percent of wildlife value orientation type indicating participation in wildlife-related recreation.

	Hunting			Fishing			Wildlife-viewing		
	Past	Current	Future	Past	Current	Future	Past	Current	Future
Utilitarian	66.3	25.4	49.6	90.8	48.7	78.2	88.8	78.7	84.4
Pluralist	63.5	20.1	41.8	89.9	52.6	74.4	80.4	69.6	80.2
Mutualist	31.3	3.8	9.5	78.3	24.7	48.7	96.4	84.2	95.8
Distanced	29.4	2.2	7.6	78.8	24.7	58.4	91.2	77.2	89.4
Washington	**47.2**	**13.2**	**27.2**	**84.1**	**36.7**	**64.0**	**90.6**	**79.0**	**88.6**

Table A-6. Percent of residents indicating participation in wildlife-related recreation.

	Hunting			Fishing			Wildlife-viewing		
County	Past	Current	Future	Past	Current	Future	Past	Current	Future
Adams	61.4	26.3	53.2	84.0	52.6	80.2	82.9	75.3	84.8
Asotin	70.9	24.0	43.3	86.5	47.6	68.3	87.2	79.4	86.3
Benton	55.6	24.7	38.8	75.3	40.7	56.8	83.0	67.4	80.9
Chelan	60.6	19.5	33.3	82.7	49.5	68.1	89.8	83.2	89.5
Clallam	50.0	11.3	30.1	81.1	37.1	66.1	94.3	89.7	89.6
Clark	50.0	19.1	31.9	87.5	43.3	74.5	90.3	76.2	89.8
Columbia	73.6	36.7	52.7	87.9	46.2	77.4	93.4	89.8	93.3
Cowlitz	66.7	25.7	42.7	92.2	53.2	74.1	93.8	85.1	87.4
Douglas	59.3	23.7	37.3	82.5	41.3	71.8	86.4	77.5	87.3
Ferry	70.5	33.7	50.0	89.5	68.6	78.6	95.2	92.3	91.3
Franklin	56.6	15.1	31.9	90.8	41.1	70.7	88.2	64.5	87.8
Garfield	72.0	38.0	48.7	87.1	48.4	76.0	85.4	82.1	85.3
Grant	67.7	25.6	42.9	82.8	44.8	69.0	91.3	81.4	88.2
Grays Harbor	63.4	28.0	45.3	83.5	50.7	66.2	93.6	85.1	91.9
Island	42.9	8.2	21.0	73.2	41.6	62.7	83.8	77.9	81.7
Jefferson	39.1	10.9	16.0	87.7	36.6	55.9	95.6	85.4	89.7
King	40.0	8.8	17.9	82.0	26.5	56.5	93.3	79.1	88.2
Kitsap	42.9	7.8	21.3	90.7	30.5	63.4	95.9	86.8	92.6
Kittitas	62.1	25.9	37.5	84.4	38.3	54.2	96.7	88.2	93.3
Klickitat	65.3	22.1	47.8	84.4	40.7	69.6	93.2	82.9	89.7
Lewis	58.3	26.9	37.2	83.8	45.3	61.3	91.5	83.3	88.6
Lincoln	75.2	30.2	47.1	95.1	51.7	76.9	92.7	88.1	91.9
Mason	54.2	13.8	27.6	86.3	41.3	64.0	92.7	78.5	87.8
Okanogan	68.2	31.8	46.7	92.5	55.3	84.8	93.5	88.7	92.5
Pacific	60.0	27.0	46.6	93.5	62.0	82.4	92.5	86.2	92.5
Pend Oreille	63.6	22.5	45.7	88.4	55.2	72.6	91.6	90.6	91.5
Pierce	46.8	15.3	37.8	82.1	48.7	72.7	84.8	76.3	85.5
San Juan	37.2	10.6	22.2	80.5	42.3	69.4	96.5	93.8	96.4
Skagit	60.7	16.1	32.5	87.7	41.3	71.3	94.3	88.4	91.5
Skamania	58.5	24.3	44.9	78.5	47.9	68.0	95.3	88.0	91.0
Snohomish	40.5	7.8	19.0	87.8	30.9	63.9	90.5	77.1	91.5
Spokane	55.9	12.5	34.0	90.1	39.1	67.0	88.3	79.2	87.7
Stevens	71.2	34.5	48.8	87.2	52.5	68.9	91.2	89.3	91.6
Thurston	42.4	11.8	23.6	78.2	34.2	60.9	93.2	80.5	90.4
Wahkiakum	70.3	23.2	44.4	90.8	52.0	78.1	94.0	93.0	93.8
Walla Walla	57.9	24.8	36.8	81.6	45.0	68.8	86.6	77.4	85.2
Whatcom	41.9	6.5	23.4	85.6	34.5	66.7	88.0	78.9	88.5
Whitman	58.7	15.3	36.4	85.7	42.5	66.3	90.1	84.3	92.2
Yakima	50.0	14.5	27.8	80.0	37.7	56.8	90.1	73.1	88.5
Washington	**47.2**	**13.2**	**27.2**	**84.1**	**36.7**	**64.0**	**90.6**	**79.0**	**88.6**

Table A-7. Demographics of hunters and those in the hunting latent demand[1] group.

	Current hunter	Latent demand group[1]	*t*-value	*p*-value	ES[2]
Gender[3]	0.11	0.22	-5.15	<.001	.154
Age[4]	54.28	54.20	0.10	.923	---
People <18 years of age in household[4]	0.79	0.62	2.56	.011	.084
Length of residence in WA (years)[4]	40.98	35.12	4.89	<.001	.148
Length of residence in current home (years)[4]	15.94	12.78	4.30	<.001	.135
Income[5]	4.55	4.16	3.45	.001	.107
Education[6]	2.21	2.40	-2.69	.007	.083

[1] "Latent demand" group is defined as residents who indicated they do not currently participate in hunting, but have a future interest in participating.

[2] Effect Size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

[3] Cell entries represent the mean. Multiplying by 100 will produce the percent of respondents who are female.

[4] Cell entries represent the mean age in years.

[5] Cell entries represent the mean. The original response scale was as follows: 0 = <$10,000, 1 = $10,000-$24,999, 2 = $25,000-$34,999, 3 = $35,000-$49,999, 4 = $50,000-$74,999, 5 = $75,000-$99,999, 6 = $100,000-$149,000, 7 = $150,000-$199,999, and 8 = $200,000+.

[6] Cell entries represent the mean. The original response scale was as follows: 0 = <Less than high school education, 1 = High school education or GED, 2 = 2-years Associates degree or trade school, 3 = 4-year degree, 4 = Advanced degree.

Table A-8. Percent of residents in two latent demand categories.

County	Hunting Latent Demand	Fishing Latent Demand
Adams	75.3	84.8
Asotin	79.4	86.3
Benton	67.4	80.9
Chelan	83.2	89.5
Clallam	89.7	89.6
Clark	76.2	89.8
Columbia	89.8	93.3
Cowlitz	85.1	87.4
Douglas	77.5	87.3
Ferry	92.3	91.3
Franklin	64.5	87.8
Garfield	82.1	85.3
Grant	81.4	88.2
Grays Harbor	85.1	91.9
Island	77.9	81.7
Jefferson	85.4	89.7
King	79.1	88.2
Kitsap	86.8	92.6
Kittitas	88.2	93.3
Klickitat	82.9	89.7
Lewis	83.3	88.6
Lincoln	88.1	91.9
Mason	78.5	87.8
Okanogan	88.7	92.5
Pacific	86.2	92.5
Pend Oreille	90.6	91.5
Pierce	76.3	85.5
San Juan	93.8	96.4
Skagit	88.4	91.5
Skamania	88.0	91.0
Snohomish	77.1	91.5
Spokane	79.2	87.7
Stevens	89.3	91.6
Thurston	80.5	90.4
Wahkiakum	93.0	93.8
Walla Walla	77.4	85.2
Whatcom	78.9	88.5
Whitman	84.3	92.2
Yakima	73.1	88.5
Washington	**14.8**	**28.9**

APPENDIX B. SUPPORTING TABLES FOR PERCEPTIONS OF NATURE AND PLACE SECTION

Table B-1. Percent of residents agreeing with beliefs about nature and the area near their homes.

	Belief Strength		
Survey item	Slightly	Moderately	Extremely
I think nature…			
is fragile *or*	3.2	33.6	23.6
is durable	2.7	25.0	11.9
is unlimited, abundant *or*	4.7	15.7	5.5
is limited, scarce	10.2	41.8	22.3
is unpredictable, chaotic *or*	7.6	30.7	11.9
is predictable, ordered	7.5	27.1	15.2
is remote, uninviting *or*	1.0	1.8	2.9
is accessible, inviting	5.5	48.5	40.3
can take care of itself *or*	2.6	6.3	3.0
needs to be protected	6.5	30.3	51.3
I think the area near my home…			
is ugly, unattractive *or*	1.9	3.2	2.1
is beautiful, attractive	4.6	41.2	47.0
is safe *or*	3.0	57.5	31.2
is dangerous	2.3	4.5	1.6
is common, generic *or*	2.9	25.7	8.2
is unique	6.6	29.0	27.7

Table B-2. Percent of wildlife value orientation type agreeing with *specific* beliefs about nature and the area near their homes.

	Utilitarian	Pluralist	Mutualist	Distanced
I think nature…				
is fragile	37.3	59.3	84.2	57.4
is limited/scarce	61.1	65.7	87.9	78.4
is unpredictable/chaotic	47.6	52.3	50.7	53.5
is accessible/inviting	95.7	92.2	94.3	93.5
needs to be protected	75.8	88.4	97.5	91.6
I think the area near my home…				
is beautiful, attractive	94.3	89.3	90.9	96.2
is safe	95.7	87.7	87.7	95.3
is unique	60.1	58.7	64.4	70.5

Table B-3. Percent of residents agreeing with specific beliefs about *nature*.

	I think nature…				
County	Is fragile	Is limited	Is unpredictable	Is accessible	Needs to be protected
Adams	47.1	69.6	39.7	94.0	75.7
Asotin	42.2	65.5	48.6	94.0	77.4
Benton	51.2	81.8	47.2	93.2	85.2
Chelan	40.0	63.3	47.1	98.9	83.5
Clallam	52.7	66.1	47.3	97.3	82.1
Clark	61.4	72.4	40.8	99.0	91.2
Columbia	43.5	60.8	44.1	96.2	71.0
Cowlitz	42.6	71.7	34.6	99.0	77.4
Douglas	50.7	59.7	59.1	100.0	82.6
Ferry	44.8	65.6	45.2	95.9	71.6
Franklin	62.5	73.6	43.3	94.1	83.3
Garfield	36.6	58.2	32.7	94.5	72.1
Grant	51.7	68.2	43.9	96.4	82.4
Grays Harbor	50.0	65.8	48.6	89.5	75.9
Island	57.7	70.1	43.4	94.1	81.6
Jefferson	63.0	76.2	40.3	97.5	86.5
King	65.5	79.3	59.3	93.0	91.9
Kitsap	67.4	77.2	44.7	100.0	87.2
Kittitas	55.8	78.8	44.3	95.7	84.2
Klickitat	50.9	73.6	36.0	95.5	83.5
Lewis	49.4	64.9	42.7	96.0	76.0
Lincoln	53.4	66.1	45.6	99.1	70.7
Mason	56.2	77.9	47.7	90.8	90.8
Okanogan	51.5	70.1	36.8	99.0	79.2
Pacific	60.2	75.6	51.7	98.9	85.4
Pend Oreille	46.7	67.8	42.4	94.8	69.2
Pierce	67.1	71.6	45.9	91.8	92.0
San Juan	62.1	75.3	51.5	96.1	85.6
Skagit	59.5	72.2	46.3	93.7	87.6
Skamania	48.3	69.6	42.0	98.2	80.2
Snohomish	64.4	72.6	53.5	92.0	83.8
Spokane	45.8	68.3	49.0	97.0	84.3
Stevens	44.7	72.3	35.2	98.4	79.8
Thurston	61.1	79.6	48.6	93.6	92.8
Wahkiakum	54.9	68.5	47.0	93.3	73.9
Walla Walla	45.7	68.3	32.0	98.0	87.3
Whatcom	57.5	77.1	49.5	94.5	87.4
Whitman	46.4	67.9	43.8	96.4	86.9
Yakima	59.5	64.5	48.0	93.4	87.3
Washington	**60.5**	**74.3**	**50.4**	**94.4**	**88.1**

Table B-4. Percent of residents agreeing with specific beliefs about *the area near their homes*.

	The area near my home is…		
County	Beautiful/attractive	Safe	Unique
Adams	89.5	93.6	51.9
Asotin	88.3	94.1	68.3
Benton	85.6	94.4	53.9
Chelan	98.9	94.5	80.4
Clallam	97.4	89.5	87.6
Clark	90.3	92.4	54.3
Columbia	100.0	97.0	70.2
Cowlitz	90.3	91.6	59.8
Douglas	92.8	95.8	75.7
Ferry	100.0	88.9	82.4
Franklin	77.8	87.7	44.3
Garfield	94.9	94.9	59.8
Grant	80.0	90.4	58.8
Grays Harbor	92.4	90.9	60.8
Island	99.0	97.0	84.2
Jefferson	98.5	92.9	85.2
King	95.4	94.3	62.2
Kitsap	99.0	93.7	70.5
Kittitas	97.5	93.9	76.9
Klickitat	98.3	92.0	87.8
Lewis	91.3	92.3	55.8
Lincoln	95.0	85.6	75.6
Mason	94.4	86.0	71.3
Okanogan	95.2	92.1	72.8
Pacific	98.9	82.2	81.1
Pend Oreille	97.6	93.5	78.9
Pierce	87.2	89.5	60.5
San Juan	99.1	91.6	95.4
Skagit	97.4	98.2	77.2
Skamania	100.0	91.3	92.2
Snohomish	92.3	85.9	60.3
Spokane	91.5	91.1	59.4
Stevens	98.4	94.3	67.7
Thurston	95.6	94.7	75.4
Wahkiakum	98.9	90.2	80.6
Walla Walla	94.5	93.5	63.6
Whatcom	95.6	93.8	75.0
Whitman	90.8	97.7	71.3
Yakima	85.2	82.1	53.2
Washington	**92.8**	**91.7**	**63.3**

Table B-5. Percent of wildlife value orientation type agreeing with statements related to participation in outdoor activities.

	Often participates	Outside a lot because of job	Participates mainly for exercise	Avoids participation due to a fear of strangers	Afraid of being harmed by wildlife if participating
Utilitarian	81.9	18.2	66.0	3.1	4.2
Pluralist	83.3	20.9	71.4	10.2	9.5
Mutualist	80.9	9.6	68.7	10.7	5.8
Distanced	81.4	10.7	64.9	5.6	7.7
Washington	**81.6**	**14.3**	**67.4**	**7.2**	**6.1**

Table B-6. Percent of wildlife value orientation type indicating seasonal participation in outdoor activities near their homes.

	Spring	Summer	Fall	Winter	Does not participate
Utilitarian	65.5	89.5	67.5	27.3	4.5
Pluralist	69.1	89.2	64.5	26.3	3.2
Mutualist	65.8	89.2	56.5	20.4	8.8
Distanced	48.9	88.7	43.0	12.4	4.1
Washington	**63.1**	**89.2**	**58.8**	**22.1**	**5.8**

Table B-7. Percent of residents agreeing with statements related to participation in outdoor activities.

County	Often participates	Outside a lot because of job	Participates mainly for exercise	Avoids participation due to strangers	Afraid of being harmed by wildlife
Adams	77.2	40.5	48.7	6.3	3.8
Asotin	83.9	23.8	65.6	8.9	5.7
Benton	75.0	23.3	62.0	4.3	4.3
Chelan	85.6	33.0	73.7	10.1	8.1
Clallam	80.3	20.7	63.9	7.5	6.6
Clark	81.6	10.6	70.1	7.7	3.9
Columbia	87.7	38.8	61.6	4.3	10.9
Cowlitz	82.6	28.6	59.6	8.8	3.5
Douglas	84.1	18.7	69.6	2.5	1.3
Ferry	97.1	37.6	53.3	11.4	15.2
Franklin	75.3	23.3	62.3	12.8	5.2
Garfield	84.4	54.9	55.3	1.6	8.1
Grant	73.0	39.3	56.7	7.5	2.2
Grays Harbor	81.3	24.1	51.9	7.4	8.6
Island	82.7	19.6	63.6	1.8	0.9
Jefferson	88.2	22.8	65.9	3.0	11.1
King	81.3	8.8	72.5	5.6	6.7
Kitsap	86.7	17.7	61.6	2.1	3.1
Kittitas	89.4	31.4	61.8	5.7	8.9
Klickitat	84.3	42.5	55.4	8.2	10.8
Lewis	81.9	25.0	64.3	9.5	11.9
Lincoln	87.6	50.0	57.4	2.5	16.0
Mason	78.9	14.9	60.2	12.6	12.9
Okanogan	90.0	34.6	67.3	4.5	12.7
Pacific	92.6	37.0	67.7	11.0	9.7
Pend Oreille	80.0	27.5	53.2	9.6	15.2
Pierce	78.5	10.4	66.7	7.7	5.1
San Juan	96.5	31.8	61.1	.9	0.9
Skagit	86.1	23.1	74.6	4.9	5.8
Skamania	84.9	34.5	57.9	10.5	14.6
Snohomish	82.9	9.9	63.8	10.8	6.0
Spokane	82.0	12.6	66.7	8.1	8.9
Stevens	90.4	32.0	66.1	.8	8.7
Thurston	89.1	15.8	70.0	7.6	4.2
Wahkiakum	87.1	29.9	49.0	9.0	15.7
Walla Walla	83.9	29.6	51.3	1.8	8.0
Whatcom	87.4	19.8	75.4	6.0	0.9
Whitman	84.4	32.6	61.1	6.6	3.3
Yakima	64.5	13.5	63.0	13.9	7.6
Washington	**81.6**	**14.3**	**67.4**	**7.2**	**6.1**

Table B-8. Percent of residents indicating seasonal participation in outdoor activities near their homes.

County	Spring	Summer	Fall	Winter	Did not participate
Adams	56.6	77.6	56.6	22.1	14.5
Asotin	76.7	84.2	68.9	21.7	8.4
Benton	77.8	82.2	71.1	28.9	12.2
Chelan	67.4	93.7	69.5	34.7	3.1
Clallam	64.5	89.9	66.4	34.5	5.5
Clark	65.4	87.6	63.8	19.2	6.7
Columbia	69.1	77.9	77.0	39.7	9.6
Cowlitz	58.4	84.1	58.4	24.8	8.8
Douglas	74.7	82.3	72.2	33.8	3.8
Ferry	74.8	87.4	75.5	51.5	2.9
Franklin	55.8	75.3	51.3	18.2	11.5
Garfield	74.8	85.4	74.8	35.8	4.1
Grant	59.1	73.6	59.8	20.7	15.9
Grays Harbor	67.1	92.0	68.4	26.3	8.0
Island	69.2	87.9	60.7	25.2	10.3
Jefferson	66.4	92.4	67.9	32.8	2.3
King	55.6	93.3	46.7	12.4	3.4
Kitsap	70.1	87.6	64.9	27.6	8.2
Kittitas	71.1	90.1	73.3	34.7	2.5
Klickitat	71.3	85.2	74.8	33.3	10.4
Lewis	67.1	76.8	68.3	37.8	7.3
Lincoln	66.9	86.9	68.0	34.7	7.4
Mason	64.4	86.7	60.0	18.9	10.0
Okanogan	72.6	87.7	69.5	35.2	3.8
Pacific	73.3	85.4	82.0	33.3	2.2
Pend Oreille	70.5	90.1	63.9	40.2	7.4
Pierce	72.2	89.9	64.6	22.8	3.8
San Juan	68.8	91.0	70.3	34.2	1.8
Skagit	76.7	94.2	71.9	31.7	1.7
Skamania	77.9	90.1	76.2	33.6	4.1
Snohomish	60.2	90.4	60.2	25.0	6.0
Spokane	59.6	87.2	60.6	29.4	5.5
Stevens	70.8	86.8	76.0	40.8	6.6
Thurston	68.8	91.1	67.9	26.8	7.1
Wahkiakum	71.1	91.7	73.2	30.9	6.2
Walla Walla	71.2	80.2	71.2	27.0	7.2
Whatcom	67.2	89.7	59.5	27.6	6.0
Whitman	70.8	91.0	69.7	27.8	6.7
Yakima	59.0	79.5	59.0	25.6	12.8
Washington	**63.1**	**89.2**	**58.8**	**22.1**	**5.8**

Table B-9. Percent of residents indicating participation in specific outdoor activities near their homes in the last 12 months.

Activity	Percent
Walking/Hiking/Running	82.2
Gardening	80.7
Wildlife Viewing	40.4
Feeding Wild Birds	37.6
Biking	36.0
Camping	29.2
Fishing (non-commercial)	28.4
Nature Photography	21.9
Boating (motorized)	21.8
Hunting	11.2
Kayaking/Canoeing/Rafting	11.2
Downhill Skiing/Snowboarding	10.6
Feeding Other Wildlife	10.4
Climbing	6.3
Cross-Country Skiing	5.7
Dirt-Biking or OHV/ATV use	5.6
Horseback Riding	5.4
Sailing (non-motorized)	3.9
Snowmobiling	2.1
Trapping	0.4
Other	18.0
None, did not participate	2.4

Table B-10. Top three outdoor activities by percent of residents indicating participation near their homes in the last 12 months.

County	First	Second	Third
Adams	Gardening	Walking/Hiking/Running	Fishing
	75.0	63.9	42.2
Asotin	Gardening	Walking/Hiking/Running	Wildlife Viewing
	77.0	76.2	51.6
Benton	Walking/Hiking/Running	Gardening	Biking
	79.3	72.8	39.1
Chelan	Walking/Hiking/Running	Gardening	Wildlife Viewing
	89.9	82.8	61.6
Clallam	Gardening	Walking/Hiking/Running	Wildlife Viewing
	83.9	77.4	52.4
Clark	Walking/Hiking/Running	Gardening	Wildlife Viewing
	80.2	79.2	41.5
Columbia	Gardening	Walking/Hiking/Running	Wildlife Viewing
	78.4	70.5	65.5
Cowlitz	Walking/Hiking/Running	Gardening	Wildlife Viewing
	72.6	69.0	57.8
Douglas	Walking/Hiking/Running	Gardening	Wildlife Viewing
	72.8	71.6	55.6
Ferry	Walking/Hiking/Running	Gardening	Wildlife Viewing
	80.0	78.1	73.1
Franklin	Gardening	Walking/Hiking/Running	Feeding Wild Birds
	75.3	72.7	37.7
Garfield	Gardening	Walking/Hiking/Running	Wildlife Viewing
	81.6	65.6	60.8
Grant	Gardening	Walking/Hiking/Running	Wildlife Viewing
	79.3	58.1	45.7
Grays Harbor	Walking/Hiking/Running	Gardening	Feeding Wild Birds
	74.5	74.4	51.2
Island	Walking/Hiking/Running	Gardening	Wildlife Viewing
	83.2	77.0	49.6
Jefferson	Walking/Hiking/Running	Gardening	Wildlife Viewing
	86.1	85.4	62.0
King	Walking/Hiking/Running	Gardening	Biking
	89.1	81.3	44.6
Kitsap	Gardening	Walking/Hiking/Running	Wildlife Viewing
	84.0	77.0	57.0
Kittitas	Walking/Hiking/Running	Gardening	Wildlife Viewing
	80.0	70.4	52.8
Klickitat	Walking/Hiking/Running	Gardening	Wildlife Viewing
	80.5	77.2	63.4

Table B-10, *continued*. Top three outdoor activities by percent of residents indicating participation near their homes in the last 12 months.

County	First	Second	Third
Lewis	Gardening 83.5	Walking/Hiking/Running 74.1	Wildlife Viewing 53.5
Lincoln	Walking/Hiking/Running 78.4	Gardening 76.8	Wildlife Viewing 74.4
Mason	Gardening 82.5	Walking/Hiking/Running 76.0	Wildlife Viewing 54.2
Okanogan	Gardening 79.1	Walking/Hiking/Running 79.1	Wildlife Viewing 54.5
Pacific	Gardening 80.2	Walking/Hiking/Running 80.1	Wildlife Viewing 70.8
Pend Oreille	Gardening 79.2	Walking/Hiking/Running 74.4	Wildlife Viewing 68.8
Pierce	Gardening 81.3	Walking/Hiking/Running 78.8	Feeding Wild Birds 38.8
San Juan	Walking/Hiking/Running 91.2	Gardening 86.7	Wildlife Viewing 70.8
Skagit	Walking/Hiking/Running 82.2	Gardening 82.1	Wildlife Viewing 52.5
Skamania	Gardening 84.5	Walking/Hiking/Running 82.9	Wildlife Viewing 63.6
Snohomish	Gardening 84.5	Walking/Hiking/Running 78.6	Biking 34.5
Spokane	Gardening 80.7	Walking/Hiking/Running 80.6	Wildlife Viewing 46.8
Stevens	Gardening 81.0	Walking/Hiking/Running 80.3	Wildlife Viewing 65.4
Thurston	Walking/Hiking/Running 80.7	Gardening 79.8	Feeding Wild Birds 54.6
Wahkiakum	Gardening 78.4	Walking/Hiking/Running 71.8	Wildlife Viewing 68.0
Walla Walla	Walking/Hiking/Running 78.3	Gardening 70.4	Wildlife Viewing 44.3
Whatcom	Walking/Hiking/Running 86.4	Gardening 83.1	Wildlife Viewing 46.6
Whitman	Walking/Hiking/Running 85.7	Gardening 82.4	Wildlife Viewing 47.3
Yakima	Walking/Hiking/Running 79.3	Gardening 78.0	Wildlife Viewing 40.2
Washington	**Walking/Hiking/Running** **82.2**	**Gardening** **80.7**	**Wildlife Viewing** **40.4**

Table B-11. Top three outdoor activities by percent of wildlife value orientation type indicating participation near their homes in the last 12 months.

	First	Second	Third
Utilitarian	Walking/Hiking/Running	Gardening	Fishing
	78.0	76.3	40.6
Pluralist	Walking/Hiking/Running	Gardening	Fishing
	80.4	79.8	45.5
Mutualist	Walking/Hiking/Running	Gardening	Feeding Wild Birds
	83.8	82.9	48.4
Distanced	Walking/Hiking/Running	Gardening	Biking
	88.5	85.7	37.9

Table B-12. Percent of residents indicating an “other” (*not listed*) activity in which they have participated near their homes in the last 12 months.

Activity	Percent
Golfing	15.2
Farming	9.5
Swimming	8.8
Cutting Wood	8.5
Working in Yard	8.1
General Outdoor Enjoyment	7.9
Ranching/Tending to Farm Animals	6.8
Snowshoeing	6.5
Recreational Sports (e.g., softball, basketball)	5.7
Work	5.6
Mushrooming	3.7
Shooting	3.1
Dogs/pets	2.9
Clamming	2.9
Beach Activities	2.9
Berry Picking	2.8
Picnicking	2.3
Scenic Drives	2.0
Motorcycling	1.7
Crabbing	1.7
Rock Hounding	1.6
Birding	1.5
Maintaining Fences	1.3
Sledding	1.3
Prospecting	1.2

Table B-13. Percent of residents indicating an outdoor activity they *currently participate in the most* near their homes.

Activity	Percent	Activity	Percent
Walking/ Hiking/ Running	34.0	Nature Photography	1.4
Gardening	24.5	Kayaking/Canoeing/Rafting	0.9
Fishing	13.1	Feed Other Wildlife	0.8
Hunting	8.0	Downhill Skiing/Snowboarding	0.6
Bird Viewing/Feeding Wild Birds	4.9	Snowmobiling	0.5
Biking (non-motorized)	4.8	Sailing	0.3
Wildlife Viewing	4.2	Cross-Country Skiing	0.2
Camping	4.0	Climbing	0.1
Boating (motorized)	3.8	Trapping	0.1
Dirt-Biking or OHV/ATV use	2.1	Other	9.5
Horseback Riding	1.9		

Table B-14. Percent of residents indicating an activity in which they are *most likely to continue* participating in the future.

Activity	Percent	Activity	Percent
Walking/ Hiking/ Running	28.8	Dirt-Biking or OHV/ATV use	1.6
Gardening	18.7	Nature Photography	1.1
Fishing	11.7	Kayaking/Canoeing/Rafting	0.8
Same as Above	11.5	Downhill Skiing/Snowboarding	0.6
Hunting	7.1	Snowmobiling	0.5
All	6.3	None	0.4
Biking	5.1	Feed Other Wildlife	0.4
Camping	3.6	Sailing	0.4
Boating (motorized)	3.4	Cross-Country Skiing	0.2
Bird Viewing/Feeding Wild Birds	3.1	Climbing	0.1
Wildlife Viewing	2.8	Trapping	0.1
Horseback Riding	1.7	Other	7.3

Table B-15. Percent of wildlife value orientation type disagreeing or agreeing with the statement "*Climate change is currently affecting the area near my home.*"

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	35.6	16.0	6.1	13.3	15.3	10.7	3.0
Pluralist	16.2	7.9	10.7	10.7	20.5	16.0	17.9
Mutualist	4.4	2.8	8.1	14.2	24.5	25.4	20.7
Distanced	11.7	6.6	5.1	10.9	28.8	26.1	10.8
Washington	17.8	8.6	7.3	12.8	21.6	19.3	12.6

Table B-16. Percent of residents disagreeing or agreeing with the statement "*Climate change is currently affecting the area near my home.*"

County	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Adams	28.2	10.3	6.4	11.5	23.1	12.8	7.7
Asotin	29.6	8.0	7.2	16.0	16.8	19.2	3.2
Benton	27.2	10.9	3.3	17.4	25.0	13.0	3.3
Chelan	23.7	17.5	8.2	13.4	15.5	12.4	9.3
Clallam	22.0	6.5	4.1	17.9	20.3	16.3	13.0
Clark	17.8	9.3	7.5	16.8	21.5	19.6	7.5
Columbia	32.1	13.9	2.2	6.6	25.5	16.1	3.6
Cowlitz	15.4	10.3	6.8	23.1	18.8	18.8	6.8
Douglas	28.8	11.3	7.5	3.8	25.0	13.8	10.0
Ferry	26.7	13.3	5.7	7.6	17.1	21.9	7.6
Franklin	23.4	11.7	2.6	20.8	20.8	16.9	3.9
Garfield	42.4	16.0	4.0	4.0	19.2	7.2	7.2
Grant	36.3	6.6	5.5	24.2	16.5	8.8	2.2
Grays Harbor	18.1	12.0	6.0	7.2	26.5	16.9	13.3
Island	25.2	10.8	6.3	10.8	15.3	18.0	13.5
Jefferson	12.6	5.2	3.0	19.3	23.0	17.8	19.3
King	13.2	5.5	7.7	7.7	23.1	24.2	18.7
Kitsap	15.2	8.1	8.1	16.2	19.2	21.2	12.1
Kittitas	26.4	12.8	4.8	19.2	11.2	11.2	14.4
Klickitat	26.2	6.6	6.6	9.8	27.0	11.5	12.3
Lewis	19.3	15.7	2.4	15.7	13.3	18.1	15.7
Lincoln	31.2	12.0	7.2	10.4	18.4	11.2	9.6
Mason	11.7	11.7	8.5	14.9	18.1	25.5	9.6
Okanogan	24.5	12.7	7.3	11.8	17.3	17.3	9.1
Pacific	14.6	8.3	8.3	8.3	27.1	15.6	17.7
Pend Oreille	30.4	8.8	4.0	16.0	15.2	13.6	12.0
Pierce	19.0	7.6	8.9	11.4	25.3	21.5	6.3
San juan	15.0	3.5	2.7	12.4	22.1	29.2	15.0
Skagit	19.7	9.0	5.7	13.1	19.7	17.2	15.6
Skamania	27.1	7.0	3.9	14.0	10.9	20.2	17.1
Snohomish	14.5	12.0	6.0	19.3	15.7	18.1	14.5
Spokane	19.8	10.8	9.9	14.4	28.8	10.8	5.4
Stevens	27.2	12.8	4.0	16.0	16.8	16.8	6.4
Thurston	16.0	10.1	5.0	11.8	23.5	19.3	14.3
Wahkiakum	25.5	10.8	2.0	13.7	20.6	14.7	12.7
Walla Walla	31.6	7.9	4.4	14.0	15.8	18.4	7.9
Whatcom	22.2	11.1	6.0	11.1	22.2	15.4	12.0
Whitman	23.6	5.6	4.5	14.6	22.5	18.0	11.2
Yakima	22.2	13.6	7.4	14.8	18.5	13.6	9.9
Washington	**17.7**	**8.6**	**7.2**	**12.9**	**21.7**	**19.3**	**12.6**

APPENDIX C. SUPPORTING TABLES FOR WILDLIFE NEAR THE HOME SECTION

Table C-1. Percent of wildlife value orientation type agreeing with general beliefs about wildlife near their homes.

	Wildlife are…				
	A Nuisance	Enjoyable	Dangerous	A Recreational Opportunity	Rarely observe wildlife near home
Utilitarian	30.9	81.5	15.8	61.3	21.6
Pluralist	21.6	91.2	24.5	70.2	24.4
Mutualist	18.4	91.8	18.6	52.9	26.8
Distanced	21.1	81.1	19.5	48.4	23.3
Washington	**23.5**	**86.4**	**18.7**	**57.4**	**24.1**

Table C-2. Percent of residents agreeing with general beliefs about wildlife near their homes.

	Wildlife are…				
County	A Nuisance	Enjoyable	Dangerous	A Recreational Opportunity	Rarely observe wildlife near home
Adams	17.5	85.0	4.9	63.8	27.2
Asotin	32.0	89.1	16.9	68.0	20.5
Benton	15.4	89.0	3.3	64.8	28.1
Chelan	26.5	93.9	28.6	74.5	25.5
Clallam	26.7	83.9	20.2	60.5	15.1
Clark	21.7	92.5	13.2	53.8	27.6
Columbia	29.0	94.2	23.9	81.8	6.4
Cowlitz	25.4	91.2	15.8	66.7	14.8
Douglas	20.0	83.8	16.3	65.4	22.5
Ferry	31.4	88.5	21.9	78.6	7.6
Franklin	7.8	82.9	12.8	55.1	38.5
Garfield	34.7	82.4	13.0	75.4	5.6
Grant	12.1	89.0	6.7	71.6	28.6
Grays Harbor	20.0	97.6	14.8	69.1	11.0
Island	26.8	85.6	17.1	60.4	20.7
Jefferson	32.6	89.8	20.6	56.2	8.8
King	26.4	83.3	20.5	52.8	26.1
Kitsap	15.5	88.0	12.0	58.2	13.4
Kittitas	17.1	87.0	11.4	63.1	16.9
Klickitat	32.5	90.2	21.3	76.3	13.1
Lewis	28.6	87.2	19.5	67.9	15.3
Lincoln	34.4	95.2	22.4	82.9	8.9
Mason	30.2	89.7	20.4	66.0	12.4
Okanogan	25.9	93.5	16.5	76.1	14.5
Pacific	22.7	96.9	17.7	82.3	8.4
Pend Oreille	27.2	96.7	28.7	75.6	9.0
Pierce	31.6	84.8	23.8	51.3	28.8
San Juan	39.3	92.8	9.0	64.5	6.4
Skagit	19.5	88.5	15.6	76.2	15.6
Skamania	28.6	93.6	12.0	72.2	6.3
Snohomish	20.2	84.5	23.8	45.2	26.2
Spokane	18.2	86.4	25.2	68.5	24.8
Stevens	28.6	89.8	18.5	77.6	7.2
Thurston	21.2	87.3	11.8	59.5	16.8
Wahkiakum	28.4	85.4	11.7	72.8	11.9
Walla Walla	15.7	91.3	14.9	70.4	28.4
Whatcom	18.6	92.3	9.4	52.1	13.8
Whitman	27.8	87.8	18.0	68.9	17.6
Yakima	17.1	84.1	9.8	71.6	38.3

Table C-3. Percent of wildlife value orientation type indicating they or their neighbors have experienced a wildlife-related problem.

	Personally experienced a problem	Neighbor experienced a problem	Doesn't know if neighbor experienced a problem
Utilitarian	35.0	35.4	35.1
Pluralist	23.5	16.6	44.1
Mutualist	30.4	30.8	36.9
Distanced	27.5	25.2	44.6
Washington	**30.4**	**29.4**	**38.7**

Table C-4. Percent of residents indicating they or their neighbors have experienced a wildlife-related problem.

County	Personally experienced a wildlife-related problem	Reported that neighbor experienced a wildlife-related problem
Adams	21.0	14.3
Asotin	32.8	33.3
Benton	14.6	13.1
Chelan	34.7	34.8
Clallam	31.3	34.5
Clark	30.5	28.3
Columbia	31.7	41.4
Cowlitz	29.6	25.7
Douglas	22.8	27.8
Ferry	52.0	44.2
Franklin	5.3	17.1
Garfield	49.2	41.4
Grant	18.7	19.8
Grays Harbor	26.8	25.0
Island	39.1	21.6
Jefferson	50.4	43.3
King	34.1	35.8
Kitsap	39.4	33.0
Kittitas	32.5	31.6
Klickitat	44.2	45.2
Lewis	38.1	36.6
Lincoln	36.9	38.3
Mason	41.8	34.5
Okanogan	37.1	36.6
Pacific	38.9	39.8
Pend Oreille	53.3	47.1
Pierce	30.8	34.2
San Juan	51.4	47.6
Skagit	23.1	22.6
Skamania	40.6	32.1
Snohomish	25.3	23.7
Spokane	23.9	18.8
Stevens	53.6	44.2
Thurston	38.8	27.2
Wahkiakum	44.1	41.1
Walla Walla	20.7	19.0
Whatcom	29.9	19.3
Whitman	35.2	36.0
Yakima	15.2	14.7
Washington	**30.4**	**29.4**

APPENDIX D. SUPPORTING TABLES FOR LAND ACCESS SECTION

Table D-1. Percent of residents disagreeing or agreeing with the statement "*I wish I had access to more land areas near my home to participate in outdoor activities.*"

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	15.4	11.9	5.9	29.2	14.4	9.6	13.5
Pluralist	10.3	9.1	5.6	22.4	11.0	17.9	23.6
Mutualist	15.3	8.3	6.0	27.2	18.1	12.5	12.7
Distanced	11.9	18.3	9.0	28.2	20.6	4.5	7.6
Washington	**14.0**	**11.4**	**6.4**	**27.5**	**16.3**	**10.8**	**13.6**

Table D-2. Percent of residents disagreeing or agreeing with the statement "*I would pay a fee to have access to more land areas near my home to participate in outdoor activities.*"

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	37.6	16.0	8.2	13.8	15.9	5.8	2.8
Pluralist	25.6	7.3	8.8	28.7	14.0	8.8	6.7
Mutualist	15.6	10.4	9.9	23.0	22.4	13.1	5.6
Distanced	21.6	20.2	14.2	18.7	17.9	4.2	3.2
Washington	**25.4**	**13.6**	**9.9**	**20.0**	**18.2**	**8.4**	**4.4**

Table D-3. Percent of residents disagreeing or agreeing with the statement "*Limited access to land areas is the **primary** reason for why I do not participate in outdoor activities near my home often.*"

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	45.2	18.1	5.5	16.5	5.7	3.7	5.2
Pluralist	27.8	11.7	8.2	29.9	8.2	5.7	8.5
Mutualist	43.5	14.7	8.9	21.4	5.7	2.6	3.1
Distanced	49.3	22.9	5.8	13.1	3.2	0.9	4.8
Washington	**42.9**	**16.9**	**7.1**	**19.5**	**5.6**	**3.1**	**4.9**

Table D-4. Percent of residents disagreeing or agreeing with the statement "*The WDFW should work with **private landowners** to provide more access to land areas near my home for outdoor activities.*"

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	22.6	9.5	4.1	27.4	11.3	9.9	15.2
Pluralist	9.2	8.5	6.3	22.6	17.0	11.6	24.8
Mutualist	13.0	8.4	3.5	30.9	18.5	13.2	12.5
Distanced	15.4	8.0	3.6	36.3	19.4	9.0	8.4
Washington	**16.1**	**8.7**	**4.1**	**29.5**	**16.1**	**11.1**	**14.4**

Table D-5. Percent of residents indicating they *would* participate in a particular activity near their homes, but *do not* due to limited access to local lands.[1]

Activity	Percent	Activity	Percent
Hunting	34.0	Kayaking/Canoeing/Rafting	3.4
Dirt-Biking or OHV/ATV use	14.4	Snowmobiling	2.2
Walking/Hiking/Running	10.9	Motorized Boating	2.1
Fishing	10.6	Downhill Skiing/Snowboarding	1.7
Biking	6.3	Cross-Country Skiing	1.3
Access Private Land	6.2	Trapping	1.1
Camping	6.0	Mushroom Foraging	1.1
Wildlife Viewing	5.7		
Horseback Riding	3.8		
Access Water/Shoreline/Beach	3.5		

[1] Percentages are out of the number of people (n = 655) who responded to the question *"Are there any activities you would participate in but don't due to limited access to local lands."*

Table D-6. Correlations[1] among demographics and statements about land access.

	Demographics						
Statements about land access[2]	Gender[3]	Age	Residents <18 years at home	Years in Washington	Years in household	Income[4]	Education[5]
I wish I had access to more land areas near my home to participate in outdoor activities.	-.077	-.173	.036	-.091	-.055	---	-.050
I would pay a fee to have access to more land areas near my home to participate in outdoor activities.	.059	-.097	---	-.135	-.100	.105	.101
Limited access to land areas is the primary reason why I do not participate in outdoor activities near my home.	-.106	---	---	---	---	-.109	-.169
The WDFW should work with private land owners to provide more access to land areas near my home for outdoor activities.	-.137	-.059	.044	-.091	-.071	---	---

[1] Unless otherwise noted, correlations are represented by Pearson's *r*, where .100 = "small", .300 = "medium", and .500 = "large" effects. Cell entries with a "---" are not significant ($p < .05$).

[2] Statements about land access were measured on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree).

[3] Gender was measured as a dichotomous variable, where 0 = Male and 1 = Female. Correlations reported are point-biserial, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Income was measured on a 9-point scale where a larger value corresponded to a higher income bracket.

[5] Education was measured on a 5-point scale, where a larger value corresponded to a higher education level.

Table D-7. Differences between hunting types on statements about land access.

Statements about land access	Hunting type[1]			*F*-value[2]	ES[3]
	Non-hunter	Past Hunter	Current Hunter		
I wish I had access to more land areas near my home to participate in outdoor activities.	3.78[a]	4.08[b]	5.31[c]	141.07	.255
I would pay a fee to have access to more land areas near my home to participate in outdoor activities.	3.41[a]	3.20[b]	3.50[a]	7.33	.060
Limited access to land areas is the primary reason why I do not participate in outdoor activities near my home.	2.22[a]	2.70[b]	3.57[c]	130.25	.246
The WDFW should work with private land owners to provide more access to land areas near my home for outdoor activities.	3.91[a]	3.98[a]	5.45[b]	143.67	.257

[1] Cell entries represent means ranging from 1 = "Strongly disagree" to 7 = "Strongly agree". Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p <= .001$).

[3] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table D-8. Differences between angling types on statements about land access.

Statements about land access	Angling type[1]			*F*-value[2]	ES[3]
	Non-angler	Past Angler	Current Angler		
I wish I had access to more land areas near my home to participate in outdoor activities.	3.66[a]	3.80[a]	4.66[b]	110.91	.229
I would pay a fee to have access to more land areas near my home to participate in outdoor activities.	3.20[a]	3.33[ab]	3.47[b]	4.81	.049
Limited access to land areas is the primary reason why I do not participate in outdoor activities near my home.	2.43[a]	2.21[b]	3.09[c]	106.19	.225
The WDFW should work with private land owners to provide more access to land areas near my home for outdoor activities.	3.77[a]	3.81[a]	4.73[b]	113.90	.232

[1] Cell entries represent means ranging from 1 = "Strongly disagree" to 7 = "Strongly agree". Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .01$).

[3] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table D-9. Differences between wildlife-viewing types on statements about land access.

Statements about land access	Wildlife-viewing type[1]			*F*-value	*p*-value	ES[2]
	Has never participated	Participated in the past	Currently participates			
I wish I had access to more land areas near my home to participate in outdoor activities.	4.17	3.93	4.10	2.45	.086	---
I would pay a fee to have access to more land areas near my home to participate in outdoor activities.	2.83[a]	3.12[b]	3.46[c]	24.71	<.001	.109
Limited access to land areas is the primary reason why I do not participate in outdoor activities near my home.	2.90[a]	2.82[a]	2.48[b]	15.69	<.001	.088
The WDFW should work with private land owners to provide more access to land areas near my home for outdoor activities.	4.37[a]	4.02[b]	4.13[ab]	3.79	.023	.043

[1] Cell entries represent means ranging from 1 = "Strongly disagree" to 7 = "Strongly agree". Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table D-10. Difference between current hunters and residents who were classified in the hunting latent demand group on statements about land access.

Statements about land access	Groups[1]		*t*-value	*p*-value	ES[3]
	Current Hunter	Latent Demand[2]			
I wish I had access to more land areas near my home to participate in outdoor activities.	5.31	4.82	4.33	<.001	.132
I would pay a fee to have access to more land areas near my home to participate in outdoor activities.	3.50	3.45	.369	.712	---
Limited access to land areas is the primary reason why I do not participate in outdoor activities near my home.	3.57	3.13	3.44	.001	.106
The WDFW should work with private land owners to provide more access to land areas near my home for outdoor activities.	5.45	4.52	8.20	<.001	.244

[1] Cell entries represent means ranging from 1 = “Strongly disagree” to 7 = “Strongly agree”.

[2] “Latent demand” is defined as residents who indicated they do not currently participate in hunting, but have a future interest in participating.

[3] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = “small”, .243 = “medium”, and .371 = “large” effects.

Table D-11. Differences between wildlife value orientation types on statements about land access.

Statements about land access	Wildlife value orientation type[1]				*F*-value[2]	ES[3]
	Utilitarian	Pluralist	Mutualist	Distanced		
I wish I had access to more land areas near my home to participate in outdoor activities.	3.98[a]	4.63[b]	4.13[a]	3.71[c]	27.56	.141
I would pay a fee to have access to more land areas near my home to participate in outdoor activities.	2.83[a]	3.51[b]	3.88[c]	3.17[d]	84.13	.240
Limited access to land areas is the primary reason why I do not participate in outdoor activities near my home.	2.51[a]	3.30[b]	2.51[a]	2.20[c]	45.46	.179
The WDFW should work with private land owners to provide more access to land areas near my home for outdoor activities.	3.86[a]	4.64[b]	4.23[c]	3.97[a]	26.24	.137

[1] Cell entries represent means ranging from 1 = Strongly disagree to 7 = Strongly agree. Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = small, .243 = medium, and .371 = large effects.

Table D-12. Percent of residents agreeing with beliefs about access to land areas near their homes.

County	Want more land access	Willing to pay a fee for more land access	Limited access is primary reason for non-participation	WDFW should work with private landowners to provide more land access
Adams	41.3	28.8	21.5	45.0
Asotin	39.2	23.8	19.5	50.4
Benton	43.5	28.3	16.1	46.7
Chelan	37.8	23.5	11.3	37.8
Clallam	34.7	22.8	10.7	41.8
Clark	45.2	33.3	12.5	41.7
Columbia	45.3	25.0	20.6	54.3
Cowlitz	58.6	40.9	31.0	55.6
Douglas	38.0	24.4	11.4	46.8
Ferry	34.9	20.0	11.5	40.4
Franklin	42.9	30.3	25.0	54.7
Garfield	32.0	16.1	10.4	31.5
Grant	44.9	20.2	20.2	46.1
Grays Harbor	35.0	29.3	17.5	43.8
Island	27.5	23.9	10.9	44.0
Jefferson	23.9	31.9	6.1	32.3
King	35.2	28.3	10.9	35.2
Kitsap	33.3	28.9	10.5	33.7
Kittitas	41.5	32.3	19.7	46.8
Klickitat	43.0	22.5	15.0	43.3
Lewis	58.3	37.6	27.7	56.0
Lincoln	31.1	19.0	16.5	33.3
Mason	34.7	26.3	14.6	46.3
Okanogan	43.9	23.6	13.9	42.7
Pacific	51.6	39.6	22.9	56.4
Pend Oreille	38.7	21.4	16.8	36.0
Pierce	53.2	47.4	20.5	44.3
San Juan	30.4	25.0	5.4	40.5
Skagit	50.8	34.4	14.2	57.7
Skamania	38.8	21.0	13.5	38.5
Snohomish	40.7	26.5	11.9	48.2
Spokane	41.4	30.6	12.6	40.9
Stevens	46.8	23.8	16.0	36.5
Thurston	42.7	33.3	11.9	46.2
Wahkiakum	43.1	19.4	18.4	38.6
Walla Walla	36.0	26.1	15.0	46.0
Whatcom	32.2	30.3	8.5	46.2
Whitman	37.4	23.3	8.9	38.9
Yakima	38.0	28.4	16.0	36.6
Washington	**40.7**	**31.1**	**13.6**	**41.6**

APPENDIX E. SUPPORTING TABLES FOR ATTITUDES TOWARD WILDLIFE AND WILDLIFE MANAGEMENT SECTION

Table E-1. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to lethally remove a coyote if it is seen near their homes.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	24.3	10.9	5.3	10.9	11.8	11.5	25.3
Pluralist	29.0	11.0	5.6	10.5	12.7	13.1	18.2
Mutualist	49.2	15.1	9.4	6.4	7.9	7.0	5.2
Distanced	38.1	18.6	7.0	9.0	12.0	6.5	8.8
Washington	**36.1**	**13.7**	**7.1**	**8.9**	**10.6**	**9.2**	**14.3**

Table E-2. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to lethally remove a coyote if it is a nuisance.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	10.0	11.3	8.5	7.0	15.3	20.0	27.9
Pluralist	18.4	11.4	5.8	6.3	15.4	20.2	22.5
Mutualist	32.8	19.5	11.7	7.5	11.4	8.5	8.7
Distanced	29.3	12.2	16.4	6.9	18.7	8.8	7.7
Washington	**22.6**	**14.3**	**10.7**	**7.1**	**14.5**	**14.0**	**16.8**

Table E-3. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to lethally remove a coyote if it has a disease that may spread to humans.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	1.8	0.6	2.1	0.9	4.3	14.1	76.2
Pluralist	3.5	2.6	1.1	0.7	7.2	18.1	66.7
Mutualist	4.6	3.2	4.2	3.0	13.5	24.0	47.6
Distanced	4.2	0.7	7.7	3.3	12.9	25.0	46.3
Washington	**3.4**	**1.8**	**3.7**	**2.0**	**9.5**	**20.0**	**59.5**

Table E-4. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to lethally remove a coyote if it attacks a pet near their homes.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	4.7	3.6	4.9	5.6	12.7	18.1	50.4
Pluralist	7.2	5.2	4.4	7.0	10.8	20.8	44.7
Mutualist	12.6	10.1	5.0	8.4	19.6	23.7	20.7
Distanced	8.8	10.3	9.4	7.3	15.8	26.4	22.0
Washington	**8.6**	**7.3**	**5.7**	**7.1**	**15.4**	**21.9**	**34.1**

Table E-5. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to lethally remove a coyote if it attacks a person near their homes.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	2.7	0.9	0.4	1.2	3.1	5.8	86.0
Pluralist	5.8	0.4	0.5	1.2	4.2	6.7	81.2
Mutualist	7.2	3.7	2.4	2.2	8.3	19.3	57.0
Distanced	1.4	1.9	3.0	3.4	7.3	14.8	68.2
Washington	**4.5**	**2.0**	**1.6**	**1.9**	**5.8**	**12.3**	**72.0**

Table E-6. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to lethally remove a black bear if it is seen near their homes.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	22.0	10.3	7.5	10.8	14.8	12.0	22.6
Pluralist	30.2	10.8	7.7	10.5	12.1	7.3	21.3
Mutualist	46.2	13.6	6.8	10.3	9.0	8.3	5.8
Distanced	34.9	15.0	11.0	4.6	17.7	7.0	9.7
Washington	**33.9**	**12.4**	**7.9**	**9.5**	**12.9**	**9.2**	**14.3**

Table E-7. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to lethally remove a black bear if it is a nuisance.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	9.7	8.4	8.2	6.2	16.6	22.3	28.5
Pluralist	15.2	11.7	7.4	7.6	15.2	13.6	29.3
Mutualist	29.3	14.4	15.4	7.0	11.1	13.3	9.4
Distanced	26.6	11.0	13.0	6.1	18.5	12.9	11.9
Washington	**20.3**	**11.4**	**11.4**	**6.7**	**14.8**	**16.3**	**19.0**

Table E-8. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to lethally remove a black bear if it has a disease that may spread to humans.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	1.6	0.5	1.4	1.7	5.9	12.2	76.7
Pluralist	3.7	2.1	1.6	0.7	10.9	14.4	66.6
Mutualist	5.1	4.0	3.5	3.0	14.4	22.9	47.1
Distanced	3.8	3.5	0.9	4.3	13.6	28.9	44.9
Washington	**3.5**	**2.5**	**2.1**	**2.5**	**11.0**	**19.2**	**59.2**

Table E-9. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to lethally remove a black bear if it attacks a pet near their homes.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	3.9	5.5	2.1	2.6	11.7	18.0	56.3
Pluralist	7.7	4.0	4.0	3.0	15.8	14.0	51.4
Mutualist	12.5	9.1	5.8	6.6	20.4	20.9	24.8
Distanced	7.3	8.3	11.0	4.9	16.8	18.2	33.6
Washington	**8.0**	**7.0**	**5.3**	**4.5**	**16.2**	**18.5**	**40.5**

Table E-10. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to lethally remove a black bear if it attacks a person near their homes.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	1.8	0.9	0.3	1.2	2.9	6.4	86.6
Pluralist	6.0	0.2	0.7	0.7	3.0	6.2	83.1
Mutualist	6.7	4.2	1.9	1.6	11.2	17.4	57.1
Distanced	1.1	2.2	0.1	2.2	6.0	13.5	75.0
Washington	**3.9**	**2.2**	**0.9**	**1.4**	**6.3**	**11.5**	**73.7**

Table E-11. Correlations[1] among demographics and the acceptability of lethal removal[2] of coyote and black bear.

Is it unacceptable or acceptable for WDFW to lethally remove a…	Demographics						
	Gender[3]	Age	Residents <18 years at home	Years in Washington	Years in household	Income[4]	Education[5]
COYOTE if it…							
…is seen near your home?	-.133	.148	---	.139	.067	-.165	-.150
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	-.154	.140	---	.189	.085	-.160	-.160
…has a disease that may be spread to humans?	---	.042	---	.123	.088	-.084	-.064
…attacks a pet near your home?	---	.079	---	.134	.039	-.088	-.145
…attacks a person near your home?	---	---	.052	.070	.050	-.034	---
BLACK BEAR if it…							
…is seen near your home?	-.043	.165	-.019	.190	.108	-.191	-.133
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	-.082	.159	---	.222	.119	-.160	-.129
…has a disease that may be spread to humans?	---	.073	---	.157	.085	-.144	-.098
…attacks a pet near your home?	---	.081	---	.166	.047	-.121	-.143
…attacks a person near your home?	---	---	.034	.079	.038	-.056	-.044

[1] Unless otherwise noted, correlations are represented by Pearson's *r*, where .100 = "small", .300 = "medium", and .500 = "large" effects. Cell entries with a "---" are not significant ($p < .05$).

[2] Statements about the acceptability of lethal removal were measured on a 7-point scale ranging from "highly unacceptable" to "highly acceptable."

[3] Gender was measured as a dichotomous variable, where 0 = "Male" and 1 = "Female." Correlations reported are point-biserial, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Income was measured on a 9-point scale where a larger value corresponded to a higher income bracket.

[5] Education was measured on a 5-point scale, where a larger value corresponded to a higher education level.

Table E-12. Differences between hunting types on acceptability of lethal removal of coyote and black bear.

Is it unacceptable or acceptable for WDFW to lethally remove a…	Hunting type[1]			*F*-value	*p*-value	ES[2]
	Non-hunter	Past Hunter	Current Hunter			
COYOTE if it…						
…is seen near your home?	3.05[a]	3.44[b]	3.75[c]	25.77	<.001	.112
…is a nuisance (for example: it gets into trash or pet food containers) near your home?[3]	3.57[a]	3.97[b]	4.62[c]	49.98	<.001	.155
…has a disease that may be spread to humans?[3]	6.03[a]	6.13[ab]	6.32[b]	7.53	.001	.061
…attacks a pet near your home?	5.03[a]	5.24[b]	5.32[b]	7.35	.001	.060
…attacks a person near your home?[3]	6.22	6.32	6.39	3.46	.032	.041
BLACK BEAR if it…						
…is seen near your home?[3]	3.29[a]	3.44[ab]	3.62[b]	5.21	.005	.051
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	3.83[a]	4.22[b]	4.72[c]	37.40	<.001	.135
…has a disease that may be spread to humans?	6.07[a]	6.06[a]	6.27[b]	4.03	.018	.045
…attacks a pet near your home?	5.19[a]	5.43[b]	5.51[b]	9.48	<.001	.068
…attacks a person near your home?	6.27[a]	6.36[ab]	6.52[b]	5.99	.003	.054

[1] Cell entries represent means ranging from 1 = "Highly unacceptable" to 5 = "Highly acceptable". Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[3] Different superscripts denote statistical difference ($p < .05$) as reported by Scheffe's post hoc test.

Table E-13. Differences between angling types on acceptability of lethal removal of coyote and black bear.

Is it unacceptable or acceptable for WDFW to lethally remove a…	Angling type[1]			*F*-value	*p*-value	ES[2]
	Non-angler	Past Angler	Current Angler			
COYOTE if it…						
…is seen near your home?	3.11[a]	3.18[a]	3.48[b]	9.21	<.001	.068
…is a nuisance (for example: it gets into trash or pet food containers) near your home?[3]	3.42[a]	3.78[b]	4.10[c]	22.53	<.001	.106
…has a disease that may be spread to humans?	5.99	6.12	6.15	2.47	.085	---
…attacks a pet near your home?	4.98	5.14	5.20	2.84	.058	---
…attacks a person near your home?	6.18	6.31	6.29	1.69	.184	---
BLACK BEAR if it…						
…is seen near your home?	3.42	3.38	3.36	.148	.862	---
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	3.84[a]	4.08[ab]	4.17[b]	5.08	.006	.050
…has a disease that may be spread to humans?	5.99	6.10	6.12	1.67	.188	---
…attacks a pet near your home?	5.15	5.33	5.34	2.39	.092	---
…attacks a person near your home?	6.28	6.30	6.40	2.32	.098	---

[1] Cell entries represent means ranging from 1 = "Highly unacceptable" to 5 = "Highly acceptable". Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

[3] Different superscripts denote statistical difference ($p < .05$) as reported by Scheffe's post hoc test.

Table E-14. Differences between wildlife-viewing types on acceptability of lethal removal of coyote and black bear.

Is it unacceptable or acceptable for WDFW to lethally remove a…	Wildlife-viewing type[1]			*F*-value[2]	ES[3]
	Has never participated	Participated in the past	Currently participates		
COYOTE if it…					
…is seen near your home?[4]	4.92	3.83	2.99	144.97	.258
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	5.11[a]	4.33[b]	3.61[c]	93.07	.209
…has a disease that may be spread to humans?	6.48[a]	6.22[b]	6.04[c]	15.40	.087
…attacks a pet near your home?	5.93[a]	5.42[b]	5.01[c]	41.89	.142
…attacks a person near your home?[3]	6.64[a]	6.43[b]	6.21[c]	16.18	.089
BLACK BEAR if it…					
…is seen near your home?[4]	4.77[a]	3.92[b]	3.13[c]	108.86	.225
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	5.22[a]	4.49[b]	3.89[c]	71.75	.185
…has a disease that may be spread to humans?	6.56[a]	6.32[b]	6.00[c]	30.41	.121
…attacks a pet near your home?	6.23[a]	5.58[b]	5.16[c]	54.44	.161
…attacks a person near your home?	6.74[a]	6.50[b]	6.26[c]	21.81	.103

[1] Cell entries represent means ranging from 1 = "Highly unacceptable" to 5 = "Highly acceptable". Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All p-values are significant ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Different superscripts denote statistical difference ($p < .05$) as reported by Scheffe's post hoc test.

Table E-15. Differences between current hunters and residents who were classified in the hunting latent demand group on acceptability of lethal removal of coyote and black bear.

Is it unacceptable or acceptable for WDFW to lethally remove a…	Groups[1]		*t*-value	*p*-value	ES[3]
	Current Hunter	Latent Demand[2]			
COYOTE if it…					
…is seen near your home?	3.75	3.65	0.68	.497	---
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	4.62	4.21	3.02	.003	.092
…has a disease that may be spread to humans?	6.32	6.39	-0.83	.407	---
…attacks a pet near your home?	5.32	5.42	-0.77	.444	---
…attacks a person near your home?	6.39	6.47	-0.95	.340	---
BLACK BEAR if it…					
…is seen near your home?	3.62	3.47	1.12	.263	---
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	4.72	4.18	4.11	<.001	.125
…has a disease that may be spread to humans?	6.27	6.26	0.16	.875	---
…attacks a pet near your home?	5.51	5.41	0.81	.419	---
…attacks a person near your home?	6.52	6.49	0.33	.743	---

[1] Cell entries represent means ranging from 1 = "Highly unacceptable" to 7 = "Highly acceptable".

[2] "Latent demand" is defined as residents who indicated they do not currently participate in hunting, but have a future interest in participating.

[3] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table E-16. Differences between wildlife value orientation types on acceptability of lethal removal of coyote and black bear.

Is it unacceptable or acceptable for WDFW to lethally remove a…	Wildlife value orientation type[1]					
	Utilitarian	Pluralist	Mutualist	Distanced	*F*-value[2]	ES[3]
COYOTE if it…						
…is seen near your home?	4.11[a]	3.79[b]	2.50[c]	2.93[d]	147.20	.311
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	4.78[a]	4.39[b]	3.06[c]	3.31[d]	190.53	.350
…has a disease that may be spread to humans?	6.52[a]	6.27[b]	5.80[c]	5.80[c]	71.79	.223
…attacks a pet near your home?	5.74[a]	5.50[a]	4.66[b]	4.78[b]	90.87	.249
…attacks a person near your home?	6.62[a]	6.42[b]	5.87[c]	6.31[b]	62.07	.208
BLACK BEAR if it…						
…is seen near your home?	4.12[a]	3.71[b]	2.71[c]	3.15[d]	107.11	.269
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	4.93[a]	4.53[b]	3.34[c]	3.65[d]	151.35	.316
…has a disease that may be spread to humans?	6.53[a]	6.23[b]	5.75[c]	5.86[c]	75.54	.229
…attacks a pet near your home?	5.92[a]	5.62[b]	4.75[c]	5.05[d]	97.57	.258
…attacks a person near your home?	6.68[a]	6.46[b]	5.87[c]	6.50[b]	81.26	.237

[1] Cell entries represent means ranging from 1 = Highly unacceptable to 5 = Highly acceptable. Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = small, .243 = medium, and .371 = large effects.

Table E-17. Percent of residents agreeing that lethal removal of a coyote is acceptable in various situations.

	Lethal removal is acceptable if coyote…				
County	Is seen near home	Is a nuisance	Has a disease that can spread to humans	Attacks a pet	Attacks a human
Adams	44.3	53.2	83.1	67.1	80.8
Asotin	49.2	69.9	92.0	85.5	92.6
Benton	32.6	41.6	87.6	68.5	89.9
Chelan	28.1	40.2	88.7	69.1	93.8
Clallam	28.3	44.1	88.3	69.4	89.2
Clark	32.4	42.3	94.2	80.8	96.1
Columbia	36.4	58.6	96.4	82.6	94.3
Cowlitz	34.2	45.9	92.1	80.7	89.6
Douglas	38.0	50.6	81.0	70.0	77.2
Ferry	23.8	43.3	87.5	70.5	89.5
Franklin	35.5	57.0	89.7	74.4	88.5
Garfield	38.2	48.8	89.6	69.4	85.4
Grant	33.7	47.2	94.4	81.8	95.5
Grays Harbor	38.8	50.6	83.8	73.8	88.9
Island	30.6	42.3	86.1	70.3	82.0
Jefferson	23.5	30.4	83.1	57.4	83.7
King	35.2	44.4	91.2	68.1	92.3
Kitsap	24.5	37.5	84.5	72.0	86.6
Kittitas	26.4	38.7	86.4	68.3	86.6
Klickitat	22.1	41.5	85.6	66.4	89.8
Lewis	25.9	40.0	84.7	75.0	88.2
Lincoln	30.1	49.6	95.2	74.6	92.7
Mason	35.8	53.2	92.6	76.9	90.2
Okanogan	21.1	37.4	83.6	66.0	81.5
Pacific	27.7	42.6	86.2	74.5	89.4
Pend Oreille	21.1	43.8	89.5	72.1	91.9
Pierce	41.3	45.6	85.0	70.0	85.0
San Juan	21.0	29.5	84.8	66.0	88.7
Skagit	33.9	50.0	93.4	69.7	93.3
Skamania	21.9	41.4	86.0	67.2	86.7
Snohomish	36.1	40.2	83.1	67.5	85.5
Spokane	36.7	54.7	94.4	79.8	93.6
Stevens	27.4	53.3	92.7	75.8	94.3
Thurston	29.9	43.6	91.5	70.6	91.5
Wahkiakum	41.2	55.4	91.1	81.8	90.0
Walla Walla	34.2	56.6	93.8	79.6	93.8
Whatcom	26.7	41.7	84.5	65.0	87.2
Whitman	31.5	48.3	87.6	78.7	90.9
Yakima	35.8	57.0	87.7	78.8	90.1
Washington	**34.2**	**45.0**	**89.1**	**71.4**	**90.1**

Table E-18. Percent of residents agreeing that lethal removal of a black bear is acceptable in various situations.

	Lethal removal is acceptable if black bear…				
County	Is seen near home	Is a nuisance	Has a disease that can spread to humans	Attacks a pet	Attacks a human
Adams	57.1	61.0	86.8	76.6	88.2
Asotin	52.8	72.6	90.3	87.1	92.7
Benton	37.1	60.7	92.1	74.2	93.3
Chelan	36.1	50.0	88.7	78.4	89.7
Clallam	27.7	45.4	85.6	71.7	85.8
Clark	34.6	49.5	94.2	81.6	97.1
Columbia	42.1	66.4	95.0	83.9	94.3
Cowlitz	34.8	51.3	92.1	82.3	89.7
Douglas	41.3	53.8	82.1	68.4	79.5
Ferry	20.0	43.8	91.3	74.3	94.3
Franklin	44.9	57.7	93.5	80.8	92.3
Garfield	41.9	55.6	89.5	75.8	91.1
Grant	44.4	60.2	94.5	83.0	93.4
Grays Harbor	35.0	51.3	84.8	75.0	90.0
Island	31.8	45.5	84.7	71.6	83.5
Jefferson	19.3	34.1	80.0	60.4	85.2
King	39.6	50.6	93.3	73.3	93.3
Kitsap	27.3	39.4	83.7	71.4	86.9
Kittitas	28.1	46.7	85.7	70.5	89.0
Klickitat	26.7	44.2	83.2	67.5	90.8
Lewis	30.6	41.2	84.7	77.4	91.7
Lincoln	41.9	58.1	95.2	83.7	96.0
Mason	35.8	52.6	90.4	78.9	92.2
Okanogan	23.9	46.3	84.5	69.8	88.2
Pacific	16.8	35.8	83.9	75.5	90.4
Pend Oreille	22.1	38.3	89.3	76.0	93.4
Pierce	41.3	48.1	87.5	77.5	85.0
San Juan	20.0	32.1	83.2	67.0	87.9
Skagit	36.4	50.4	93.4	76.2	92.6
Skamania	20.3	41.9	86.0	68.0	86.8
Snohomish	34.9	44.0	78.6	68.7	89.2
Spokane	37.0	61.1	95.4	83.3	98.1
Stevens	21.8	52.0	90.3	78.9	92.8
Thurston	30.8	47.4	88.0	70.3	91.5
Wahkiakum	36.6	56.0	93.0	81.0	91.1
Walla Walla	38.7	60.2	93.8	83.2	95.6
Whatcom	24.1	44.4	86.2	72.4	89.7
Whitman	32.6	52.8	85.4	82.0	89.9
Yakima	40.7	61.7	91.5	82.5	90.2

Table E-19. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to capture and lethally remove problem deer or elk.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	20.3	11.4	7.8	9.1	14.9	17.6	18.9
Pluralist	21.2	20.0	12.3	7.0	16.1	10.0	13.5
Mutualist	46.7	14.3	9.1	8.0	14.0	3.4	4.6
Distanced	29.3	12.9	13.2	6.9	24.0	10.7	2.9
Washington	**31.2**	**13.9**	**9.8**	**8.1**	**16.3**	**10.4**	**10.4**

Table E-20. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to use techniques designed to scare away problem deer or elk.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	3.0	5.0	2.7	6.4	14.7	23.0	45.1
Pluralist	4.7	5.3	3.5	9.5	18.2	19.1	39.6
Mutualist	5.1	6.5	6.0	3.5	20.0	27.5	31.4
Distanced	1.8	5.0	4.5	5.1	27.4	28.9	27.4
Washington	**3.8**	**5.6**	**4.3**	**5.6**	**19.4**	**25.0**	**36.4**

Table E-21. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to use agency funds to compensate landowners for damage ($10,000 or more) caused by deer of elk.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	29.9	14.1	11.6	12.7	17.0	8.3	6.5
Pluralist	28.7	13.4	9.7	12.3	15.8	12.5	7.6
Mutualist	30.9	18.4	11.2	15.7	12.8	6.9	4.1
Distanced	37.9	19.5	10.2	15.7	12.9	3.0	0.8
Washington	**31.5**	**16.5**	**10.9**	**14.2**	**14.7**	**7.4**	**4.8**

Table E-22. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to contribute agency funds to a landowner cost-sharing program supporting the construction of fences around property damaged by deer or elk.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	22.4	15.3	10.4	11.2	19.4	13.9	7.3
Pluralist	20.9	9.8	5.6	14.6	22.8	14.8	11.3
Mutualist	18.5	13.8	8.8	9.5	28.8	13.8	6.7
Distanced	26.1	11.5	11.4	12.1	20.8	15.5	2.7
Washington	**21.5**	**13.3**	**9.4**	**11.3**	**23.4**	**14.3**	**6.8**

Table E-23. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to require landowners to accept at least 50% of the responsibility in dealing with problem deer or elk.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	8.9	3.5	3.8	12.3	22.5	23.2	25.8
Pluralist	8.0	3.0	6.8	13.6	13.3	27.4	27.7
Mutualist	5.0	3.9	4.3	11.0	16.2	27.8	31.8
Distanced	2.5	2.2	2.5	11.6	23.6	26.6	31.2
Washington	**6.2**	**3.3**	**4.2**	**11.9**	**19.2**	**26.0**	**29.1**

Table E-24. Correlations[1] among demographics and the acceptability of different management actions for deer/elk.[2]

	Demographics						
Is it unacceptable or acceptable for WDFW to…	Gender[3]	Age	Residents <18 years at home	Years in Washington	Years in household	Income[4]	Education[5]
…capture and lethally remove problem deer or elk?	-.141	.095	---	.111	.081	-.073	-.033
…use techniques designed to scare problem deer or elk away (examples: loud noises, rubber bullets)?	---	---	.076	.054	---	---	-.038
…use agency funds to compensate landowners for damage ($10,000 or more) caused by deer or elk?	---	.166	---	.134	.098	-.221	-.097
…contribute agency funds to a landowner cost-sharing program supporting the construction of fences around property that has been damaged by deer or elk?[4]	.069	.104	---	.077	.040	-.193	---
…require landowners to accept at least 50 of the responsibility in dealing with problem deer or elk?	.089	-.107	---	-.154	-.109	.070	.104

[1] Unless otherwise noted, correlations are represented by Pearson's *r*, where .100 = "small", .300 = "medium", and .500 = "large" effects. Cell entries with a "---" are not significant ($p < .05$).

[2] Statements about land the acceptability of deer/elk-related management actions were measured on a 7-point scale ranging from "highly unacceptable" to "highly acceptable."

[3] Gender was measured as a dichotomous variable, where 0 = Male and 1 = Female. Correlations reported are point-biserial, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Income was measured on a 9-point scale where a larger value corresponded to a higher income bracket.

[5] Education was measured on a 5-point scale, where a larger value corresponded to a higher education level.

Table E-25. Differences between hunting types on acceptability of different management actions for deer/elk.

Is it unacceptable or acceptable for WDFW to…	Hunting type[1]			*F*-value	*p*-value	ES[2]
	Non-hunter	Past Hunter	Current Hunter			
…capture and lethally remove problem deer or elk?	3.18[a]	3.41[b]	3.98[c]	28.84	<.001	.119
…use techniques designed to scare problem deer or elk away (examples: loud noises, rubber bullets)?	5.54	5.53	5.41	1.41	.244	---
…use agency funds to compensate landowners for damage ($10,000 or more) caused by deer or elk?	2.94[a]	3.04[a]	3.51[b]	17.74	<.001	.093
…contribute agency funds to a landowner cost-sharing program supporting the construction of fences around property that has been damaged by deer or elk?[3]	3.74	3.61[a]	3.89[b]	4.05	.017	.045
…require landowners to accept at least 50 of the responsibility in dealing with problem deer or elk?	5.42[a]	5.24[b]	4.85[c]	23.06	<.001	.106

[1] Cell entries represent means. Original response scales ranged from 1 (highly unacceptable) to 7 (highly acceptable). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

[3] Different superscripts denote statistical difference ($p < .05$) as reported by Scheffe's post hoc test.

Table E-26. Differences between angling types on acceptability of different management actions for deer/elk.

Is it unacceptable or acceptable for WDFW to…	Angling type[1]			*F*-value	*p*-value	ES[2]
	Non-angler	Past Angler	Current Angler			
…capture and lethally remove problem deer or elk?	2.99[a]	3.33[b]	3.53[c]	14.39	<.001	.085
…use techniques designed to scare problem deer or elk away (examples: loud noises, rubber bullets)?	5.35[a]	5.67[b]	5.41[a]	13.93	<.001	.083
…use agency funds to compensate landowners for damage ($10,000 or more) caused by deer or elk?	2.75[a]	3.01[b]	3.21[c]	13.67	<.001	.082
…contribute agency funds to a landowner cost-sharing program supporting the construction of fences around property that has been damaged by deer or elk?	3.45[a]	3.78[b]	3.69[b]	6.94	.001	.059
…require landowners to accept at least 50 of the responsibility in dealing with problem deer or elk?	5.48[a]	5.39[a]	5.11[b]	15.76	<.001	.089

[1] Cell entries represent means. Original response scales ranged from 1 (highly unacceptable) to 7 (highly acceptable). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table E-27. Differences between wildlife-viewing types on acceptability of different management actions for deer/elk.

Is it unacceptable or acceptable for WDFW to…	Wildlife-viewing type[1]			*F*-value	*p*-value	ES[2]
	Has never participated	Participated in the past	Currently participates			
…capture and lethally remove problem deer or elk?	4.03[a]	3.94[a]	3.20[b]	48.85	<.001	.153
…use techniques designed to scare problem deer or elk away (examples: loud noises, rubber bullets)?	5.55	5.60	5.50	0.96	.384	---
…use agency funds to compensate landowners for damage ($10,000 or more) caused by deer or elk?	3.71[a]	3.22[b]	2.95[c]	28.54	<.001	.118
…contribute agency funds to a landowner cost-sharing program supporting the construction of fences around property that has been damaged by deer or elk?	4.11[a]	3.81[ab]	3.66[b]	9.02	<.001	.066
…require landowners to accept at least 50 of the responsibility in dealing with problem deer or elk?	4.54[a]	5.37[b]	5.37[b]	38.16	<.001	.136

[1] Cell entries represent means. Original response scales ranged from 1 (highly unacceptable) to 7 (highly acceptable). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table E-28. Differences between current hunters and residents who were classified in the hunting latent demand group on acceptability of different management actions for deer/elk.

Is it unacceptable or acceptable for WDFW to…	Groups[1]		*t*-value	*p*-value	ES[3]
	Current Hunter	Latent Demand[2]			
…capture and lethally remove problem deer or elk?	3.98	3.70	2.11	.035	.065
…use techniques designed to scare problem deer or elk away (examples: loud noises, rubber bullets)?	5.41	5.68	-2.63	.009	.082
…use agency funds to compensate landowners for damage ($10,000 or more) caused by deer or elk?	3.51	3.22	2.28	.023	.071
…contribute agency funds to a landowner cost-sharing program supporting the construction of fences around property that has been damaged by deer or elk?	3.89	3.94	-0.41	.685	---
…require landowners to accept at least 50% of the responsibility in dealing with problem deer or elk?	4.85	5.22	-3.14	.002	.097

[1] Cell entries represent means. Original response scales ranged from 1 (highly unacceptable) to 7 (highly acceptable).

[2] "Latent demand" is defined as residents who indicated they do not currently participate in hunting, but have a future interest in participating.

[3] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table E-29. Differences between wildlife value orientation types on acceptability of different management actions for deer/elk.

Is it unacceptable or acceptable for WDFW to…	Wildlife value orientation type[1]				*F*-value[2]	ES[3]
	Utilitarian	Pluralist	Mutualist	Distanced		
…capture and lethally remove problem deer or elk?	4.15[a]	3.61[b]	2.57[c]	3.27[d]	143.60	.309
…use techniques designed to scare problem deer or elk away (examples: loud noises, rubber bullets)?	5.74[a]	5.47[b]	5.35[b]	5.47[b]	13.79	.100
…use agency funds to compensate landowners for damage ($10,000 or more) caused by deer or elk?	3.24[a]	3.41[a]	2.98[b]	2.59[c]	26.92	.139
…contribute agency funds to a landowner cost-sharing program supporting the construction of fences around property that has been damaged by deer or elk?[4]	3.61[a]	3.99[b]	3.84[b]	3.47[a]	10.72	.088
…require landowners to accept at least 50 of the responsibility in dealing with problem deer or elk?	5.09[a]	5.15[a]	5.40[b]	5.56[b]	15.88	.107

[1] Cell entries represent means. Original response scales ranged from 1 (highly unacceptable) to 7 (highly acceptable). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = small, .243 = medium, and .371 = large effects.

[4] Different superscripts denote statistical difference ($p < .05$) as reported by Scheffe's post hoc test.

Table E-30. Percent of residents accepting of different management actions for problem deer or elk.

County	Lethally remove	Scare away	Agency compensate for damage	Cost-share program to build fences	Landowners accept 50% responsibility
Adams	48.7	78.7	46.1	55.1	64.9
Asotin	50.0	86.3	57.3	51.6	55.3
Benton	47.7	85.4	39.3	41.6	80.7
Chelan	42.9	92.8	42.3	64.9	73.2
Clallam	40.3	75.0	28.3	40.8	68.6
Clark	36.9	83.7	25.7	39.8	68.9
Columbia	46.8	88.6	50.4	52.9	67.1
Cowlitz	42.0	76.5	30.1	43.4	64.9
Douglas	38.3	84.0	41.3	58.0	77.5
Ferry	39.4	75.2	40.0	55.8	63.5
Franklin	43.0	87.2	50.0	57.7	65.4
Garfield	57.4	80.0	65.3	62.1	44.4
Grant	46.2	88.9	40.0	58.9	75.3
Grays Harbor	40.3	77.5	32.1	48.1	71.3
Island	32.7	78.2	26.1	34.5	62.4
Jefferson	26.9	78.2	21.1	44.7	69.4
King	38.6	82.2	23.3	51.1	81.8
Kitsap	36.4	79.0	23.5	37.8	80.8
Kittitas	36.4	79.3	37.0	47.5	71.7
Klickitat	40.5	79.2	42.1	63.9	72.1
Lewis	41.9	78.6	41.7	49.4	71.8
Lincoln	41.9	75.6	46.0	42.7	58.9
Mason	34.7	75.8	30.5	44.2	65.9
Okanogan	44.0	72.5	38.9	55.5	71.3
Pacific	29.8	70.2	37.2	47.9	56.4
Pend Oreille	37.7	79.7	40.5	43.8	65.9
Pierce	32.5	76.3	20.0	32.5	73.8
San Juan	33.9	75.5	10.1	30.9	74.5
Skagit	35.8	84.2	24.8	44.7	66.7
Skamania	34.6	70.2	33.8	41.1	65.4
Snohomish	31.3	79.5	26.5	47.0	67.5
Spokane	38.9	79.6	27.1	31.5	80.6
Stevens	42.7	81.5	41.9	46.4	71.8
Thurston	31.6	85.5	32.5	45.3	68.4
Wahkiakum	33.0	68.7	39.2	51.5	58.6
Walla Walla	40.2	75.2	36.6	42.5	67.6
Whatcom	29.9	79.7	18.8	35.6	66.4
Whitman	41.1	78.0	36.3	40.7	64.8
Yakima	42.5	83.8	37.0	60.0	71.6

Table E-31. Percent of wildlife value orientation type indicating it is unacceptable or acceptable for WDFW to move wolves from one area of Washington where they've reached a certain population size to another area in the state to establish new wolf populations.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	19.7	7.1	6.2	6.7	18.5	17.4	24.3
Pluralist	14.6	3.3	5.3	4.2	16.5	25.2	30.9
Mutualist	2.6	2.2	2.1	8.2	15.9	33.5	35.6
Distanced	6.9	3.0	2.6	8.6	24.6	29.4	24.9
Washington	**10.9**	**4.2**	**4.0**	**7.2**	**18.4**	**26.1**	**29.2**

Table E-32. Percent of wildlife value orientation type indicating it is unacceptable or acceptable for WDFW to allow wolves to recolonize and establish new populations on their own in Washington.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	15.0	5.9	8.2	9.0	24.8	16.4	20.6
Pluralist	16.1	5.5	6.4	3.9	23.5	19.3	25.4
Mutualist	2.2	2.7	3.0	6.3	22.2	27.3	36.4
Distanced	3.1	2.4	3.4	9.7	32.4	25.4	23.5
Washington	**8.6**	**4.1**	**5.3**	**7.5**	**25.1**	**22.1**	**27.2**

Table E-33. Percent of wildlife value orientation type indicating it is unacceptable or acceptable for WDFW to limit the number of wolves if they cause declines in deer and elk populations *in certain areas*.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	3.8	3.7	6.1	7.2	22.0	21.9	35.2
Pluralist	8.8	1.4	3.9	6.5	19.8	25.6	33.9
Mutualist	8.6	7.9	9.4	11.5	30.9	18.2	13.6
Distanced	8.0	5.6	9.8	18.5	31.8	19.9	6.4
Washington	**6.9**	**5.2**	**7.5**	**10.6**	**26.5**	**20.8**	**22.5**

Table E-34. Percent of wildlife value orientation type indicating it is unacceptable or acceptable for WDFW to capture and lethally remove a wolf if it is known to have caused loss of livestock.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	3.6	4.9	4.2	5.0	10.8	22.0	49.5
Pluralist	5.5	8.1	7.6	3.4	16.0	19.6	39.9
Mutualist	14.3	12.1	14.9	7.3	20.8	15.1	15.5
Distanced	9.8	10.4	12.5	12.9	25.9	16.8	11.7
Washington	**8.7**	**8.8**	**9.8**	**7.0**	**17.7**	**18.4**	**29.6**

Table E-35. Percent of wildlife value orientation type indicating it is unacceptable or acceptable for WDFW to compensate landowners for loss of livestock caused by a wolf.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	20.0	8.6	7.7	15.9	12.3	16.4	19.2
Pluralist	11.2	20.8	7.6	10.8	15.2	10.5	23.9
Mutualist	19.7	13.2	7.4	13.0	25.7	14.3	6.8
Distanced	23.2	15.8	13.1	15.9	12.0	13.8	6.3
Washington	**19.3**	**13.1**	**8.6**	**14.2**	**17.2**	**14.4**	**13.2**

Table E-36. Percent of wildlife value orientation type indicating it is unacceptable or acceptable for WDFW to use a portion of WDFW hunting and fishing license dollars to compensate landowners for loss of livestock caused by a wolf.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	28.5	9.7	10.2	11.8	15.8	10.7	13.3
Pluralist	21.3	13.6	6.2	9.5	18.1	13.2	18.1
Mutualist	17.6	10.5	7.0	12.2	24.6	17.6	10.4
Distanced	23.9	13.3	8.8	11.5	20.7	14.7	7.1
Washington	**22.9**	**11.1**	**8.3**	**11.5**	**20.0**	**14.2**	**11.9**

Table E-37. Percent of wildlife value orientation type indicating it is unacceptable or acceptable for WDFW to use a portion of state tax dollars to compensate landowners for loss of livestock caused by a wolf.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	29.8	9.2	10.2	11.1	15.5	12.0	12.2
Pluralist	23.8	7.1	10.5	9.8	20.7	9.8	18.4
Mutualist	25.4	11.3	10.2	9.6	26.3	11.9	5.2
Distanced	32.2	20.4	12.1	7.4	19.5	5.3	3.1
Washington	**27.8**	**11.6**	**10.6**	**9.7**	**20.7**	**10.5**	**9.1**

Table E-38. Percent of wildlife value orientation type finding it unacceptable or acceptable for WDFW to allow a recreational hunt of wolves once they have reached a certain population size that exceeds WDFW recovery goals.

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Utilitarian	2.8	2.4	3.1	7.5	12.6	23.3	48.3
Pluralist	8.5	3.9	4.9	7.1	11.1	19.2	45.3
Mutualist	33.4	8.6	6.6	9.7	23.2	10.6	7.9
Distanced	13.7	12.4	7.0	10.9	27.0	12.7	16.2
Washington	**16.1**	**6.5**	**5.2**	**8.8**	**18.6**	**16.5**	**28.4**

Table E-39. Correlations[1] among demographics and the acceptability of different management actions for wolves.[2]

Is it unacceptable or acceptable for WDFW to…	Demographics						
	Gender[3]	Age	Residents <18 years at home	Years in Washington	Years in household	Income[4]	Education[5]
…move wolves from one area in Washington where they've reached a certain population size to another area in the state to establish new wolf populations?	.225	-.117	---	-.170	-.133	.068	.136
…allow wolves to recolonize and establish new populations on their own in Washington?	.144	-.182	.076	-.197	-.129	.171	.177
…limit the number of wolves if they cause declines in deer and elk populations *in certain areas*?	-.115	.105	---	.173	.175	-.110	-.119
…capture and lethally remove a wolf if it is known to have caused loss of livestock?	-.121	.204	-.039	.202	.201	-.133	-.113
…compensate landowners for loss of livestock caused by a wolf?	---	.187	-.042	.146	.162	-.131	---
…use *a portion of WDFW hunting and fishing license dollars* to compensate landowners for loss of livestock caused by a wolf?	.138	.108	---	---	.091	-.097	.038
…use *a portion of state tax dollars* to compensate landowners for loss of livestock caused by a wolf?	---	.177	-.065	.125	.135	-.165	---
…allow a recreational hunt of wolves once they have reached a certain population size that exceeds WDFW recovery goals?	-.228	.087	---	.161	.120	-.063	-.076

[1] Unless otherwise noted, correlations are represented by Pearson's *r*, where .100 = "small", .300 = "medium", and .500 = "large" effects. Cell entries with a "---" are not significant ($p < .05$).

[2] Statements about the acceptability of different wolf-related management actions were measured on a 7-point scale ranging from 1 (highly unacceptable) to 7 (highly acceptable).

[3] Gender was measured as a dichotomous variable, where 0 = Male and 1 = Female. Correlations reported are point-biserial, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Income was measured on a 9-point scale where a larger value corresponded to a higher income bracket.

[5] Education was measured on a 5-point scale, where a larger value corresponded to a higher education level.

Table E-40. Differences between hunting types on acceptability of different management actions for wolves.

Is it unacceptable or acceptable for WDFW to…	Hunting type[1]			*F*-value[2]	ES[3]
	Non-hunter	Past Hunter	Current Hunter		
…move wolves from one area in Washington where they've reached a certain population size to another area in the state to establish new wolf populations?	5.51[a]	5.07[b]	3.81[c]	168.72	.279
…allow wolves to recolonize and establish new populations on their own in Washington?	5.39[a]	5.09[b]	4.21[c]	88.05	.205
…limit the number of wolves if they cause declines in deer and elk populations *in certain areas*?	4.72[a]	4.97[b]	6.00[c]	110.21	.229
…capture and lethally remove a wolf if it is known to have caused loss of livestock?	4.56[a]	5.01[b]	6.02[c]	114.63	.232
…compensate landowners for loss of livestock caused by a wolf?	3.69[a]	4.02[b]	4.62[c]	42.71	.144
…use *a portion of WDFW hunting and fishing license dollars* to compensate landowners for loss of livestock caused by a wolf?	3.97[a]	3.79[b]	3.45[c]	13.30	.081
…use *a portion of state tax dollars* to compensate landowners for loss of livestock caused by a wolf?	3.38[a]	3.54[a]	3.95[b]	15.29	.087
…allow a recreational hunt of wolves once they have reached a certain population size that exceeds WDFW recovery goals?	4.26[a]	4.85[b]	6.09[c]	159.94	.272

[1] Cell entries represent means. Original response scales ranged from 1 (highly unacceptable) to 7 (highly acceptable). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table E-41. Differences between angling types on acceptability of different management actions for wolves.

Is it unacceptable or acceptable for WDFW to…	Angling type[1]			*F*-value[2]	ES[3]
	Non-angler	Past Angler	Current Angler		
…move wolves from one area in Washington where they've reached a certain population size to another area in the state to establish new wolf populations?	5.68[a]	5.35[b]	4.68[c]	79.37	.197
…allow wolves to recolonize and establish new populations on their own in Washington?	5.36[a]	5.41[a]	4.70[b]	71.78	.187
…limit the number of wolves if they cause declines in deer and elk populations *in certain areas*?	4.88[a]	4.87[a]	5.18[b]	13.96	.084
…capture and lethally remove a wolf if it is known to have caused loss of livestock?	4.43[a]	4.83[b]	5.21[c]	36.46	.134
…compensate landowners for loss of livestock caused by a wolf?	3.57[a]	3.90[b]	4.10[c]	14.86	.086
…use *a portion of WDFW angling and fishing license dollars* to compensate landowners for loss of livestock caused by a wolf?	3.81[a]	4.13[b]	3.48[c]	40.51	.142
…use *a portion of state tax dollars* to compensate landowners for loss of livestock caused by a wolf?	3.23[a]	3.51[b]	3.65[b]	9.07	.068
…allow a recreational hunt of wolves once they have reached a certain population size that exceeds WDFW recovery goals?	4.15[a]	4.41[b]	5.31[c]	98.05	.218

[1] Cell entries represent means. Original response scales ranged from 1 (highly unacceptable) to 7 (highly acceptable). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table E-42. Differences between wildlife-viewing types on acceptability of different management actions for wolves.

Is it unacceptable or acceptable for WDFW to…	Wildlife-viewing type[1]			*F*-value[2]	ES[3]
	Has never participated	Participated in the past	Currently participates		
…move wolves from one area in Washington where they've reached a certain population size to another area in the state to establish new wolf populations?[4]	4.80[a]	5.14[b]	5.17[b]	5.56	.053
…allow wolves to recolonize and establish new populations on their own in Washington?	3.97[a]	4.95[b]	5.29[c]	89.29	.206
…limit the number of wolves if they cause declines in deer and elk populations *in certain areas*?	5.28[a]	5.24[a]	4.89[b]	15.73	.088
…capture and lethally remove a wolf if it is known to have caused loss of livestock?	5.95[a]	4.93[b]	4.78[b]	55.75	.164
…compensate landowners for loss of livestock caused by a wolf?	4.88[a]	3.65[b]	3.88[c]	43.52	.145
…use *a portion of WDFW wildlife-viewing and fishing license dollars* to compensate landowners for loss of livestock caused by a wolf?	4.34[a]	3.85[b]	3.80[b]	10.90	.073
…use *a portion of state tax dollars* to compensate landowners for loss of livestock caused by a wolf?	4.23[a]	3.37[b]	3.47[b]	23.43	.107
…allow a recreational hunt of wolves once they have reached a certain population size that exceeds WDFW recovery goals?	5.71[a]	4.69[b]	4.60[b]	42.86	.144

[1] Cell entries represent means. Original response scales ranged from 1 (highly unacceptable) to 7 (highly acceptable). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p <= .004$).

[3] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Different superscripts denote statistical difference ($p < .05$) as reported by Scheffe's post hoc test.

Table E-43. Differences between current hunters and residents who were classified in the hunting latent demand group on acceptability of different management actions for wolves.[1]

Is it unacceptable or acceptable for WDFW to…	Groups		*t*-value	*p*-value	ES[3]
	Current Hunter	Latent Demand[2]			
…move wolves from one area in Washington where they've reached a certain population size to another area in the state to establish new wolf populations?	3.81	5.00	-8.41	<.001	.253
…allow wolves to recolonize and establish new populations on their own in Washington?	4.21	4.98	-5.69	<.001	.175
…limit the number of wolves if they cause declines in deer and elk populations *in certain areas*?	6.00	5.20	7.77	<.001	.231
…capture and lethally remove a wolf if it is known to have caused loss of livestock?	6.02	4.92	9.69	<.001	.281
…compensate landowners for loss of livestock caused by a wolf?	4.62	4.08	4.03	<.001	.124
…use *a portion of WDFW hunting and fishing license dollars* to compensate landowners for loss of livestock caused by a wolf?	3.45	3.65	-1.48	.139	---
…use *a portion of state tax dollars* to compensate landowners for loss of livestock caused by a wolf?	3.95	3.63	2.28	.023	.071
…allow a recreational hunt of wolves once they have reached a certain population size that exceeds WDFW recovery goals?	6.09	5.43	6.26	<.001	.187

[1] Cell entries represent means. Original response scales ranged from 1 (highly unacceptable) to 7 (highly acceptable).

[2] "Latent demand" is defined as residents who indicated they do not currently participate in hunting, but have a future interest in participating.

[3] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table E-44. Differences between wildlife value orientation types on acceptability of different management actions for wolves.

Is it unacceptable or acceptable for WDFW to…	Wildlife value orientation type[1]				*F*-value[2]	ES[3]
	Utilitarian	Pluralist	Mutualist	Distanced		
…move wolves from one area in Washington where they've reached a certain population size to another area in the state to establish new wolf populations?	4.47[a]	5.04[b]	5.75[c]	5.28[b]	112.12	.277
…allow wolves to recolonize and establish new populations on their own in Washington?	4.54[a]	4.73[a]	5.71[b]	5.36[c]	116.13	.281
…limit the number of wolves if they cause declines in deer and elk populations *in certain areas*?	5.47[a]	5.39[a]	4.57[b]	4.46[b]	97.93	.260
…capture and lethally remove a wolf if it is known to have caused loss of livestock?	5.78[a]	5.34[b]	4.15[c]	4.32[c]	212.73	.368
…compensate landowners for loss of livestock caused by a wolf?	4.18[a]	4.25[a]	3.82[b]	3.44[c]	26.47	.139
…use *a portion of WDFW hunting and fishing license dollars* to compensate landowners for loss of livestock caused by a wolf?	3.62[a]	4.02[b]	4.10[b]	3.64[a]	15.79	.107
…use *a portion of state tax dollars* to compensate landowners for loss of livestock caused by a wolf?	3.58[a]	4.00[b]	3.57[a]	2.90[c]	32.45	.153
…allow a recreational hunt of wolves once they have reached a certain population size that exceeds WDFW recovery goals?	5.88[a]	5.48[b]	3.44[c]	4.28[d]	432.01	.492

[1] Cell entries represent means. Original response scales ranged from 1 (highly unacceptable) to 7 (highly acceptable). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = small, .243 = medium, and .371 = large effects.

Table E-45. Percent of residents accepting of different management actions for wolves.

County	Help establish new populations with relocation	Allow to recolonize on their own	Limit if causing declines in deer and elk	Lethally remove if causing loss of livestock	Allow recreational hunt
Adams	46.8	62.8	78.2	79.5	77.2
Asotin	35.8	31.5	89.4	84.6	84.1
Benton	70.5	74.2	71.9	75.3	65.2
Chelan	52.6	75.3	78.4	75.0	74.2
Clallam	63.3	69.2	62.5	70.3	71.7
Clark	74.8	71.8	67.9	66.3	61.9
Columbia	39.1	49.3	82.0	85.6	83.6
Cowlitz	58.0	72.6	66.4	74.3	69.0
Douglas	55.0	59.3	63.3	73.8	54.3
Ferry	43.3	55.2	80.6	81.9	74.3
Franklin	65.8	64.1	80.3	70.9	74.4
Garfield	23.4	31.7	91.7	86.3	86.3
Grant	55.6	54.5	82.2	78.9	73.3
Grays Harbor	58.0	66.7	75.3	76.3	81.5
Island	69.2	62.9	67.9	63.0	56.0
Jefferson	71.8	75.2	58.8	59.1	53.4
King	80.5	80.9	69.3	60.7	63.2
Kitsap	71.1	74.2	59.2	62.0	52.5
Kittitas	59.0	54.9	72.4	72.4	68.3
Klickitat	50.8	62.0	68.0	74.6	70.5
Lewis	52.9	67.9	74.1	72.6	64.3
Lincoln	43.2	48.4	84.7	91.8	87.8
Mason	66.0	63.4	73.4	72.3	66.0
Okanogan	51.4	60.7	70.2	75.9	79.2
Pacific	54.7	69.5	78.3	76.8	65.2
Pend Oreille	47.1	66.1	79.8	78.0	80.2
Pierce	78.5	75.9	68.4	60.8	64.6
San Juan	77.3	85.3	62.4	54.6	53.6
Skagit	60.8	70.5	68.1	66.4	53.7
Skamania	57.7	76.0	65.6	69.0	63.6
Snohomish	81.7	85.4	67.1	56.1	56.1
Spokane	70.4	62.0	75.0	84.3	74.1
Stevens	48.4	53.2	79.4	81.7	81.7
Thurston	74.8	72.0	61.0	68.1	58.5
Wahkiakum	47.0	61.6	75.0	74.0	67.7
Walla Walla	61.3	62.5	80.9	82.0	74.1
Whatcom	77.8	74.4	66.7	62.4	48.7
Whitman	56.2	55.6	74.2	74.4	67.8
Yakima	67.5	70.4	86.1	72.8	69.1
Washington	**73.7**	**74.5**	**69.8**	**65.7**	**63.5**

Table E-46. Percent of residents accepting of compensation techniques for wolf-caused loss of livestock.

County	Compensate landowners for livestock losses	Compensation source	
		Hunting and fishing license dollars	Portion of state tax dollars
Adams	55.1	50.0	49.4
Asotin	66.1	60.8	56.5
Benton	43.8	38.2	29.5
Chelan	63.9	46.9	47.9
Clallam	42.1	47.1	35.8
Clark	30.8	36.5	31.1
Columbia	64.7	56.1	49.6
Cowlitz	45.9	35.5	33.0
Douglas	62.0	47.5	47.5
Ferry	65.7	59.0	58.1
Franklin	56.0	55.1	55.8
Garfield	80.6	69.2	71.9
Grant	53.3	51.1	50.0
Grays Harbor	53.8	50.0	46.3
Island	29.6	26.9	25.9
Jefferson	41.2	40.2	38.6
King	48.3	53.4	40.9
Kitsap	34.7	37.4	35.4
Kittitas	54.9	47.5	39.3
Klickitat	61.2	55.8	50.8
Lewis	52.4	47.0	48.8
Lincoln	66.1	59.7	54.0
Mason	33.0	32.6	29.8
Okanogan	65.4	50.5	55.0
Pacific	66.0	50.0	44.1
Pend Oreille	67.2	49.6	51.7
Pierce	37.2	38.0	44.3
San Juan	33.0	38.5	25.5
Skagit	45.1	38.8	35.3
Skamania	56.3	45.0	44.2
Snohomish	41.5	45.8	33.7
Spokane	46.7	45.4	47.2
Stevens	62.7	53.2	45.2
Thurston	44.9	48.7	40.2
Wahkiakum	61.6	50.5	47.0
Walla Walla	52.3	53.6	42.3
Whatcom	44.0	47.4	37.9
Whitman	53.3	45.5	47.8
Yakima	54.4	44.4	48.8
Washington	**44.8**	**46.1**	**40.3**

Table E-47. Percent of wildlife value orientation type disagreeing or agreeing with the statement *"Salmon are important to the local economy where I live."*

	Strongly Agree	Moderately Agree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	4.3	3.6	2.5	6.7	16.7	29.5	36.9
Pluralist	3.1	1.2	1.9	6.1	6.3	26.4	55.0
Mutualist	3.2	1.4	3.8	6.6	11.5	21.1	52.5
Distanced	1.5	3.1	6.8	6.9	16.1	28.0	37.5
Washington	**3.2**	**2.4**	**3.6**	**6.6**	**13.3**	**25.9**	**44.9**

Table E-48. Percent of wildlife value orientation type disagreeing or agreeing with the statement *"Salmon are important to the quality of life for residents where I live."*

	Strongly Agree	Moderately Agree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	6.6	3.7	4.0	12.1	21.0	26.4	26.2
Pluralist	3.1	2.3	3.1	9.1	14.8	27.5	40.1
Mutualist	3.2	2.1	1.8	13.8	10.9	26.3	41.9
Distanced	1.8	4.2	2.3	10.9	20.1	26.9	33.8
Washington	**4.1**	**3.0**	**2.8**	**12.1**	**16.4**	**26.6**	**35.0**

Table E-49. Percent of wildlife value orientation type disagreeing or agreeing with the statement *"WDFW should continue its efforts to recover wild salmon throughout the state."*

	Strongly Agree	Moderately Agree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	3.6	2.4	2.7	4.4	19.0	32.5	35.4
Pluralist	0.7	1.0	1.7	3.5	9.4	17.1	66.1
Mutualist	0.6	0.2	0.3	3.1	7.0	21.3	67.4
Distanced	0.5	2.7	0.8	4.9	16.2	20.2	54.7
Washington	**1.6**	**1.5**	**1.4**	**3.9**	**13.0**	**24.2**	**54.3**

Table E-50. Percent of wildlife value orientation type disagreeing or agreeing with the statement *"WDFW should focus more of its efforts on introduction of hatchery-raised salmon to enhance fishing opportunities."*

	Strongly Agree	Moderately Agree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Utilitarian	3.8	2.9	7.5	16.5	22.3	21.6	25.4
Pluralist	5.2	5.6	9.4	6.8	16.6	29.4	26.9
Mutualist	16.6	9.3	9.7	18.2	20.5	15.3	10.4
Distanced	12.2	11.5	15.0	23.4	20.5	10.5	6.9
Washington	**10.0**	**7.0**	**9.8**	**17.0**	**20.7**	**18.5**	**17.0**

Table E-51. Correlations[1] among demographics and statements about salmon.

	Demographics						
Statements about salmon[2]	Gender[3]	Age	Residents <18 years at home	Years in Washington	Years in household	Income[4]	Education[5]
Salmon are important to the local economy where I live.	.035	---	---	---	-.033	.057	.069
Salmon are important to the quality of life for residents where I live.	---	---	.041	---	-.037	.061	.064
WDFW should continue its efforts to recover *wild salmon* throughout the state.	.068	---	-.047	-.067	-.085	---	.091
WDFW should focus more of its efforts on introduction of *hatchery-raised salmon* to enhance fishing opportunities.	-.200	.102	---	.147	.083	-.152	-.209
Over the past five years, would you say that your **support for salmon recovery** has increased, decreased, or remained the same?	.039	---	---	-.073	-.096	---	.051

[1] Unless otherwise noted, correlations are represented by Pearson's *r*, where .100 = "small", .300 = "medium", and .500 = "large" effects. Cell entries with a "---" are not significant ($p < .05$).

[2] Statements about salmon were measured on a 7-point scale ranging from "strongly disagree" to "strongly agree," except for the statement measuring support for salmon recovery which was measured on a 5-point scale ranging from "decrease greatly" to "increase greatly."

[3] Gender was measured as a dichotomous variable, where 0 = Male and 1 = Female. Correlations reported are point-biserial, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Income was measured on a 9-point scale where a larger value corresponded to a higher income bracket.

[5] Education was measured on a 5-point scale, where a larger value corresponded to a higher education level.

Table E-52. Differences between hunting types on statements about salmon.

Statements about salmon	Hunting type[1]			*F*-value	*p*-value	ES[2]
	Non-hunter	Past Hunter	Current Hunter			
Salmon are important to the local economy where I live.[3]	5.86	5.78	5.69	2.85	.058	---
Salmon are important to the quality of life for residents where I live.[3]	5.58	5.46	5.50	2.19	.116	---
WDFW should continue its efforts to recover *wild salmon* throughout the state.[3]	6.21[a]	6.13[ab]	5.97[b]	7.69	<.001	.061
WDFW should focus more of its efforts on introduction of *hatchery-raised salmon* to enhance fishing opportunities.[3]	4.43[a]	4.52[a]	5.10[b]	26.50	<.001	.114
Over the past five years, would you say that your **support for salmon recovery** has increased, decreased, or remained the same?[4]	3.55[a]	3.51[a]	3.36[b]	7.85	<.001	.067

[1] Means with different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

[3] Cell entries represent means. Original response scales ranged from 1 (strongly disagree) to 7 (strongly agree).

[4] Cell entries represent means. Original response scales ranged from 1 (decrease greatly) to 5 (increase greatly).

Table E-53. Differences between angling types on statements about salmon.

Statements about salmon	Angling type[1]			*F*-value	*p*-value	ES[2]
	Non-angler	Past Angler	Current Angler			
Salmon are important to the local economy where I live.[3]	5.67[a]	5.87[b]	5.80[ab]	4.28	.014	.046
Salmon are important to the quality of life for residents where I live.[3]	5.50	5.55	5.50	.564	.569	---
WDFW should continue its efforts to recover *wild salmon* throughout the state.[3]	6.07[a]	6.23[b]	6.06[a]	9.35	<.001	.068
WDFW should focus more of its efforts on introduction of *hatchery-raised salmon* to enhance fishing opportunities.[3]	4.34[a]	4.31[a]	4.98[b]	59.62	<.001	.170
Over the past five years, would you say that your **support for salmon recovery** has increased, decreased, or remained the same?[4]	3.34[a]	3.53[b]	3.53[b]	8.21	<.001	.069

[1] Means with different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

[3] Cell entries represent means. Original response scales ranged from 1 (strongly disagree) to 7 (strongly agree).

[4] Cell entries represent means. Original response scales ranged from 1 (decrease greatly) to 5 (increase greatly).

Table E-54. Differences between wildlife-viewing types on statements about salmon.

Statements about salmon	Wildlife-viewing type[1]			*F*-value	*p*-value	ES[2]
	Has never participated	Participated in the past	Currently participates			
Salmon are important to the local economy where I live.[3]	5.79	5.85	5.81	0.29	.752	---
Salmon are important to the quality of life for residents where I live.[34]	5.34[a]	5.50[ab]	5.56[b]	3.19	.041	.039
WDFW should continue its efforts to recover *wild salmon* throughout the state.[3]	6.03	6.11	6.17	2.33	.097	---
WDFW should focus more of its efforts on introduction of *hatchery-raised salmon* to enhance fishing opportunities.[3]	5.49[a]	4.76[b]	4.42[c]	58.02	<.001	.166
Over the past five years, would you say that your **support for salmon recovery** has increased, decreased, or remained the same?[5]	3.59[a]	3.61[ab]	3.49[ac]	4.30	.014	.050

[1] Means with different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

[3] Cell entries represent means. Original response scales ranged from 1 (strongly disagree) to 7 (strongly agree).

[4] Different superscripts denote statistical difference ($p < .05$) as reported by Scheffe's post hoc test.

[5] Cell entries represent means. Original response scales ranged from 1 (decrease greatly) to 5 (increase greatly).

Table E-55. Differences between current hunters and residents who were classified in the hunting latent demand group on statements about salmon.

Is it unacceptable or acceptable for WDFW to…	Current Hunter	Latent Demand[1]	*t*-value	*p*-value	ES[2]
Salmon are important to the local economy where I live.[3]	5.69	5.81	-1.22	.223	---
Salmon are important to the quality of life for residents where I live.[3]	5.50	5.49	0.11	.915	---
WDFW should continue its efforts to recover *wild salmon* throughout the state.[3]	5.97	6.01	-0.48	.631	---
WDFW should focus more of its efforts on introduction of *hatchery-raised salmon* to enhance fishing opportunities.[3]	5.10	5.04	0.55	.580	---
Over the past five years, would you say that your **support for salmon recovery** has increased, decreased, or remained the same?[4]	3.36	3.58	-3.25	.001	.106

[1] "Latent demand" is defined as residents who indicated they do not currently participate in hunting, but have a future interest in participating.

[2] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

[3] Cell entries represent means. Original response scales ranged from 1 (strongly disagree) to 7 (strongly agree).

[4] Cell entries represent means. Original response scales ranged from 1 (decrease greatly) to 5 (increase greatly).

Table E-56. Differences between wildlife value orientation types on statements about salmon.

Statements about salmon	Wildlife value orientation type[1]				*F*-value[2]	ES[3]
	Utilitarian	Pluralist	Mutualist	Distanced		
Salmon are important to the local economy where I live.[4]	5.64[a]	6.10[b]	5.95[b]	5.67[a]	18.99	.117
Salmon are important to the quality of life for residents where I live.[4]	5.21[a]	5.73[b]	5.74[b]	5.59[b]	30.40	.147
WDFW should continue its efforts to recover *wild salmon* throughout the state.[4]	5.72[a]	6.37[b]	6.50[b]	6.13[c]	102.97	.264
WDFW should focus more of its efforts on introduction of *hatchery-raised salmon* to enhance fishing opportunities.[4]	5.17[a]	5.20[a]	4.04[b]	3.88[b]	157.68	.321
Over the past five years, would you say that your **support for salmon recovery** has increased, decreased, or remained the same?[5]	3.28[a]	3.65[bcd]	3.67[bc]	3.56[bd]	40.98	.184

[1] Means with different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Cell entries represent means. Original response scales ranged from 1 (strongly disagree) to 7 (strongly agree).

[5] Cell entries represent means. Original response scales ranged from 1 (decrease greatly) to 5 (increase greatly).

Table E-57. Percent of residents agreeing with statements about salmon.

County	Important to economy	Important to quality of life	Continue recovery efforts for wild salmon	Focus on hatchery-raised salmon for fishing opportunities
Adams	39.7	29.5	71.8	65.4
Asotin	88.8	75.8	81.6	74.4
Benton	61.5	61.5	76.9	65.9
Chelan	68.4	63.2	72.9	52.6
Clallam	92.6	86.9	88.2	58.3
Clark	79.8	70.2	88.5	49.0
Columbia	52.2	52.9	69.6	73.0
Cowlitz	90.2	85.8	92.9	65.5
Douglas	62.5	62.5	81.5	75.0
Ferry	28.6	22.9	67.6	68.6
Franklin	55.1	52.6	73.1	72.2
Garfield	49.6	38.1	65.3	64.5
Grant	38.9	35.6	77.8	75.0
Grays Harbor	96.2	90.1	93.8	66.7
Island	85.3	75.0	83.5	55.0
Jefferson	93.4	88.1	94.1	43.7
King	94.5	85.9	97.8	42.4
Kitsap	89.9	84.0	94.9	57.0
Kittitas	38.8	40.5	81.1	55.8
Klickitat	81.1	77.7	82.0	63.1
Lewis	84.5	82.1	83.5	60.0
Lincoln	25.8	25.8	72.8	70.4
Mason	92.5	87.4	93.7	66.3
Okanogan	62.6	60.2	77.8	56.5
Pacific	98.9	95.9	90.5	62.1
Pend Oreille	21.1	25.8	70.0	57.0
Pierce	96.3	87.5	91.1	70.0
San Juan	92.9	94.6	99.1	49.1
Skagit	93.4	92.6	91.8	54.5
Skamania	91.5	86.9	85.3	53.8
Snohomish	90.2	83.3	92.9	62.7
Spokane	46.8	44.0	88.9	66.0
Stevens	37.6	33.9	83.3	56.3
Thurston	90.7	88.1	93.2	59.8
Wahkiakum	91.2	89.2	81.4	68.0
Walla Walla	42.1	51.3	77.0	53.1
Whatcom	92.3	90.5	93.2	47.9
Whitman	42.2	45.1	78.0	57.1
Yakima	76.5	71.6	87.7	75.3
Washington	**84.1**	**78.0**	**91.6**	**56.2**

Table E-58. Percent of residents indicating their support for salmon recovery has increased, decreased, or remained the same over the last five years.

County	Decreased Greatly	Decreased Some	Remained the Same	Increased Some	Increased Greatly
Adams	8.1	9.7	58.1	19.4	4.8
Asotin	3.6	9.1	62.7	16.4	8.2
Benton	6.9	9.7	44.4	23.6	15.3
Chelan	9.4	10.6	45.9	23.5	10.6
Clallam	8.6	4.8	46.7	19.0	21.0
Clark	2.2	2.2	44.4	31.1	20.0
Columbia	11.3	12.1	41.9	20.2	14.5
Cowlitz	4.0	5.1	44.4	29.3	16.2
Douglas	4.2	4.2	63.9	23.6	4.2
Ferry	9.6	9.6	53.0	20.5	7.2
Franklin	4.9	11.5	45.9	21.3	16.4
Garfield	11.1	9.3	58.3	7.4	13.9
Grant	5.3	14.5	64.5	13.2	2.6
Grays Harbor	4.3	4.3	40.6	33.3	17.4
Island	4.7	4.7	47.7	30.2	12.8
Jefferson	2.4	4.7	49.6	18.9	24.4
King	2.5	2.5	43.0	36.7	15.2
Kitsap	1.2	3.5	44.2	25.6	25.6
Kittitas	7.5	9.4	52.8	16.0	14.2
Klickitat	10.5	5.3	53.5	17.5	13.2
Lewis	7.8	5.2	41.6	32.5	13.0
Lincoln	14.1	9.1	55.6	16.2	5.1
Mason	0.0	6.3	51.3	25.0	17.5
Okanogan	14.6	7.3	47.9	12.5	17.7
Pacific	10.6	1.2	40.0	30.6	17.6
Pend Oreille	11.4	6.8	54.5	18.2	9.1
Pierce	1.4	4.3	45.7	25.7	22.9
San Juan	0.0	5.7	33.3	24.8	36.2
Skagit	3.6	3.6	45.5	28.2	19.1
Skamania	5.7	10.6	43.1	26.0	14.6
Snohomish	4.3	5.8	47.8	26.1	15.9
Spokane	8.8	1.3	55.0	23.8	11.3
Stevens	5.7	9.5	62.9	13.3	8.6
Thurston	1.0	7.0	48.0	27.0	17.0
Wahkiakum	9.9	6.6	35.2	33.0	15.4
Walla Walla	3.2	10.5	60.0	16.8	9.5
Whatcom	2.9	2.0	48.0	31.4	15.7
Whitman	1.4	9.9	59.2	16.9	12.7
Yakima	1.5	6.2	41.5	32.3	18.5
Washington	**3.5**	**4.4**	**46.3**	**29.2**	**16.7**

Table E-59. Percent of wildlife value orientation type wanting the *coyote* population to increase, decrease, or remain the same in Washington over the next five years.

	Eliminate This Species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Utilitarian	1.2	6.7	31.4	54.3	5.6	0.7
Pluralist	0.5	18.7	13.7	53.2	8.8	5.0
Mutualist	0.0	3.5	14.0	62.5	16.6	3.3
Distanced	0.1	3.1	18.8	58.8	17.6	1.5
Washington	**0.5**	**6.7**	**20.7**	**57.8**	**11.9**	**2.4**

Table E-60. Percent of wildlife value orientation type wanting the *black bear* population to increase, decrease, or remain the same in Washington over the next five years.

	Eliminate This Species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Utilitarian	0.3	2.6	12.3	68.8	13.0	3.0
Pluralist	0.9	6.1	8.7	55.1	21.1	8.0
Mutualist	0.1	1.1	6.7	59.0	27.2	6.0
Distanced	0.0	2.6	7.4	63.1	24.5	2.6
Washington	**0.2**	**2.6**	**9.0**	**62.4**	**21.1**	**4.7**

Table E-61. Percent of wildlife value orientation type wanting the *deer* population to increase, decrease, or remain the same in Washington over the next five years.

	Eliminate This Species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Utilitarian	0.1	3.2	9.6	46.1	27.6	13.5
Pluralist	0.0	0.3	10.0	38.5	26.8	24.4
Mutualist	0.0	0.7	8.0	51.8	29.2	10.2
Distanced	0.1	2.9	13.1	48.6	31.7	3.5
Washington	**0.1**	**1.9**	**9.7**	**47.4**	**28.7**	**12.2**

Table E-62. Percent of wildlife value orientation type wanting the *elk* population to increase, decrease, or remain the same in Washington over the next five years.

	Eliminate This Species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Utilitarian	0.1	0.3	4.1	47.2	30.1	18.3
Pluralist	0.0	0.0	7.7	30.7	34.8	26.8
Mutualist	0.0	0.2	4.4	52.8	30.3	12.2
Distanced	0.0	0.6	5.9	48.3	40.1	5.0
Washington	**0.0**	**0.3**	**5.0**	**47.0**	**32.5**	**15.2**

Table E-63. Percent of wildlife value orientation type wanting the *cougar* population to increase, decrease, or remain the same in Washington over the next five years.

	Eliminate This Species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Utilitarian	2.6	9.1	25.9	52.7	8.0	1.7
Pluralist	3.3	13.1	13.9	43.2	16.9	9.6
Mutualist	0.2	4.4	7.2	54.4	25.2	8.6
Distanced	0.7	5.1	12.2	58.8	20.2	3.0
Washington	**1.6**	**7.3**	**15.4**	**53.0**	**17.3**	**5.5**

Table E-64. Correlations[1] among wildlife acceptance capacity and lethal control.

Is it unacceptable or acceptable for WDFW to lethally remove a particular species…	Wildlife Acceptance Capacity species	
	Coyote	Black bear
if it…		
…is seen near your home?	-.416	-.347
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	-.419	-.347
…has a disease that may be spread to humans?	-.208	-.232
…attacks a pet near your home?	-.359	-.337
…attacks a person near your home?	-.234	-.234

[1] Correlations are represented by Pearson's *r*, where .100 = "small", .300 = "medium", and .500 = "large" effects. Cell entries are significant ($p < .01$).

Table E-65. Correlations[1] among wildlife acceptance capacity and beliefs about deer and elk management.

Is it unacceptable or acceptable for WDFW to…	Wildlife Acceptance Capacity species	
	Deer	Elk
…capture and lethally remove problem deer or elk?	-.120	-.094
…use techniques designed to scare problem deer or elk away (examples: loud noises, rubber bullets)?	-.074	---
…use agency funds to compensate landowners for damage ($10,000 or more) caused by deer or elk?	.040	---
…contribute agency funds to a landowner cost-sharing program supporting the construction of fences around property that has been damaged by deer or elk?	.048	---
…require landowners to accept at least 50% of the responsibility in dealing with problem deer or elk?	-.034	---

[1] Correlations are represented by Pearson's *r*, where .100 = "small", .300 = "medium", and .500 = "large" effects. Cell entries with a "---" are not significant ($p < .05$).

Table E-66. Correlations[1] among demographics and wildlife acceptance capacity[2] for five species.

	Demographics						
	Gender[3]	Age	Residents <18 years at home	Years in Washington	Years in household	Income[4]	Education[5]
Coyote	---	-.156	.057	-.142	-.116	.116	.094
Black Bear	-.089	-.194	.079	-.136	-.120	.170	.089
Deer	-.175	-.070	.062	---	---	-.059	-.196
Elk	-.245	-.079	.051	---	---	---	-.162
Cougar	---	-.170	.051	-.135	-.140	.137	.173

[1] Unless otherwise noted, correlations are represented by Pearson's *r*, where .100 = "small", .300 = "medium", and .500 = "large" effects. Cell entries with a "---" are not significant ($p < .05$).

[2] Measurements for wildlife acceptance capacity ranged from 0 (eliminate this species) to 5 (increase greatly).

[3] Gender was measured as a dichotomous variable, where 0 = Male and 1 = Female. Correlations reported are point-biserial, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Income was measured on a 9-point scale where a larger value corresponded to a higher income bracket.

[5] Education was measured on a 5-point scale, where a larger value corresponded to a higher education level.

Table E-67. Differences between hunting types on wildlife acceptance capacity for five species.

	Hunting type[1]				
Species	Non-hunter	Past Hunter	Current Hunter	*F*-value[2]	ES[3]
Coyote	2.86[a]	2.84[a]	2.55[b]	29.84	.122
Black Bear	3.11[a]	3.16[a]	3.34[b]	17.17	.093
Deer	3.21[a]	3.37[b]	4.16[c]	259.74	.341
Elk	3.37[a]	3.59[b]	4.28[c]	283.65	.355
Cougar	2.96[a]	2.98[a]	2.68[b]	19.72	.100

[1] Cell entries represent means. Original response scales ranged from 0 (eliminate this species) to 5 (increase greatly). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table E-68. Differences between angling types on wildlife acceptance capacity for five species.

	Angling type[1]				
Species	Non-angler	Past Angler	Current Angler	*F*-value[2]	ES[3]
Coyote	2.85[a]	2.91[a]	2.69[b]	30.00	.123
Black Bear	3.07[a]	3.14[ab]	3.21[b]	7.57	.063
Deer	3.38[a]	3.25[b]	3.56[c]	52.27	.162
Elk	3.42[a]	3.44[a]	3.80[b]	94.70	.216
Cougar	2.89[a]	3.04[b]	2.84[a]	18.32	.097

[1] Cell entries represent means. Original response scales ranged from 0 (eliminate this species) to 5 (increase greatly). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p <= .001$).

[3] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table E-69. Differences between wildlife-viewing types on wildlife acceptance capacity for five species.

Species	Wildlife-viewing type[1]			*F*-value	*p*-value	ES[2]
	Has never participated	Participated in the past	Currently participates			
Coyote	2.46[a]	2.73[b]	2.87[c]	42.34	<.001	.145
Black Bear	2.83[a]	3.01[b]	3.22[c]	55.95	<.001	.166
Deer	3.49	3.38	3.39	1.94	.143	---
Elk	3.40[a]	3.49[a]	3.61[b]	13.23	<.001	.082
Cougar	2.39[a]	2.76[b]	3.03[c]	78.01	<.001	.195

[1] Cell entries represent means. Original response scales ranged from 0 (eliminate this species) to 5 (increase greatly). superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table E-70. Differences between current hunters and residents who were classified in the hunting latent demand group on wildlife acceptance capacities for five species.

	Groups[1]				
	Current Hunter	Latent Demand[2]	*t*-value	*p*-value	ES[3]
Coyote	2.55	2.78	-4.30	<.001	.133
Black Bear	3.34	3.30	0.72	.464	---
Deer	4.16	3.48	12.37	<.001	.354
Elk	4.28	3.83	8.85	<.001	.264
Cougar	2.68	2.98	-4.38	<.001	.136

[1] Cell entries represent means. Original response scales ranged from 0 (eliminate this species) to 5 (increase greatly).

[2] "Latent demand" is defined as residents who indicated they do not currently participate in hunting, but have a future interest in participating.

[3] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table E-71. Differences between wildlife value orientation types on wildlife acceptance capacity for five species.

	Wildlife value orientation type[1]					
Species	Utilitarian	Pluralist	Mutualist	Distanced	*F*-value[2]	ES[3]
Coyote	2.59[a]	2.66[a]	3.02[b]	2.95[b]	78.36	.236
Black Bear	3.01[a]	3.14[b]	3.30[c]	3.17[b]	34.25	.159
Deer	3.38[a]	3.65[b]	3.40[a]	3.20[c]	27.43	.142
Elk	3.62[a]	3.81[b]	3.50[c]	3.43[c]	28.04	.144
Cougar	2.60[a]	2.86[b]	3.26[c]	3.01[b]	113.63	.281

[1] Cell entries represent means. Original response scales ranged from 0 (eliminate this species) to 5 (increase greatly). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = small, .243 = medium, and .371 = large effects.

Table E-72. Percent of residents indicating their acceptance capacity for *coyote* over the next five years.

County	Eliminate this species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Adams	0.0	10.5	21.1	60.5	3.9	3.9
Asotin	5.6	7.2	28.0	56.0	2.4	0.0
Benton	1.1	4.4	15.4	69.2	7.7	1.1
Chelan	1.0	7.1	21.4	64.3	5.1	1.0
Clallam	0.0	4.3	18.1	63.8	12.1	1.7
Clark	1.0	8.9	23.8	58.4	6.9	1.0
Columbia	1.5	4.4	26.3	51.1	14.6	2.2
Cowlitz	0.0	8.0	31.0	47.8	10.6	2.7
Douglas	0.0	5.1	21.5	65.8	6.3	1.3
Ferry	0.0	9.8	25.5	59.8	3.9	1.0
Franklin	2.6	2.6	10.4	72.7	9.1	2.6
Garfield	1.6	12.0	24.8	58.4	0.8	2.4
Grant	1.1	12.2	25.6	55.6	4.4	1.1
Grays Harbor	1.2	8.6	16.0	59.3	7.4	7.4
Island	1.8	12.5	17.9	56.3	8.9	2.7
Jefferson	0.7	8.9	22.2	57.8	10.4	0.0
King	0.0	7.1	19.0	57.1	15.5	1.2
Kitsap	1.0	6.1	22.4	55.1	15.3	0.0
Kittitas	0.8	6.4	18.4	65.6	8.0	0.8
Klickitat	0.0	8.3	24.0	56.2	8.3	3.3
Lewis	0.0	11.9	22.6	48.8	16.7	0.0
Lincoln	1.6	12.1	21.8	58.9	4.8	0.8
Mason	0.0	8.4	18.9	63.2	8.4	1.1
Okanogan	1.8	7.2	26.1	55.0	7.2	2.7
Pacific	2.1	13.5	18.8	59.4	5.2	1.0
Pend Oreille	0.0	14.2	20.0	59.2	3.3	3.3
Pierce	0.0	5.1	25.3	51.9	12.7	5.1
San Juan	0.0	2.9	11.7	53.4	29.1	2.9
Skagit	2.5	5.8	20.7	62.0	7.4	1.7
Skamania	1.6	7.0	23.3	54.3	10.9	3.1
Snohomish	1.3	5.0	15.0	60.0	13.8	5.0
Spokane	1.9	8.4	29.9	51.4	7.5	0.9
Stevens	0.8	10.5	23.4	58.1	6.5	0.8
Thurston	0.0	6.1	20.2	57.9	11.4	4.4
Wahkiakum	1.0	22.0	31.0	42.0	1.0	3.0
Walla Walla	1.9	6.5	21.5	58.9	10.3	0.0
Whatcom	0.0	3.5	16.5	68.7	9.6	1.7
Whitman	0.0	8.0	30.7	53.4	8.0	0.0
Yakima	0.0	2.5	14.8	64.2	14.8	3.7
Washington	**0.5**	**6.7**	**20.7**	**57.8**	**11.9**	**2.4**

Table E-73. Percent of residents indicating their acceptance capacity for *black bear* over the next five years.

County	Eliminate this species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Adams	2.6	3.8	7.7	70.5	10.3	5.1
Asotin	1.6	9.7	17.7	58.9	8.9	2.4
Benton	1.1	3.4	6.9	65.5	19.5	3.4
Chelan	0.0	2.1	11.3	69.1	16.5	1.0
Clallam	0.9	0.9	10.3	60.3	22.4	4.3
Clark	0.0	4.0	10.1	57.6	28.3	0.0
Columbia	0.7	3.6	14.5	59.4	16.7	5.1
Cowlitz	0.0	1.8	6.2	63.7	23.0	5.3
Douglas	0.0	1.3	10.4	74.0	13.0	1.3
Ferry	0.0	1.0	16.2	61.0	18.1	1.9
Franklin	3.8	2.6	10.3	60.3	19.2	3.8
Garfield	0.0	7.1	15.1	62.7	11.1	4.0
Grant	0.0	3.3	9.9	69.2	15.4	2.2
Grays Harbor	0.0	1.3	10.0	60.0	20.0	8.8
Island	1.8	1.8	10.8	60.4	19.8	5.4
Jefferson	0.0	2.3	3.8	65.9	24.2	3.8
King	0.0	2.4	7.1	64.3	22.6	3.6
Kitsap	0.0	1.0	4.2	71.9	19.8	3.1
Kittitas	0.8	1.6	8.9	58.1	24.2	6.5
Klickitat	0.0	1.7	10.7	62.8	15.7	9.1
Lewis	0.0	3.7	13.4	58.5	18.3	6.1
Lincoln	3.3	5.0	13.2	57.9	13.2	7.4
Mason	0.0	2.1	16.7	61.5	18.8	1.0
Okanogan	0.0	1.8	10.1	63.3	20.2	4.6
Pacific	2.1	1.1	9.5	65.3	17.9	4.2
Pend Oreille	0.0	5.0	15.0	59.2	18.3	2.5
Pierce	0.0	2.5	10.1	51.9	25.3	10.1
San Juan	0.0	1.0	5.7	56.2	28.6	8.6
Skagit	0.0	3.3	3.3	68.6	20.7	4.1
Skamania	0.0	1.6	11.7	57.0	21.1	8.6
Snohomish	0.0	2.6	7.7	62.8	17.9	9.0
Spokane	1.9	1.9	14.2	66.0	14.2	1.9
Stevens	0.0	3.2	8.9	66.1	19.4	2.4
Thurston	0.0	3.5	8.8	64.6	16.8	6.2
Wahkiakum	0.0	5.0	11.0	64.0	14.0	6.0
Walla Walla	0.0	3.8	17.0	59.4	17.0	1.9
Whatcom	0.0	1.8	7.0	65.8	21.9	3.5
Whitman	1.2	2.3	9.3	59.3	24.4	3.5
Yakima	0.0	1.3	8.9	68.4	17.7	3.8
Washington	**0.2**	**2.6**	**9.0**	**62.4**	**21.1**	**4.7**

Table E-74. Percent of residents indicating their acceptance capacity for *deer* over the next five years.

County	Eliminate this species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Adams	0.0	0.0	6.3	45.6	31.6	13.9
Asotin	0.0	0.0	10.4	32.0	36.8	18.4
Benton	0.0	0.0	2.2	51.7	29.2	16.9
Chelan	0.0	0.0	11.2	48.0	28.6	12.2
Clallam	0.0	0.0	20.9	46.1	18.3	10.4
Clark	0.0	0.0	4.0	53.0	25.0	16.0
Columbia	0.0	0.0	19.0	35.0	29.2	13.1
Cowlitz	0.0	0.0	2.6	34.2	35.1	26.3
Douglas	0.0	0.0	3.8	53.2	31.6	11.4
Ferry	0.0	1.9	19.2	36.5	26.9	15.4
Franklin	0.0	0.0	9.0	41.0	32.1	17.9
Garfield	0.0	5.6	11.9	44.4	22.2	15.9
Grant	0.0	1.1	10.0	36.7	32.2	20.0
Grays Harbor	0.0	1.3	5.1	32.1	37.2	24.4
Island	1.8	2.7	13.4	56.3	11.6	14.3
Jefferson	0.0	8.1	13.3	59.3	14.1	5.2
King	0.0	1.2	10.6	43.5	36.5	8.2
Kitsap	0.0	5.1	10.1	56.6	22.2	6.1
Kittitas	0.8	0.0	12.1	46.0	20.2	21.0
Klickitat	0.8	6.6	13.2	46.3	22.3	10.7
Lewis	0.0	1.2	11.9	45.2	29.8	11.9
Lincoln	0.0	8.1	21.0	37.1	25.0	8.9
Mason	0.0	1.1	9.7	49.5	30.1	9.7
Okanogan	0.0	3.7	18.5	36.1	29.6	12.0
Pacific	0.0	0.0	5.2	38.5	32.3	24.0
Pend Oreille	0.0	7.5	20.8	35.0	20.8	15.8
Pierce	0.0	2.5	6.3	50.0	21.3	20.0
San Juan	0.9	7.5	25.2	51.4	11.2	2.8
Skagit	0.0	0.8	9.2	44.2	30.0	15.8
Skamania	0.0	1.5	13.0	42.7	27.5	15.3
Snohomish	0.0	0.0	6.4	47.4	33.3	12.8
Spokane	0.0	2.8	19.6	53.3	22.4	1.9
Stevens	0.0	6.5	18.7	39.0	24.4	11.4
Thurston	0.0	0.9	14.8	53.0	18.3	13.0
Wahkiakum	0.0	2.0	7.9	32.7	32.7	24.8
Walla Walla	0.0	2.7	11.6	46.4	29.5	8.9
Whatcom	0.9	2.6	12.3	52.6	21.9	9.6
Whitman	1.1	9.0	22.5	33.7	24.7	9.0
Yakima	0.0	1.2	3.7	47.6	31.7	15.9
Washington	**0.1**	**1.9**	**9.7**	**47.4**	**28.7**	**12.2**

Table E-75. Percent of residents indicating their acceptance capacity for *elk* over the next five years.

County	Eliminate this species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Adams	0.0	0.0	2.6	48.7	30.8	17.9
Asotin	0.0	0.0	3.2	27.2	38.4	31.2
Benton	0.0	0.0	3.3	50.0	24.4	22.2
Chelan	0.0	0.0	6.2	45.4	30.9	17.5
Clallam	0.0	0.0	14.7	49.1	22.4	13.8
Clark	0.0	1.0	3.0	53.5	23.8	18.8
Columbia	0.0	1.5	4.4	27.2	36.0	30.9
Cowlitz	0.0	0.9	3.6	33.3	33.3	28.8
Douglas	0.0	0.0	2.6	45.5	31.2	20.8
Ferry	0.0	2.0	0.0	25.5	38.2	34.3
Franklin	0.0	0.0	3.8	42.3	32.1	21.8
Garfield	0.8	2.4	7.9	32.5	31.7	24.6
Grant	0.0	0.0	5.5	36.3	31.9	26.4
Grays Harbor	0.0	0.0	0.0	26.3	42.5	31.3
Island	0.0	0.0	3.6	52.7	27.3	16.4
Jefferson	0.0	0.0	6.7	60.4	23.9	9.0
King	0.0	0.0	7.1	47.1	35.3	10.6
Kitsap	0.0	1.0	2.0	58.2	28.6	10.2
Kittitas	0.8	1.6	5.6	53.2	19.0	19.8
Klickitat	0.0	1.7	5.0	42.5	34.2	16.7
Lewis	0.0	4.8	4.8	45.8	33.7	10.8
Lincoln	0.0	0.0	8.1	37.1	33.9	21.0
Mason	0.0	2.1	2.1	47.4	33.7	14.7
Okanogan	0.0	0.9	2.8	38.9	35.2	22.2
Pacific	0.0	2.1	5.3	41.1	30.5	21.1
Pend Oreille	0.0	2.5	4.1	37.2	31.4	24.8
Pierce	0.0	0.0	3.8	46.8	27.8	21.5
San Juan	0.0	1.0	1.0	53.8	33.7	10.6
Skagit	0.0	0.0	0.0	47.9	33.9	18.2
Skamania	0.0	0.0	7.7	42.3	30.0	20.0
Snohomish	0.0	0.0	6.4	38.5	42.3	12.8
Spokane	0.0	0.0	6.5	50.5	33.6	9.3
Stevens	0.0	1.6	2.4	36.6	31.7	27.6
Thurston	0.0	0.0	5.4	51.4	27.0	16.2
Wahkiakum	0.0	2.0	4.9	42.2	28.4	22.5
Walla Walla	0.0	0.9	4.7	47.2	29.2	17.0
Whatcom	0.9	0.0	3.6	50.0	31.3	14.3
Whitman	1.2	1.2	8.1	36.0	40.7	12.8
Yakima	0.0	1.2	1.2	50.6	29.6	17.3
Washington	**0.0**	**0.3**	**5.0**	**47.0**	**32.5**	**15.2**

Table E-76. Percent of residents indicating their acceptance capacity for *cougar* over the next five years.

County	Eliminate this species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Adams	1.3	15.6	18.2	50.6	6.5	7.8
Asotin	8.2	18.9	21.3	44.3	4.1	3.3
Benton	1.1	6.7	13.5	62.9	13.5	2.2
Chelan	1.0	8.2	25.8	51.5	11.3	2.1
Clallam	0.9	8.5	21.4	53.8	13.7	1.7
Clark	0.0	12.9	15.8	55.4	12.9	3.0
Columbia	1.5	20.6	30.9	33.1	8.1	5.9
Cowlitz	0.0	3.6	19.8	54.1	15.3	7.2
Douglas	0.0	6.3	22.5	52.5	16.3	2.5
Ferry	1.0	17.0	34.0	36.0	11.0	1.0
Franklin	3.8	11.4	11.4	50.6	13.9	8.9
Garfield	0.8	13.6	24.0	52.8	6.4	2.4
Grant	4.4	10.0	30.0	41.1	11.1	3.3
Grays Harbor	0.0	12.5	22.5	42.5	10.0	12.5
Island	3.6	5.5	15.5	53.6	12.7	9.1
Jefferson	0.0	8.1	14.8	51.9	23.7	1.5
King	2.3	6.9	14.9	47.1	24.1	4.6
Kitsap	3.1	3.1	9.2	66.3	13.3	5.1
Kittitas	1.6	4.9	22.8	53.7	13.8	3.3
Klickitat	1.7	13.2	21.5	51.2	8.3	4.1
Lewis	3.7	6.2	18.5	56.8	12.3	2.5
Lincoln	8.9	14.5	27.4	43.5	4.8	0.8
Mason	0.0	11.6	12.6	58.9	14.7	2.1
Okanogan	2.8	11.9	22.0	45.0	13.8	4.6
Pacific	2.1	14.9	14.9	58.5	6.4	3.2
Pend Oreille	2.5	11.6	24.0	49.6	9.1	3.3
Pierce	0.0	7.6	11.4	58.2	15.2	7.6
San Juan	0.0	1.0	14.3	47.6	25.7	11.4
Skagit	3.3	5.0	17.4	52.9	15.7	5.8
Skamania	0.8	10.9	12.4	45.7	22.5	7.8
Snohomish	1.3	5.1	7.6	57.0	16.5	12.7
Spokane	3.7	7.4	25.9	48.1	12.0	2.8
Stevens	0.8	21.1	23.6	48.0	5.7	0.8
Thurston	0.0	7.3	13.8	56.0	17.4	5.5
Wahkiakum	5.1	11.1	16.2	47.5	14.1	6.1
Walla Walla	2.8	11.3	28.3	45.3	11.3	0.0
Whatcom	0.0	1.7	16.5	56.5	21.7	3.5
Whitman	1.2	5.8	20.9	50.0	20.9	1.2
Yakima	3.7	1.2	17.3	58.0	13.6	6.2
Washington	**1.6**	**7.3**	**15.4**	**53.0**	**17.3**	**5.5**

APPENDIX F. SUPPORTING TABLES FOR WILDLIFE-RELATED SERVICES SECTION

Table F-1. Percent of wildlife value orientation type indicating their beliefs regarding wildlife-related services.

	Importance					WDFW is responsible for providing	Willing to pay for service
Example Services	Not at all	Slightly	Moderately	Quite	Extremely		
Care for injured or orphaned wildlife.							
Utilitarian	12.6	36.1	31.1	14.7	5.5	46.0	22.9
Pluralist	4.6	12.2	28.8	35.0	19.3	74.3	51.5
Mutualist	0.4	7.7	27.1	37.0	27.8	85.8	76.9
Distanced	5.3	30.3	35.3	26.2	2.9	58.9	33.9
Washington	**5.9**	**21.8**	**30.2**	**27.3**	**14.8**	**66.0**	**47.8**
Response to complaints about wildlife in urban areas.							
Utilitarian	4.4	20.1	30.8	24.6	20.1	79.7	39.0
Pluralist	2.0	14.1	27.3	41.7	15.0	84.8	37.7
Mutualist	1.9	13.8	26.4	36.7	21.2	83.7	51.6
Distanced	3.2	13.5	25.4	41.5	16.5	84.2	52.9
Washington	**3.0**	**16.0**	**27.8**	**34.1**	**19.1**	**82.6**	**45.6**
Incentives to private landowners who restore wildlife habitat.							
Utilitarian	10.4	13.6	35.4	27.7	12.8	52.6	26.2
Pluralist	7.9	8.8	21.7	32.6	28.9	60.7	36.9
Mutualist	1.4	7.7	20.5	37.1	33.3	70.3	51.4
Distanced	5.9	15.8	32.1	33.8	12.4	54.2	37.8
Washington	**6.1**	**11.3**	**27.8**	**32.7**	**22.1**	**60.1**	**38.4**
Protection and recovery of threatened or endangered species.							
Utilitarian	6.5	17.1	30.5	29.1	16.8	78.1	40.2
Pluralist	0.7	5.7	18.9	30.3	44.4	89.6	54.8
Mutualist	0.4	3.4	9.8	22.5	63.9	96.1	80.3
Distanced	1.8	9.5	23.8	34.3	30.5	87.0	66.5
Washington	**2.7**	**9.4**	**20.5**	**27.9**	**39.5**	**87.5**	**60.8**
Outdoor educational programs to connect youth/families to nature.							
Utilitarian	6.5	18.9	30.8	29.5	14.1	62.4	40.8
Pluralist	2.3	5.1	22.3	38.6	31.7	75.3	48.2
Mutualist	2.7	8.9	21.7	32.5	34.2	79.2	61.4
Distanced	3.2	17.9	29.1	31.3	18.6	59.3	55.9
Washington	**4.0**	**13.2**	**26.1**	**32.2**	**24.5**	**69.4**	**51.6**

Table F-1, *continued*. Percent of wildlife value orientation type indicating their beliefs regarding wildlife-related services.

	Importance					WDFW is responsible for providing	Willing to pay for service
Example Services	Not at all	Slightly	Moderately	Quite	Extremely		
Hunting and fishing opportunities.							
Utilitarian	2.8	6.4	26.2	29.3	35.4	84.6	52.4
Pluralist	1.1	4.4	17.6	35.3	41.6	83.9	57.8
Mutualist	20.7	22.0	31.8	17.5	8.0	69.0	31.4
Distanced	20.2	24.5	33.7	13.4	8.2	66.3	26.1
Washington	**12.0**	**14.8**	**28.3**	**23.2**	**21.7**	**76.1**	**41.3**
Wildlife viewing opportunities.							
Utilitarian	16.1	20.5	37.1	20.6	5.7	56.2	36.3
Pluralist	7.8	20.0	26.2	25.4	20.6	62.4	36.4
Mutualist	5.6	14.0	31.1	27.2	22.0	72.0	58.1
Distanced	10.1	22.4	36.4	20.0	11.1	69.6	48.5
Washington	**10.2**	**18.5**	**33.4**	**23.5**	**14.5**	**64.8**	**46.0**
Programs that help local governments plan for protection of open space and wildlife populations in urban areas.							
Utilitarian	10.3	20.9	31.2	25.0	12.5	60.1	24.9
Pluralist	2.0	6.1	27.6	29.8	34.6	80.2	38.5
Mutualist	2.2	4.5	13.7	35.7	43.9	89.0	64.0
Distanced	5.1	12.9	24.2	30.9	26.8	68.5	54.6
Washington	**5.4**	**11.6**	**23.3**	**30.5**	**29.2**	**74.2**	**45.6**

Table F-2. Correlations[1] among demographics and the importance of wildlife-related services.

Wildlife-related services	Demographics						
	Gender[3]	Age	Residents <18 years at home	Years in Washington	Years in household	Income[4]	Education[5]
Care for injured or orphaned wildlife	.239	.043	-.063	---	---	-.157	-.094
Response to complaints about wildlife in urban areas	.237	-.130	.057	---	-.040	-.101	-.045
Incentives to private landowners who restore wildlife habitat	.083	-.085	---	-.086	-.088	---	.069
Protection and recovery of threatened or endangered species	.165	-.169	---	-.157	-.152	---	.082
Outdoor educational programs to connect youth/families to nature	.108	-.092	---	-.060	-.069	-.083	.064
Hunting and fishing opportunities	-.273	.077	---	.146	.065	-.107	-.201
Wildlife viewing opportunities	.110	-.128	---	-.108	-.092	---	.092
Programs that help local governments plan for protection of open space and wildlife populations in urban areas	.158	-.132	---	-.149	-.110	---	.147

[1] Unless otherwise noted, correlations are represented by Pearson's *r*, where .100 = "small", .300 = "medium", and .500 = "large" effects. Cell entries with a "---" are not significant ($p < .05$).

[2] The importance of wildlife-related services were measured on a 5-point scale ranging from "not at all important" to "extremely important."

[3] Gender was measured as a dichotomous variable, where 0 = Male and 1 = Female. Correlations reported are point-biserial, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Income was measured on a 9-point scale where a larger value corresponded to a higher income bracket.

[5] Education was measured on a 5-point scale, where a larger value corresponded to a higher education level.

Table F-3. Differences between hunting types on importance of wildlife-related services.

Wildlife-related services	Hunting type[1]			*F*-value[2]	ES[3]
	Non-hunter	Past Hunter	Current Hunter		
Care for injured or orphaned wildlife[4]	3.41[a]	3.20[b]	2.58[c]	118.13	.235
Response to complaints about wildlife in urban areas	3.66[a]	3.39[b]	3.13[c]	62.49	.174
Incentives to private landowners who restore wildlife habitat	3.50[a]	3.52[a]	3.71[b]	6.88	.058
Protection and recovery of threatened or endangered species	4.03[a]	3.86[b]	3.66[c]	25.72	.113
Outdoor educational programs to connect youth/families to nature	3.65[a]	3.52[b]	3.69[a]	7.92	.063
Hunting and fishing opportunities	2.82[a]	3.55[b]	4.50[c]	486.58	.441
Wildlife viewing opportunities[4]	3.32[a]	2.99[b]	2.89[b]	47.37	.152
Programs that help local governments plan for protection of open space and wildlife populations in urban areas	3.81[a]	3.54[b]	3.47[b]	31.23	.125

[1] Cell entries represent means. Original response scales ranged from 1 (not at all important) to 5 (extremely important). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p <= .001$).

[3] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Different superscripts denote statistical difference ($p < .05$) as reported by Scheffe's post hoc test.

Table F-4. Differences between angling types on importance of wildlife-related services.

Wildlife-related services	Angling type[1]			*F*-value	*p*-value	ES[2]
	Non-angler	Past Angler	Current Angler			
Care for injured or orphaned wildlife[3]	3.37[a]	3.30[a]	3.04[b]	29.82	<.001	.121
Response to complaints about wildlife in urban areas	3.58[a]	3.63[a]	3.29[b]	46.56	<.001	.152
Incentives to private landowners who restore wildlife habitat[3]	3.54	3.54	3.53	.034	.967	---
Protection and recovery of threatened or endangered species	4.02[a]	3.98[a]	3.78[b]	17.04	<.001	.093
Outdoor educational programs to connect youth/families to nature[3]	3.49[a]	3.64[b]	3.61[ab]	4.06	.017	.045
Hunting and fishing opportunities	2.66[a]	2.96[b]	3.98[c]	418.43	<.001	.417
Wildlife viewing opportunities	3.08[a]	3.21[b]	3.08[a]	6.50	.002	.057
Programs that help local governments plan for protection of open space and wildlife populations in urban areas	3.77[a]	3.69[ab]	3.59[b]	5.86	.003	.055

[1] Cell entries represent means. Original response scales ranged from 1 (not at all important) to 5 (extremely important). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

[3] Different superscripts denote statistical difference ($p < .05$) as reported by Scheffe's post hoc test.

Table F-5. Differences between wildlife-viewing types on importance of wildlife-related services.

Wildlife-related services	Wildlife-viewing type[1]			*F*-value[2]	ES[3]
	Has never participated	Participated in the past	Currently participates		
Care for injured or orphaned wildlife[4]	3.06[a]	3.60[b]	3.19[a]	38.95	.137
Response to complaints about wildlife in urban areas	3.38[a]	3.72[b]	3.47[a]	16.65	.091
Incentives to private landowners who restore wildlife habitat	3.19[a]	3.52[b]	3.58[b]	18.33	.095
Protection and recovery of threatened or endangered species	3.55[a]	3.79[b]	3.98[c]	28.44	.118
Outdoor educational programs to connect youth/families to nature[4]	3.40[a]	3.57[ab]	3.65[b]	8.12	.063
Hunting and fishing opportunities	3.57[a]	3.03[b]	3.31[c]	20.57	.100
Wildlife viewing opportunities	2.51[a]	3.12[b]	3.23[b]	60.40	.170
Programs that help local governments plan for protection of open space and wildlife populations in urban areas[4]	3.25[a]	3.63[b]	3.74[b]	28.88	.120

[1] Cell entries represent means. Original response scales ranged from 1 (not at all important) to 5 (extremely important). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test (except where noted), used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = "small", .243 = "medium", and .371 = "large" effects.

[4] Different superscripts denote statistical difference ($p < .05$) as reported by Scheffe's post hoc test.

Table F-6. Difference between current hunters and residents who were classified in the hunting latent demand group on their level of importance for wildlife-related services.

Wildlife-related services	Groups[1]		*t*-value	*p*-value	ES[3]
	Current Hunter	Latent Demand[2]			
Care for injured or orphaned wildlife	2.58	3.15	-8.09	<.001	.240
Response to complaints about wildlife in urban areas	3.13	3.50	-5.38	<.001	.164
Incentives to private landowners who restore wildlife habitat	3.71	3.77	-0.85	.398	---
Protection and recovery of threatened or endangered species	3.66	3.77	-1.58	.114	---
Outdoor educational programs to connect youth/families to nature	3.69	3.66	0.44	.663	---
Hunting and fishing opportunities	4.50	4.11	7.68	<.001	.227
Wildlife viewing opportunities	2.89	3.11	-2.82	.005	.087
Programs that help local governments plan for protection of open space and wildlife populations in urban areas	3.47	3.56	-1.22	.224	---

[1] Cell entries represent means. Original response scales ranged from 1 (not at all important) to 5 (extremely important).

[2] "Latent demand" is defined as residents who indicated they do not currently participate in hunting, but have a future interest in participating.

[3] Effect size measures. Eta values are presented when *p*-values are significant ($p < .05$), where .100 = "small", .243 = "medium", and .371 = "large" effects.

Table F-7. Differences between wildlife value orientation types on importance of wildlife-related services.

Wildlife-related services	Wildlife value orientation type[1]				*F*-value[2]	ES[3]
	Utilitarian	Pluralist	Mutualist	Distanced		
Care for injured or orphaned wildlife	2.64[a]	3.52[b]	3.84[c]	2.91[d]	380.10	.466
Response to complaints about wildlife in urban areas	3.36[a]	3.53[b]	3.61[b]	3.55[b]	14.27	.102
Incentives to private landowners who restore wildlife habitat	3.19[a]	3.66[b]	3.93[c]	3.31[a]	121.88	.287
Protection and recovery of threatened or endangered species	3.33[a]	4.12[b]	4.46[c]	3.82[d]	314.77	.434
Outdoor educational programs to connect youth/families to nature	3.26[a]	3.92[b]	3.87[b]	3.44[c]	96.29	.258
Hunting and fishing opportunities	3.88[a]	4.11[b]	2.70[c]	2.65[c]	445.02	.496
Wildlife viewing opportunities	2.79[a]	3.31[b]	3.46[b]	3.00[c]	87.35	.245
Programs that help local governments plan for protection of open space and wildlife populations in urban areas	3.09[a]	3.89[b]	4.15[c]	3.61[d]	230.14	.383

[1] Cell entries represent means. Original response scales ranged from 1 (not at all important) to 5 (extremely important). Different superscripts denote statistical difference ($p < .05$) as reported by Dunnett's post hoc test, used due to a violation of the equal-variances assumption in analysis of variance (ANOVA).

[2] All *F*-values were statistically different ($p < .001$).

[3] Effect size measures. Eta values are presented, where .100 = small, .243 = medium, and .371 = large effects.

Table F-8. Mean level of importance for wildlife-related services.[1]

County	Care for injured or orphaned wildlife	Response to complaints about wildlife in urban areas	Incentives to private landowners who restore wildlife habitat	Protection and recovery of threatened or endangered species
Adams	3.06	3.13	3.39	3.60
Asotin	3.28	3.51	3.30	3.46
Benton	3.11	3.45	3.35	3.68
Chelan	3.14	3.41	3.54	3.53
Clallam	3.05	3.16	3.32	3.66
Clark	3.37	3.41	3.54	3.98
Columbia	2.90	3.32	3.53	3.43
Cowlitz	3.50	3.47	3.55	3.79
Douglas	3.15	3.33	3.58	3.63
Ferry	3.19	3.44	3.55	3.45
Franklin	3.13	3.32	3.61	3.71
Garfield	2.58	3.20	3.32	2.94
Grant	3.00	3.45	3.56	3.60
Grays Harbor	3.46	3.36	3.41	3.77
Island	3.15	3.38	3.33	3.80
Jefferson	3.20	3.24	3.65	4.17
King	3.10	3.75	3.58	4.11
Kitsap	3.34	3.33	3.49	4.01
Kittitas	3.22	3.17	3.50	3.86
Klickitat	3.16	3.31	3.60	3.70
Lewis	3.21	3.43	3.53	3.69
Lincoln	3.06	3.14	3.54	3.26
Mason	3.32	3.44	3.46	3.80
Okanogan	2.93	3.23	3.38	3.55
Pacific	3.52	3.49	3.58	3.75
Pend Oreille	2.85	3.18	3.39	3.43
Pierce	3.30	3.34	3.71	3.84
San Juan	3.34	3.15	3.80	4.30
Skagit	3.41	3.49	3.64	4.03
Skamania	3.33	3.30	3.34	3.71
Snohomish	3.40	3.57	3.44	3.86
Spokane	3.11	3.49	3.37	3.88
Stevens	3.00	3.11	3.37	3.44
Thurston	3.45	3.33	3.69	4.06
Wahkiakum	3.22	3.12	3.46	3.63
Walla Walla	3.20	3.25	3.70	3.60
Whatcom	3.27	3.23	3.39	3.96
Whitman	3.05	3.46	3.40	3.57
Yakima	3.48	3.51	3.44	3.76

Table F-8, *continued*. Mean level of importance for wildlife-related services.[1]

County	Outdoor educational programs to connect youth/families to nature	Hunting and fishing opportunities	Wildlife viewing opportunities	Programs that help local governments plan for protection of open space and wildlife populations in urban areas
Adams	3.54	3.76	3.22	3.39
Asotin	3.61	3.93	2.84	3.10
Benton	3.49	3.49	3.05	3.55
Chelan	3.59	3.66	3.05	3.33
Clallam	3.62	3.44	3.00	3.59
Clark	3.68	3.69	3.20	3.72
Columbia	3.36	4.06	2.89	3.15
Cowlitz	3.83	3.71	3.20	3.34
Douglas	3.72	3.48	2.93	3.45
Ferry	3.47	3.77	2.68	3.28
Franklin	3.62	3.45	3.13	3.54
Garfield	3.09	3.74	2.39	2.90
Grant	3.38	3.67	3.13	3.41
Grays Harbor	3.53	3.79	3.14	3.38
Island	3.56	3.41	2.96	3.40
Jefferson	3.75	2.93	3.02	3.71
King	3.52	2.81	3.11	3.80
Kitsap	3.71	3.29	3.22	3.65
Kittitas	3.56	3.50	3.00	3.70
Klickitat	3.68	3.64	3.15	3.69
Lewis	3.27	3.64	3.01	3.36
Lincoln	3.15	3.52	2.44	2.92
Mason	3.55	3.54	3.07	3.37
Okanogan	3.22	3.78	2.94	3.27
Pacific	3.56	3.89	2.91	3.49
Pend Oreille	3.43	3.72	3.01	3.09
Pierce	3.84	3.45	3.18	3.83
San Juan	3.93	3.27	3.37	3.86
Skagit	3.69	3.48	3.27	3.71
Skamania	3.44	3.49	2.98	3.30
Snohomish	3.65	3.23	3.19	3.67
Spokane	3.53	3.69	3.01	3.55
Stevens	3.29	3.73	2.94	3.11
Thurston	3.69	3.29	3.49	3.91
Wahkiakum	3.41	3.75	2.80	3.06
Walla Walla	3.33	3.44	3.13	3.34
Whatcom	3.49	3.18	3.10	3.50
Whitman	3.36	3.40	3.03	3.34
Yakima	3.55	3.66	3.16	3.29

[1] Cell entries represent means. Original response scales ranged from 1 (not at all important) to 5 (extremely important).

Table F-9. Other (*not listed*) wildlife-related services.

Services	Percent citing this service is important
Law Enforcement	8.5
Access	8.1
Wildlife Population Control	7.7
Already Pay Taxes/Fees	7.5
Hunting Regulations	6.7
Negative toward WDFW	6.3
Assist/Work with Private Landowners	5.9
Educational Opportunities/Outreach	5.5
More Opportunities/Resources for Hunters and Anglers	5.3
Native American Issues	4.7
Cooperation with Other Entities (e.g. volunteers, governments, NGOs)	4.7
Budget Reforms	4.0
Curtail Land Development/Urban Sprawl	3.6
Species Protection	3.6
Fishing Regulations	3.6
Fund with Fees	3.2
Less Government Involvement/Management of Nature	3.2
Wildlife Habitat	2.8
Better Management	2.6
Reimbursement for Damages/Loss caused by Wildlife	2.6
Fund by Taxes	2.4
Habitat Restoration	2.2
Increase Scientific Research/Information to the Public	2.2
Eliminate Gill Netting	1.8
NO Reintroduction	1.8
Incentives (e.g. for habitat conservation)	1.6
Opportunities for Youths	1.2
Natural balance	1.0
Manage wildlife, not people	1.0
Improved/Additional Facilities at Waterways	0.8
Wildlife Corridors	0.8
Make humans deal with problems	0.8
Conservation Easements	0.6
Utilize Tourism	0.4

Table F-10. Percent of residents indicating WDFW is responsible for providing wildlife-related services.

County	Care for injured or orphaned wildlife	Response to complaints about wildlife in urban areas	Incentives to private landowners who restore wildlife habitat	Protection and recovery of threatened or endangered species
Adams	63.9	80.0	48.5	80.0
Asotin	67.8	82.5	59.8	76.9
Benton	59.3	79.3	65.1	89.3
Chelan	53.7	82.5	54.6	75.0
Clallam	51.8	76.4	47.8	78.6
Clark	70.4	76.5	58.5	85.9
Columbia	65.2	79.4	65.1	83.5
Cowlitz	70.3	87.5	61.3	86.2
Douglas	64.8	73.3	61.3	82.4
Ferry	63.1	83.7	60.2	79.2
Franklin	66.7	86.8	64.6	87.1
Garfield	52.5	79.2	61.7	74.6
Grant	61.4	81.9	54.9	79.8
Grays Harbor	67.5	83.8	58.2	84.2
Island	58.9	72.6	53.7	87.7
Jefferson	60.3	83.2	59.7	87.0
King	66.3	82.1	60.5	89.3
Kitsap	62.2	84.4	54.5	90.3
Kittitas	67.5	73.9	57.9	85.3
Klickitat	60.3	80.9	64.1	78.0
Lewis	65.1	77.6	54.9	80.2
Lincoln	65.3	83.9	66.9	72.2
Mason	70.8	80.4	62.9	84.9
Okanogan	56.3	79.4	65.7	85.8
Pacific	68.1	85.6	56.7	79.3
Pend Oreille	63.4	84.1	64.9	79.6
Pierce	72.4	85.5	60.5	88.0
San Juan	44.1	69.9	52.0	88.9
Skagit	66.4	84.9	65.8	91.3
Skamania	67.2	81.6	55.0	87.2
Snohomish	62.0	86.4	61.7	87.5
Spokane	67.0	84.3	58.3	91.3
Stevens	60.5	80.3	57.4	79.5
Thurston	67.8	82.6	68.4	92.2
Wahkiakum	65.0	76.5	61.2	81.6
Walla Walla	62.3	83.5	63.8	82.1
Whatcom	59.8	71.8	58.3	84.5
Whitman	71.1	84.7	71.3	83.8
Yakima	70.9	86.5	56.9	81.8

Table F-10, *continued*. Percent of residents indicating WDFW is responsible for providing wildlife-related services.

County	Outdoor educational programs to connect youth/families to nature	Hunting and fishing opportunities	Wildlife viewing opportunities	Programs that help local governments plan for protection of open space and wildlife populations in urban areas
Adams	55.1	77.1	66.7	62.5
Asotin	71.7	84.2	52.1	59.8
Benton	62.8	80.0	68.2	75.0
Chelan	60.4	74.0	61.5	67.3
Clallam	67.3	71.6	59.8	72.0
Clark	69.7	79.2	64.4	74.5
Columbia	65.9	83.5	56.3	68.2
Cowlitz	64.8	82.4	67.9	70.0
Douglas	68.1	76.6	53.9	66.2
Ferry	71.0	88.0	53.5	67.3
Franklin	75.7	77.3	67.1	71.8
Garfield	69.2	80.0	44.4	61.0
Grant	56.0	80.7	62.7	69.4
Grays Harbor	64.5	81.6	59.7	57.3
Island	71.2	77.9	63.8	74.8
Jefferson	70.2	65.9	63.1	76.2
King	70.7	69.1	61.7	75.6
Kitsap	64.8	70.5	65.2	69.1
Kittitas	64.0	78.0	61.5	70.7
Klickitat	73.9	80.7	65.5	67.5
Lewis	64.2	80.5	70.7	73.8
Lincoln	62.5	70.8	45.7	53.6
Mason	68.9	74.7	63.9	63.6
Okanogan	55.0	80.0	65.7	72.1
Pacific	60.4	79.8	58.4	65.2
Pend Oreille	57.7	82.6	59.3	60.4
Pierce	74.0	82.7	68.0	75.0
San Juan	68.8	71.0	69.0	77.0
Skagit	62.1	83.8	62.4	68.8
Skamania	66.4	77.9	59.7	64.5
Snohomish	74.7	83.1	70.1	78.5
Spokane	66.3	82.8	63.1	80.8
Stevens	63.0	82.0	53.3	66.1
Thurston	69.3	71.7	75.2	74.4
Wahkiakum	63.9	82.7	55.9	67.3
Walla Walla	66.3	69.5	59.0	71.0
Whatcom	70.4	68.6	66.7	67.9
Whitman	74.1	88.8	62.2	68.4
Yakima	63.2	75.0	60.3	68.1

Table F-11. Percent of residents indicating willingness to pay for wildlife-related services.

County	Care for injured or orphaned wildlife	Response to complaints about wildlife in urban areas	Incentives to private landowners who restore wildlife habitat	Protection and recovery of threatened or endangered species
Adams	31.0	35.7	32.9	48.5
Asotin	34.5	29.7	37.6	41.3
Benton	39.0	47.6	37.3	59.5
Chelan	35.9	37.0	30.3	45.7
Clallam	38.3	36.0	33.7	52.6
Clark	46.4	36.2	37.9	60.2
Columbia	26.7	31.8	37.5	42.7
Cowlitz	43.9	38.0	35.5	44.9
Douglas	50.7	49.3	41.4	58.8
Ferry	40.8	30.5	31.3	39.4
Franklin	47.8	49.2	40.3	60.3
Garfield	32.2	31.0	26.8	30.1
Grant	41.0	40.5	45.1	54.7
Grays Harbor	55.7	39.0	33.8	62.2
Island	42.6	31.6	35.6	60.6
Jefferson	51.2	48.8	50.8	69.0
King	45.5	48.2	35.4	64.7
Kitsap	51.6	43.0	42.6	60.9
Kittitas	51.8	36.5	39.1	61.3
Klickitat	42.1	38.0	50.9	57.0
Lewis	48.2	38.8	32.5	51.3
Lincoln	27.6	29.6	39.7	34.2
Mason	42.4	45.1	39.8	53.6
Okanogan	33.3	31.7	40.0	51.4
Pacific	50.0	41.6	43.7	49.4
Pend Oreille	35.1	34.5	37.5	44.2
Pierce	58.9	49.3	42.5	61.1
San Juan	53.5	50.0	51.5	76.0
Skagit	53.0	51.3	50.9	65.8
Skamania	47.2	36.1	29.3	52.9
Snohomish	46.7	53.3	38.2	65.4
Spokane	46.6	45.5	34.3	58.8
Stevens	41.5	29.9	37.6	47.9
Thurston	50.5	38.5	46.3	62.2
Wahkiakum	39.2	25.5	33.0	46.8
Walla Walla	45.6	48.0	42.2	54.0
Whatcom	50.0	48.6	46.7	69.8
Whitman	46.3	36.7	41.8	44.9
Yakima	51.4	33.8	29.9	39.4

Table F-11, *continued*. Percent of residents indicating willingness to pay for wildlife-related services.

County	Outdoor educational programs to connect youth/families to nature	Hunting and fishing opportunities	Wildlife viewing opportunities	Programs that help local governments plan for protection of open space and wildlife populations in urban areas
Adams	44.1	55.7	47.1	25.4
Asotin	53.6	55.5	33.0	29.8
Benton	43.8	38.6	45.5	40.3
Chelan	41.5	47.9	34.0	34.4
Clallam	53.8	47.6	50.5	54.9
Clark	42.3	43.8	41.4	44.9
Columbia	45.0	51.9	32.1	33.6
Cowlitz	41.7	48.1	37.5	36.9
Douglas	55.9	53.6	38.4	44.4
Ferry	45.2	50.5	32.3	35.5
Franklin	49.3	52.4	41.2	46.2
Garfield	33.9	42.9	23.2	29.2
Grant	37.5	53.8	34.2	43.2
Grays Harbor	40.5	58.3	43.2	39.2
Island	55.6	42.7	37.8	41.4
Jefferson	56.3	33.3	40.2	55.6
King	51.2	27.9	47.1	45.2
Kitsap	54.5	40.7	50.6	42.9
Kittitas	47.7	53.1	35.1	46.8
Klickitat	54.2	49.5	46.3	47.1
Lewis	39.5	50.0	37.5	39.0
Lincoln	33.9	40.4	13.9	23.9
Mason	52.4	53.1	46.9	40.8
Okanogan	44.1	52.4	36.5	35.6
Pacific	46.7	53.4	36.4	35.2
Pend Oreille	37.2	48.3	30.7	30.9
Pierce	58.3	51.4	41.3	48.6
San Juan	67.0	43.8	57.3	60.0
Skagit	58.0	52.3	50.9	54.7
Skamania	44.6	42.9	38.0	37.8
Snohomish	57.9	43.6	51.3	48.0
Spokane	49.0	55.6	44.0	46.9
Stevens	43.9	54.2	32.5	38.9
Thurston	62.4	38.7	59.8	53.4
Wahkiakum	32.3	40.0	25.3	31.5
Walla Walla	53.4	41.0	38.5	39.2
Whatcom	56.1	37.1	53.3	55.4
Whitman	50.6	50.0	43.4	38.0
Yakima	44.4	50.7	51.5	37.1

APPENDIX G. METHODS AND WEIGHTING

Sampling and Data Collection

Results reported here are for Washington's portion of the *Understanding People in Places* project. A full background and methods for the entire project will be reported separately.

Washington residents were the target population for this study. The sample for data collection was obtained through random selection from two sampling firms, Genesys and Survey Sampling, Inc. (SSI). Records were primarily obtained from Genesys and supplemented from records obtained through SSI when necessary. Sampling was stratified by county, with a relatively equal number of residents sampled from each of 39 counties within Washington. This stratification allowed for comparisons by county on key questions of interest. A pretest of the survey instrument with a small sample of Washington residents was conducted in the summer of 2009. Data were collected via a mail-back questionnaire (see Appendix I) administered in the fall of 2009. Data collection occurred via a modified Dillman (2007) approach, consisting of multiple mailings to maximize response rates. All survey administration, including for the pretest, was conducted by Colorado State University. Data from completed questionnaires were analyzed using SPSS/PASW 18.0.

A total of 4,183 Washington residents responded to the mail survey, resulting in an overall response rate of 31.8%. Response rates obtained for each county are reported in Table G-1. The population estimate for the entire Washington study area was within ±2% at the 99% confidence level. Sixty-eight responses per county were targeted to allow for population estimates within ±10% at the 90% confidence level at the county level. Due to varying response rates and sample sizes available, margins of error were different for each county. All counties had a larger sample than the targeted number of 68; thus, overall error for each county is less than ±10%.

Table G-1. Response rates to the mail survey.

County	Number of surveys mailed	Nondeliverables	Completed surveys	Response rate (%)	Nonresponse surveys
Adams	365	56	83	27.0	49
Asotin	399	30	128	34.6	68
Benton	401	54	92	26.5	64
Chelan	379	39	99	29.0	49
Clallam	402	39	124	34.2	63
Clark	418	48	106	28.7	51
Columbia	376	19	141	39.4	64
Cowlitz	405	32	116	31.2	63
Douglas	353	27	81	24.9	53

Table G-1, *continued*. Response rates to the mail survey.

County	Number of surveys mailed	Nondeliverables	Completed surveys	Response rate (%)	Nonresponse surveys
Ferry	332	36	105	35.4	62
Franklin	398	48	78	22.4	48
Garfield	310	13	125	42.2	65
Grant	360	38	94	29.3	53
Grays Harbor	336	39	82	27.6	39
Island	391	47	113	32.8	59
Jefferson	392	34	138	38.6	56
King	420	31	92	23.5	47
Kitsap	403	29	100	26.8	50
Kittitas	352	43	125	40.4	49
Klickitat	373	41	124	37.3	68
Lewis	363	35	86	26.2	48
Lincoln	364	52	125	40.1	50
Mason	365	52	97	31.0	47
Okanogan	389	62	110	33.7	57
Pacific	379	73	96	31.4	58
Pend Oreille	371	52	125	39.3	68
Pierce	409	29	80	21.0	47
San Juan	335	70	114	43.0	38
Skagit	403	39	123	33.7	66
Skamania	390	44	130	37.5	55
Snohomish	415	63	84	23.8	42
Spokane	421	38	111	29.0	65
Stevens	333	29	127	41.7	62
Thurston	409	28	119	31.2	65
Wahkiakum	337	41	103	34.9	57
Walla Walla	396	33	115	31.7	56
Whatcom	397	51	118	34.2	44
Whitman	355	82	92	33.6	59
Yakima	403	50	82	23.2	47
Washington	**14799**	**1666**	**4183**	**31.8**	**2151**

Nonresponse Check

A sample of residents who did not respond to the mail survey in each county was contacted for a brief phone interview following data collection (n = 2,151 completed interviews). Calls were made by Phone Base Research, Inc., located in Fort Collins, CO, in January, 2010. The purpose of this effort was to obtain responses to a few key questions from the mail survey (see Appendix J for phone survey instrument). The phone survey allowed for an exploration of whether differences existed between respondents to the mail survey and nonrespondents on key variables of interest to the study (Table G-2). *Unweighted data* were used in these analyses. Slight differences were noted between respondents and nonrespondents on certain variables. As an example, nonrespondents were likely to have higher means on items related to the wildlife value orientations ("*Animals should have rights like humans", "The needs of humans should take priority over fish and wildlife protection", "I value the sense of companionship I receive from animals"*, and "*People who want to hunt should be provided the opportunity to do so"*). Although all items except two ("*I often participate in outdoor activities near my home",* and "*Length of residence in current home")* were found to be statistically significant, effect size measures indicated only marginal variation between respondents and nonrespondents. Respondents were also much more likely to be male and have participated in hunting and fishing in the last 12 months than nonrespondents. Although we did not weight data based on the results of the nonresponse comparisons, the results did contribute to the weighting procedures described in the next section of this appendix.

Table G-2. Comparing respondents (RE) and nonrespondents (NR) on key survey items.

Items		N	Mean/ Percent	*F*-value	*p*-value	Eta
I often participate in outdoor activities near my home	RE	4103	5.84	-0.34	.733	.004
	NR	2011	5.86			
Animals should have rights like humans	RE	4118	3.27	-5.86	<.001	.075
	NR	1966	3.62			
The needs of humans should take priority over fish and wildlife protection	RE	4100	4.12	-15.84	<.001	.200
	NR	1935	5.01			
I value the sense of companionship I receive from animals	RE	4111	5.15	-29.94	<.001	.358
	NR	1996	6.41			
People who want to hunt should be provided the opportunity to do so	RE	4120	5.70	-6.36	<.001	.081
	NR	1991	5.97			
Wildlife are a nuisance	RE	4142	2.85	9.83	<.001	.125
	NR	1987	2.35			

Table G-2, *continued*. Comparing respondents (RE) and nonrespondents (NR) on key survey items.

Item		N	Mean/ Percent	*F*-value	*P*-value	Eta
Acceptability of limiting the number of wolves in certain areas if they cause declines in deer and elk populations?	RE	4060	5.29	2.90	.004	.038
	NR	1892	5.13			
Would you like mountain lion populations to decrease in WA over the next five years?	RE	4056	2.75	-2.32	.020	.031
	NR	1690	2.82			
In the last 12 months, did you participate in hunting?	RE	3894	26%	68.13[1]	<.001	.107[2]
	NR	2020	17%			
In the last 12 months, did you participate in fishing (non-commercial)?	RE	3992	51%	46.20[1]	<.001	.088[2]
	NR	2019	41%			
In the last 12 months, did you participate in wildlife viewing?	RE	4020	83%	10.75[1]	.001	.042[2]
	NR	2016	80%			
Respondent gender	RE	4135	32%[3]	254.52[1]	<.001	.203[2]
	NR	2024	53%[3]			
Respondent age	RE	4102	59.57	11.83	<.001	.150
	NR	1987	54.82			
Length of residence in WA (years)	RE	4143	40.47	3.54	<.001	.045
	NR	2006	38.42			
Length of residence in current home (years)	RE	3967	16.25	1.32	.188	.017
	NR	2005	15.75			

[1] Test statistic is a chi-square value (not an *F*-value), because both independent and dependent variables were dichotomous.

[2] This effect size is a *Phi* as opposed to an *eta* value. Breakpoints of small, medium and large are .1, .243, and .371 respectively (as opposed to .1, .3, and .5 for *eta*).

[3] The percentage of females within the sample.

Data Weighting Procedures

Unless otherwise noted, results reported in this document were obtained from data weighted to more accurately represent the resident population of interest on key variables. Specifically, an overrepresentation of males was found in the unweighted sample, as compared to the actual population. Findings reported at the county level were weighted to represent the true proportions of males and females in each county. It is worth noting that weighting by gender partially adjusted for overrepresentation of hunters in the sample. Findings reported at the statewide level for Washington are based on data that have been weighted to accurately reflect the true proportions of residents in each county. This weighting procedure was necessary given that sampling was stratified at the outset to ensure relatively equal representation of residents in each county for comparison purposes.

Population estimates for gender and population weighting were obtained from U.S. Census data (2000). These estimates and data weights can be found in Tables G-3 and G-4.

Table G-3. Percent of males and females in the population and study sample.[1]

County	Population, Male (%)	Population, Female (%)	Sample, Male (%)	Sample, Female (%)	Male Weight[2]	Female Weight[2]
Adams	50.7	49.3	67.9	32.1	0.75	1.54
Asotin	46.6	53.4	63.8	36.2	0.73	1.47
Benton	49.4	50.6	72.8	27.2	0.68	1.86
Chelan	49.3	50.7	72.2	27.8	0.68	1.82
Clallam	48.7	51.3	73.8	26.2	0.66	1.96
Clark	49.3	50.7	65.1	34.9	0.76	1.45
Columbia	48.0	52.0	71.2	28.8	0.67	1.81
Cowlitz	49.0	51.0	67.2	32.8	0.73	1.56
Douglas	49.0	51.0	75.3	24.7	0.65	2.07
Ferry	50.7	49.3	72.1	27.9	0.70	1.77
Franklin	52.5	47.5	75.3	24.7	0.70	1.93
Garfield	49.9	50.1	78.5	21.5	0.64	2.33
Grant	51.2	48.8	67.7	32.3	0.76	1.51
Grays Harbor	50.2	49.8	62.5	37.5	0.80	1.33
Island	48.4	51.6	73.0	27.0	0.66	1.91
Jefferson	49.0	51.0	68.4	31.6	0.72	1.61
King	49.8	50.2	62.6	37.4	0.79	1.34
Kitsap	50.0	50.0	59.0	41.0	0.85	1.22
Kittitas	49.6	50.4	59.8	40.2	0.83	1.25
Klickitat	49.4	50.6	70.2	29.8	0.70	1.70
Lewis	48.8	51.2	68.7	31.3	0.71	1.63

Table G-3, *continued*. Percent of males and females in the population and study sample.[1]

County	Population, Male (%)	Population, Female (%)	Sample, Male (%)	Sample, Female (%)	Male Weight[2]	Female Weight[2]
Lincoln	48.0	52.0	76.4	23.6	0.63	2.20
Mason	51.0	49.0	68.8	31.3	0.74	1.57
Okanogan	49.4	50.6	69.7	30.3	0.71	1.67
Pacific	48.6	51.4	68.8	31.3	0.71	1.64
Pend Oreille	49.3	50.7	72.7	27.3	0.68	1.86
Pierce	49.1	50.9	51.3	48.8	0.96	1.04
San Juan	48.7	51.3	52.7	47.3	0.92	1.09
Skagit	48.9	51.1	65.0	35.0	0.75	1.46
Skamania	49.9	50.1	70.0	30.0	0.71	1.67
Snohomish	49.7	50.3	68.7	31.3	0.72	1.61
Spokane	48.6	51.4	72.7	27.3	0.67	1.88
Stevens	49.1	50.9	66.9	33.1	0.73	1.54
Thurston	48.4	51.6	55.5	44.5	0.87	1.16
Wahkiakum	48.8	51.2	68.0	32.0	0.72	1.60
Walla Walla	50.4	49.6	62.8	37.2	0.80	1.34
Whatcom	49.3	50.7	61.9	38.1	0.80	1.33
Whitman	51.3	48.7	71.7	28.3	0.71	1.72
Yakima	49.3	50.7	73.2	26.8	0.67	1.89

[1] Population Estimates = 2008 population estimates for adults 20 years of age and older.

[2] Weighting factor = % Pop divided by the % Sample.

Table G-4. Population and sample distribution.

County	Population Estimates[1]	Population Estimates[1] (%)	Sample %	Pop Weight[2]
Adams	10,932	0.23	1.99	0.11
Asotin	16,189	0.33	3.05	0.11
Benton	116,424	2.41	2.20	1.09
Chelan	52,246	1.08	2.36	0.46
Clallam	56,180	1.16	2.97	0.39
Clark	305,492	6.31	2.54	2.49
Columbia	3,162	0.07	3.37	0.02
Cowlitz	74,307	1.54	2.78	0.55
Douglas	26,068	0.54	1.94	0.28

Table G-4, *continued*. Population and sample distribution.

County	Population Estimates[1]	Population Estimates[1] (%)	Sample %	Pop Weight[2]
Ferry	5,562	0.11	2.51	0.05
Franklin	46,435	0.96	1.87	0.51
Garfield	1,645	0.03	3.00	0.01
Grant	56,693	1.17	2.25	0.52
Grays Harbor	53,668	1.11	1.96	0.57
Island	62,106	1.28	2.70	0.48
Jefferson	24,271	0.50	3.30	0.15
King	1,426,667	29.49	2.19	13.46
Kitsap	178,137	3.68	2.40	1.54
Kittitas	29,614	0.61	2.99	0.21
Klickitat	15,343	0.32	2.96	0.11
Lewis	55,099	1.14	2.05	0.55
Lincoln	8,015	0.17	2.99	0.06
Mason	44,543	0.92	2.32	0.40
Okanogan	29,593	0.61	2.63	0.23
Pacific	16,843	0.35	2.30	0.15
Pend Oreille	9,878	0.20	2.99	0.07
Pierce	569,424	11.77	1.91	6.16
San Juan	12,656	0.26	2.73	0.10
Skagit	87,475	1.81	2.94	0.62
Skamania	8,234	0.17	3.10	0.05
Snohomish	496,308	10.26	2.01	5.11
Spokane	341,482	7.06	2.65	2.66
Stevens	31,504	0.65	3.03	0.21
Thurston	185,281	3.83	2.84	1.35
Wahkiakum	3,307	0.07	2.47	0.03
Walla Walla	42,264	0.87	2.75	0.32
Whatcom	147,083	3.04	2.83	1.08
Whitman	31,523	0.65	2.19	0.30
Yakima	156,710	3.24	1.96	1.66

[1] Population Estimates = 2008 population estimates for adults 20 years of age and older.

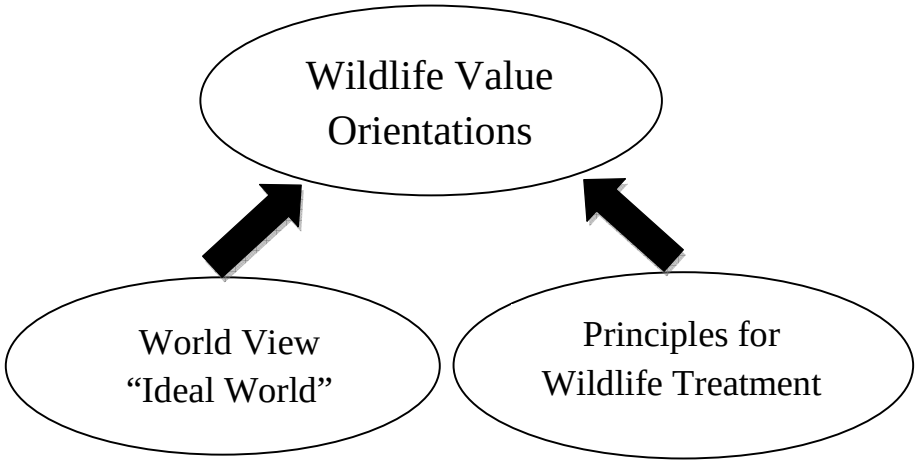
[2] Weighting factor = % Pop divided by the % Sample.

APPENDIX H. ADDITIONAL BACKGROUND ON THE WILDLIFE VALUE ORIENTATION CONCEPT[1]

Wildlife value orientations are a component of an individual's hierarchical belief structure. They consist of networks of beliefs that organize around one's values and provide contextual meaning to those values in relation to wildlife. Wildlife value orientations are assumed to play an important role in explaining individual variation in wildlife-related behaviors and attitudes toward the treatment of wildlife. Value orientations provide the foundation for an individual's attitudes and norms, which in turn guide their behavior. Prior research has shown that wildlife value orientations are effective in predicting participation in wildlife-related recreation (Fulton et al., 1996) as well as support for wildlife management actions (e.g., Bright et al., 2000; Manfredo et al., 1998; Manfredo et al., 1999; Manfredo & Fulton, 1997; Manfredo & Zinn, 1996; Whittaker, 2000; Zinn et al., 1998).

Wildlife value orientations can be viewed as *expressions of fundamental values*. A classic definition states that values are enduring beliefs about desired end states and modes of conduct (Rokeach, 1973). They are "goals for living" that define how we want the world to be (i.e., a "worldview") and principles that guide our behavior. In extending this idea to how people relate to wildlife, two "classes" or categories of thought have been identified (Figure H-1; Teel et al., 2005). Worldview captures the notion of "desired end states" in the values definition – an ideal view of what one would want the world to be regarding wildlife. Principles for wildlife treatment represent the idea of "desired modes of conduct" – guiding principles for how an individual perceives we should interact with and treat wildlife.

Figure H-1. Conceptual model for wildlife value orientations.



[1] Some of the content appearing in this section has been extracted from Teel et al. (2005).

As described by Fulton et al. (1996), wildlife value orientations are comprised of "dimensions," or sets, of basic beliefs about wildlife and wildlife management. They are revealed through the pattern of direction and intensity among these beliefs. Recent work as part of the *Wildlife Values in the West* project has identified two primary value orientations toward wildlife that exist in the United States. Each of these orientations, including their corresponding belief dimensions, is described briefly below.

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

The utilitarian wildlife value orientation is one involving a view that wildlife should be used and managed for human benefit, and that human needs should take precedence over wildlife.

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

Basic Belief Dimensions

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

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

This orientation is associated with a view of wildlife as capable of relationships of trust with humans and as deserving of rights and compassion. Data collected in the *Wildlife Values in the West* study suggest that a shift toward mutualism is occurring in the United States and that this shift is a function of broad, societal forces, including urbanization and a rise in economic well-being (Teel et al., 2005).

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

Basic Belief Dimensions

A. *Social Affiliation Belief Dimension*	B. *Caring Belief Dimension*
Philosophy regarding a relationship of trust with wildlife, as if part of an extended family.	Philosophy regarding a desire to care for animals and prevent them from suffering.

Statements used on the survey as part of this study to measure wildlife value orientations and specific belief dimensions are presented in Table H-1.

Table H-1. Items used to measure wildlife value orientations and basic belief dimensions.[1]

Wildlife value orientation
Basic belief dimension
Items comprising the basic belief dimension[2]
Utilitarian value orientation
Appropriate use belief dimension
Humans should manage fish and wildlife populations so that humans benefit.
The needs of humans should take priority over fish and wildlife protection.
Fish and wildlife are on earth primarily for people to use.
Hunting belief dimension
We should strive for a world where there's an abundance of fish and wildlife for hunting and fishing.
Hunting does not respect the lives of animals.[3]
Hunting is cruel and inhumane to the animals.[3]
People who want to hunt should be provided the opportunity to do so.
Mutualism value orientation
Social affiliation belief dimension
We should strive for a world where humans and fish and wildlife can live side by side without fear.
I view all living things as part of one big family.
Animals should have rights similar to the rights of humans.
Wildlife are like my family and I want to protect them.
Caring belief dimension
I care about animals as much as I do other people.
I feel a strong emotional bond with animals.
I value the sense of companionship I receive from animals.

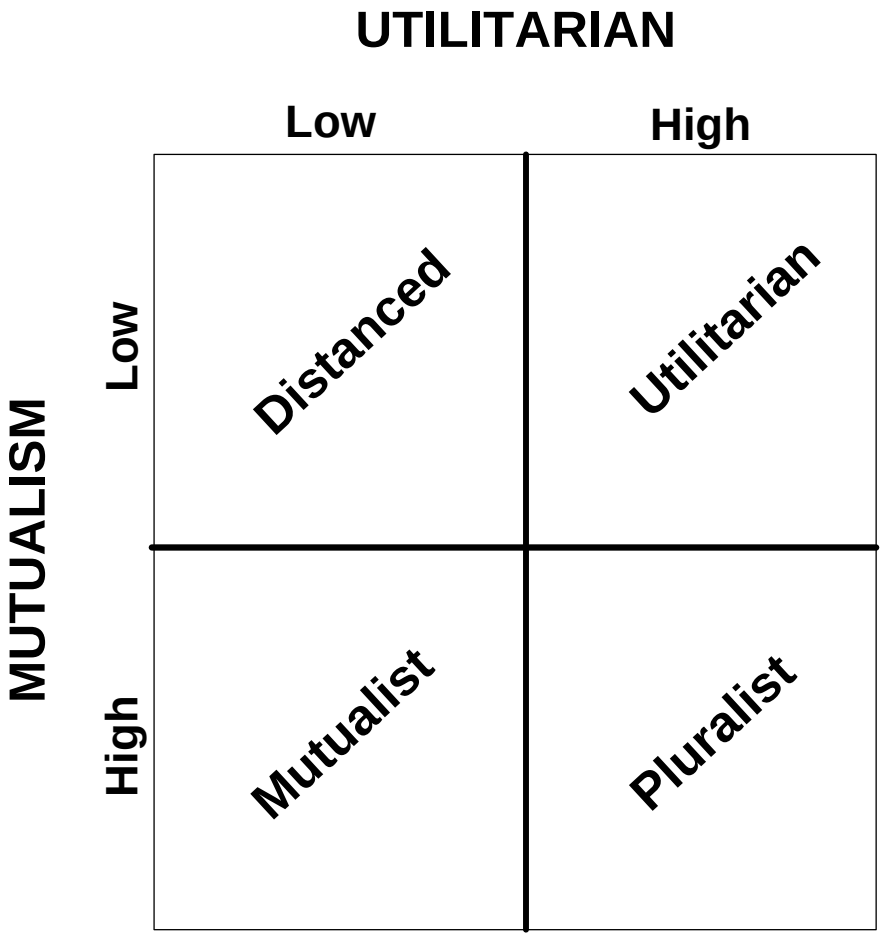
[1] This item set was extracted from the *Wildlife Values in the West* study.

[2] Items were measured on a scale ranging from 1 = "strongly disagree" to 7 = "strongly agree."

[3] Item reverse-coded prior to analysis.

The next step in being able to use this information is to classify people into types based on their responses to the survey items and explore how the types differ in their wildlife-related attitudes and behaviors. Figure H-2 provides a visual depiction of the four value orientation types identified in the *Wildlife Values in the West* study and discussed elsewhere in this report. For more detail on the analysis procedures used to segment people into these types and findings on key attitudinal/behavioral differences, see Teel et al. (2005).

Figure H-2. Wildlife value orientation classification scheme (from Teel et al., 2005).



APPENDIX I. MAIL SURVEY INSTRUMENT

2009 Survey of Washington Residents Regarding Place and Wildlife

We greatly appreciate your opinions!

Even if you know little about wildlife in your area,

your input is needed!

A study conducted cooperatively by:

Colorado State University

Knowledge to Go Places

Washington Department of FISH and WILDLIFE

SECTION I.

This survey begins with a list of paired phrases representing different ways that people might think about nature. We want to know which phrase out of each pair below best describes **how *you* think about <u>nature</u>**.

There are two parts to this question.

PART 1. Circle one phrase for each pair below.

PART 2. Circle one number for each phrase circled in Part 1.

I think <u>nature</u>…			**To what extent does the phrase to the left represent how you think about nature?**		
			<u>Slightly</u>	**<u>Moderately</u>**	**<u>Extremely</u>**
is fragile	or	is durable	1	2	3
is unlimited, abundant	or	is limited, scarce	1	2	3
is unpredictable, chaotic	or	is predictable, ordered	1	2	3
is remote, uninviting	or	is accessible, inviting	1	2	3
can take care of itself	or	needs to be protected	1	2	3

We are now interested in knowing more about **how you think about the <u>area near your home</u>** (including your place of residence and the area within a few miles of it).

There are two parts to this question.

PART 1. Circle one word/phrase for each pair below.

PART 2. Circle one number for each word/phrase circled in Part 1.

I think <u>the area near my home</u> is…			**To what extent does the word/phrase to the left represent how you think about the area near your home?**		
			<u>Slightly</u>	**<u>Moderately</u>**	**<u>Extremely</u>**
ugly, unattractive	or	beautiful, attractive	1	2	3
safe	or	dangerous	1	2	3
common	or	unique	1	2	3

SECTION II.

In this section, we're interested in knowing **whether you participate in <u>outdoor activities near your home</u>** and what factors might influence your participation. Again, for this survey, we're defining "near your home" as your place of residence and the area within a few miles of it. *Circle one number for each statement below.*

Do you disagree or agree with the following?	**Strongly <u>Disagree</u>**	**Moderately <u>Disagree</u>**	**Slightly <u>Disagree</u>**	**<u>Neither</u>**	**Slightly <u>Agree</u>**	**Moderately <u>Agree</u>**	**Strongly <u>Agree</u>**
I often participate in outdoor activities near my home.	1	2	3	4	5	6	7
I avoid participation in outdoor activities near my home due to fear of strangers.	1	2	3	4	5	6	7
My job requires that I spend a lot of time outside near my home.	1	2	3	4	5	6	7
I participate in outdoor activities near my home **mainly** to get exercise.	1	2	3	4	5	6	7
I am afraid of being harmed by wildlife if I participate in outdoor activities near my home.	1	2	3	4	5	6	7

In which season(s) do you **spend the most time participating in outdoor activities near your home**? *If you spend a similar amount of time in more than one season, check all that apply, OR check the box indicating that you don't spend much time participating in outdoor activities near your home.*

❒ **Spring** ❒ **Summer** ❒ **Fall** ❒ **Winter** ❒ **I don't spend much time participating in outdoor activities near my home.**

Now we would like to learn about the **specific outdoor activities you participated in near your home in the last 12 months**. *Check all that apply in the list below.*

❒ Gardening	❒ Walking/Hiking/Running	❒ Feeding Wild Birds	❒ Fishing (non-commercial)	❒ Boating (motorized)
❒ Camping	❒ Horseback Riding	❒ Feeding Other Wildlife	❒ Dirt-Biking or OHV/ATV use	❒ Sailing (non-motorized)
❒ Climbing	❒ Nature Photography	❒ Hunting	❒ Downhill Skiing/Snowboarding	❒ Cross-Country Skiing
❒ Biking	❒ Wildlife Viewing	❒ Trapping	❒ Kayaking/Canoeing/Rafting	❒ Snowmobiling

❒ **OTHER (*describe*):**_____

❒ **NONE, I did not participate in outdoor activities near my home in the last 12 months.**

If you checked more than one activity above:

Which activity do you currently participate in **the most** near your home? (*write response*) _____

Which activity are you **most likely to continue** in the future near your home? (*write response*) _____

Are there any activities listed above that you **would** participate in near your home but don't due to limited access to local lands?

❒ Yes ❒ No (*if yes, write activities here)* _____

Below is a series of statements to learn more about **access to lands near your home**. *Circle one number for each statement.*

Do you disagree or agree with the following?	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neither**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
I wish I had access to more land areas near my home to participate in outdoor activities.	1	2	3	4	5	6	7
I would pay a fee to have access to more land areas near my home to participate in outdoor activities.	1	2	3	4	5	6	7
Limited access to land areas is the **primary** reason for why I do not participate in outdoor activities near my home often.	1	2	3	4	5	6	7
The Washington Department of Fish & Wildlife (WDFW) should work with **private landowners** to provide more access to land areas near my home for outdoor activities.	1	2	3	4	5	6	7

There's been a lot of talk recently about climate change and its potential impacts. We are interested in learning **your views about climate change in relation to the area near your home**. *Circle one number for the statement below.*

	Strongly Disagree	**Moderately Disagree**	**Slightly Disagree**	**Neither**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
I believe that climate change is currently affecting the area near my home.	1	2	3	4	5	6	7

SECTION III.

Below are statements representing different ways that people might think about fish and wildlife. We're interested in knowing ***your*** **views about <u>fish and wildlife</u>**. *Circle one number for each statement.*

Do you disagree or agree with the following?	**Strongly <u>Disagree</u>**	**Moderately <u>Disagree</u>**	**Slightly <u>Disagree</u>**	**<u>Neither</u>**	**Slightly <u>Agree</u>**	**Moderately <u>Agree</u>**	**Strongly <u>Agree</u>**
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's 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
Fishing is cruel and inhumane to the fish.	1	2	3	4	5	6	7
Fishing allows people to enjoy the outdoors in a positive manner.	1	2	3	4	5	6	7
Fish are valuable only if people get to use them in some way.	1	2	3	4	5	6	7

Now we're interested in **your views about the wildlife <u>near your home</u>**. *Circle one number for each statement below.*

The wildlife near my home…	**Strongly <u>Disagree</u>**	**Moderately <u>Disagree</u>**	**Slightly <u>Disagree</u>**	**<u>Neither</u>**	**Slightly <u>Agree</u>**	**Moderately <u>Agree</u>**	**Strongly <u>Agree</u>**
…are generally a nuisance (cause problems).	1	2	3	4	5	6	7
…are enjoyable to have around.	1	2	3	4	5	6	7
…pose a dangerous risk to people.	1	2	3	4	5	6	7
…provide valuable opportunities for recreation.	1	2	3	4	5	6	7
I rarely see any wildlife near my home.	1	2	3	4	5	6	7

In the past 12 months, have you or your neighbors had **problems with wildlife**? *Check one box for each category below.*

I PERSONALLY have experienced problems near my home:	MY NEIGHBORS have experienced problems:
❒ yes ❒ no	❒ yes ❒ no ❒ I don't know

If you answered yes above for either category, **please briefly explain the problem(s)**, the wildlife that caused it, and how often it occurred (once during the year, once a month, once a week, etc.). *Write response below.*

_____

_____

SECTION IV.

The Washington Department of Fish and Wildlife (WDFW) has a variety of responsibilities when it comes to conserving the state's fish and wildlife resources and providing residents with fish and wildlife-related recreation opportunities. Below is a list of examples of services that WDFW may provide. Some of these services are currently offered by WDFW, while others are either new activities or ones provided by other organizations (for example, private businesses) that could be considered as possible future partnership opportunities for WDFW. New services may require WDFW to take funding away from other existing responsibilities. Given limited funds, we're interested in ***your*** **opinions about the importance of these services and whether you feel they should be WDFW's responsibility**.

There are multiple parts to this question. EXAMPLE SERVICES:	PART 1. **How important is each of the following to you?** *Circle one number for each service (A through I).* **Not at all Important**	**Slightly Important**	**Moderately Important**	**Quite Important**	**Extremely Important**	PART 2. **Should it be WDFW's responsibility to provide...?** *Check one box for each service.*	PART 3. **Would you be willing to pay to support...?** *Check one box for each service.*
A. Care for injured or orphaned wildlife.	1	2	3	4	5	❒ Yes ❒ No	❒ Yes ❒ No
B. Response to complaints about wildlife in urban areas.	1	2	3	4	5	❒ Yes ❒ No	❒ Yes ❒ No
C. Incentives to private landowners who restore wildlife habitat (example: tax breaks, reimbursement for expenses).	1	2	3	4	5	❒ Yes ❒ No	❒ Yes ❒ No
D. Protection and recovery of threatened or endangered species.	1	2	3	4	5	❒ Yes ❒ No	❒ Yes ❒ No
E. Outdoor educational programs to connect youth/families to nature.	1	2	3	4	5	❒ Yes ❒ No	❒ Yes ❒ No
F. Hunting and fishing opportunities.	1	2	3	4	5	❒ Yes ❒ No	❒ Yes ❒ No
G. Wildlife viewing opportunities (example: provide information on viewing areas, build viewing platforms/boardwalks).	1	2	3	4	5	❒ Yes ❒ No	❒ Yes ❒ No
H. Programs that help local governments plan for protection of open space and wildlife populations in urban areas.	1	2	3	4	5	❒ Yes ❒ No	❒ Yes ❒ No
I. **OTHER** (*write your response below*) _____	1	2	3	4	5	❒ Yes ❒ No	❒ Yes ❒ No

SECTION V.

In this section, we ask **your opinions about specific fish and wildlife species and their management, particularly dealing with conflict situations, in Washington**.

COYOTES AND BLACK BEARS:

We're interested in knowing under what circumstances (if any) you think it is acceptable for WDFW to **lethally remove a coyote or black bear**. *Circle one number for each statement below.*

Is it unacceptable or acceptable for WDFW to lethally remove a COYOTE if it…	**Highly Unacceptable**	**Moderately Unacceptable**	**Slightly Unacceptable**	**Neither**	**Slightly Acceptable**	**Moderately Acceptable**	**Highly Acceptable**
…is seen near your home?	1	2	3	4	5	6	7
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	1	2	3	4	5	6	7
…has a disease that may be spread to humans?	1	2	3	4	5	6	7
…attacks a pet near your home?	1	2	3	4	5	6	7
…attacks a person near your home?	1	2	3	4	5	6	7
Is it unacceptable or acceptable for WDFW to lethally remove a BLACK BEAR if it…	**Highly Unacceptable**	**Moderately Unacceptable**	**Slightly Unacceptable**	**Neither**	**Slightly Acceptable**	**Moderately Acceptable**	**Highly Acceptable**
…is seen near your home?	1	2	3	4	5	6	7
…is a nuisance (for example: it gets into trash or pet food containers) near your home?	1	2	3	4	5	6	7
…has a disease that may be spread to humans?	1	2	3	4	5	6	7
…attacks a pet near your home?	1	2	3	4	5	6	7
…attacks a person near your home?	1	2	3	4	5	6	7

DEER AND ELK:

As human populations expand, interactions between humans and deer or elk are likely to increase in certain parts of Washington. Although some people enjoy seeing these animals, interactions can sometimes result in problems such as damage to shrubbery, landscaping, and commercial crops. Below we ask about the **acceptability of different management actions** that could be used to address these problems. *Circle one number for each statement below.*

Is it unacceptable or acceptable for WDFW to…	**Highly Unacceptable**	**Moderately Unacceptable**	**Slightly Unacceptable**	**Neither**	**Slightly Acceptable**	**Moderately Acceptable**	**Highly Acceptable**
…capture and lethally remove problem deer or elk?	1	2	3	4	5	6	7
…use techniques designed to scare problem deer or elk away (examples: loud noises, rubber bullets)?	1	2	3	4	5	6	7
…use agency funds to compensate landowners for damage ($10,000 or more) caused by deer or elk?	1	2	3	4	5	6	7
…contribute agency funds to a landowner cost-sharing program supporting the construction of fences around property that has been damaged by deer or elk?	1	2	3	4	5	6	7
…require landowners to accept at least 50% of the responsibility in dealing with problem deer or elk?	1	2	3	4	5	6	7

WOLVES: Wolves are a state and federal endangered species and have started to recolonize Washington from other surrounding states. There are a wide range of opinions and interests associated with wolves. Some residents are concerned that an increase in wolves could lead to problems like attacks on livestock and population declines in certain hunted species. Others are excited about the prospect of having wolves return to Washington (for example, the opportunity to see wolves in the wild). Below we ask about the **acceptability of different management actions** that may be considered in the future as wolves become reestablished in the state. *Circle one number for each statement below.*

Is it unacceptable or acceptable for WDFW to…	**Highly Unacceptable**	**Moderately Unacceptable**	**Slightly Unacceptable**	**Neither**	**Slightly Acceptable**	**Moderately Acceptable**	**Highly Acceptable**
…move wolves from one area in Washington where they've reached a certain population size to another area in the state to establish new wolf populations?	1	2	3	4	5	6	7
…allow wolves to recolonize and establish new populations on their own in Washington?	1	2	3	4	5	6	7
…limit the number of wolves if they cause declines in deer and elk populations *in certain areas*?	1	2	3	4	5	6	7
…capture and lethally remove a wolf if it is known to have caused loss of livestock?	1	2	3	4	5	6	7
…compensate landowners for loss of livestock caused by a wolf?	1	2	3	4	5	6	7
…use *a portion of WDFW hunting and fishing license dollars* to compensate landowners for loss of livestock caused by a wolf?	1	2	3	4	5	6	7
…use *a portion of state tax dollars* to compensate landowners for loss of livestock caused by a wolf?	1	2	3	4	5	6	7
…allow a recreational hunt of wolves once they have reached a certain population size that exceeds WDFW recovery goals?	1	2	3	4	5	6	7

SALMON: Many salmon are federally listed under the Endangered Species Act. Salmon are also a symbol of the Pacific Northwest. Federal, state, and tribal management efforts have focused on the recovery of wild salmon for many years, and a large percentage of Washington's geography is involved in salmon-related activities. While some people feel that salmon recovery is important for the natural environment and local economies, others feel that it may interfere with their livelihoods. We are interested in **your views about salmon in the state**. *Circle one number for each statement below.*

Do you disagree or agree with the following?	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neither**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
Salmon are important to the local economy where I live.	1	2	3	4	5	6	7
Salmon are important to the quality of life for residents where I live.	1	2	3	4	5	6	7
WDFW should continue its efforts to recover *wild salmon* throughout the state.	1	2	3	4	5	6	7
WDFW should focus more of its efforts on introduction of *hatchery-raised salmon* to enhance fishing opportunities.	1	2	3	4	5	6	7

	Decreased Greatly	**Decreased Some**	**Remained the Same**	**Increased Some**	**Increased Greatly**	**No Opinion**
Over the past five years, would you say that your **support for salmon recovery** has increased, decreased, or remained the same? (*Circle one number OR check the box to indicate "no opinion".)*	1	2	3	4	5	❒

Would you like the following **wildlife populations in Washington** to increase, decrease, or remain at their current levels over the next five years? *Circle one number for each species below.*

	Eliminate This Species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Coyote	0	1	2	3	4	5
Black Bear	0	1	2	3	4	5
Deer	0	1	2	3	4	5
Elk	0	1	2	3	4	5
Cougar	0	1	2	3	4	5

SECTION VI.

The following **background information** will be used to help make general conclusions about the residents of Washington. **Your responses will remain completely confidential.**

For each activity listed below, check one response for each of the three questions appearing to the right.

	Have you ever participated in…	In the last 12 months, did you participate in…	Do you have an interest in future participation in…
…Hunting?	❒ Yes ❒ No	❒ Yes ❒ No	❒ Yes ❒ No
…Fishing (non-commercial)?	❒ Yes ❒ No	❒ Yes ❒ No	❒ Yes ❒ No
…Wildlife Viewing?	❒ Yes ❒ No	❒ Yes ❒ No	❒ Yes ❒ No

Are you…? ❒ Male ❒ Female

What is your age? (*Write response.*) _____ Years

How many people under 18 years of age are currently living in your household? (*Write response.*) _____ Person(s)

About how long have you lived in… (*Write response or check box for less than one year.*)

Washington? _____ Years, OR ❒ Less than one year.

Your current home? _____ Years, OR ❒ Less than one year.

What is your approximate annual household income before taxes? (*Check one.*)

❒ Less than $10,000
❒ $10,000 - $24,999
❒ $25,000 - $34,999
❒ $35,000 - $49,999
❒ $50,000 - $74,999
❒ $75,000 - $99,999
❒ $100,000 - $149,999
❒ $150,000 - $199,999
❒ $200,000 or more

What is the highest level of education that you have achieved? (*Check one.*)

❒ Less than high school diploma
❒ High school diploma or equivalent (GED)
❒ 2-year associates degree or trade school
❒ 4-year college degree
❒ Advanced degree beyond 4-year college degree

Are you…? (*Check one or more categories.*)

❒ White
❒ Hispanic or Latino
❒ Black or African American
❒ American Indian or Alaska Native
❒ Asian
❒ Native Hawaiian or Other Pacific Islander
❒ Other (*Please print on line below.*)

_____

Thank you for participating in this study!

APPENDIX J. NONRESPONSE PHONE SURVEY INSTRUMENT

Hello, my name is _____. I'm calling from Colorado State University for a study conducted cooperatively with the Washington Department of Fish and Wildlife. Your household has been selected to participate in a short survey designed to understand how people feel about the place where they live and about wildlife issues in the state of Washington. Would you be willing to take a minute or two to answer a few questions for me?

Please keep in mind that your participation in this study is voluntary and your responses would remain completely confidential. Additionally, please be aware that there are no known risks or direct personal benefits associated with participation in this study. Feel free to contact Tara Teel at (970) 491-7729 with questions about this survey. If you have questions about your rights as a participant in this research, you may contact Janell Barker of the CSU Institutional Review Board at (970) 491-1655.

[*If yes, begin asking questions listed below*]
[*If no*] Sorry to disturb you, have a good evening / day.

Before we begin, can I verify that you are at least 18 years of age? [*if no, ask to speak to someone in the household that is*]

Questions:

For each of the following statements that I read to you, please tell me if you agree or disagree that the statement describes how you feel. I will then ask you to what extent you agree or disagree. That is, do you strongly, moderately, or slightly agree or disagree?

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
1.	The needs of humans should take priority over fish and wildlife protection.	1	2	3	4	5	6	7
2.	Animals should have rights similar to the rights of humans.	1	2	3	4	5	6	7
3.	People who want to hunt should be provided the opportunity to do so.	1	2	3	4	5	6	7
4.	I value the sense of companionship I receive from animals.	1	2	3	4	5	6	7
5.	The wildlife near my home are generally a nuisance (cause problems).	1	2	3	4	5	6	7
6.	I often participate in outdoor activities near my home.	1	2	3	4	5	6	7

Wolves are a state and federal endangered species and have started to recolonize Washington from other surrounding states.

		Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
7.	Is it unacceptable or acceptable for the Washington Department of Fish and Wildlife to limit the number of wolves if they cause declines in deer and elk populations *in certain areas*? [*prompt with highly, moderately, slightly.*]	1	2	3	4	5	6	7

Would you like the cougar population in Washington to increase, decrease, or remain at their current levels over the next five years?

	Eliminate This Species	Decrease Greatly	Decrease Some	Remain at Current Level	Increase Some	Increase Greatly
Cougar	0	1	2	3	4	5

OK, now just a couple of quick questions about you and your participation in wildlife recreation.

8. In the last 12 months, did you participate in… hunting? ❒ Yes ❒ No
   fishing (non-commericial)? ❒ Yes ❒ No
   wildlife-viewing? ❒ Yes ❒ No

9. About how long have you lived in… …Washington? _____ Years OR ❒ Less than one year
   …your current home? _____ Years OR ❒ Less than one year

10. Finally, what is your age? _____ Years

11. [*Record respondent Gender:*] ❒ Male ❒ Female

That's all. Thank you very much for your participation!