

# Public Attitudes towards Wolves and Wolf Management in Wisconsin

Wisconsin Department of Natural Resources

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The Wisconsin DNR Bureau of Science Services generated this report and conducted the research upon which it is based. Robert Holsman, Natalie Kaner, and Jordan Petchenik were the authors.

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## **CHAPTER 1: Study Purpose, Methods, and Study Highlights**

Wolves have been under management authority of the Wisconsin Department of Natural Resources (Wisconsin DNR) since their removal by the U.S. Fish and Wildlife Service from the federal endangered species list in 2012. Since then, two focal points of the Wisconsin DNR's wolf management efforts have been to reduce wolf depredations and reduce the number of wolves to a level closer to the population goal of 350 animals. The Wisconsin DNR has also maintained extensive monitoring efforts of wolf pack size and locations. Following two seasons of regulated wolf hunting and trapping, the 2013-14 overwinter wolf population has been reduced to at least 660 animals from their estimated high point of 834.

### **STUDY PURPOSE**

Under the direction of the Natural Resources Board, the Wisconsin DNR is developing an updated wolf management plan. Upon the recommendation of the agency's Wolf Advisory Committee, we undertook this large scale survey to measure public opinion about wolves and wolf management among state residents. The objectives of this report are to document public attitudes toward wolves and wolf management in Wisconsin and to identify the demographic, experiential, and social-psychological factors that influence those attitudes. The data collected and documented in this report are intended to provide accurate, representative social science information to inform wolf management plan decisions, but are not intended to be the only source of public input considered in this process.

### **Scope of Study**

There was interest in measuring current opinions of people all across Wisconsin because the last statewide survey about wolves occurred in 1997. However, the department and its Wolf Advisory Committee were particularly interested in the opinions of people living among wolves, especially in rural areas, because those residents are most likely to encounter wolves and be impacted by them. People who are most impacted by wolves are also the ones whose acceptance and cooperation are most needed to ensure continued success with management efforts. Therefore, we developed a sampling protocol that allowed for an in-depth examination of residents living in counties that have established wolf territories. As a result, the analysis of survey data is organized and presented in accordance with our study objectives to compare responses of people living in wolf range to those who do not live in wolf range. Beyond the broad "inside – outside" comparison layer, we performed and report a number of secondary comparisons (e.g., rural vs. urban residents) to test for attitude differences that have been found in prior research on public attitudes toward wolves (see Appendix A). In addition, a number of comparisons of potential interest are highlighted in quick summaries in a separate section of this report titled "Segment Profiles."

## **METHODS**

### **Overview**

We measured public attitudes toward wolves and wolf management objectives and strategies using a 12-page questionnaire that underwent rigorous review and pre-testing procedures. The questions were developed from a literature review of previous wolf attitude research (Appendix A) along with input from the Wolf Advisory Committee. We conducted six focus groups with various wolf stakeholders to pilot test our questions, which resulted in substantive revisions in our wording and presentation. We received affirmation on our methodology (with minor suggestions), including sampling design, from an external review by a national panel of human dimensions of wildlife experts. Next, we pilot-tested our survey process in January 2014 with a small sample of households to fine tune our measurement and evaluate the possibility of offering the survey online--an option we dismissed because of poor response.

### **Questionnaire Design and Development**

The variables of interest on the survey emerged through consultation with Wisconsin DNR carnivore ecologist Dave MacFarland, an initial meeting with the Wolf Advisory Committee, and an extensive literature review of published studies on public wolf attitudes. We developed an initial draft questionnaire and presented it to the Wolf Advisory Committee for review and input on November 19, 2013. Based on feedback from the committee, we made several specific changes to the first draft questionnaire. Some of those changes included:

- the removal of a statewide map depicting relative differences in wolf abundance;
- the removal of several sections of background information that were deemed “educational;”
- the elevation of risk questions in the overall order of questions;
- the addition of a question asking if people were willing to live near wolves;
- the deletion of a question that sought to measure tolerance on a line continuum;
- the removal of a block of questions that sought to measure likelihood of taking political or legal action to change wolf management;
- and numerous suggested wording changes.

We conducted six focus groups (Table 1) to pilot test the language and presentation of a revised draft questionnaire. Though focus group participants provided comments to us about wolf management, we concentrated the discussions in these groups on evaluating the measures we designed in the survey instrument. These discussions enabled us to evaluate how successful our measures were in assessing preferences for wolf population size or social carrying capacity based on a continuum of likely wolf-human interactions (e.g., complaints ) (see Peyton et al. 2007 for discussion). Focus group results did prove useful for framing and presenting some concepts on the final questionnaire, but despite several attempted alterations we were unable to

present wolf population and impact data in a way that worked for respondents. Focus group participants either had difficulty sorting through the complexity of the data or rejected the data on which the scenarios were presented. For example, hunter groups and livestock producers believed that the past and recent wolf population estimates and corresponding depredation and damage reports we presented were too low. Meanwhile, several participants among wolf educator and volunteer trackers suggested that the differences in damage amounts from one population scenario to the next were too small to register any difference. As a consequence of what we observed in focus groups, we developed simplified and more generic questions to measure public preference for wolf population size and relative distribution.

Table 1. Focus group dates, stakeholder groups, and locations.

<b>Date</b>	<b>Stakeholder group</b>	<b>Location</b>
Dec. 5, 2013	Livestock producers with past wolf depredations	Amnicon
Dec. 6, 2013	Volunteer wolf trackers	Tomah
Dec. 10, 2013	Bowhunters (Archery license holders in 2013)	Tomahawk
Dec. 19, 2013	Wolf trackers/ naturalists	Manitowish Waters
Jan. 9, 2014	Urban millennials	Madison
Jan. 13, 2104	Bear hunters (Class-B license holders in 2013)	Medford

### **External Peer Review**

We sent a draft survey along with our survey sampling plan to a national panel of five human dimensions experts for review. Each reviewer has conducted and published peer-reviewed research articles on public attitudes toward wolves. The reviews we received can be described as cautiously positive, with some hesitancy expressed about respondent ability to handle the complexity of a data table associated with the population preference measure (which we removed from the questionnaire for the reasons described above). Minor editorial suggestions on other questions were adopted. One reviewer opined that our sampling numbers were “overkill” for a statewide survey, but we maintained our large sample size because it was integral to assessing variation in wolf attitudes on a regional/local basis.

### **Pilot Survey**

The revised items that were developed as a result of focus groups were included in a third draft questionnaire that we pilot tested with a sample of 400 households selected with a random stratified sample of residents living in and out of wolf range. We conducted this final test of the questionnaire in January and February 2014. The pilot test provided us with a dataset to evaluate question reliability and validity. We made only a couple of minor modifications to question wording following the review of pilot survey results.

In addition to fine tuning the questionnaire, we also experimented with survey administration procedures to test a two-stage survey design whereby half of the pilot sample received a brochure style survey that included a web address where the complete survey could be taken. This brochure group (half of our pilot sample) also had the option to opting out of the survey by returning the card and indicating why they were choosing not to participate. We had two objectives in running this experiment. First, we wanted to see whether providing the questionnaire in an alternative, online format would increase response rates among younger cohorts in the public (and save us money on postage). Second, we wanted to gather information about the reasons for survey non-response. The results of the design administration experiment showed that the standard (Dillman) mail survey design produced a stronger response than did the brochure/online hybrid. Consequently, we chose to use standard mail survey procedures with the statewide survey, rather than using a web survey.

### **Sample Protocol**

A standard public opinion poll for a population like ours in Wisconsin might contact between 400 and 1,000 people. We drew a very large sample (n=8750) because we wanted the ability to test whether there were differences in wolf attitudes within wolf range at a finer scale than a simple, random survey of state residents would have provided. We also wanted the ability to segment the responses to perform group comparisons on a number of variables and the large sample was required to “capture” enough responses to complete this objective.

Like all wildlife species, wolves are not equally distributed across the places in Wisconsin where they live. Wolf packs tend to organize themselves in non-overlapping territories that occupy greater spatial coverage across a particular landscape as populations increase. Stated another way, areas with a higher density of wolves also have more packs that occupy more of the landscape. Therefore, wolf human interactions should be more frequent in places where wolves occupy more space (with more wolves) and/ or where there are more human settlements. To the extent that these assumptions are true, we expected to see some differences in the social carrying capacity of wolves across its Wisconsin range.

We considered a number of factors and tradeoffs in deciding how to allocate our sampling effort. We did not have the budgetary resources to treat each county with wolves as a separate unit of analysis, so we developed 11 county-clusters within wolf range for intensive sampling (Figure 1). The remaining 37 counties in the state were sampled and described collectively as “non-range.” This large cluster provided opportunity for input from all citizens of the state.

We developed these sample clusters to be able to investigate whether or not there are localized differences in wolf attitudes based on differences in wolf density in relation to human population size. County cluster groupings were determined by taking a ratio of percent area occupied by wolf territories (as a proxy for wolf population density) and the human population in those counties (Table 2). We grouped counties with similar wolf-to human ratios taking advantage of

contiguous boundaries whenever possible. We also considered the land uses, amount of public land, and histories of wolf depredations cases in arranging the clusters.

*A note on terminology*

This report uses the terms “wolf range” and “non-range” as labels of convenience to describe our survey sample areas. **These labels are not used in a biological sense to convey any judgment about habitat suitability, nor do they adhere 100% to where wolves have been observed or may live in the state.** In other words, there are likely some wolves that occur in counties we considered “non-range” for the purposes of this study. In fact, we know this to be true in cases of Eau Claire and Monroe counties where wolves do occupy territories. Yet, these two counties were removed from our intensively sampled county clusters because they presented cases that did not fit well with our clustering criteria of grouping counties based on their ratio of wolf occupancy to human population density. Aside from these exceptions, those counties we sampled and called “wolf range” all have multiple wolf packs whose home ranges include all or some parts of those counties.

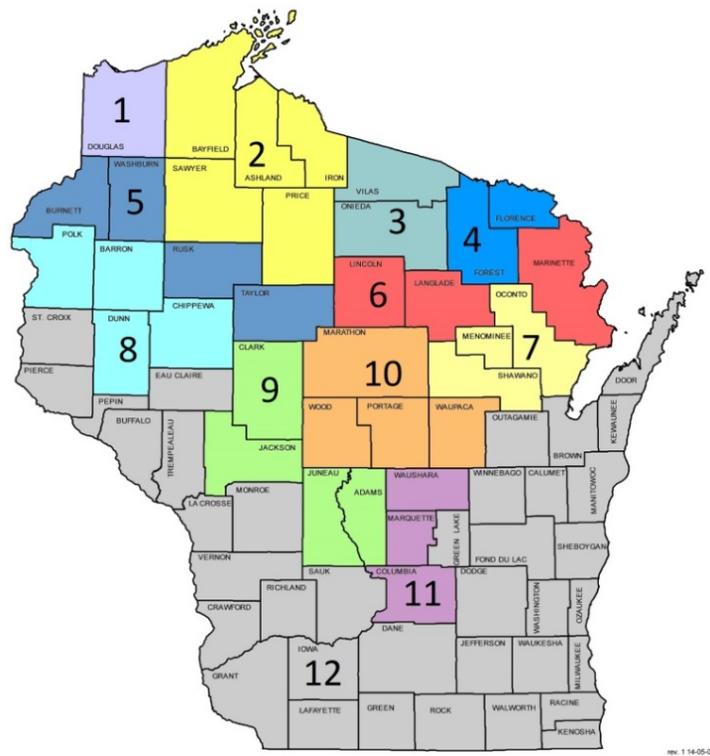


Figure 1. Map of county sampling clusters 1-12. Clusters 1-11 are referred to as ‘Wolf range’ while cluster 12 is ‘Non-range’.

Table 2. Clustering ratios for wolf range counties.

Cluster group	Counties	A) % Wolf territory occupancy	B) Human density: people/sq. mile	Ratio A/B	County population	Cluster population
1	Douglas	67	34	1.98	34590	34590
2	Iron	56	8	7.18	4985	54166
	Price	74	11	6.55	11373	
	Bayfield	64	10	6.27	12230	
	Sawyer	54	13	4.09	13265	
	Ashland	54	16	3.48	12313	
3	Vilas	47	25	1.88	17711	46996
	Oneida	52	32	1.61	29285	
4	Florence	64	9	7.03	3765	10987
	Forest	44	9	4.78	7222	
5	Washburn	64	20	3.20	12661	51855
	Rusk	64	16	2.84	11166	
	Burnett	39	19	2.07	12459	
	Taylor	41	21	1.93	15569	
6	Lincoln	39	33	1.22	22430	71379
	Langlade	28	23	1.19	15717	
	Marinette	35	30	1.17	33250	
7	Menominee	12	53	0.22	2892	64550
	Oconto	22	38	0.58	29205	
	Shawano	22	47	0.47	32453	
8	Chippewa	14	61	0.23	48449	162989
	Polk	8	48	0.17	43610	
	Barron	7	53	0.13	35672	
	Dunn	4	51	0.08	35258	
9	Jackson	22	21	1.06	15978	78853
	Juneau	32	35	0.92	21038	
	Adams	27	32	0.84	17370	
	Clark	20	29	0.70	24449	
10	Marathon	9	87	0.10	102399	257648
	Portage	9	87	0.10	56536	
	Waupaca	7	70	0.10	40662	
	Wood	21	94	0.22	58051	
11	Columbia	unknown	74	--	43393	74907
	Marquette	3	34	.11	11807	
	Waushara	2	39	.19	19707	

### *Outlier Counties*

In the case of Eau Claire County, most of the wolves living there are located in the eastern half of the county, which is part of the central forest region of the state. Most of the people reside in the western half of the county in the large metropolitan area surrounding the city of Eau Claire. We concluded that including Eau Claire County in a cluster comprised of rural counties would have biased the results too much in favor of urban respondents. As for Monroe, most wolves in that county spend all or some of their time on the Fort McCoy Military installation where they are protected for all intents and purposes, creating another case that did not lend itself to clustering.

### **Mail Administration Process**

We mailed a 12-page questionnaire to 8,750 randomly selected households in the state during March and April 2014. Household addresses were purchased from a commercial firm and randomly drawn within each sampling cluster using Address-Based-Sampling (ABS) of U.S. Census records. Six hundred and fifty household addresses were selected for each of the 11 clusters of wolf counties. We randomly selected 1,600 households to receive questionnaire in cluster 12 (rest of the state/ non-wolf counties).

The first round of surveys was sent out across the state on Tuesday, March 18, 2014. Our survey administration methods included a cover letter signed by Wisconsin DNR Secretary Cathy Stepp, first-class postage (including real stamps on return envelopes), and an opportunity for people to formally decline participation. On the following Monday, March 24, we sent out a reminder post card to the entire sample of 8,750 state households. As questionnaires were returned to us, we removed those households from our mailing list using the tracking codes printed on the bottom of the first page. The rate of returned questionnaires is shown in Figure 2.

We were told to expect an undeliverable rate of 15-20% using ABS records. Sixteen percent of the mailings were returned to us as undeliverable. The USPS cited five main reasons for undeliverable envelopes not getting to residents. These were: “Vacant,” “Unable to forward/no forwarding address,” “No mail receptacle,” “Deceased,” and “Attempted-not known.”

A second round of surveys was sent to the non-respondents on Wednesday, April 16. These envelopes contained the same contents of the initial mailing, but with a modified cover letter to reflect the purpose of the second mailing. We re-mailed 587 surveys to some of the addresses that had come back as undeliverable in the first round of mailing. These households had been addressed to a name that no longer matched the household, and were thus marked as undeliverable. For this subset of undeliverables, we changed the addressee to “Household Resident” and sent the address a second mailing.

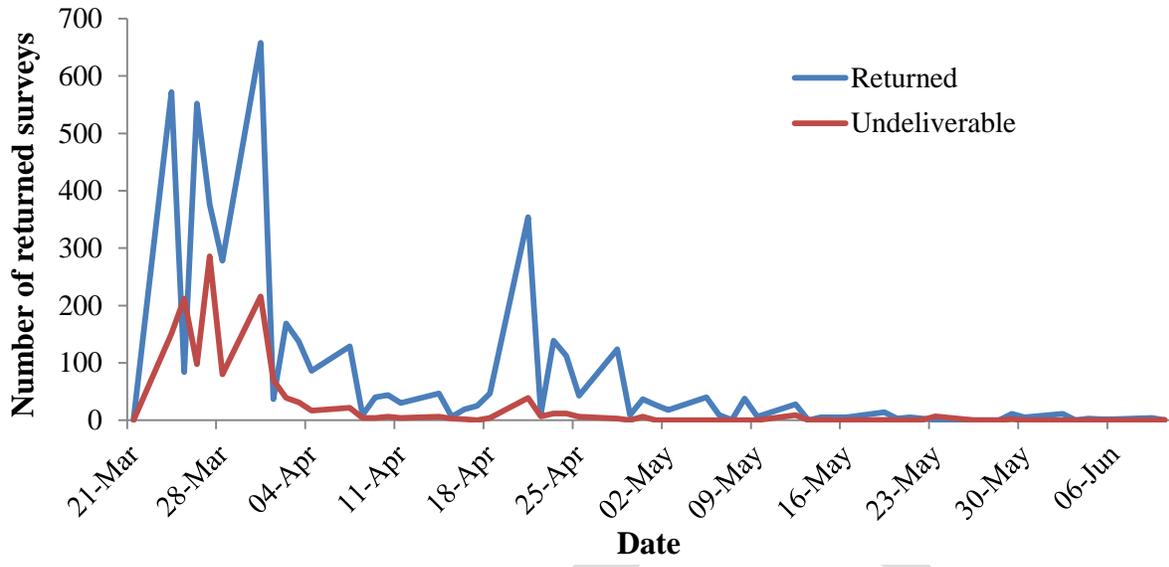


Figure 2. Number of returned surveys by date.

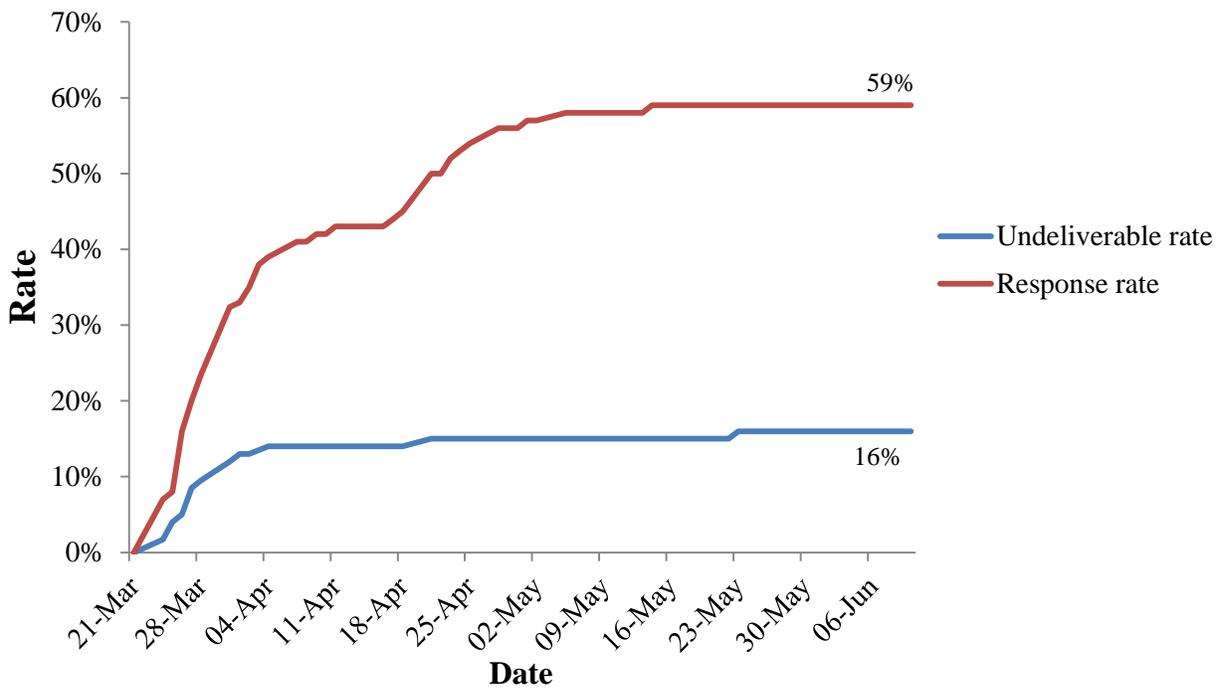


Figure 3. Response rate and undeliverable rate over time.

## Response Rate

Our overall response rate achieved 59%, with 85% of respondents returning a fully completed questionnaire (Figure 3). Fifteen percent of respondents declined to participate.

## Opt-outs

The most frequent reason for declining to participate (63%) was because respondents felt they “did not know enough to participate” (Figure 4). The second most frequent response, with 33%, was because they trusted the Wisconsin DNR to manage wolves without their input. Third (21%) was because they were not interested in the topic. Other reasons included “I feel my opinion will be ignored” (10%), “I am too busy” (5%) and “Other” (11%). Some of the “Other” responses cited health reasons or old age. In wolf range, those who declined were slightly more likely to cite that they “feel their opinion will be ignored” (12%) than those outside of wolf range (4%). Additionally, hunters were more likely to think that their opinion will be ignored (22%) than non-hunters (7%) (Figure 4). Also, non-hunters were more likely to indicate they do not know enough to participate than hunters did.

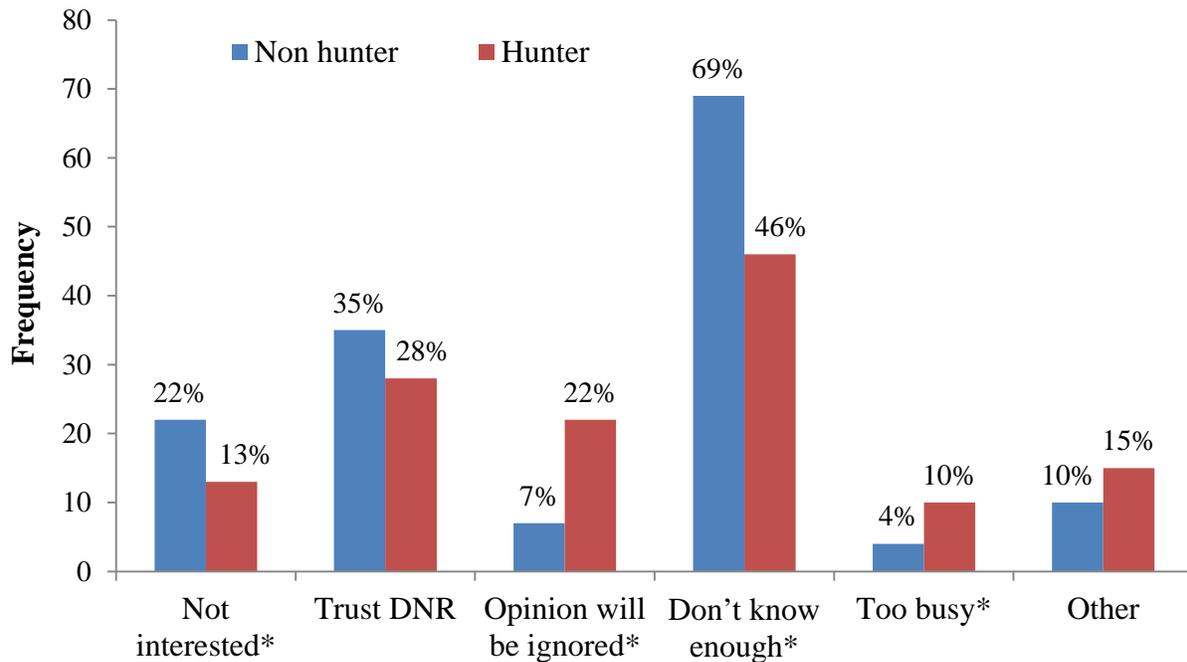


Figure 4. Hunters versus non-hunters: Reasons for declining to participate. \*indicates that the difference is statistically significant.

## **Data Entry**

We entered the survey data into SPSS-19 for analysis. Data verification checks showed that coding errors were less than 1%. Corrections were made using sort functions on variable columns where key stroke errors were detected from examination of data codes.

## **Data Weighting**

We performed data weighting to more accurately represent the cluster populations following the procedures outlined by Vaske (2008). The weights used in the analysis to describe wolf range results were adjusted for observed overrepresentations of hunter respondents and people ages 45 years and older. We used Census data within counties for age corrections and actual hunt participation rates by county that were determined from the 2013 gun deer license address records to correct for biases. Wolf range weights were adjusted to account for the true proportion for each cluster's overall population size within wolf range. Had we not weighted on this basis, clusters with low human population would have contributed variance to the results equal to that of more populated counties within wolf range.

## **Data Summarization**

In reporting survey responses for questions that included multi-unit response scales (e.g., a continuum of “strongly agree” to “strongly disagree”), we followed standard practice in survey research by combining the frequencies of two or more response categories for analytical and reporting purposes. For example, the frequency of people who “strongly agreed” were added to those who “agreed” with a statement and simply reported as “agreed,” except in situations with a notably high percentage of “strongly agreed” responses. We have for the sake of transparency, however, included figures and tables throughout the report that present the separate frequencies for each response option.

Survey questions that asked about wolf population goals (one focused at the state level and one at the county level) included response options of “many more,” “more,” “about the same,” “fewer,” “many fewer,” “zero,” and “don’t know.” Setting aside the last response category (don’t know), results in an unbalanced, six-point scale arranged as a continuum. The continuum is unbalanced with three options (for decreasing wolves) to the right of what might be considered the midpoint (same number of wolves), and two options (for increasing wolves) to the left of that midpoint. In developing the survey, we presented the option for respondents to select “zero” wolves even though that is not a viable policy option because focus group testing indicated that a segment of our respondents would want to express that opinion. We did not offer a corresponding third option on the other end of continuum (e.g. infinity or unlimited) because it seemed nonsensical to do so. Consequently, the result is a six-point, lop-sided scale.

In the text of this report, we often combine the frequencies for the response options for decreasing wolves (“fewer,” “many fewer,” and “zero”) and contrast that total to the total

frequency for those wanting “the same,” “more,” and “many more.” Splitting a six-point scale in the middle is the standard default approach to take in such situations. This approach creates homologous and proportional response categories that reflect units of equivalent composition. Further, this approach is supported by the graphical depiction of the frequency of responses to each category (e.g., see Figure 7) which reveals natural breaks or clustering that justify combining “the same” responses with the “more” options as opposed to with the “fewer” categories.

### **Index Scores**

In addition to looking at responses to attitude questions individually, we used six original questions to create a summative index to reflect overall attitudes toward wolves. In creating an overall score, respondents were assigned 2 points for each positive item to which they strongly agreed. They were given 1 point for agreeing with positive items. Conversely, disagreement with a positively worded wolf item scored -1 and -2 for strongly disagree responses. Those who neither agreed nor disagreed with these 3 items received a score of zero for those items. The scoring protocol was reversed for negatively worded questions. In other words, agreement with a negative statement was assigned minus values to indicate negative attitudes toward wolves.

We used statistical procedures to confirm that individual responses to the six items were sufficiently correlated to justify our scale creation (Cronbach’s  $\alpha=.94$ ). We then added the scores for respondents on all six items to get their overall wolf attitude index score. These scores ranged from -12 to +12, with -12 indicating the most negative attitudes, +12 indicating the most positive attitudes, and 0 being neutral.

Scale scores for risk perception and lethal control support were also created using similar procedures. The risk scale ranged from -6 to +6 with positive values being indicative of worry regarding wolves and negative values meaning lack of worry. The lethal control scale ranged from +18 to -18. The higher the score on this scale the more a respondent endorsed lethal control measures to reduce conflict situations. A score of -18 on this scale would indicate a complete opposition to any form of lethal control in wolf conflict situations.

### **Segment Comparisons**

Throughout this report, we present secondary comparisons of residents based on demographic, participation, and identity categories. These comparisons highlight how people within certain groups may differ in their wolf attitudes from people who are not in those categories, or from the overall sample population. We used the self-identified responses people provided to various questions to assign group membership. For example, some findings below contrast “rural” residents versus “urban” residents. Unless otherwise noted, we considered “rural” to include that survey respondents indicated living on a farm or in the country (not in small towns or villages). By contrast, “urban” includes respondents indicated living in a small city of at least 10,000 people or living in a metropolitan area. We want to note that the residence question also included

two middle categories (e.g., small towns and villages) that are excluded whenever we contrast urban and rural respondents.

“Rural” and “urban” are not simply measures of one’s geography; the terms also reflect cultural values to which people self-associate. Past research has shown that where a person is raised (regardless of their current residence) influences their thinking about wolves because values are cultivated at a young age and carried forward through life. We asked both questions of respondents (with the same response category options): tell us where you live and tell us where you grew up. Examining both variables allowed us to place the study into the proper context for understanding the overall results. In many cases, we found that the size of the area a person was raised was a better predictor of their tendency to view wolves as positive or negative than looking at current residence (see Chapter 3: How Geography Affects Overall Wolf Range Results).

DRAFT

## STUDY HIGHLIGHTS

- We found that state residents held attitudes toward wolves that were more favorable than unfavorable— by a small margin within wolf range; and by a larger margin outside wolf range.
  - Survey respondents across the state endorsed six separate statements as reasons for sustaining wolf populations in the state (p. 25-26)
    - For example, 84% of respondents outside wolf range agreed that wolves are “*important members of the ecological community*,” 67% of range residents agreed (p. 26).
    - Also, 83% in non-range agreed that “*wolves have a right to exist*,” 69% of wolf range residents agreed (p. 26)
  - On an overall wolf attitude index score that ranged from -12 (very negative) to +12 (very positive), wolf range residents averaged a score of 2.5 indicating a slightly positive attitude (p. 29).
  - Outside wolf range, average wolf attitude index scores (mean=4.8) were significantly higher statistically than scores of residents within wolf range (p. 28)
  - A relatively high percentage of respondents throughout the state (31% non-range, 24% wolf range) had neither favorable nor unfavorable feelings toward wolves (p. 24).
- Among the survey respondents within wolf range, “*maintaining the same number of wolves*” was the most frequently selected response (26%) for a statewide wolf population goal (p. 31).
  - 17% checked “*Don’t know*” as their statewide wolf population preference;
  - 15 % indicated that they wanted “*more*” wolves in the state;
  - 15% wanted “*fewer*” wolves in the state;
  - 12% wanted “*many fewer*” wolves;
  - 11% wanted “*zero*”
  - 4% wanted “*many more.*”
- Among the survey respondents within wolf range, most people (40%) wanted wolf numbers to be “*maintained*” at current levels **in their county of residence** (p. 32).
  - 18% wanted wolf numbers “*decreased*” in their home county in wolf range;
  - 15% wanted wolves “*eliminated*” from their county;
  - 13% wanted to see an “*increase*” in their county wolf population:
  - 14% were “*not sure.*”

- People outside of wolf range—who reported less experience with wolves than rural residents of wolf range— were generally more positive toward wolves, perceived fewer risks from wolves, and were statistically more likely to favor maintaining (29%) or increasing (27%) wolves in the state than were people were people residing within wolf range.
  - This finding is consistent with other research that finds people with less exposure to wolves tend to view them more favorably.
  - Less than half of residents (43%) living outside wolf range counties have ever seen a wolf in Wisconsin, even while vacationing or recreating in parts of the state where wolves live; by contrast 62% of wolf range residents have seen a wolf at least once (p. 37).
  - 28% of non-range respondents indicated “*Don’t know*” when asked for their statewide wolf population preference (p. 31).
  
- In addition to the living in a county that has wolves, two other factors emerged from the study which account for many of the differences among respondent attitudes toward wolves and their preferences for wolf management goals. These factors are:
  - living and/or growing up in a rural area (p. 42-43);
  - being a deer hunter (p. 48-52).
  
- Consistent with prior research conducted both nationally and internationally, rural residents in wolf range expressed less support for wolves than did people living in non-rural areas of wolf range, including those respondents residing in small and large towns.
  - Forty-seven percent of current rural, wolf range residents wanted to have fewer (33%) or no wolves (14%) in the state; 24% the same number of wolves; and 16% wanted more wolves in the state (p. 43).
  - Among wolf range respondents who were raised in a rural area and continue to live in a rural area, 57% want fewer wolves in the state (p. 43).
  
- *Current rural wolf range residents* were split on their willingness to have wolves living near them; 49% were not willing and 45% were willing (p. 45-46).
  - Among those *wolf range residents who grew up in a rural area*, willingness to have wolves living nearby drops to 40% and the frequency of those who would prefer to not live by wolves increases to 55% (p. 40).
  - Two out of three people living on farms within wolf range were unwilling to live near wolves (p. 121).
  - About half (49%) of all residents in wolf range said they are willing to have wolves live near them compared to 43% who are not willing (p. 40).

- Rural residents and those who live in small towns and villages both reported similar perceptions of the current wolf abundance levels in their county of residence, but both groups perceived greater wolf abundance than did urban residents of wolf range.
  - The most frequently selected response option (45%), regardless of area of residence, was that wolves were “*Present but not abundant*” in their county of residence (p. 37).
  - People living in rural areas of wolf range were significantly more likely to have seen wolves on multiple occasions (72%) than were residents of towns (60%) or urban areas (49%).
  - People who have seen wolves more than once or who know someone who has lost a domestic animal to wolf depredation perceived wolves to be more abundant in their county of residence than did respondents with less experience with wolves (p. 38).
  - People who perceived wolves to be more abundant in their county were also more likely to perceive threats to human safety from wolves than were people with less experience (p. 59-60).
  
- Deer hunters (especially those residing in wolf range) and non-hunters (both in and out of wolf range) held divergent opinions about wolves, especially pertaining to the species’ ecological value and contribution to wildlife diversity (p. 48-50).
  - These attitude differences are also manifest in preferences for how many wolves hunters and non-hunters find acceptable (p. 50-51).
  - In general, deer hunters living in wolf range wanted fewer wolves in the state (71%) and in their home county (64%) and were less likely to say they were willing to have wolves living near (66%) them than were non-hunters in wolf range (p. 50-52).
  - Deer hunters who live outside wolf range were statistically more tolerant of wolves than were deer hunters living in wolf range, but less tolerant than were non-hunters, regardless of where they lived.
    - 56% of deer hunters living outside of wolf range wanted fewer wolves in the state; 35% wanted more or the same number of wolves in the state (p. 50).
    - Of non-range residents that deer hunt in a county within wolf range, 38% wanted fewer or no wolves; 36% said they wanted wolves maintained in that county; and 14% wanted wolf numbers increased (p. 34).

- A majority of survey respondents expressed worry about the risk that wolves pose to the safety of children (63% in range; 64% outside range) and pets (72% in range; 70% outside range) (p. 56-58).
  - Those living in rural areas and those who participated in deer hunting perceived higher risks to personal safety from wolves than those who do not hunt or reside in rural areas (p. 55-56).
  - Respondents living in wolf range that saw wolves *more than once* reported higher perceived risks to personal safety; meanwhile, multiple wolf sightings for non-range residents decreased their perceived risks (p. 62).
  - Survey respondents also expressed concern about the risks that bears pose for people and pets.
    - People living outside of wolf range were more worried about their safety from bears (59%) than wolves (33%); similar frequencies of wolf range residents worried about wolves (44%) and bears (47%) while spending time outdoors (p. 64-65).
    - Hunters showed greater concern for personal safety about wolves (54% in range; 49% outside range) than they did for bears (37% in range; 46% outside range) (p. 64-65).
  
- We observed statistically significant differences across 12 sampling clusters of wolf range in attitudes and management preferences (p. 82).
  - These differences can be partially explained by the proportion of the population that can be classified as urban or rural, and by per capita rates of participation in deer hunting (p. 82-84).
  - In essence, the more deer hunters and more rural-born residents that lived in a cluster, the less tolerance was apparent for wolves.
    - For example, Douglas County had the highest average wolf attitude scores and was also the most urban county in wolf range, as well as the lowest per capita participation in deer hunting in 2013 (p. 82).
  
- Most wolf range respondents indicated that they expected wolves to be managed in the state (p. 30).
  - A plurality of survey respondents (44%) disagreed with the statement: “*I would like to have as many wolves as the habitat in the state will support.*”
  - 49% disagreed with companion question: “*I would like to have as few wolves as possible in the state.*”

- A majority of state’s citizens supported the regulated hunting and trapping of wolves (62% in range; 51% outside range) and the level of support was highest in rural counties within wolf range (p. 75).
  - The biggest reason for opposing the wolf harvest season was concern that it would result in wolves becoming endangered again (53% in range; 65% outside range) (p. 76-77).
  - A majority (53% in range; 59% outside range) of those opposed to a harvest season also selected “*I do not think we need to hunt wolves*” (p. 76-77).
  - There appears to be little support statewide (8%), and even among hunters (13%), for maintaining “surplus” wolves each year for the purpose of providing a hunting/ trapping opportunity (p. 71-75).
  
- There was general agreement across the state (69% in range; 55% outside range) that killing wolves that have threatened human safety should be a high priority for wolf management in the state (p. 70-72).
  - A majority (59% in range; 59% outside range) of state residents favored using wildlife professionals to kill wolves in these situations (p. 77-79).
  
- “*Eliminating wolves from areas where they are attacking domestic livestock*” was the second most frequently selected “High priority” management objective (53% in range; 40% outside range) among all survey respondents (p. 70-72).
  - Most respondents (64% in range; 56% outside range) also supported landowner shooting permits as means of addressing these conflicts (p. 77-79).
  
- Preferences for what should be considered *high priority* management objectives for wolf populations varied by identity groups (p. 72-75).
  - Seven in ten deer hunters indicated that “*Reducing wolf population in northern counties to address deer hunter concerns about predation*” should be high management priority (p. 72-73).
  - People who identified centrally as “wolf advocates” had a trio of their most frequently picked high priorities: “Promoting diverse animal communities” (75%), “Creation of wolf refuges in the state” (72%), and “Increase law enforcement to reduce illegal shooting of wolves” (72%) (p. 73).
  - Meanwhile environmentalists’ most frequently selected priorities were “elimination of wolves from areas” of livestock depredation and “creation of refuge areas to protect wolves” (p. 73).

- Public support for various forms of lethal control of wolves --including hunting season-- as a means of reducing specific human-wolf conflicts was highly variable and conditional (p. 77-81).
  - A few types of conflicts paired with certain lethal control measures received an endorsement from a majority of survey respondents (p. 77-79).
- “Forested areas with large blocks of public land” was the most frequently selected area for allowing wolves in the state (59% of range respondents; 66% of non-range) (p. 67).
  - “Forested areas with large blocks of public land” was also the most frequently selected (43%) area to allow wolves among wolf range respondents who indicated that they were not willing (43%) to live near wolves (p. 69-70).
- Both general wolf attitudes and degree of perceived risks were strongly correlated with the respondents’ preferred goals for population trends at the state and county level, as well as their willingness to live near wolves (p. 32, 36, 41).
  - In other words, people with more negative attitudes and/ or who feared wolves more typically wanted wolves reduced or eliminated and were reluctant to have wolves living near them.

## CHAPTER 2: ATTITUDES ABOUT WOLVES AND WOLF NUMBERS

### ATTITUDES ABOUT WOLVES

Attitudes are defined as favorable or unfavorable evaluations of some object, in this case: wolves. We start with the wolf attitude results because they set the stage for understanding the social carrying capacity results that follow. In other words, general attitudes toward wolves were predictive of preferences for how many wolves were desirable at the county and state levels.

We employed three separate measures of wolf attitudes on the questionnaire. The first one is a single-item broad measure of favorable or unfavorable feelings that wolves evoke (Figure 5). A majority of residents outside wolf range (55%) indicated they had favorable or very favorable feelings about wolves, while 14% were unfavorable or very unfavorable. Among wolf range respondents, more respondents (44%) were either favorable or very favorable, and 32% indicated unfavorable or very unfavorable feelings toward wolves. A relatively high percentage of respondents throughout the state (31% non-range, 24% wolf range) had neither favorable nor unfavorable feelings toward wolves.

The finding that those who do not live with wolves are more favorable than residents living among wolves is consistent with many other studies that have examined wolf attitudes based on proximity to known wolf packs. It is also a pattern of responses that occurs consistently in other sections of the report that address risks, goal preferences, and preferences for management strategies.

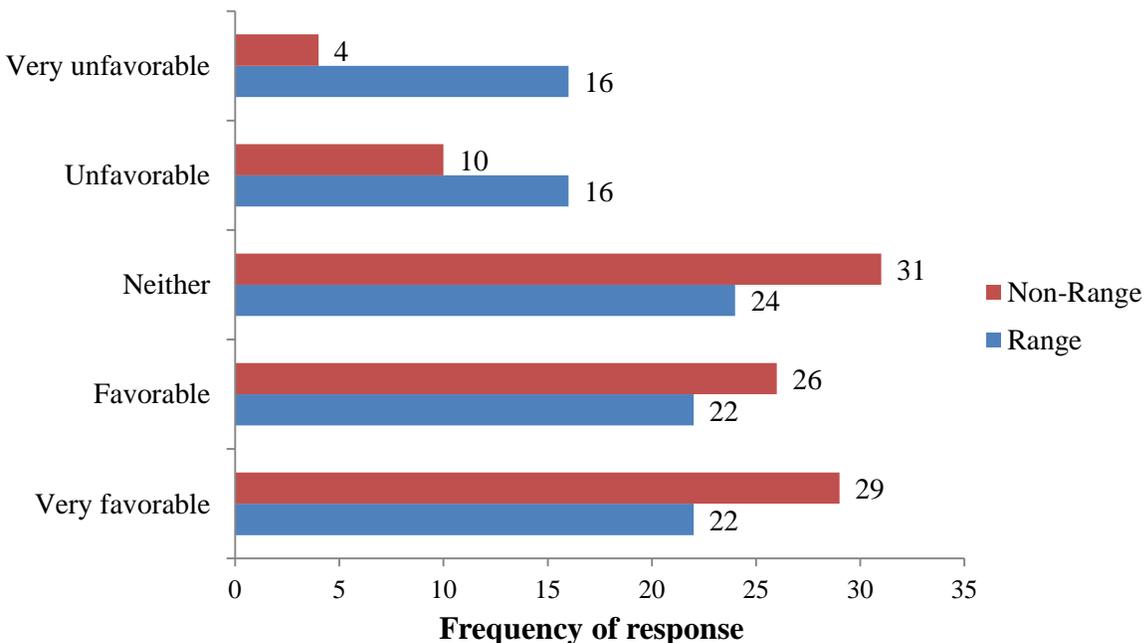


Figure 5. A comparison of the frequency of responses between wolf range residents to non-wolf range residents to the question: “Overall, how would you describe your feelings about wolves?”

The second way we measured wolf attitudes employed a set of measures developed by one of the pioneers of human dimensions of wildlife research, Stephen Kellert. Kellert used the measurement in a public survey of Michigan residents' attitudes toward wolves in 1990 and Mertig (2002) replicated it. This set of items assessed the extent to which people agree or disagree that certain benefits are reasons for having wolves in the state.

In our survey, we found that a majority of respondents—including those living among wolves—endorsed six different reasons for maintaining sustainable wolf populations in the state (Table 3). The item that drew the most frequent selection of agreement was “*Because wolves have a right to exist.*” Eighty-three percent of those outside wolf range agreed with that statement, as did 69% of wolf range respondents.

Majorities of respondents within and outside wolf range also agreed with the reason “*Because they are important members of the ecological community.*” Eighty-four percent of the residents outside wolf range agreed or strongly agreed-- that wolves are “*important members of the ecological community.*” Within wolf range, two-thirds of respondents agreed that wolves' role as “*important members of the ecological community*” is a reason for maintaining a sustainable population. Even when wolves' role is further specified as “*help keep deer in balance with their habitat,*” a majority of residents still agreed. Outside wolf range, two-thirds of respondents agreed with the notion of *keeping deer in balance* compared with 55% of wolf range residents who did so.

There were four items that described various use-related benefits of wolves. Each of these attracted relatively low frequencies of support among survey respondents. Three out of four of those items involved the consumptive use of wolves for hunting, trapping, and fur harvest. It is curious to note that these were the only three Kellert attitude questions for which there was statistically significant convergence between sample groups. The results show that most residents (44% in range; 48% in non-range) disagreed with the statement “*So some people will be able to hunt them.*” A majority disagreed (60%) with the reason “*So some people will be able to trap them.*”

A cautious interpretation of these findings is needed. These data simply indicate that most Wisconsinites do not see utilitarian value of wolves as *the reason* for maintaining wolves. This is different than asking whether they support or agree that wolves can or should be harvested. In fact a majority of survey respondents indicated support for a regulated harvest season on wolves (detailed later in the report).

The fourth item that did not generate agreement among a majority of survey respondents as a reason for maintaining wolves was “*Because they may attract tourists.*” In this case, the most frequently selected response was neither agree/nor disagree. About one in three (35%) of wolf range residents and 42% outside wolf range indicated this neutral response.

Table 3. A comparison of attitudes between Wisconsin residents in wolf range and non-wolf range on Kellert's (1990) wolf attitude measures. (\*on item indicates statistically significant differences between range and non-range respondents at  $p < 0.001$ ).

Reasons for maintaining a sustainable population of wolves in Wisconsin	Frequency of Response (%)					
	Segment sample	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Because they have a right to exist *	Range	31	38	16	7	8
	Non-range	42	41	11	4	2
Because they are important members of the ecological community *	Range	26	39	16	12	7
	Non-range	37	47	13	4	2
So future generations can enjoy them *	Range	22	37	20	13	8
	Non-range	28	44	20	6	3
To help keep deer in balance with their habitat *	Range	18	37	15	13	16
	Non-range	22	45	22	6	5
Because we are one of the few places in the U.S. with wolves *	Range	14	33	28	15	11
	Non-range	16	42	31	7	4
Because of their value to science and research *	Range	13	33	30	14	10
	Non-range	16	45	28	8	4
To photograph them *	Range	11	34	31	13	10
	Non-range	14	41	32	9	4
So that some people will be able to hunt them	Range	5	22	29	23	21
	Non-range	3	20	30	24	24
So that some people will be able to trap them	Range	5	18	25	25	27
	Non-range	2	15	25	25	33
Because they may attract tourists *	Range	5	18	35	26	16
	Non-range	6	25	42	19	8
To be able to harvest their fur	Range	4	16	29	28	23
	Non-range	2	14	25	32	28

In addition to the Kellert measures, we developed an original six-question wolf attitude scale that reflects some of the positive and negative phrases expressed by participants during the focus group portion of this investigation. We wanted an additional set of items that depicted counter balanced statements about wolves to avoid criticism that we were biased by asking respondents only about potential benefits of wolves. The frequency of responses to these six measurement items are shown in Table 4.

Table 4. A comparison of attitudes between residents of wolf range and non-wolf range on original wolf attitude measures. (\*on item indicates statistically significant differences between range and non-range respondents at  $p < .001$ ).

Wolf attitude scale items	Frequency of Response (%)					
	Segment sample	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Negative statements						
Wolves provide no benefits to people.*	Range	12	15	25	31	17
	Non-Range	3	9	27	42	20
The previous generations were right in eliminating wolves from the landscape.*	Range	10	12	17	31	29
	Non-Range	2	9	18	38	33
Wolves are a nuisance for people.*	Range	12	22	30	21	15
	Non-Range	3	19	33	27	18
Positive statements						
Wolves are special animals that deserve our admiration. *	Range	21	33	24	12	10
	Non-Range	27	41	22	7	2
Predators like wolves keep nature in balance.*	Range	23	43	13	11	8
	Non-Range	31	51	13	4	2
People and wolves should be able to co-exist.*	Range	22	40	15	14	9
	Non-Range	27	50	11	10	3

The collective responses to these original wolf attitude measures corroborate the findings of the previous two attitude measures described above. In general, more people in the state hold positive views of wolves than those who hold negative views based on agreement to positively worded statements and disagreement to negatively worded statements. This finding is true for both samples: people living in wolf areas and residents elsewhere. There is a statistically significant difference, however, between sample responses in the degree to which they express positive attitudes.

For example, 68% of non-range respondents agreed or strongly agreed that “*Wolves are special animals that deserve our admiration.*” Meanwhile, 54% of those in wolf range agreed or strongly agreed with that same statement. On another item, “*Wolves provide no benefit to people,*” a majority of non-range respondents disagreed (62%) whereas more wolf range residents marked disagreed (48%) with the statement than those who agreed (37%).

### **Wolf Attitude Index**

The overall distribution of wolf attitude index scores of survey respondents is depicted in Figure 6. The average score for wolf range residents was 2.5, indicating a slight tendency to be more positive than negative toward wolves in areas where wolves live. The shape of the bar chart is illustrative of the challenges shaping public policy on wolf management. While the overall scores within wolf range skew in a positive direction, there is also a bimodal distribution of minorities (4%, 8%) at each end of the continuum (positive and negative) reflecting some degree of polarization. Thirty-four percent of the wolf range respondents had index scores that were zero or less (negative) for wolves.

By comparison, respondents in the non-range sample averaged 4.8 on the wolf attitude index. Overall, 85 % of the attitude index scores were neutral to positive among non-range residents; 15% were negative. Ten percent of the index scores outside wolf range reached maximum favorability toward wolves, and 1% were completely. Negative

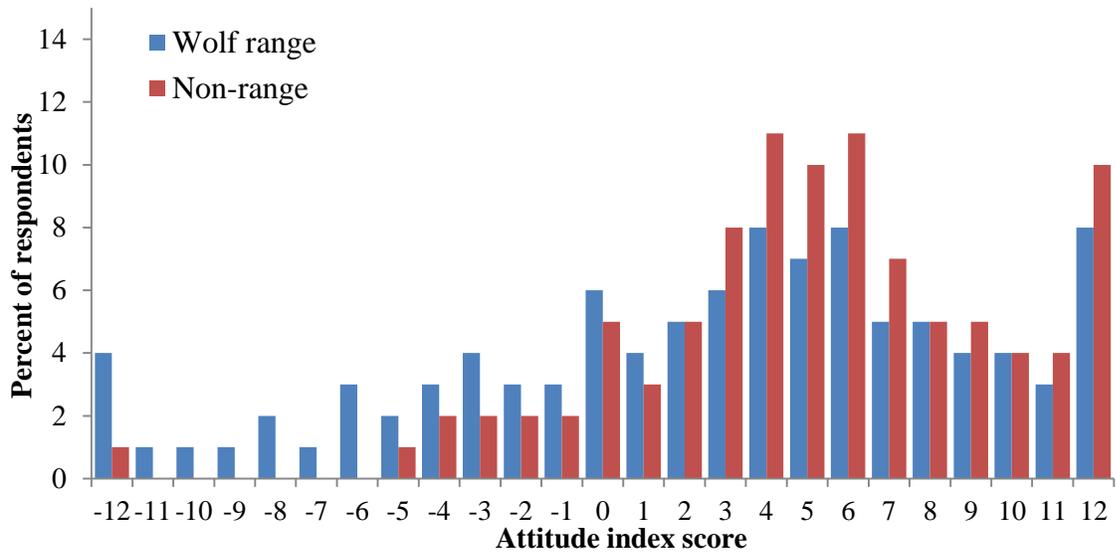


Figure 6. Histogram of wolf attitude scores among wolf range and non-wolf range residents.

DRAFT

## **SOCIAL CARRYING CAPACITY AND ITS INFLUENCES**

We examined social carrying capacity for wolves in Wisconsin by asking survey respondents to indicate their preference for population levels at both a statewide scale and county scale (if they lived in a county within the wolf range sample). Respondents that visited vacation property within wolf range counties—regardless of where they lived in the state—also had the opportunity to indicate a population preference at the county level. Finally, residents within our wolf range sample were also asked if they were willing to have wolves living near them. We also found differences in wolf population preferences based on differences in respondent beliefs about the number of wolves currently occurring in their area and also based on degree of perceived risks posed by wolves.

### **Statewide Wolf Numbers**

To get a sense of where respondents fell on the attitude toward wolf population numbers, we asked them to indicate the extent to which they agreed or disagreed with two statements that outlined opposite and extreme scenarios (neither of which is a plausible consideration for management). The first statement was “*I would like to have as few wolves as possible in the state.*” In wolf range, about half of respondents (49%) indicated that they disagreed with the statement, and roughly a third (32%) of respondents agreed with the statement. Outside of wolf range, a majority (61%) of respondents disagreed with the statement, and only 17% agreed that they would like to have as few wolves as possible. These data suggest most Wisconsinites prefer that wolves be managed above what might be considered the minimum viable population in the state.

The second opposing statement was “*I would like to have as many wolves as the habitat in the state will support*” and sought to capture opinions on the other end of the spectrum. A plurality of wolf range respondents (44%) disagreed with this statement, whereas 36% agreed. Outside of wolf range, 47% of respondents agreed and 28% of respondents disagreed that they would like to have as many wolves as the habitat would support. The fact that this question did not garner a majority who agreed with it suggests that most residents expect wolves to be managed.

The latest population monitoring data from winter 2014 indicates that the state had at least 660 wolves. Pre-survey focus groups indicated widespread skepticism over Wisconsin DNR wolf population estimates, especially among groups that dislike wolves. Consequently, we prefaced the question about population preference with the phrase “*compared to current levels*” to allow each respondent to answer from his or her own frame of reference (e.g., more wolves or less wolves than official estimate).

A plurality of wolf range residents favored maintaining or increasing statewide wolf numbers over reducing wolves by a 45%-38% margin; 17% selected “*I don’t know*” (Figure 7). In wolf range, 19% of residents wanted more wolves while 26% selected “*about the same number of*” wolves. Twenty-seven percent wanted fewer wolves in the state. About one in ten (11%) preferred no wolves at all.

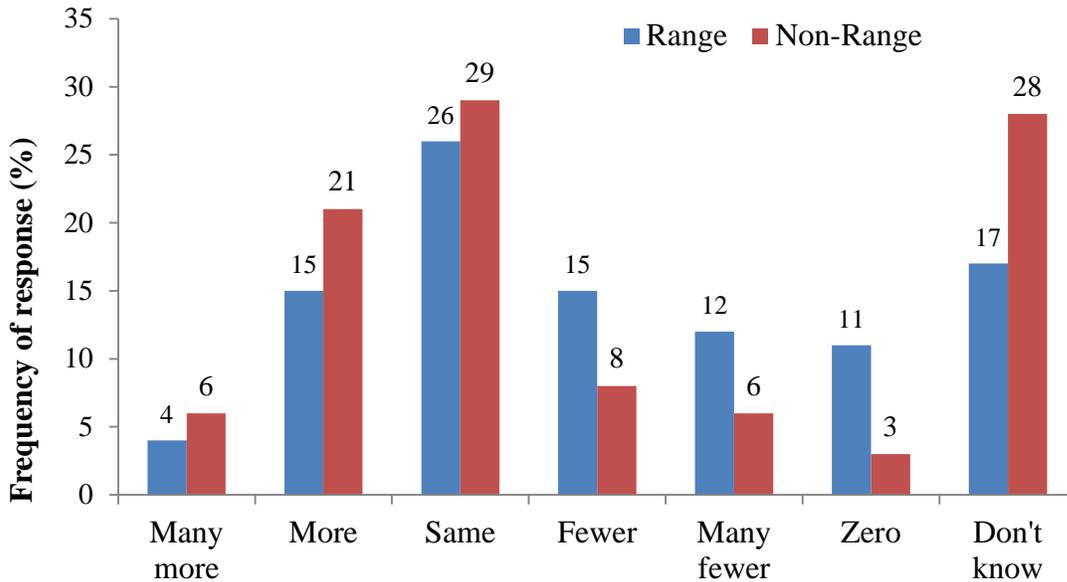


Figure 7. A comparison of frequency of responses from wolf range and non-range residents on their preferences for the number of wolves in the state compared to conditions in the winter of 2014.

Our findings show statistically significant differences between those living with wolves and the rest of the state’s residents on desired number of wolves at a state level (Figure 7). A majority of residents living in non-wolf counties (56%) would like to see the statewide population increased or maintained at the current level. As was the case with the range sample, the most frequently selected response in the non-range sample was 29% who chose “*Maintain about the same.*” A relatively high percentage of non-range residents (28%) selected “*I don’t know*” indicating either mixed feelings or less familiarity with the issue.

### County Level Wolf Populations

Four in ten residents in wolf counties said they would like to see the wolf population in their county of residence maintained at its current level (Figure 8). An additional 13% favored an increase in their local wolf population. One in three residents (33%) said they want wolves decreased or eliminated from their counties.

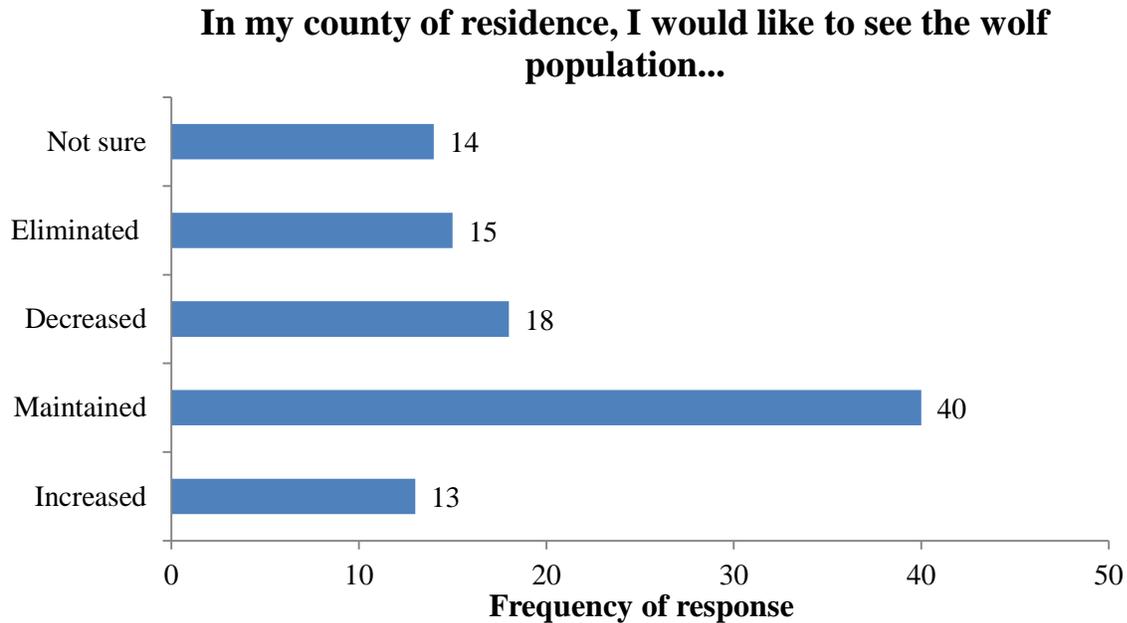


Figure 8. Preferences for local wolf population goals among wolf range residents.

Individuals’ general wolf attitudes predict their tolerance for wolf population levels in county of residence (Table 5). Those respondents who want the wolf population in their county increased or maintained had positive attitude scores. Conversely, among those who wanted wolves decreased or eliminated, the average wolf attitude scores were negative.

Table 5. Analysis of variance of the mean differences in wolf attitudes based on respondent preference for county wolf population goal. (Note: Only range residents were asked to respond to this question).

Reference question and respondents by category of response	Wolf Attitude Composite MEAN score	ANOVA test
<i>“In my county of residence I would like to see the wolf population...”</i>		
Increased (13%)	9.1	p< .000
Maintained about the same (40%)	5.2	
Not Sure (14%)	4.2	
Decreased (18%)	-1.4	
Eliminated (15%)	-7.3	

As a side note, responses to the questions about state and county level population preferences were highly correlated ( $p < 0.000$ ). In other words, in most cases when someone wants more or the same number of wolves in the state than currently exist, they probably also want to see wolves increased or maintained locally. The opposite correlation is also true: people favoring wolf reduction at the state level were more likely to want fewer in their county as well.

### Wolf Population Preferences Related to Vacation Counties

We recognized that people who spend recreation or vacation time in places where wolves live may also have particular interest in wolf population levels. Consequently, we asked all survey respondents—both those in wolf range as well as those in the rest of the state— if they “regularly visited a vacation home, cabin, or hunting land” in wolf range counties (depicted on a map on the questionnaire). For those that answered affirmatively, they were directed to respond to the question regarding perceived population abundance and preference for wolf population goals, using their *vacation county* as the frame of reference. Survey respondents were also asked to indicate whether they hunt on or from that vacation property. A relatively large percentage of respondents in both samples checked “Yes” that they visited a place in wolf range regularly (Table 6). There was no statistical difference between wolf range and non-range respondents in the frequency who visit a county occupied by wolves. However, residents in wolf range were significantly more likely to indicate that they hunted from a vacation property within wolf range than were non-respondents (Table 6).

Table 6. Frequencies of respondents in wolf range and outside of wolf range who “regularly visit a vacation home, cabin, cottage, or hunting land” in wolf range, as well as frequencies of responses to “Do you hunt on or from that vacation property?” (\* on item indicates a statistically significant difference at  $p < .001$ )

Segment Sample	Visit wolf range county	Hunt there?	
		Yes *	No
Wolf range	38%	49	51
Non range	36%	34	66

Respondents who did not hunt from their wolf range vacation property were significantly more likely than people who did to want to see wolves increased or maintained in their county (Table 7). This held true regardless of whether the respondent’s residence was inside or outside of wolf range. Two-thirds (66%) of the tourists that did not hunt from their vacation county wanted wolves increased or maintained there. Wolf range residents who did not hunt from their vacation county also indicated a preference for increasing or maintaining (62%) wolf numbers. Range residents who did not hunt on the vacation land were also more likely (29%) than their non-range counterparts (10%) to want wolves decreased or eliminated.

Roughly two-thirds of range residents who hunted from their wolf range vacation property wanted to have wolves decreased or eliminated. Only 27% supported maintaining or increasing wolf numbers in their vacation county. Hunters residing outside wolf range, but vacationing there were statistically different in their population preference than were resident vacationers who hunt there. Half of these hunter-tourists wanted to see wolves increased or maintained in their vacation county (Table 7).

Table 7. A comparison of wolf population goals in vacation county of wolf range and non-range residents based on whether respondent hunts from that vacation land ( $p < .001$ ).

Resides in	Hunts vacation property in wolf range	% indicating				
		Increased	Maintained	Decreased	Eliminated	Not Sure
Wolf range	Yes	6	21	38	30	5
	No	16	46	18	11	11
Non-range	Yes	14	36	25	13	11
	No	16	50	8	2	24

*How perceptions of wolf abundance influence social carrying capacity*

We wondered how perception of wolf abundance might influence preference for county level wolf population goals among all wolf range respondents. We tested the hypothesis that those people who think wolves are already abundant would be more likely to want the population reduced than would people who consider wolves less abundant. The cross tabulation of answers from wolf range respondents on these two variables shows a statistically significant relationship (Table 8). Those who perceived wolves to be abundant are more likely to want wolves decreased or eliminated in their county than respondents who perceive wolves to be present or rare. A majority of those who favor an increase or maintenance of wolf numbers perceived them to be present, but not abundant.

Perceptions of abundance among those who want wolves reduced and those wanting them eliminated from their county were very similar. Among both segments, majorities (63 and 60%) think that wolves were already “*abundant or very abundant.*” Conversely, 62% the people who wanted wolf populations to remain at current levels rated wolf populations as “*present, but not abundant.*”

Returning for a moment to statewide wolf population goals, we see a similar relationship unfold between perceived abundance levels in one’s county of residence and preferred statewide wolf trends (Table 9). Those who perceived wolves to be locally abundant are statistically more likely to want wolves decreased or eliminated in the state than do respondents who perceived wolves to be present or rare. A majority of those favoring an increase or maintenance of wolf numbers at the state level perceive them be present, but not abundant in their county.

Table 8. Influence of perceived wolf abundance in one’s county and preferences for population goal in county of residence,  $p < .000$ .

“I would like to see the wolf population...”	% among respondents who said their county’s wolf population size can be considered...			
	Abundant	Present, but not abundant	Rare	No idea
Increased (13%)	7	55	31	7
Maintained about the same (40%)	13	62	19	7
Decreased (18%)	63	30	4	3
Eliminated (15%)	60	27	6	7
Not Sure (14%)	4	25	15	55

Table 9. Influence of perceived wolf abundance in one’s county and preferences for statewide population goal,  $p < .000$ .

“Compared to the current level, I would like to see _____ wolves in the state.”	% among respondents who said their county’s wolf population size can be considered...			
	Abundant	Present, but not abundant	Rare	No idea
More (19%)	10	54	28	9
About the same number (26%)	15	59	18	9
Fewer (27%)	54	36	6	5
Zero (11%)	62	25	5	8
Don’t know (17%)	11	35	17	38

*How risk perceptions influence preferences for statewide wolf population goals*

We compared the influence of perceived wolf risks on statewide population preferences among both range and non-range respondents. Those who agreed that they worry about their personal safety in areas that have wolves were significantly less tolerant (Table 10). Nearly three out of four wolf range residents that indicated they would prefer zero wolves also agreed that they worried about wolf threats to personal safety. In the wolf range sample, 73% of those who wanted more wolves in the state did not personally fear wolves.

Table 10. Influence of perceived risks on respondents’ population preferences for the state. (Wolf range:  $p < .000$ ; Non wolf range:  $p < .000$ .)

Preference for number of wolves in the state		% who _____ that wolves pose risk to personal safety		
		Agree	Neither	Disagree
More	Wolf range	12	15	73
	Non-wolf range	5	31	64
About the same	Wolf range	27	25	48
	Non-wolf range	28	36	36
Fewer or zero	Wolf range	74	14	12
	Non-wolf range	67	18	15
I don’t know	Wolf range	38	27	35
	Non-wolf range	45	21	34

**Experience with Wolves and Its Impact on Social Carrying Capacity**

*Direct and indirect encounters*

The majority of residents (63%) in wolf range have seen a wolf in the state *at least once*. A majority of residents (56%) in the rest of state have never seen a wolf (Table 11). Similarly, 56% of wolf range residents have seen wolf tracks compared with 37% of those outside wolf range. A majority of both wolf range and non-range respondents reported having heard wolves howl at least once. Over half (52%) of residents of wolf range counties have heard wolves more than once. About 6% of wolf range residents reported having an animal attacked by a wolf; less than 3% of non-range respondents had animals killed by wolves (Table 11). When it comes to *knowing about* other people losing animals to wolves, about eight in ten (81%) non-range respondents and six in ten (61%) range respondents checked “Never.”

Table 11. Frequency of the occurrence of various wolf encounters among survey respondents (\* indicates significant difference between range and non-range samples,  $p < .000$ ).

Wolf experience	Sample	% responding...			
		Don't know	Never	Once	More than once
Seen a wolf*	Range	2	35	26	37
	Non-range	1	56	25	18
Seen wolf tracks*	Range	10	35	14	42
	Non-range	10	52	14	23
Heard a wolf howl*	Range	7	28	14	52
	Non-range	6	43	15	37
Know someone else who had animal killed by wolves*	Range	5	61	16	18
	Non-range	3	81	10	5
Had animal killed by wolves*	Range	3	92	3	3
	Non-range	1	97	2	0

### Perceptions of Wolf Abundance

For people who live in counties with established wolf packs “*Present, but not abundant*” was the most frequently selected response category when asked about wolf abundance in their home county (Figure 9). One in five (20%) characterized wolves as “*Very abundant*” or “*Abundant*” in their home county. Seeing wolves increased respondent perceptions of their abundance among those in the wolf range sample (Table 12). Knowing someone who had a domestic animal killed by a wolf had an even stronger impact on individual perception of wolf abundance than actually seeing wolves did.

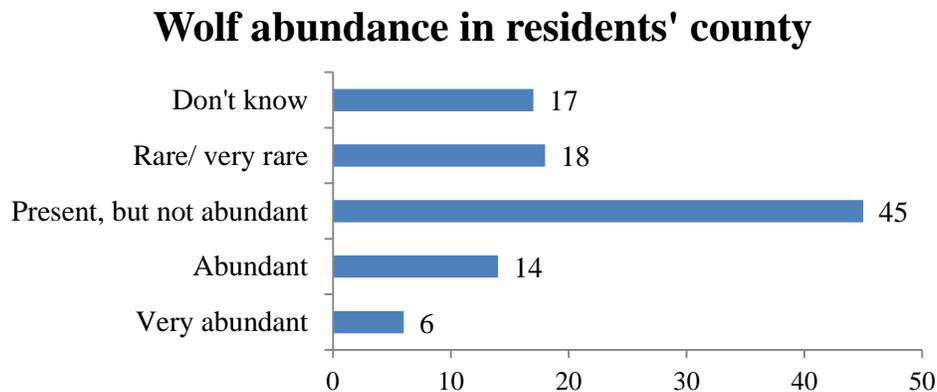


Figure 9. Frequency of the perception of wolf abundance by wolf residents in their local county.

Table 12. Wolf range residents' perception of their home counties' wolf abundance based on reported wolf interactions.

Frequency of wolf encounter by type	% perceiving county wolf population as...			
	Abundant	Present, but not abundant	Rare	No Idea
<b>Saw a wolf</b>	p < .000			
Never	6	39	27	29
Once	16	52	19	14
More than once	38	45	10	7
<b>Know someone who had an animal killed by a wolf</b>	p < .000			
Never	9	47	24	21
Once	31	42	11	16
More than once	51	37	5	8

Those who might be considered tourists or non-residents of wolf range counties perceived fewer wolves in their vacation county than wolf range residents did (Table 13). This is especially true among tourists who did not hunt in wolf range (Note: some may hunt elsewhere). Only 10% of the non-hunting, non-resident respondents thought wolves are abundant in their vacation county. One-third of respondents (34%) from this segment also indicated that they were uncertain how many wolves lived in the county they visit.

Table 13. Perceptions of wolf population size in respondent's vacation county among range and non-range respondents based on whether or not they hunt in a wolf range vacation county (\* indicates statistically significant difference at p < .001).

Reside in wolf range	Hunt from vacation property in wolf range	Present, but not abundant			
		Abundant	Present, but not abundant	Rare	No idea
Yes*	Yes*	55	34	9	2
	No*	34	48	10	13
No*	Yes*	32	40	14	14
	No *	10	43	13	34

The data support the notion that those who both live and vacation in wolf range were statistically more likely to have encounters with wolves than people who simply visit wolf range for vacation. Wolf range residents rated wolf abundance in their vacation county significantly higher than did non-range residents (Figure 10). In addition, non-range respondents were more than five times (27% vs. 5%) as likely to indicate that they had “No Idea” how many wolves were present where they spent vacation time as were range residents.

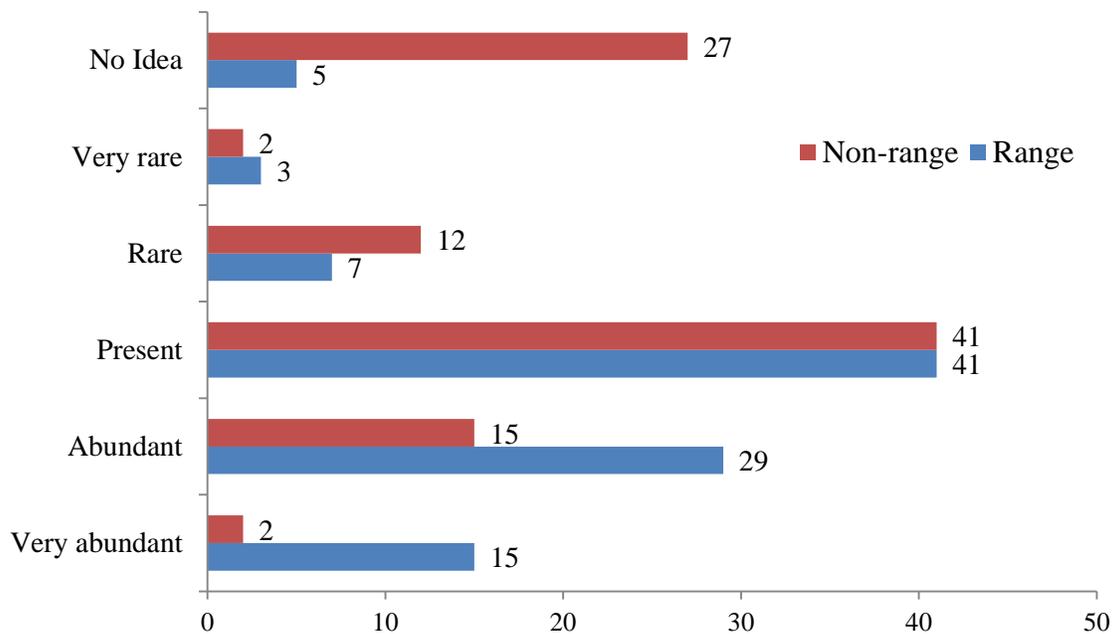


Figure 10. A comparison of wolf abundance ratings in survey respondent’s vacation county (p<0.001).

### Willingness to Live Near Wolves

The most direct measure of wolf acceptance is the question regarding one’s willingness to live near wolves. This question was developed by Tom Heberlein in his work examining wolf attitudes in Sweden. Similar to the question of population preference that used “compared to current level,” the use of the phrase “near where you live” allowed respondents to make their own association about what “near” means in terms of their own acceptance. By a margin of 49%-43%, wolf range residents indicated their willingness to have wolves living near them (Figure 11).

## Willingness to live near wolves

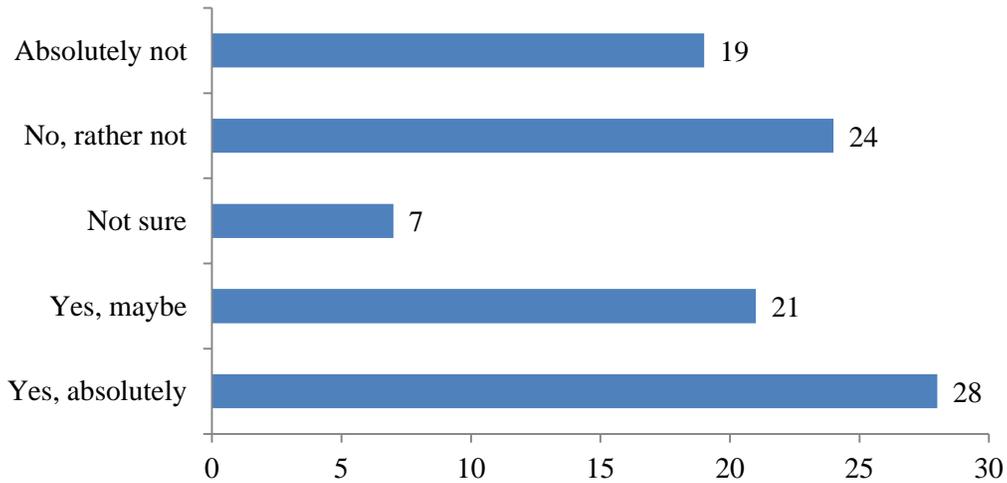


Figure 11. Frequency of the degree to which wolf range residents are willing to accept wolves living near them.

More people living in rural areas in wolf range (45%) are unwilling to live near wolves than those who are willing (40%) (Table 14). When considering respondents in wolf range that were raised in rural areas, this differential increases to 55% (unwilling) and 40% (willing). Similarly, urbanites' willingness to have wolves living nearby is 58% if based on where they live now, but rises to 63% if considering those who were raised in urban areas (which may include areas outside of wolf range). This interplay between current and childhood residence is important and will be described further in the next chapter.

Table 14. A comparison of the influence of size of area of residence and size of area of upbringing on willingness to live near wolves.

Segmentation by geographic area	Are you willing to have wolves near where you live? (%)		
	Yes	No	Not Sure
<i>Where resident lives now</i>	$p < .000$		
Rural (48%)	45	49	6
Town or village (32%)	53	39	9
Urban (20%)	58	35	8
<i>Where resident was raised</i>	$p < .000$		
Rural (45%)	40	55	6
Town or village (24%)	52	40	8
Urban (32%)	63	28	9

Like the comparison made in the previous section, we also found a relationship between responses to our measure of *willingness to live near wolves* and one’s perception of current wolf abundance (Table 15). In essence, those who perceived wolves to be abundant are less likely to be willing to live near wolves; those more willing to live near wolves are more likely to perceive them as “*Present but not abundant.*” Half of those who do not want to live near wolves thought they are already “*Abundant.*” About half (52%) of those who said they would be willing to have wolves nearby rated them as “*Present, but not abundant.*”

Table 15. A comparison of the influence of perception of wolf abundance in your county on respondent willingness to live near wolves,  $p < .000$ .

Are you willing to have wolves near where you live?	% among respondents who said their county’s wolf population size can be considered...			
	Abundant	Present, but not abundant	Rare	No idea
Yes (50%)	21	52	17	11
No (43%)	50	33	9	9
Not Sure (7%)	11	49	17	23

Whether a range residents has seen a wolf once or never seen one, their willingness to have wolves living near them is the same—just over half (53%) said “yes.” As people start to report seeing wolves more often, their willingness to live near them declines (Table 16).

Table 16. A comparison of the influence of seeing wolves on respondent willingness to live near wolves,  $p < .000$ .

How many times have you seen a wolf in the wild (in Wisconsin)?	Are you willing to have wolves near where you live? (%)		
	Yes	No	Not Sure
Never (36%)	53	36	10
Once (26%)	53	40	8
More than once (37)	46	51	3

### CHAPTER 3: HOW GEOGRAPHY AFFECTS OVERALL WOLF RANGE RESULTS

There are more people living in rural areas of wolf range (nearly half of all respondents) than those who are residing in towns or urban areas (Figure 12). Rural residents outnumber urban residents by nearly two and half times. To the extent that rural residents differ from urban residents, and they do in every measure pertaining to wolves on the survey, one might expect their views to dominate the overall wolf range results. However, a careful examination of the influence of current residence on wolf attitudes must also consider who really comprises these labels (e.g. urban/rural).

Decades of social science research has shown that values and worldviews that underpin many of our attitudes are formed early in life and typically change little throughout adulthood (Dietz et. al 2005; Rokeach 1979). Therefore, being raised in an urban or rural setting would likely have as much influence on wolf attitudes as where individuals live today. We ran a linear regression to test what extent current residence and childhood residence (where someone was raised) influenced the wolf attitude index scores when the effects of one variable were controlled for the other. The test results found when taking both of these variables into consideration, where a person was raised was roughly four times as influential on wolf attitudes as was current residence ( $p < .001$ ). Keeping this in mind provides two important insights into why the wolf range results found such a diversity of opinion about wolves despite the high proportion of current rural residents.

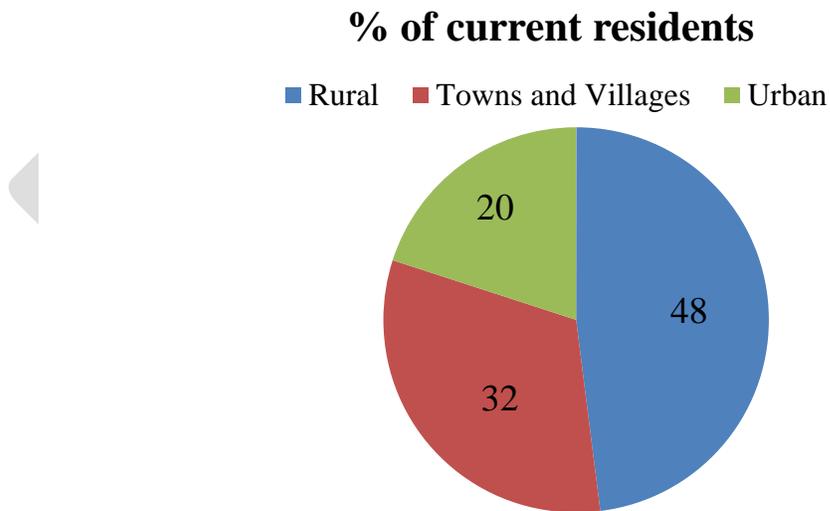


Figure 12. Frequency of wolf range respondent's self-reported current area of residence.

## Point 1

Although two-thirds of the current rural residents of wolf range grew up in rural areas, 22% of them grew up in urban areas (Table 17). Though small by comparison, this segment of exurbanites (22%) is large enough to impact the overall results of wolf range responses on any question. This is especially true given the magnitude of the difference in views between these exurbanites and the other rural residents.

We compared the responses of these exurbanites to all rural residents and all urban residents of wolf range on their preferences for statewide wolf numbers. What we found is that these former urban residents within the current rural residence classification were statistically more likely to prefer more wolves in the state than even current urbanites within wolf range (Table 18).

Consequently, strictly looking at where someone lives now without considering where they were raised can obscure the impact of cultural values formed early on wolf attitudes. In looking at the relationships between current and childhood residence in the opposite direction, we again see most people (67%) raised in rural areas are likely to remain in rural areas (Table 19). A more important observation, however, is the small number of people (9%) raised in rural areas who move to urban areas as adults. The consequence of this small number is that it means a much smaller proportion of “rural values” are exported to be represented among current urbanites than the other way around.

Table 17. A comparison of wolf range respondents’ current area of residence compared to the size of area in which they were raised,  $p < .001$ .

Where wolf range respondents live now	% Where they grew up			Row totals
	Rural	Small or large town	Urban	
Rural (48%)	67	16	22	100
Small or large town (32%)	33	36	31	100
Urban (20%)	21	22	57	100

Table 18. Frequency of preferences for statewide wolf population trends based on classification of residence,  $p < .001$ .

Current residence	Many more/more	About the same number	Fewer/many fewer	Zero	Don’t know	Row totals
All rural	16	24	33	14	13	100
<i>Raised Urban/live rural (Exurbanites)</i>	29	29	19	6	18	100
<i>Raised rural/live rural</i>	10	23	39	18	10	100
All Towns	21	32	22	8	18	100
All Urban	24	24	21	5	26	100

Table 19. A comparison of wolf range respondents' dispersal frequency to current residence from size of area where they were raised,  $p < .001$ .

Where wolf range respondents grew up	% Where they live now			Row totals
	Rural	Small or large town	Urban	
Rural	67	24	9	100
Small or large town	32	49	19	100
Urban	33	32	36	100

## Point 2

While contrasting opposite categories of any variable can be useful at times, focusing exclusively on the urban-rural classification of residence sets aside the middle category (small towns and large towns under 10,000 people) whose responses make up about one-third of the respondents in wolf range (Figure 12). Within this category of “towns people,” they are almost equally likely to have been raised in a rural area, an urban area, or in small to large town (Table 17). About half (49%) stay in small or large towns as adults, one-third moved to rural areas, and about one-fifth settled in urban areas (Table 19). This segment is also critical to understanding the overall results within wolf range because their responses also lean in support of wolves on key survey measures.

Examination of the frequency responses of this middle group suggests that they are more similar to urban respondents than rural respondents in many of their wolf attitudes. In some cases, they are more supportive of wolves than those living in urban areas. For example, 53% of town and village residents wanted to see wolves increased or maintained in the state compared to 48% of urban residents; forty percent of current rural residents of wolf range wanted more or the same number of wolves in the state (Table 18). A majority of residents of towns held this population preference despite being no different statistically than rural residents in their perceptions of wolf abundance (Table 20) or their perceived risks to self from wolves (Table 21).

Table 20. Perceptions of wolf abundance in county of residence based on current area of residence,  $p < .001$ .

Wolf abundance ratings	% Current classification of wolf respondent residence		
	Rural	Small or large town	Urban
Very abundant	9	4	3
Abundant	15	13	9
Present, but not abundant	46	48	41
Rare/ very rare	15	17	24
No idea	13	17	24
total	100	100	100

Table 21. Risk perceptions of wolves to personal safety among wolf range respondents by current residence,  $p < .001$ .

<b>“I worry about my personal safety when outdoors in areas where wolves occur.”</b>	<b>% response by category of current residence</b>		
	Rural	Small or large town	Urban
Strongly agree	19	17	14
Agree	27	25	25
Neither	19	21	17
Disagree	23	26	30
Strongly disagree	12	12	13
total	100	100	100

A majority (55%) of people residing in towns and villages also wanted to see wolf numbers increased or maintained in their county of residence (Table 22). This percentage is statistically higher than the 49% of rural residents who wanted their county to have wolf numbers increased or maintained. Residents of towns and villages were also statistically less likely than rural residents to want county wolf numbers decreased or eliminated; 42% of rural residents preferred fewer wolves compared to 28% of town residents.

Table 22. Frequency of preferences for wolf population goals in county of residence by current area of residence among wolf range respondents,  $p < .001$ .

<b>Preference for wolf numbers in current county of residence</b>	<b>% response by category of current residence</b>		
	Rural	Small or large town	Urban
Increased	10	12	19
Maintained	39	43	39
Decreased	22	16	14
Eliminated	20	12	8
Don't know	9	17	20
totals	100	100	100

A majority (52%) of current town residents said they were willing to have wolves living near them. This response places their preference about halfway between the two other categories—seven points higher than current rural residents but six points less than current urban residents (Table 23). The findings suggest that one's tolerance for wolves is to some extent forged early in life and shaped by differences in urban and rural and cultural values and reinforced by experience with wolves.

Table 23. Frequency of willingness to live near wolves based on size of current residence and area where raised among wolf range respondents.

Willingness to have wolves living nearby where you live	% response by category of current residence		
	Rural	Small or large town	Urban
Yes	45	52	58
Not sure	6	9	8
No	49	39	35

### Summary

Past wolf research has identified that differences in wolf attitudes often break along an urban-rural continuum, but there are risks to assuming uniformity of attitudes according to current residence only. Doing so ignores the fact that people often move from one location to another throughout their lives, often bringing their cultural values with them. We found much higher rates of people raised in urban areas and in towns moving out into rural areas than we did of rural people moving to more metropolitan areas. As a result, there is much greater diversity of wolf attitudes found in wolf range despite the fact that most of the survey respondents currently identified themselves as living in rural areas.

Exploring contrasts can be useful for understanding how important segments of the public view wolves—we provide a series of them in the back of this report. Yet we found that including those between the rural and urban categories is more helpful for understanding why the overall survey results break slightly in favor of wolves within wolf range. The overall findings reflect that a majority of people residing in small and large towns were more tolerant of wolves than were rural respondents, and in some cases were closer to urban respondents in their frequencies on key survey measures. This tendency when added to the proportion of current urban residents and exurbanites within rural areas results in overall survey findings that are more diverse than might be expected from across the rural landscape where wolves are found.

## CHAPTER 4: STAKEHOLDER GROUPS

In addition to comparing demographic segments in their survey responses, we also undertook a segmentation analysis of all respondents based on the extent to which they self-identified with certain labels or stakeholder groupings. In table 24, we report the average wolf attitude scores from high to low by identity labels among wolf range resident. (Note: The labels are not mutually exclusive; respondents could identify strongly with multiple stakeholder groups). We included only those respondents who indicated that a particular label was either “central” (column a) or “applies to me” (column b). We have also indicated what proportion of wolf range respondents identified themselves with the various labels. We found statistically significant differences that exist between consumptive users and the rest of the wolf range residents in attitudes about wolves.

Table 24. A comparison of mean scores on wolf attitude index of respondent identity groups among wolf range residents.

By Identity label	Mean scores on wolf attitude composite score		% of respondents who identified themselves with labels (columns a + b)	
	a) This central to who I am	b) This applies to me, but is not the central part of who am	Wolf range	Non-range
Wolf advocate	8.8	7.7	26%	23%
Environmentalist	5.2	3.7	50%	52%
Conservationist	4.5	3.4	58%	55%
Nature Lover	4.2	2.5	82%	77%
Birdwatcher	3.9	3.5	44%	38%
Farmer	-0.8	1.0	16%	9%
Grouse hunter	-1.8	-0.4	12%	6%
Deer hunter	-2.5	0.2	27%	16%
Hound hunter	-3.2	-2.1	3%	3%
Trappers	-3.4	-0.4	4%	1%
Bear hunter	-4.0	-1.7	6%	3%

\* Column total >100% because respondents could choose multiple identity labels.

Those who considered themselves “wolf advocates” (8.8) or “*environmentalists*” (5.2) had the highest scores on the wolf attitude index, generating significantly higher averages than all wolf range residents overall (mean=2.5). Identifying strongly with any consumptive user labels resulted in negative wolf attitude scores. Those who identified centrally as bear hunters held the lowest attitude scores with an average of -4.0. Readers should keep in mind that all of the consumptive identity labels are not independent from one another and that the deer hunter identity likely exerts a strong influence in the results for all consumptive identities. For example, those with a strong deer hunter identity made up 46% of the trapper group compared to 27% of the overall respondent pool. Centrally identified deer hunters made up an even larger segment of bear hunters (75%). Consequently, is difficult to parcel out how much of the attitude average result from which consumptive identity, but deer hunting identity likely compounds the results for both trappers and bear hunters.

**NOTE: Additional stakeholder comparisons are provided in the quick reference section at the back end of the report**

### **Deer Hunters and Non-hunters Comparison**

We measured and considered “deer hunters” in two different ways: participation and identity. Participation was the narrower of the two variables and included only those respondents who indicated that they hunted deer last fall (2013). For example, 21% of those in wolf range participated in deer hunting, but twice as many identified themselves as deer hunters on some level. The identity variable was more inclusive in that it allowed people who may have hunted in the past or who may relate to deer hunters, perhaps through family ties or other cultural avenues, to identify with the group and its interests. Fourteen percent of respondents in wolf counties said “deer hunter” is a label that is *central to their identity*.

A statistically significant difference was found between deer hunters and non-hunters on almost every issue considered on the survey. The differences appear widest when comparing wolf – range deer hunters to non-range, non-hunters, but it is still substantial when comparing deer hunters to non-hunters within wolf range.

Responses to the Kellert attitude questions offer a starting point to illustrate the difference between deer hunters and the broader public where wolves are concerned (Table 25). Three-quarters of non-hunters agreed or strongly agreed that wolves “*hav(ing) a right to exist*” is reason for maintaining a sustainable wolf population, compared with 47% of deer hunters who indicated agreement (Table 25). Furthermore, deer hunters were three times as likely to disagree or disagree strongly (31%) to this notion of *rights* as non-hunters were (10%).

Table 25. A comparison of attitudes between deer hunters and non-hunters across the state on select Kellert's (1990) wolf attitude items. (\*on item indicates statistically significant differences between range and non-range respondents at  $p < .001$ ).

Reasons for maintaining a sustainable population of wolves in Wisconsin	Frequency of Response (%)					
	Segment sample	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Because they have a right to exist*	Deer Hunters	13	34	22	14	17
	Non-hunters	35	40	14	5	5
Because they are important members of the ecological community*	Deer Hunters	10	31	19	25	16
	Non-hunters	30	43	14	8	5
To help keep deer in balance with their habitat*	Deer Hunters	6	20	14	22	39
	Non-hunters	21	41	18	10	10
So that some people will be able to hunt them*	Deer Hunters	11	32	27	17	13
	Non-hunters	2	19	29	26	24
So that some people will be able to trap them*	Deer Hunters	10	29	26	20	15
	Non-hunters	3	14	25	26	33
To be able to harvest their fur *	Deer Hunters	9	27	28	27	20
	Non-hunters	2	12	27	31	28

Deer hunters and non-hunters also differed on the ecological value of wolves as a predator in the state. For example, deer hunters are evenly split in their agreement (41%) and disagreement (41%) over maintaining wolves “*Because they are important members of the ecological community.*” Meanwhile, non-hunters agreed (73%) with the notion of maintaining wolves “*because they are important to the ecological community.*” In addition, 62% of non-hunters agreed that maintaining wolves should be done to “*keep deer in balance with their habitat.*” Twenty-six percent of deer hunters agreed that deer-habitat balance was a reason to maintain

wolves. Non-hunters (21%) were three and half times as likely as deer hunters (6%) to strongly agree on the deer-habitat balance question. About six in ten (61%) deer hunters disagreed or strongly disagreed that keeping deer “*in balance with their habitat*” was a reason for maintaining wolves.

The frequencies of deer hunters who agreed with three statements describing consumptive use benefits as reason for wolves did not reach a majority. For example, 43% of deer hunters agreed with the statement “*So that some people will be able to hunt them,*” whereas three in ten (30%) hunters disagreed and about a quarter (27%) were neutral. On the corresponding trapping question, 39% of deer hunters agreed that a benefit of maintaining wolves was “*So that some people will be able to trap them.*” Just over one in three (37%) agreed that fur harvest was a reason for maintaining wolves. These data suggest that a majority of the state’s deer hunters are not viewing the opportunity to pursue wolves as a game species as reason for sustaining them.

When Kellert studied Michigan residents in 1990, he found hunters were more favorable toward wolves than were members of the general public. Wilson (1997) also found more hunters supported than opposed efforts to restore wolves in Wisconsin. Both of these studies reflect a time when wolf populations were low and recovering. Research done in regions where wolf populations are more established generally find that most hunters hold negative views compared with non-hunters. Our findings in this study are consistent with recent work if not more decisive.

The attitude findings portend deer hunter preferences for wolf population goals. Among deer hunters living in wolf range, most (71%) wanted fewer or no wolves in the state; only 24% wanted more or the same number. A majority (56%) of deer hunters residing outside of wolf range also favored fewer or no wolves in the state. All deer hunters, regardless of where they lived, were statistically different in their desired statewide population goals than were non-hunters in the surveys. Non-hunters living outside of wolf range were most likely among survey respondents to want more (27%) or the same number (31%) of wolves as current levels. This same subset of respondents was also most likely (29%) among respondents to check “Don’t know” when asked how many wolves they preferred in the state.

Table 26. The influence of deer hunting participation (statewide) on preferences for statewide wolf population goals (\* indicates statistical significance at  $p < .001$ ).

<b>Group</b>	<b>Resides in...</b>	<b>More/many more</b>	<b>About the same</b>	<b>Fewer/ many fewer</b>	<b>Zero</b>	<b>Don’t know</b>
Deer hunters *	Wolf range*	8	16	48	23	6
	Non-range*	14	21	44	12	9
Non-hunters *	Wolf range*	19	30	24	8	19
	Non-range*	27	31	12	2	29

Intolerance for wolves is most evident among the segment of deer hunters for whom the activity is central to their identity. For this group, nearly three-tenths (29%) would like zero wolves in the state and 78% want less than what we have now. A similar result is evident when the focus of the question shifts to population preferences for county of residence (Table 27). Fifty-nine percent of non-deer hunters in wolf range preferred the same or more wolves in their county of residence. In contrast, two-thirds of resident wolf-range deer hunters want to see wolf numbers reduced or eliminated in their county.

Table 27. The influence of being a deer hunter in wolf range on preference for population goals in the respondent’s county of residence.

Segment sample	“I would like to see the wolf population in my county of residence...”				
	Increased	Maintained about the same	Decreased	Eliminated	Not sure
<b>Participated in deer hunting in 2013</b>	p < .000				
Yes (21%)	5	25	31	33	6
No (79%)	15	44	15	11	16
<b>Deer Hunter Identity</b>	p < .000				
This not me at all (58%)	15	46	12	8	19
This is only a small part of who I am (14%)	17	36	25	13	11
This applies to me but is not the central part of who I am (13%)	9	38	23	23	7
This is central to who I am (14%)	4	18	34	39	4

Two-thirds of last year’s wolf range resident deer hunters said they are not willing to have wolves live near them and willingness is even less among those respondents for whom deer hunting is central to their identity (Table 28).

Finally, the more closely a respondent identifies as a deer hunter, the more likely that they rated their county wolf population as abundant or very abundant. Forty-five percent of *centrally identified deer hunters* said wolves were *abundant* in their county of residence (Table 29). Wolf range residents who deer hunted last year were over twice as likely (38% to 16%) to think wolves are abundant in their county than people who did not deer hunt.

Table 28. The influence of being a deer hunter in wolf range on willingness to have wolves near where you live.

Segment sample	Are you willing to have wolves near where you live?		
	Yes	No	Not Sure
<b>Participated in deer hunting in 2013</b>	p < .000		
Yes (21%)	31	66	4
No (79%)	55	37	8
<b>Deer Hunter Identity</b>	p < .000		
This not me at all (58%)	58	33	9
This is only a small part of who I am (14%)	53	45	2
This applies to me but is not the central part of who I am (13%)	43	50	7
This is central to who I am (14%)	25	72	4

Table 29. The influence of being a deer hunter in wolf range on perceptions of wolf population abundance in their county of residence.

Segment sample	In my opinion, the number of wolves occurring in my county of residence can be considered...			
	Abundant	Present, but not abundant	Rare	No idea
<b>Participated in deer hunting in 2013</b>	p < .000			
Yes (21%)	38	45	12	5
No (79%)	16	45	19	21
<b>Deer Hunter Identity</b>	p < .000			
This not me at all (58%)	13	44	21	23
This is only a small part of who I am (14%)	20	51	16	14
This applies to me but is not the central part of who I am (13%)	28	49	17	7
This is central to who I am (14%)	45	42	8	5

## Other Demographic Differences

Exploring the extent to which there may be demographic differences in opinion within a population is standard practice in survey research. For example, comparing respondents by age, gender, level of education, and current residence can be helpful to understanding the overall study results. It is also useful for comparing results across attitude studies as an additional way of establishing the validity and reliability of current results. For example, when demographic findings produce similar results even when question wording may differ across studies, we can conclude that questions are measuring the same concepts. Most other surveys of public attitudes toward wolves have considered demographics as a way of comparing groups of respondents (see appendix A for details).

There are also statistically significant differences in statewide wolf population preferences based on the demographics of survey respondents in both the range and non-range samples (Tables 29 & 30). These results confirm other human dimensions studies of wolves and generally find that support for more wolves is higher among women and college educated respondents.

In wolf range, a majority (54%) of female residents indicated they wanted more or the same number of wolves compared to current levels (Table 23). By contrast, more men (47%) preferred wolves reduced from current levels than those who want more or the same (40%). Outside wolf counties, majorities of both men (57%) and women (54%) checked that they wanted more or the same number of wolves in the state as current levels.

Table 29. Gender differences on preferences for the statewide wolf population goal among wolf range and non-range residents.

Gender comparison	“Compared to the current level, I would like to have _____ wolves in the state.”				
	More	About the same number of	Fewer	Zero	Don’t know
<b>Within Wolf Range</b>	p < .000				
Male	15	25	33	14	14
Female	25	29	19	7	21
<b>Outside wolf range</b>	p < .000				
Male	27	30	17	4	22
Female	28	26	11	0	35

Having a college degree was also associated with support for increasing or maintaining statewide wolf numbers, especially among respondents outside of wolf range (Table 30). Roughly one-third (31%) of non-range respondents who hold an advanced degree indicated they wanted more or many more wolves in the state. Another 31% of this segment wanted about the same number of wolves. Meanwhile, high school graduates in wolf range are three times (15%) as likely to indicate zero tolerance for wolves in the state as those with advanced college degrees (5%).

Table 30. Education level differences on preferences for the statewide wolf population goal among wolf range and non-range residents.

Level of education comparison	Compared to the current level, I would like to have _____ wolves in the state.				
	More	About the same number of	Fewer	Zero	Don't know
<i>Within wolf range</i>	$p < .000$				
High school or less	11	27	30	15	18
Trade school or some college	18	27	28	11	15
Four-year degree	25	27	23	6	19
Advanced degree	32	23	22	5	19
<i>Outside wolf range</i>	$p < .000$				
High school or less	16	29	18	2	24
Trade school or some college	27	30	9	2	34
Four-year degree	31	25	12	0	26
Advanced degree	31	31	12	0	26

## CHAPTER 5: RISK PERCEPTIONS ABOUT WOLVES

### Worry about Personal Safety

Perceptions of risk and responses to fear can be important determinants of public acceptance of large carnivores. We asked survey respondents to answer three risk perception questions relating to the extent to which they worry about their personal safety, the safety of their pets, and the safety of children *while outdoors in areas where wolves live*. We compared responses on these three items to other key responses such as hunting participation, hiking and dog walking participation, the amount of wolves they want in their home county, as well the amount of personal experiences respondents have had with wolves.

In wolf range, 44% of respondents were worried for their personal safety in areas where wolves live, while 37% did not indicate worry (Table 31). Nineteen percent of respondents in wolf range marked that they neither agreed nor disagreed that they would worry.

Living in a rural area or participating in deer hunting increased personal concern about wolves for wolf range residents. A majority of respondents (51%) who live in rural areas within wolf range indicated that they are worried for their personal safety, whereas 40% of respondents who live in urban areas within wolf range agreed. Of respondents in wolf range who indicated that they had hunted in the past year, a majority (54%) agreed that they *would worry for their personal safety while outdoors in areas where wolves live*. Of non-hunters in wolf range, statistically fewer agreed that they would worry (41%). There were not statistically significant differences resulting from age or gender on the question of personal worry.

Outside of wolf range, fewer people said they would worry about their personal safety when spending time outdoors where wolves live. Thirty-three percent of non-wolf range respondents agreed that they would worry, and 27% indicated that they neither agreed nor disagreed that they would worry. Forty percent of non-range respondents disagreed with the statement “*I would worry about my personal safety while outdoors in areas where wolves live*” (Table 31). Deer hunters who live outside wolf range were more apt to worry for their personal safety (49%) than were non-range, non-hunters. The apparent difference between urban and rural resident shown in Table 31 was not statistically significant, nor were differences based on age or gender.

Table 31. A comparison of responses to the statement “*I would worry about my personal safety while outdoors in areas where wolves live*” in wolf range and outside of wolf range. (\* indicates statistically significant differences between item respondents at  $p < .05$ )

Segment sample	Frequency of Response (%)		
	Agree	Neither agree nor disagree	Disagree
<i>Wolf Range</i>	44	19	37
Urban*	40	19	41
Rural*	51	17	32
Deer hunter*	54	18	28
Non hunter*	41	20	39
Over 45	47	20	34
Under 45	51	16	33
Male	49	19	32
Female	45	17	38
<i>Non-Range</i>	33	27	40
Urban	36	27	37
Rural	42	16	42
Deer hunter*	49	17	34
Non hunter*	32	28	40
Over 45	37	24	39
Under 45	36	27	37
Male	36	24	40
Female	37	27	36

### Worry about Children’s Safety

A majority of survey respondents regardless of where they live in the state expressed concern over the potential risks that wolves pose to children. Sixty-four percent of respondents in wolf range and 63% of respondents (no difference) outside of wolf range agree that they “*would worry about the safety of children who are outdoors in areas where wolves live*” (Table 32).

Again, respondents who are deer hunters had the highest percentage of agreement that they would worry for the safety of their children, both inside and outside of wolf range (76%). Within wolf range, three-fourths of respondents who indicated they hiked in the past year would worry for the safety of children outdoors, whereas only 66% of non-hikers would worry. Outside of wolf range, the opposite trend occurs, where non-hikers are more apt to be worried for the safety of children (74%) than hikers (60%).

Table 32. Comparison of responses to the statement “*I would worry about the safety of children who are outdoors in areas where wolves live.*” (\* indicates statistically significant differences between item respondents at  $p < .05$ )

Segment sample	Frequency of Response (%)		
	Agree	Neither	Disagree
<i>Wolf range</i>	64	15	21
Deer hunter*	76	10	14
Non hunter*	63	16	21
Hiker*	75	13	12
Non hiker*	66	13	21
<i>Non-range</i>	63	16	21
Deer hunter*	76	10	14
Non hunter*	61	17	22
Hiker*	60	16	24
Non hiker*	74	14	12

### Worry about Pet Safety

Similar to the trend in response regarding child safety, there seems to be little difference between respondents within wolf range and outside of wolf range on the question of whether or not they “*would worry about the safety of my pets while outdoors in areas where wolves live.*” A majority of survey respondents agreed that wolves pose risk to pets (Table 33). In wolf range, deer hunters (82%) were more apt to be worried for the safety of their pets than non-hunters (71%), and rural residents (80%) were more likely to worry than urban residents (72%). Rural residents and deer hunters residing outside wolf range were similar to their range resident counterparts. Eighty percent of deer hunters said they would worry for their pets while 68% of non-hunters would.

Table 33. A comparison of responses to the statement “*I would worry about the safety of my pets while outdoors in areas where wolves live.*” (\* indicates statistically significant differences between item respondents at  $p < .05$ )

Segment sample	% who responded...		
	Agree	Neither	Disagree
<i>Wolf range</i>	72	12	16
Urban*	72	13	15
Rural*	80	9	11
Deer hunter*	82	9	9
Non hunter*	71	14	15
<i>Non range</i>	70	15	15
Urban	72	14	13
Rural	79	10	12
Deer hunter*	80	10	10
Non hunter*	68	16	16

We found there is no statistical difference between those who walk dogs and those who do not when it comes to perceived risk for pets, as about three-fourths of respondents indicate they would worry for their pets (Table 34).

Table 34. Comparison of responses to the statement “*I would worry about the safety of my pets while outdoors in areas where wolves live*” by respondents who walk dogs and respondents who do not walk dogs,  $p = .251$ )

Walks dog:	Agree	Neither	Disagree
No (46%)	76	12	12
Yes (54%)	78	10	12

## Comparison to Wolf Hunter Data

About six weeks prior to the administration of this public survey, the Wisconsin DNR conducted a separate mail survey of wolf harvest permit holders (Dhuey, unpublished data 2014). We asked some of the same questions for comparative purposes and found that deer hunters who live in wolf range counties were similar in risk perceptions about wolves as hunters/ trappers from across the state who applied for wolf harvest permit in 2013 (Table 35).

Table 35. A comparison of wolf risk perceptions between two types of hunters from two different surveys.

Sample	% of sample that...		
	Worry about personal safety	Worry about children's' safety	Worry about risks to pets
<i>Wolf range deer hunters</i>	54	76	82
<i>Wolf hunters/ trappers from Dhuey Survey (2014)</i>	50	76	77

### *Influence of perceptions of wolf population levels on risk attitudes*

Perceptions of wolf population levels in one's own county of residence can influence risk perceptions as well. Generally, respondents that perceived wolves to be more abundant were more likely to perceive risks to their personal safety in areas where wolves live. Of wolf range respondents who perceived wolf populations to be very abundant in their home county, 73% agreed that they “*would worry about their personal safety outdoors in areas where wolves live*” (Table 36). Of those wolf range respondents that perceived wolf populations to be “rare or very rare,” only 31% agreed that they are fearful for their personal safety, and 50% disagreed.

A slightly different response arises when respondents in wolf range are asked whether they would worry about the safety of their pets while outdoors in areas where wolves live. The majority of respondents would worry about the safety of their pets while outdoors in areas where wolves live. However, the likelihood of worrying about pets increases among people perceiving greater wolf abundance (Table 37).

Table 36. A comparison of responses to the statement “*I would worry about my personal safety while outdoors in areas where wolves live*” by perceptions of wolf population abundance in home county that is within wolf range,  $p < .000$ .

Wolf population abundance	Frequency of Responses (%)		
	Agree	Neither	Disagree
Very abundant (6%)	73	10	17
Abundant (14%)	61	15	24
Present but not abundant (45%)	37	21	42
Rare (17%)	31	20	50
I have no idea (17%)	49	21	30

Table 37. A comparison of responses to the statement “*I would worry about the safety of my pets while outdoors in areas where wolves live*” by perceptions of wolf population abundance in home county that is within wolf range,  $p < .000$ .

Wolf population abundance	Frequency of Responses (%)		
	Agree	Neither	Disagree
Very abundant (7%)	92	2	7
Abundant (14%)	84	11	6
Present but not abundant (45%)	69	13	18
Rare (18%)	58	16	26
I have no idea (16%)	76	13	11

### *Risk Scale*

Similar to our attitude index, we created a summative score to reflect overall perceptions of risk toward wolves. To do this, we combined scores for responses to three questions on safety—personal safety, safety of pets, and safety of children—to create an overall risk scale score. We used statistical procedures to confirm that individual responses to the three items were sufficiently correlated to justify our scale creation (Cronbach’s  $\alpha=0.89$ ).

Figure 13 is a histogram showing the distribution of frequencies of various risk scores. Scores higher than zero indicate increasing perceived risks associated with wolves. Within wolf range, the average score for respondents was 1.64. The score with the highest frequency on the risk scale was a 6 (16%) which is the most fearful response option. The second most frequent score was a 3 (14%), which still indicates a rather high level of perceived risk.

The average score for respondents outside of wolf range was statistically lower ( $\bar{x}=1.20$ ) than that of range residents, but still leaning toward mild worry about wolves. The mode response on the risk scale was 3.0 for non-range residents with 18% netting this score. The second most frequent (15%) risk index score was 1.0 among non-range residents.

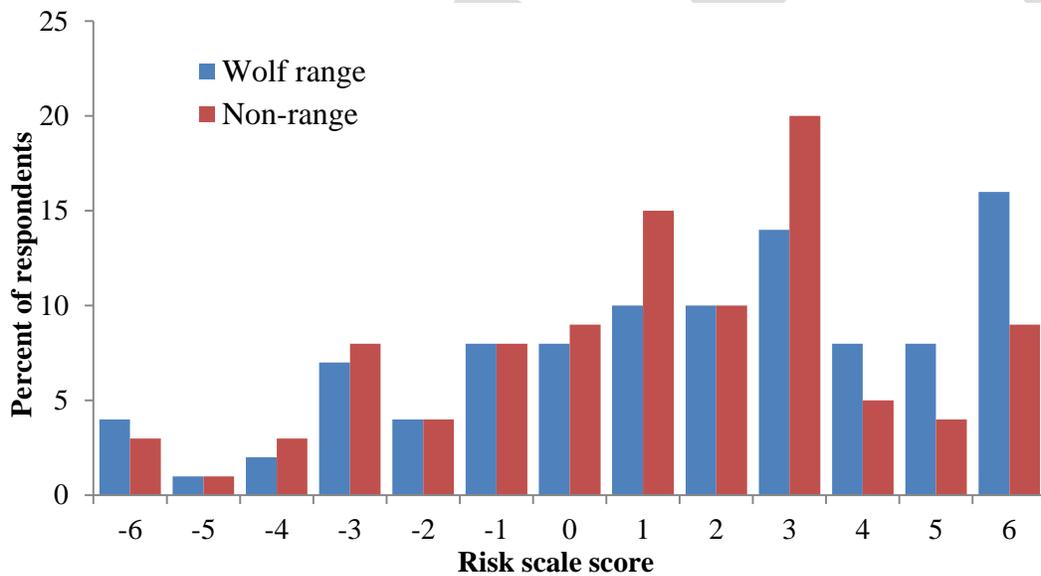


Figure 13. Histogram of wolf risk scale scores among wolf range and non-wolf range residents.

### *Influence of experience on risk perceptions*

We tested the hypothesis that personal experiences with wolves would influence perceptions of risk in areas where wolves live. Within wolf range, a majority of respondents (62%) have seen wolves (Table 38). Outside of wolf range, 82% of respondents had never seen a wolf or had only seen a wolf once (Table 38). A plurality (48%) of respondents in wolf range who have seen a

wolf multiple times said they would worry for their personal safety around wolves, compared to 41% agreement among those in wolf range who have only seen wolves once, or have never seen a wolf.

The effect of multiple wolf sightings had the opposite direction of influence on perceived risks for non-range residents. Outside of wolf range, a plurality of respondents *disagreed* (47%) that they worry for their personal safety in areas where wolves reside. Furthermore, not seeing wolves increased the frequency of those who expressed worry about their personal safety.

The difference in the degree of influence that multiple wolf sightings has on perceived risks of range and non-range respondents might reflect differences in the nature of these encounters. Perhaps, it is not the number of wolf sightings that count but nature of them that matters (e.g., proximity to one’s home. A majority (59%) of hunters reported that they have seen wolves more than once, whereas only 29% of non-hunters reported they had seen wolves more than once (Table 39). However, the number of sightings respondents have had appears to influence hunters and non-hunters in different ways, not unlike our previous observation about differences between wolf range and non-range residents.

Of the hunters that have had more than one wolf sighting, a majority agreed (60%) that they would worry for their personal safety, whereas only 47% of hunters who have seen a wolf once or never would worry (Table 39). Of non-hunters, respondents that have seen a wolf more than once were slightly more likely to *disagree* that they would worry for their personal safety (44%) than non-hunters who had only seen a wolf once or never (Table 19). Thus, a higher number of wolf sightings increases a hunter’s perception of risk in areas where wolves live, but does not influence non-hunters’ perception of risk in the same way.

Table 38. A comparison of responses to the statement “*I would worry about my personal safety while outdoors in areas where wolves live*” between residents of wolf range and non-wolf range by the number of times they have seen a wolf. (Wolf range:  $p < .000$ , Non-wolf range:  $p < .196$ )

Seen a wolf		Frequency of Response (%)		
		Agree	Neither	Disagree
Wolf range	Never or once (62%)	41	21	38
	More than once (38%)	48	16	36
Non wolf range	Never or once (82%)	35	27	38
	More than once (18%)	26	27	47

Table 39. A comparison of responses from hunters and non-hunters to the statement “*I would worry about my personal safety while outdoors in areas where wolves live*” by how many times they have seen a wolf. (Wolf range:  $p < .05$ , Non-wolf range:  $p < .05$ )

Seen a wolf		Frequency of Response (%)		
		Agree	Neither	Disagree
Non-hunter	Never or once (71%)	38	23	39
	More than once (29%)	39	17	44
Hunter	Never or once (41%)	47	19	34
	More than once (59%)	60	16	24

Respondents indicated the highest levels of perceived risk if they had experienced the death of a personal pet or were aware of multiple instances where others have had domestic animals killed. In wolf range especially, respondents who knew of multiple instances where other people have had domestic animals killed were more likely to agree that they worry for their personal safety around wolves (72%) (Table 40). We did not specify in our question whether “multiple instances” meant knowing several people who each had a depredation event, or a single individual (e.g., a livestock producer) having multiple losses.

Outside of wolf range, a majority of people have never or only once known of an instance where someone’s pet was killed. Because so few respondents outside of wolf range were aware of multiple incidents of pets being killed by wolves, there is likely a larger margin of error on this analysis and we have less confidence in its findings because it is based on so few cases. However, of the small percentage (5%) of respondents that know of more than one instance of a pet being killed, a plurality agreed (46%) that they worry for their personal safety (Table 40).

In wolf range, the number of times you have heard a wolf has only a small effect on whether or not respondents perceived risks to their personal safety in areas where wolves reside. Outside of wolf range, if a respondent has heard a wolf howl more than once they are more likely to disagree (48%) that they worry for their personal safety than if they have only heard a wolf once or never (36%).

Table 40. A comparison of perceptions of risk between residents of wolf range and non-wolf range by the number of times they have known of someone else’s domestic animal being killed by a wolf. (Wolf range:  $p < .000$ , Non-wolf range:  $p = .231$ )

Known someone who has had a domestic animal killed		Worry for personal safety (%)		
		Agree	Neither	Disagree
Never or once	Wolf range (82%)	36	21	43
	Non-wolf range (18%)	32	27	41
More than once	Wolf range (95%)	72	12	16
	Non-wolf range (5%)	46	25	29

In wolf range, respondents who have seen wolf tracks more than once are more likely to agree (47%) that they worry for their personal safety than those who have only seen tracks once, or have never seen tracks (40% agree). Outside of wolf range, the majority of respondents (52%) that have seen wolf tracks more than once do not worry when they are in areas where wolves live. Of those respondents that have never seen wolf tracks, or have only seen them one time, there is no clear tendency to agree or disagree that they fear for their personal safety.

### Risk Perceptions of Other Large Predators

Although perceptions of wolves are the main focus of this report, it is also useful to determine if respondents perceived risks from other large predators in Wisconsin, such as bears and coyotes, in order to put fears about wolves into a larger context. Based on responses to the statement “*I would worry about my personal safety while outdoors in areas where bears live,*” respondents in wolf range worried about bears (47% agree) and wolves (44% agree) at a similar frequency (Table 41). Far fewer respondents in wolf range (26%) agreed with a similar statement about coyotes. Fifty five percent of wolf range respondents actually disagreed that they would worry for their personal safety around coyotes.

Outside of wolf range, respondents were more likely to express fear of bears than they were fear of wolves. A majority (59%) of respondents reported that they would worry for their safety around bears, compared to one-third (33%) of respondents that say they would worry for their safety around wolves (Table 41). In the case of coyotes, 30% of respondents outside of wolf range would agree that they worry for their safety and 51% would not.

A majority of hunters in wolf range agreed (54%) that they worry for their safety around wolves, but when it comes to bears, only 37% of hunters worried for their personal safety (Table 41). When asked the same question about coyotes, only 18% of hunters in range indicated they would worry, whereas a majority (64%) would not worry about their personal safety.

Once again, we can observe some distinct differences between hunters and non-hunters. Almost half of non-hunters in wolf range indicated they are worried about bears (Table 41). By comparison, 41% of those non-hunters are also worried about wolves. When it comes to coyotes, a majority of non-hunters in wolf range would not worry for their personal safety, but one in four indicated they would still worry. In wolf range, non-hunters are more likely than hunters to be afraid of bears over wolves, and the non-hunter group had more respondents who indicated they were anxious around coyotes as well.

Table 41. A comparison of responses to the statement “*I would worry about my personal safety while outdoors in areas where bears live.*” (\* indicates statistically significant differences between item respondents at  $p < .05$ ).

Segment sample	Wolf risk response	Bear risk response		
	Agree	Agree	Neither	Disagree
<i>Wolf Counties</i>	44	47	18	35
Urban	40	45	17	38
Rural	51	42	20	38
Deer hunter*	54	37	20	43
Non hunter*	41	49	18	33
Over 45	47	44	19	37
Under 45	51	40	19	41
Male*	49	38	21	41
Female*	45	54	15	31
<i>Non-wolf counties</i>				
Urban	33	59	15	26
Rural	36	58	17	25
Deer hunter*	42	50	15	34
Non hunter*	49	46	17	37
Over 45	32	60	16	24
Under 45	37	53	18	29
Male	36	60	14	26
Female	36	49	18	33
Female	37	65	15	20

There are gender differences in risk perceptions as well. In wolf range, a plurality of males (49%) agreed that they would worry for their personal safety with wolves, and 45% of females agreed. With bears, however, only 38% of males agreed that they would worry, whereas a majority of females (54%) said they would worry about their personal safety (Table 41). More

females than males worried about coyotes as well, with one in three females agreeing, compared to only 18% of males. Thus, in wolf range, males and hunters are more worried about wolves than the other two carnivores. Conversely, females and non-hunters were more worried about bears than wolves and still have some level of anxiety over coyotes.

Outside of wolf range, non-hunters are twice as likely to agree that they are worried for their personal safety around bears as they are to say they are worried about wolves. Hunters outside of wolf range are slightly more likely to worry around bears (46%) than those hunters within wolf range (37%). Worrying about personal safety around coyotes is very similar outside of wolf range to responses within wolf range—a majority disagrees. Similar to within wolf range, females are more apt to agree that they worry about bears and coyotes than males are.

A majority of respondents outside of wolf range agreed (63%) that they would worry for the safety of their pets in areas where bears live (Table 42). Within wolf range, 49% of respondents agreed to the same statement. Comparing this to fear of coyotes, regardless of whether respondents lived in wolf range or outside of wolf range, a majority agreed (57% and 69%, respectively) with the statement *“I would worry about the safety of my pet while outdoors in areas where coyotes live.”* Across the board, respondents were fearful for their pets around all three carnivores. However, in comparing the three animals, respondents were most likely to fear for their pets around wolves, with coyotes coming in second and bears coming in third.

Table 42. Comparison of responses to the statement *“I would worry about the safety of my pets while outdoors in areas where (type of animal) live”* by wolf range and non-wolf range respondents.

Type of animal	Range	Fear for safety of pets while outdoors (%)		
		Agree	Neither	Disagree
Wolf	Wolf Range	72	12	16
	Non-wolf range	70	15	15
Bear	Wolf range	49	20	31
	Non-wolf range	63	16	21
Coyote	Wolf range	57	16	27
	Non-wolf range	69	12	19

When the focus is on the safety of children, we found a majority of respondents perceived risks associated with all three carnivores. A majority of respondents both within and outside of wolf range agree that they worry for children’s safety around bears (61% and 73%, respectively). This is also true for wolves, where 64% in wolf range and 63% outside of range would worry. For coyotes, a majority (54%) outside of wolf range agree that they would worry for children and a plurality in wolf range (46%) would worry.

## CHAPTER 6: OPINIONS ABOUT WOLF MANAGEMENT TOPICS

### Preferred Locations for Wolves

When asked which areas respondents would support allowing wolves to exist in Wisconsin, the most frequently selected area was “*primarily forested areas with large blocks of public land*” with 59% of residents in wolf range and 66% of residents outside of wolf range indicating their support (Figure 14). Thirty-nine percent of wolf range respondents supported allowing wolves to live *anywhere they become established on their own*, making that the second most frequently supported response. One-third of wolf range respondents supported allowing wolves to live on “*primarily forested areas that are largely privately owned.*” Sixteen percent of wolf range respondents indicated that they do not want wolves to live anywhere in the state, compared to 6% of non-wolf range respondents who provided that answer.

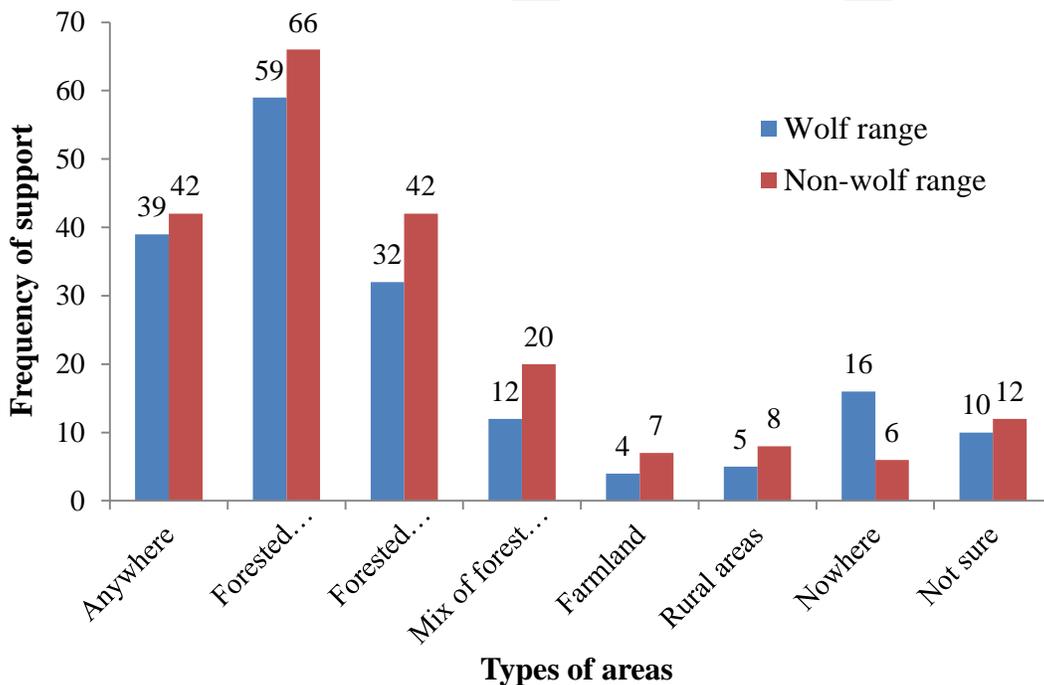


Figure 14. A comparison of frequency responses of wolf range and non-range residents in their preferences for the type of areas wolves should be allowed to occur in the state. (Note: This was a “check all that apply” question so frequencies exceed 100%).

Residents outside of wolf range generally had higher support for all of the possible areas where wolves could exist, but their top three areas included forested public land (66%), forested private land (42%) and anywhere that wolves become established on their own (42%). Meanwhile, very few survey respondents within or outside of wolf range thought wolves should be in “farmland” or rural areas.

Opinions about where to allow wolves to live were influenced strongly by respondent attitudes about the role wolves play in ecology. For example, 89% of those who said wolves should be allowed to exist “*Anywhere they become established on their own*” also agreed that they were important members of the ecological community. Similarly, three-quarters agreed that a benefit of having wolves was to keep deer populations in balance with their habitat. Meanwhile only 3% of respondents who said that wolves belonged “*Nowhere*” in the state agreed that they had value to the ecological community or that they were beneficial in keeping deer populations in balance with their habitat.

Respondent preferences for how many wolves they would like to have in the state does influence what areas of the state respondents would support allowing wolves to exist (Figure 15). Of respondents that indicated they would like to have “*many more or more*” wolves in the state, the majority supported allowing wolves to exist “*anywhere where wolves becomes established on their own*” (73%) and “*primarily forested areas with large blocks of public land*” (69%). However, this group also had majority support for “*primarily forested areas with large blocks of private land*” (54%). None of the respondents who wanted more wolves in the state indicated that they wanted wolves to live “*nowhere.*”

Of respondents that wanted about the “*same number of*” wolves in Wisconsin compared to current levels, the majority supported allowing wolves to live in “*primarily forested areas with large blocks of public land*” (79%). Forty-five percent of respondents who wanted the same number of wolves supported allowing wolves to exist anywhere they become established, and 40% supported wolves living in forests with large blocks of private land. Similar to respondents who wanted more wolves, no respondents that indicated they would like to maintain wolves at current levels supported wolves living “*nowhere.*”

Respondents that indicated they want fewer wolves in the state differed from respondents that indicated they want zero wolves in the state when it comes to the level of support for allowing wolves to live in certain areas. Almost all respondents (92%) who wanted “*Zero*” wolves in the state selected “*Nowhere*” for their preferred location of wolves (Note: We did not include them in Figure 15 for simplicity sake). By comparison, 23% of respondents who prefer fewer wolves in the state would like wolves to live “*nowhere*” in Wisconsin. Meanwhile, over half (53%) of respondents who want fewer wolves in Wisconsin would support allowing them to exist in “*primarily forested areas with large blocks of public land*” (Figure 15), whereas only 4% of respondents who want zero wolves in the state support wolves existing in those areas.

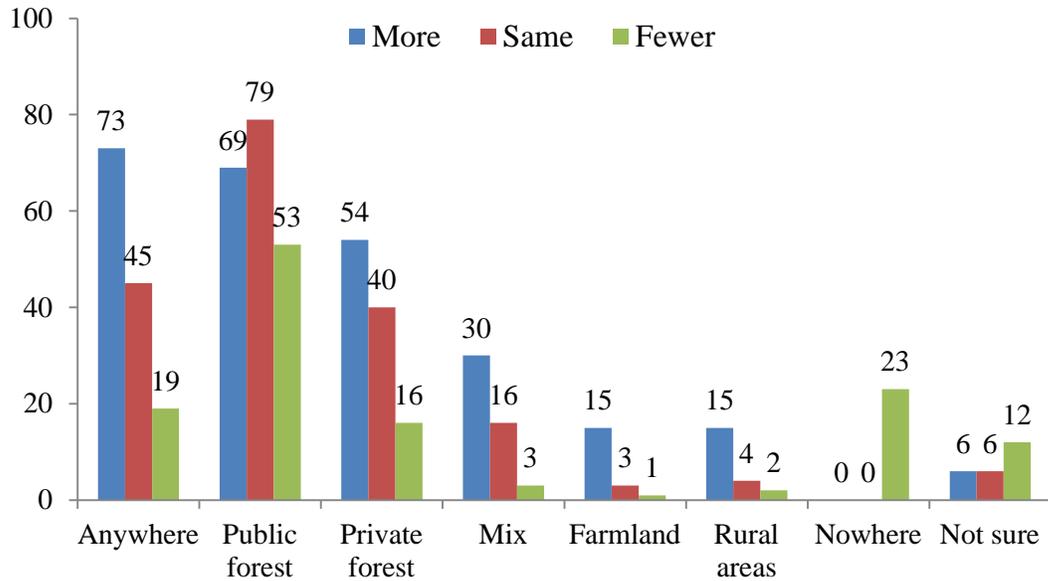


Figure 15. A comparison of the frequency of responses between respondents who want more, the same number of, or fewer wolves in Wisconsin to the question: “*In which kinds of areas would you support allowing wolves to exist in Wisconsin?*” (Note: This was a “check all” that apply question so frequencies exceed 100%).

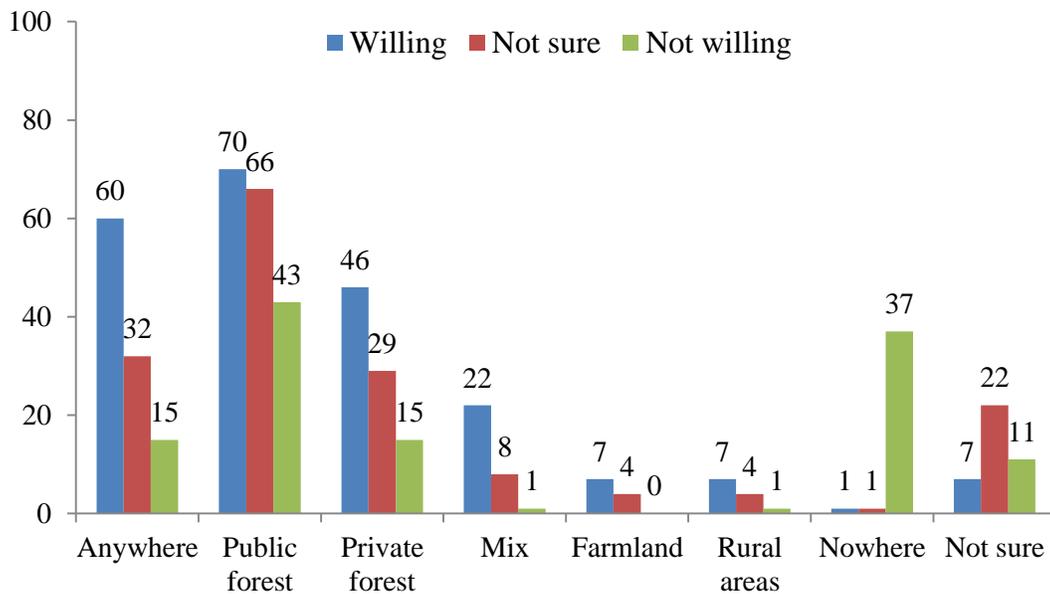


Figure 16. A comparison of the frequency of responses between respondents who are willing, unsure, or not willing to have wolves near where they live to the question: “*In which kinds of areas would you support allowing wolves to exist in Wisconsin?*” (Note: This was a “check all” that apply question so frequencies exceed 100%).

We asked respondents in wolf range to indicate their willingness to have wolves near where they live, and found that willingness did have an influence on the frequency of support for allowing wolves to exist in various kinds of areas in the state (Figure 16). The most frequently supported area was “*primarily forested areas with large blocks of public land,*” but the amount of support was significantly different ( $p < .000$ ) across the three levels of willingness. The majority (70%) of those who were willing to live near wolves, as well as a majority (66%) of those who were unsure, supported the animals existing in public forest areas.

Of respondents that indicated they are willing to live near wolves, the majority (60%) supported the option of allowing wolves to exist in “*anywhere wolves become established on their own.*” One third of respondents who were unsure of their willingness to live near wolves also indicated support for allowing the animals to live anywhere they become established. Of those respondents who were unsure whether or not they were willing to live near wolves, 22% were also unsure of which kinds of areas they supported allowing wolves to exist in the state.

We were interested in understanding whether or not those respondents that were not willing to accept wolves near where they live would support allowing wolves to exist in other areas of the state. A plurality (43%) of respondents in this “not willing” group supported allowing wolves to exist in public forest areas. However, the second most frequently supported option was wolves living “nowhere” in the state, with 37% supporting that response. On the other end of the spectrum, fifteen percent of those who indicated they are unwilling to live near wolves supported wolves existing anywhere they become established on their own, and in primarily forested areas with large blocks of public land (15%).

### **Management Priorities**

We asked survey respondents to rate eleven different potential wolf management priorities on a 4-point scale from “*High priority*” to “*Not at all a priority*” (Table 43). There was widespread agreement that human safety should be the highest priority of wolf management in Wisconsin—69% said the Wisconsin DNR should eliminate wolves “*that show aggression or threatening behavior toward people.*” Elimination of wolves involved in livestock depredation was the second highest rated priority and 53% of the respondents in wolf range said that it should be a “high priority” for management. No other options received a majority of responses as a “high priority.”

About six in ten (61%) wolf range residents said that reducing wolf population in the elk reintroduction area was either a high or medium priority. About six in ten (59%) also identified “creating protected wolf refuge areas” as a high or medium priority. About one in five (19%) said wolf refuges were not at all a priority.

Four items drew a majority of responses that assigned low or no priority among wolf range respondents. These items included reducing wolves for the purpose of lowering their predation impacts on deer, promoting opportunities for people to see/hear wolves, leaving nature to

manage wolf populations, and managing wolf numbers at a level to maintain hunting and trapping seasons (Table 43).

Table 43. Relative prioritization of potential wolf management objectives by wolf range respondents. (\* Scale ranged from 1 point for high priority to 4 points for no priority; “Not sure” responses removed from calculations of average).

<b>Management objective</b>	<b>Ave*</b>	<b>High priority</b>	<b>Medium priority</b>	<b>Low priority</b>	<b>Not at all a priority</b>	<b>Not sure</b>
Kill wolves that show aggression or threatening behavior toward people.	1.56	69	16	8	4	3
Eliminate wolves from areas where they are attacking domestic livestock.	1.73	53	30	10	4	3
Reduce the number of wolves living near the state’s reintroduced elk herd.	2.32	30	31	24	10	6
Create refuge areas to protect wolves from removal or harvest.	2.35	33	26	18	19	4
Promote diverse animal communities that include wolves.	2.41	30	26	22	16	6
Increase law enforcement efforts to reduce the illegal shooting of wolves in the state.	2.51	30	20	21	25	3
Reduce wolf populations on public lands where they are killing bear hunting dogs.	2.55	24	27	25	21	4
Reduce wolf populations in northern counties to address deer hunter concerns about predation on deer.	2.62	26	18	27	24	4
Promote public opportunities to see and hear wolves.	2.77	17	25	26	30	3
Leave wolves alone and let nature decide how many we have.	3.07	15	20	20	33	12
Maintain enough wolves to allow for a yearly public hunting and trapping season.	3.17	8	18	28	39	6

Those living in wolf range counties were statistically different from the rest of state residents in the frequency of their wolf management priorities (Figure 17). Killing wolves that act aggressively toward people was the most frequently cited “High priority” across the board, drawing more than a majority of wolf range and non-range respondents. The samples differed in the selection of a second high priority management objective. Wolf range residents picked elimination of livestock depredation as their second most frequently picked high priority (53% of the cases). Meanwhile, the second most frequently selected high priority in non-range was creation of a wolf refuge. Maintaining enough wolves for a hunting season was seldom (8%) identified as a high priority for either group.

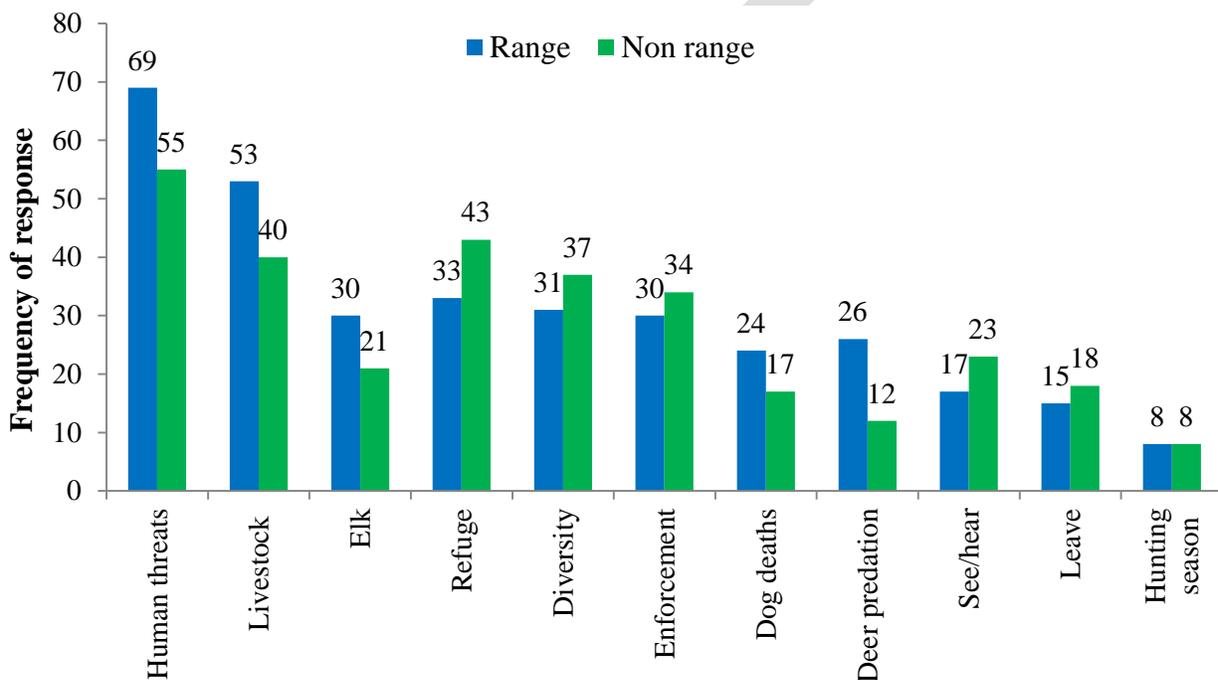


Figure 17. A comparison of frequencies of “high priority” management objectives between wolf range and non-range samples. (Note: The abbreviated labels on the X axis of the graph correspond to the objectives listed in Table 38).

We found statistically significant differences among stakeholders as defined by the central identity variable in the prioritization of wolf management objectives (Figure 18). For those who marked “deer hunter” as a central part of their identity, the four highest rated management priorities all had to do with the lethal control of wolves to address various conflicts. For these deer hunters, nearly nine in ten (89%) rated killing wolves that show aggression or threatened behavior toward people as a high priority. A majority of the centrally identified deer hunter segment also indicated removal of wolves in livestock depredation (77%) and to reduce predation impacts on deer (70%) as high priorities. Six in ten in this group also said reducing wolves in the elk restoration area was a high priority.

Survey respondents who centrally identified with the “environmentalist” label were generally more mixed in their priorities than were the deer hunters or the wolf advocates. In other words, their responses were spread more equally across many categories of the management objectives. Nonetheless, the most frequently (62%) cited high priority for environmentalists was killing wolves that threaten humans. The next tier of management priorities for environmentalists, with roughly half marking these as high priorities, were to create wolf (no harvest) refuges (54%), to manage for wildlife diversity, including wolves (51%) and to increase law enforcement to curb illegal wolf killing (50%).

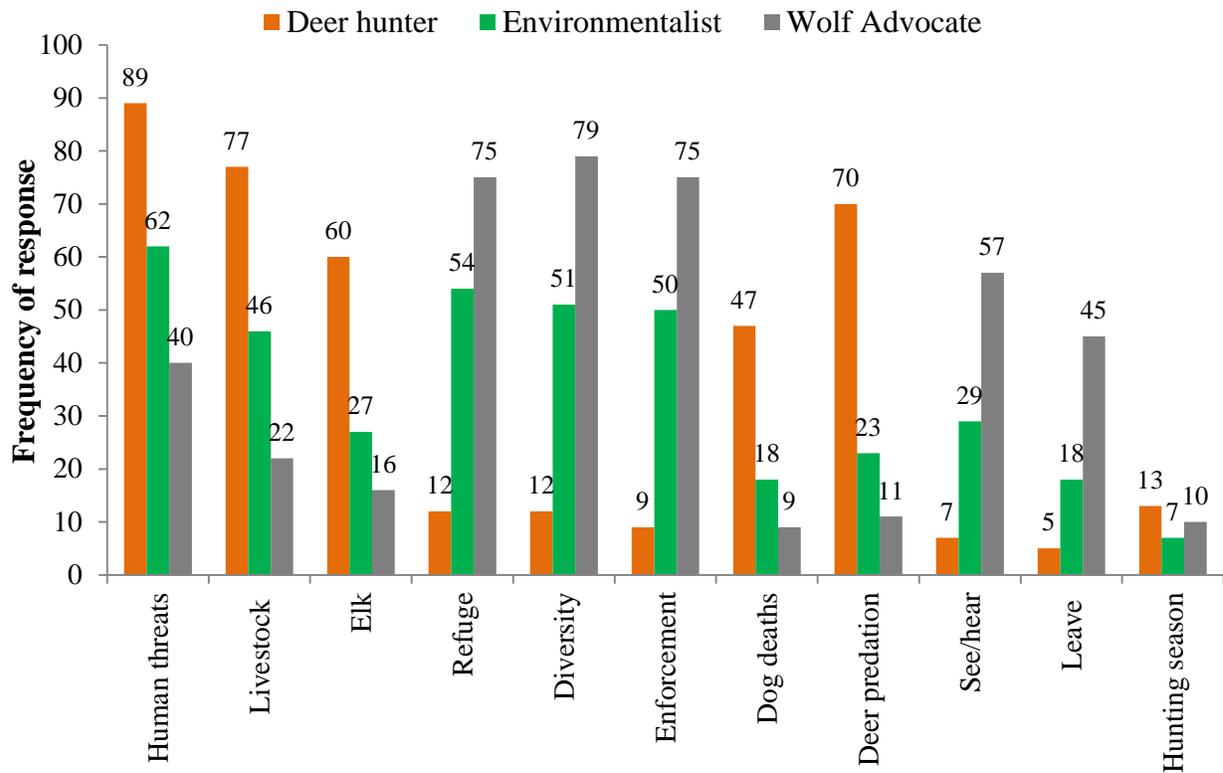


Figure 18. A comparison of the frequencies of high priority wolf management objectives among respondents who centrally identified with various stakeholders.

This suite of management objectives were also the three highest rated priorities for those centrally identified as wolf advocates, though with higher intensity of response. Managing for diverse wildlife communities was selected by 79% of wolf advocates as a high priority, while 75% thought creation of a wolf refuge should be a high management priority. Three-quarters of wolf advocates also wanted increased law enforcement to reduce wolf poaching.

Wolf advocates were less likely to assign a high priority to killing wolves that threaten humans than were other groups. Four in ten said that this management objective was a high priority. Only one-quarter of wolf advocates agreed that they have concerns about their safety while outside in wolf areas.

One issue where wolf advocates deviated significantly from both deer hunters and environmentalists was the issue of developing opportunities for the public to see and hear wolves in the state. A majority of wolf advocates (57%) thought this should also be a high priority in the management of wolves. By contrast, only 7% of those with a strong deer hunter identity and 29% of environmentalists assigned a high priority designation to public wolf viewing/listening.

We also compared three consumptive user groups (based on identity labels) to results of the DNR survey of wolf harvester applicants (Dhuey 2014) conducted near the same time. Bear hunters, trappers, deer hunters and wolf hunters all agree in the relative order of priorities for wolf management in the state, though with some slight difference in frequency of response (Figure 19). For example, wolf hunters were lower than any other segment in indicating that creation of wolf refuges should be a high priority in management; only 2% rated this item as a high priority. Conversely, wolf hunters showed the highest frequency among the groups for maintaining “enough wolves to ensure an annual public harvest” at 25% of the respondents.

One of the more contentious wolf issues for the state’s bear hound hunters has been the increase in wolf kills on their dogs during training and hunting seasons on public lands. Last year, wolves killed 27 hunting dogs in the state with most of those cases involving bear hounds. We tested “*Reduce wolf populations on public lands where they are killing bear hunting dogs*” as a management priority. Roughly one in four residents (24%) of wolf range picked this objective as a high priority (Figure 17). Consumptive user groups were split on whether addressing dog depredations through general wolf population reduction should be a high priority (Figure 19). A majority (51%) of bear hunters picked addressing dog depredation as high priority for wolf management. In Dhuey’s survey, 43% of those who participated in last year’s wolf hunt assigned high priority status to the dog depredation issue.

An issue on which there is convergence of opinions among identity stakeholder groups was with respect to managing wolves for public harvest. Very few people in any of the identity groups-- including the consumptive oriented groups-- indicated that managing to provide an annual surplus of wolves for public harvest was a high priority.

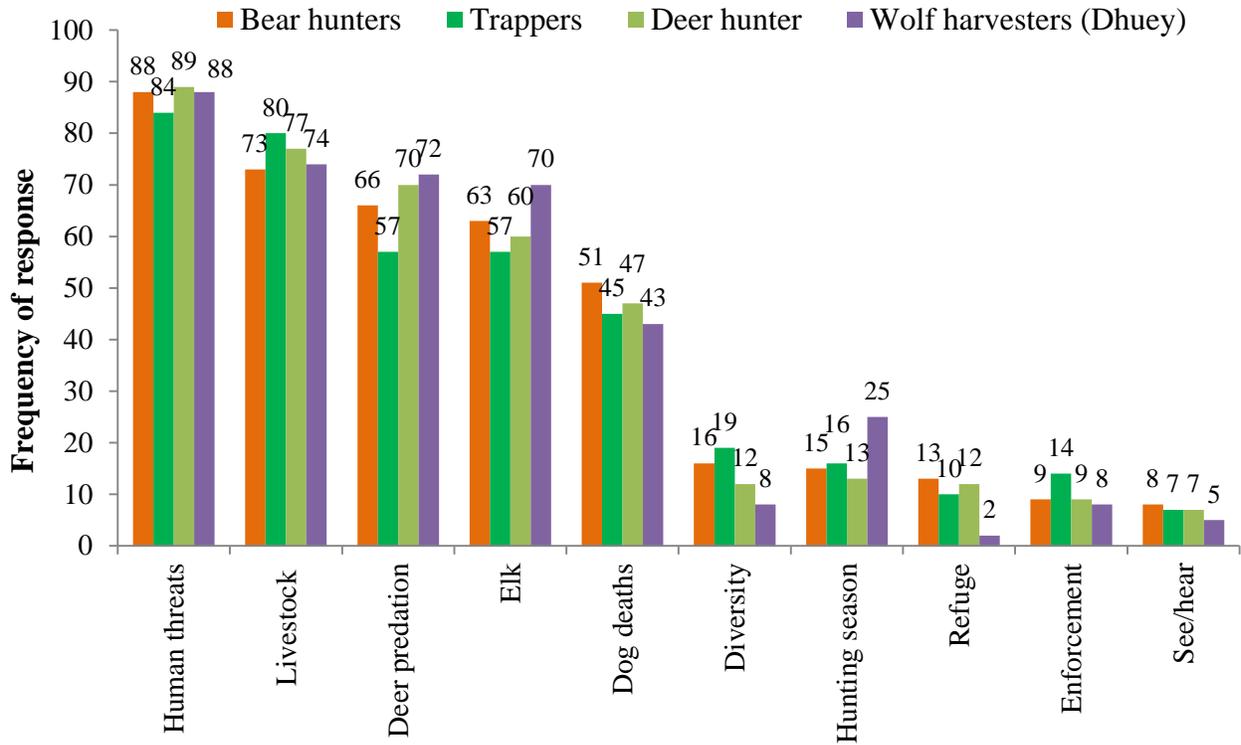


Figure 19. Frequency of HIGH priority wolf management goals among consumptive user groups, including wolf hunter/trappers from Dhuey survey (2014).

### Support for Wolf Harvest

A majority of the respondents in the state supported the regulated wolf harvest season (Table 44). In addition to selecting “oppose” or “undecided,” there were two variations of response options to indicate support for the regulated hunting and trapping season on wolves. One reflected harvest as population control, while the other reflected hunting wolves sustainably. The frequency of responses to all four options is shown in Figure 20; the frequency of responses with both “yes” choices collapsed is shown by cluster in Table 44.

Table 44. A comparison of the support level for wolf harvest season in and outside of wolf range samples.

Segment sample	% Response		
	Yes	Undecided	No
<i>Range</i>	$p < .000$		
Wolf range	62	17	21
Non-wolf range	51	22	27

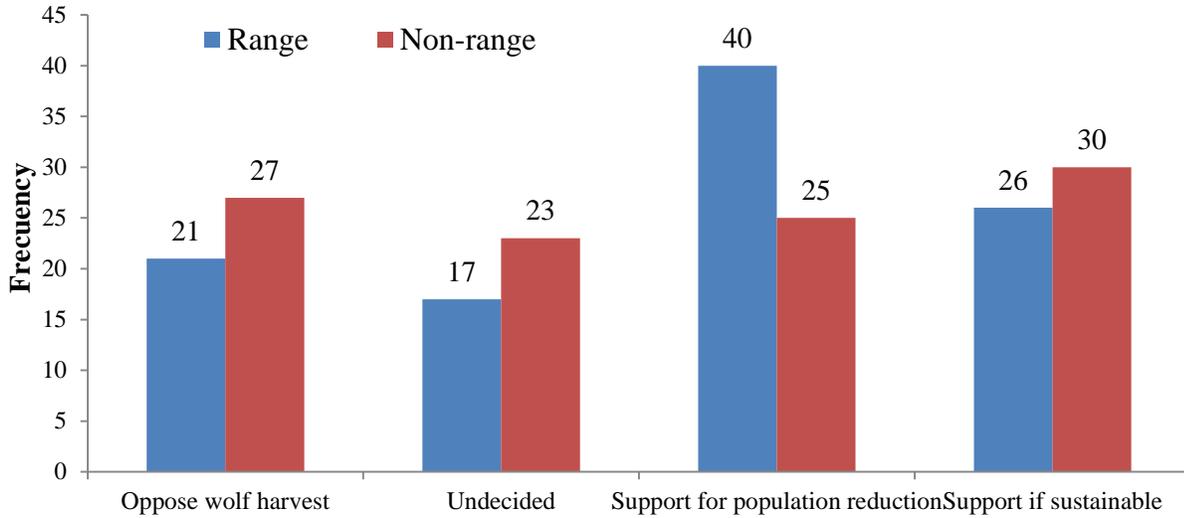


Figure 20. Frequencies of support or opposition to a regulated wolf harvest season by respondents in wolf range and non-wolf range.

#### *Opposition to wolf harvest season*

Most respondents who opposed the state’s regulated wolf harvest season held their position for multiple reasons. Two-thirds of the opponents outside of wolf range counties indicated they were “*worried wolves would become endangered again*” (Table 45). Concern that harvest would put wolves back on the endangered list tied for the most frequently cited reason (53%) among those living in wolf range as well. Fifty-three percent of wolf range residents indicated that they “*did not think we need to hunt wolves.*”

In non-wolf range counties, there were a few other reasons that also drew a majority response from those opposed to a wolf harvest season. Fifty-nine percent thought “*We do not need to hunt*” wolves and 57% believed that harvest would not reduce human-wolf conflicts. On this latter issue, 43% of wolf range respondents were also skeptical that a wolf harvest would reduce conflicts.

Table 45. Frequency of reasons that people opposed the regulated wolf harvest season.

Reason for opposing a wolf harvest season	Wolf Range		Non-range	
	% of opponents	% of overall sample	% of opponents	% of overall sample
I am worried wolves will become endangered again.	53	11	65	18
I do not think we need hunt wolves.	53	11	59	16
I do not think hunting wolves will reduce wolf-human conflicts.	44	9	57	15
I support some forms of hunting but not for wolves.	50	11	45	12
I am fond of wolves.	30	6	42	11
Hunting wolves is offensive to Native Americans	23	5	22	6
I think all forms of hunting are cruel.	16	3	24	6

### Managing Wolf-Human Conflicts

Wildlife management agencies rely on lethal control of wildlife species' populations at local or regional scales to minimize their negative impacts to people. Allowing recreational hunting and trapping can help to achieve population reduction over broad landscapes, but the use of traps and euthanization programs or special shooting permits can be used to target individual animals or packs that are involved in conflicts with people. For wolves, local conflicts are typically those involving livestock depredation or reported incidents of wolves becoming habituated (e.g., losing their fear, approaching humans, etc.). We asked state residents to indicate which lethal control options they support to mitigate a variety of different wolf human-conflicts.

Among all state residents, most people support some form of lethal control for wolves in each of the conflict types we presented in the questionnaire (Figure 21). Conversely, support for lethal control is very conditional depending on the type of conflict and application of particular lethal control strategy to kill wolves. For example, there were only three situations where a majority of respondents in wolf range supported a particular lethal control technique- conflict match. Issuing shooting permits to landowners to kill wolves in livestock depredation situations received the highest endorsement – 64% of wolf range residents. The other two applications for which a majority showed support were for wildlife professionals to kill wolves to reduce risks to humans and in places where wolves have attacked pets. All other lethal control for all other reasons was supported by less than half of the respondents.

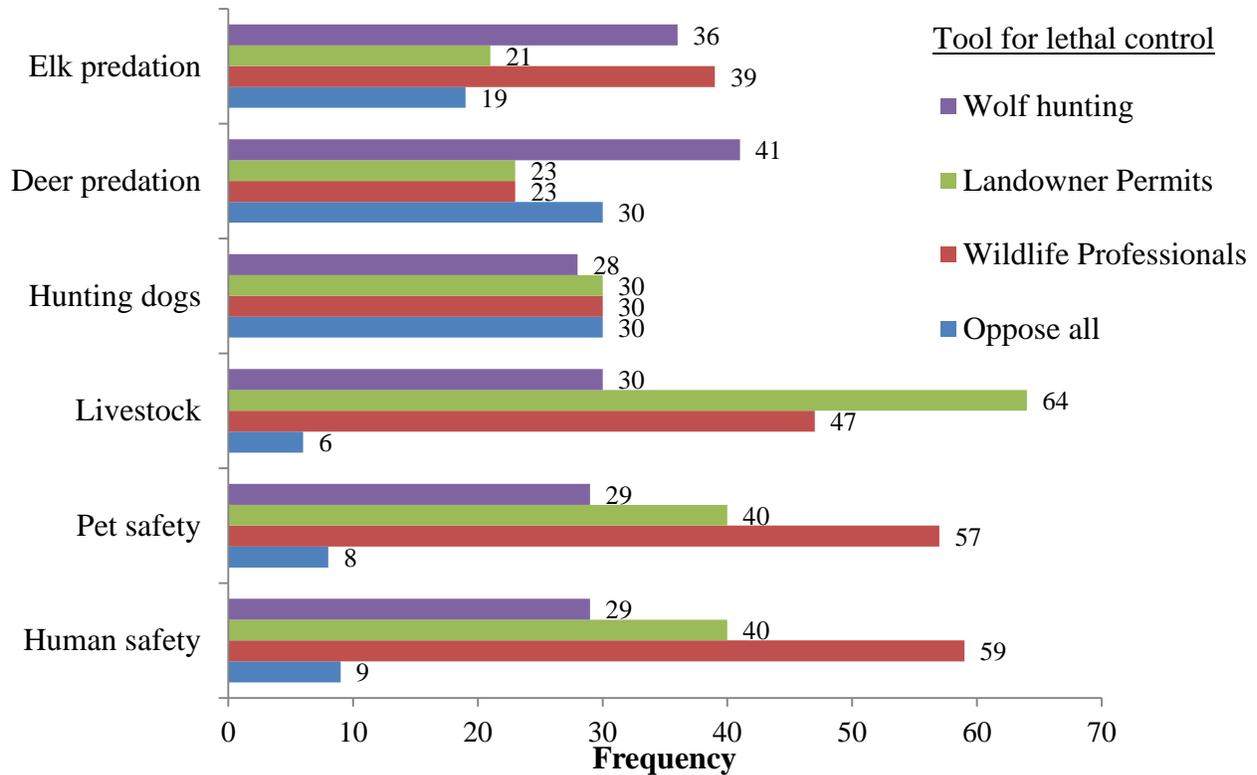


Figure 21. The frequency of support and opposition from wolf range residents to conflict-specific reasons for killing wolves.

A majority of non-range residents endorsed the same three conflict-control matches as did wolf range respondents, though in slightly different order and with slightly less support (Figure 21). For example, most non-range respondents (59%) supported a wildlife professional killing wolves involved in threats to human’s safety and attacks on pets near residences. Slightly fewer (56%) endorsed issuing shooting permits to landowners who experience attacks on livestock.

Two human-wolf conflicts drew notable opposition from survey respondents in both range and non-range samples (Figures 21 and 22). Killing wolves to reduce hunting dog deaths was opposed by 30% of wolf range respondents. Thirty-seven percent of non-range respondents opposed any killing of wolves to curtail wolf predation impacts on whitetail deer. Within wolf range, 31% also identified the deer predation issue as an area where they did not support killing wolves. Eighty-three percent of those who opposed killing wolves to curtail deer predation agreed or strongly agreed that wolves “*help keep deer in balance with their habitat.*”

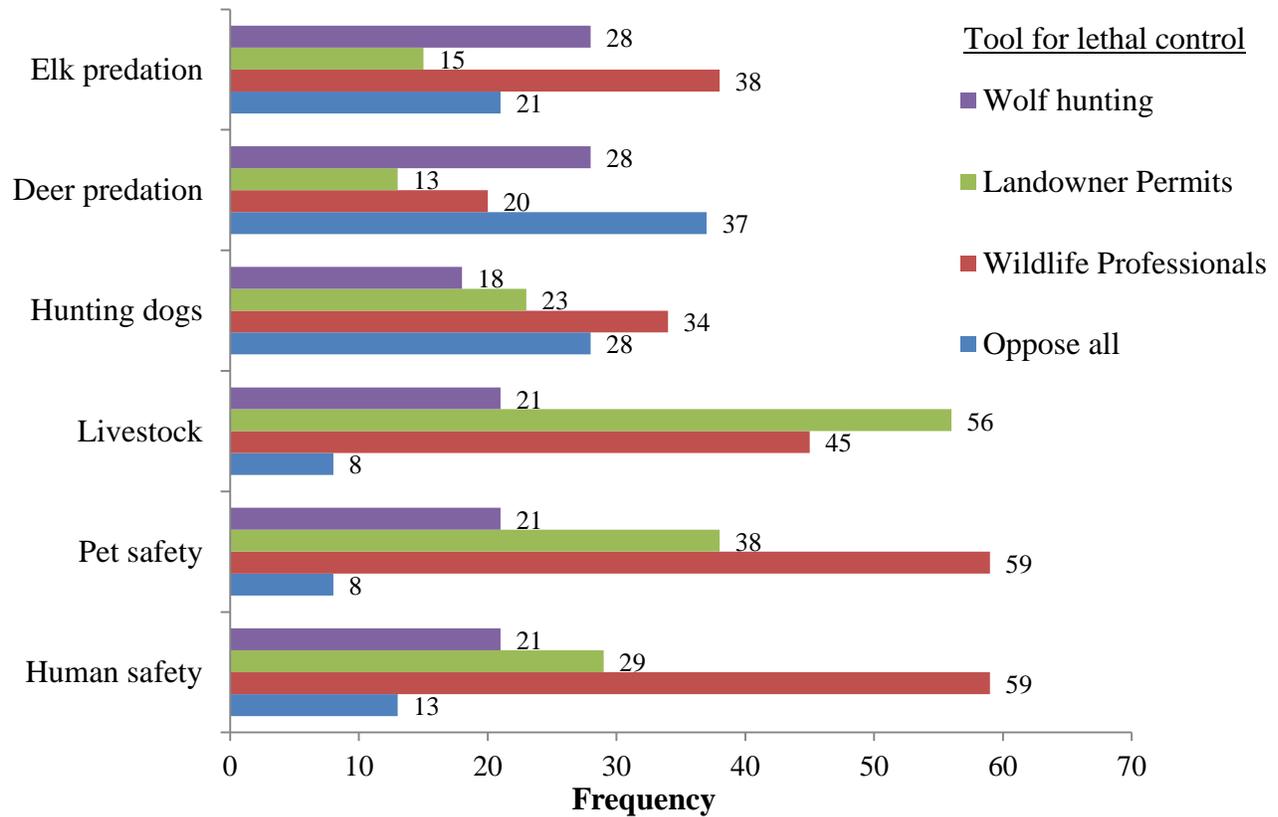


Figure 22. The frequency of support and opposition from non-range residents to conflict-specific reasons for killing wolves.

*Relationship between support for wolf harvest season and support for other lethal control*

The data in Tables 45-50 depicts the comparisons of support for three different lethal control options when one of six scenarios is presented regarding livestock, hunting dogs, deer, elk, humans, and pets. The collective responses across these comparisons reveal a deeply nuanced and conflicted picture within individual respondents in evaluating the acceptability of responding to wolf conflicts by killing wolves.

For example, even among those who did support the regulated wolf harvest season, less than half (44%) supported the use of wildlife professionals to kill wolves in livestock situations (Table 45). Conversely, a majority (56%) of those opposed to a harvest season supported the use of professionals to kill wolves in livestock conflicts. Four of the six conflict situations failed to garner majority support for utilizing a wolf hunting season as a fix. Wolf hunt supporters only endorsed hunting as an acceptable tool for reducing predation on deer and elk, but not for livestock or dog depredations, nor threats to humans or pets.

Table 45. Support for various types of lethal controls to address attacks on domestic livestock.

<b>Support for wolf hunting season:</b>	<b>“Attacks on domestic livestock (cattle, sheep)”</b>		
	% indicating support for:		
	Wildlife Professionals*	Landowner Permits*	Hunting season*
No (21%)	56	35	2
Unsure (18%)	46	57	10
Yes (61%)	44	74	43

Table 46. Support for various types of lethal controls to address hunting dogs being killed on public lands.

<b>Support for wolf hunting season:</b>	<b>“Hunting dogs being killed on public lands”</b>		
	% indicating support for:		
	Wildlife Professionals*	Landowner Permits*	Hunting season*
No (21%)	25	10	2
Unsure (18%)	29	28	7
Yes (61%)	34	36	42

Table 47. Support for various types of lethal controls to address predation impacts to white-tailed deer.

<b>Support for wolf hunting season:</b>	<b>“Predation impacts to white-tailed deer”</b>		
	% indicating support for:		
	Wildlife Professionals*	Landowner Permits*	Hunting season*
No (21%)	18	5	2
Unsure (18%)	16	11	17
Yes (61%)	26	30	58

Table 48. Support for various types of lethal controls to address predation impacts to elk.

<b>Support for wolf hunting season:</b>	<b>“Predation impacts to the state’s reintroduced elk herd”</b>		
	% indicating support for:		
	Wildlife Professionals*	Landowner Permits*	Hunting season*
No (21%)	33	4	3
Unsure (18%)	34	12	14
Yes (61%)	42	27	52

Table 49. Support for various types of lethal controls to address wolves which are approaching humans.

<b>Support for wolf hunting season:</b>	<b>“Wolves which regularly approach humans”</b>		
	% indicating support for:		
	Wildlife Professionals*	Landowner Permits*	Hunting season*
No (21%)	55	14	3
Unsure (18%)	57	28	10
Yes (61%)	63	50	42

Table 50. Support for various types of lethal controls to address wolves that are attacking pets near residences.

<b>Support for wolf hunting season:</b>	<b>“Wolves that have attacked pets near residences”</b>		
	% indicating support for:		
	Wildlife Professionals	Landowner Permits*	Hunting season*
No (21%)	57	22	2
Unsure (18%)	58	40	10
Yes (61%)	58	59	40

## CHAPTER 7: WOLF RANGE CLUSTER PROFILES

### Attitudes

Wolf attitude index scores showed statistically significant differences depending on the cluster in wolf range that was sampled (Table 51 and Figure 23). Douglas County, which was its own cluster for the survey, produced the highest (most positive) wolf attitude scores (4.4) within the wolf range county-clusters that we intensively sampled. Only the non-range cluster (12) produced a higher average attitude score of 4.8. There are likely a number of factors that make Douglas county more favorable toward wolves than some of its neighboring counties, our prior analysis hints at two of these factors: percent of population that is considered “urban” and the percent of population that hunt deer. Not only is Douglas County—with the City of Superior metropolitan area—the most urban of the northern tier of wolf range counties, it also has among the lowest participation rates of adult deer hunters. These correlations set the stage for a county population that is more favorably oriented toward wolves. These two variables also, to some extent, serve to explain differences in wolf attitudes and preferences among other county clusters.

Table 51. A comparison of average scores on wolf attitude index by cluster (P <0.000).

Cluster	n	Wolf attitude Mean	95 % Confidence Interval	
			low	high
1: Douglas	234	4.4	3.76	5.19
2: Bayfield, Ashland, Iron, Sawyer, Price	283	2.4	1.55	3.11
3: Oneida, Vilas	264	2.5	1.72	3.29
4: Florence, Forest	240	1.5	0.66	2.31
5: Burnett, Washburn, Rusk, Taylor	277	1.3	0.50	2.07
6: Lincoln, Langlade, Marinette	249	2.8	2.01	3.66
7: Menominee, Oconto, Shawano	269	1.9	1.14	2.66
8: Polk, Barron, Dunn, Chippewa	255	1.4	.70	2.24
9: Clark, Jackson, Juneau, Adams	253	2.1	1.42	3.09
10: Marathon, Portage, Wood, Waupaca	284	2.8	2.14	3.60
11: Waushara, Marquette, Columbia	262	3.8	3.03	4.54
12: Rest of state	539	4.8	4.40	4.22

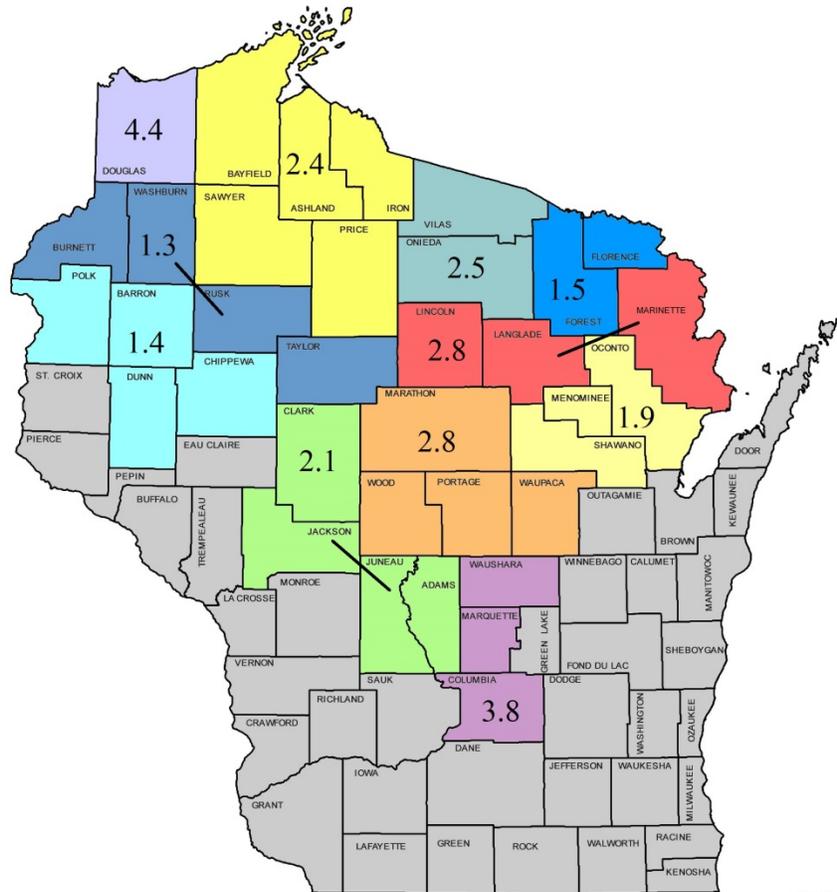


Figure 23. Differences in mean scores on composite wolf attitude scale (ranging from -12 to 12 with 0 indicating neutral) by sampling cluster ( $F=9.61, P<0.000$ ).

The next highest average wolf attitude scores were observed in a three county cluster (Columbia, Marquette and Waushara) that represents an area with very different land use patterns and relatively recent pack settlement by wolves, occurring at low density. The proximity to cluster 12 with its many urban areas as well as little experience with wolf conflicts likely influenced the attitudes of cluster 11 respondents. Cluster 11 also included Columbia County which has a much higher human population density than either Marquette or Waushara.

Wolf attitudes scores were the lowest in clusters 4, 5, 7 and 8. The counties in these clusters have four of the five highest frequencies of current rural residents (Table 52). They are also among the counties with the highest per capita deer hunting rates.

Table 52. Frequency of the respondents' geography of residence by sample cluster.

Cluster	Where they grew up			Where they live now		
	% Response			% Response		
	Rural	Town/Village	Urban	Rural	Town/Village	Urban
1	42	13	45	34	13	53
2	41	28	31	51	46	2
3	32	31	37	43	51	7
4	35	32	34	51	47	1
5	52	25	23	64	34	1
6	45	31	24	45	39	17
7	48	29	24	52	40	8
8	52	18	30	56	29	16
9	62	20	18	59	40	2
10	39	21	40	30	27	43
11	42	28	30	51	39	10
12	25	20	55	15	21	63

### Perceived Risks

The pattern of cluster differences of risk perception index scores was fairly similar to what we observed in the attitude data (Table 53). Clusters 4, 5 and 7 had the least positive wolf attitudes and also had the highest perceived risk scores. Clusters 1 and 11 had the lowest overall fear for wolf threats to selves, children, and pets.

Table 54 shows a breakdown by sampling cluster in wolf range of the frequency of responses to the statement “*I would worry about my personal safety while outdoors in areas where wolves live.*” Within the table, there is a distinction between frequencies of responses from hunters versus non-hunters. Overall, concern over personal safety appears highest in clusters 4, 7 and 9. Additionally, hunters agreed that they *would worry about their personal safety* more frequently than non-hunters agreed in every cluster in wolf range. Douglas County (cluster 1) has the highest frequency of hunting respondents who would not worry about their personal safety (42%).

Clusters 1 and 11 have the fewest worry-prone non-hunters, with 51% and 56% disagreeing respectively that wolves pose risk to their personal safety. The highest percentage of non-hunters who would worry for their personal safety is in cluster 4. From the analysis of scores on the wolf attitude scale, we observe that cluster 4 has the most negative wolf attitudes as well.

Table 53. A comparison of average scores on wolf risk perception index by cluster,  $p < .000$ . (Risk scale score ranged from +6 (high risk) to -6 (low risk)).

Cluster	n	Risk Perception Mean	95% Confidence Interval	
			low	high
<b>1:</b> Douglas	239	1.06	0.66	1.45
<b>2:</b> Bayfield, Ashland, Iron, Sawyer, Price	285	1.97	1.58	2.36
<b>3:</b> Oneida, Vilas	254	1.33	0.89	1.77
<b>4:</b> Florence, Forest	250	2.21	1.82	2.60
<b>5:</b> Burnett, Washburn, Rusk, Taylor	283	2.26	1.91	2.62
<b>6:</b> Lincoln, Langlade, Marinette	242	1.89	1.52	2.25
<b>7:</b> Menominee, Oconto, Shawano	255	2.33	1.98	2.68
<b>8:</b> Polk, Barron, Dunn, Chippewa	248	1.57	1.15	1.99
<b>9:</b> Clark, Jackson, Juneau, Adams	260	1.83	1.42	2.23
<b>10:</b> Marathon, Portage, Wood, Waupaca	287	1.52	1.12	1.92
<b>11:</b> Waushara, Marquette, Columbia	261	.87	0.46	1.28
<b>12:</b> Rest of state	496	1.20	0.94	1.46

Table 54. A comparison of perceptions of risk to personal safety between non-hunters and hunters in each cluster,  $p < .000$ .

<b>Cluster</b>	<b>Segment sample</b>	<b>Agree</b>	<b>Neither</b>	<b>Disagree</b>
1	Non-hunter	30	19	51
	Hunter	41	17	42
2	Non-hunter	44	17	39
	Hunter	52	16	32
3	Non-hunter	44	15	41
	Hunter	51	17	32
4	Non-hunter	54	15	31
	Hunter	57	21	22
5	Non-hunter	43	15	43
	Hunter	55	18	26
6	Non-hunter	42	21	37
	Hunter	52	16	33
7	Non-hunter	43	28	29
	Hunter	61	15	24
8	Non-hunter	40	26	35
	Hunter	56	20	24
9	Non-hunter	42	29	29
	Hunter	60	13	27
10	Non-hunter	43	19	38
	Hunter	56	17	27
11	Non-hunter	27	17	56
	Hunter	52	25	22

Table 55 compares personal risk perceptions based on hiking participation across wolf range clusters. We tested the hypothesis that hikers, by virtue of spending more time outside, may be more likely to encounter wolves and thereby have more concerns than those who do not hike. Our data did not support this hypothesis. Across all of wolf range, respondents who are non-hikers agreed (52%) that they are fearful for their personal safety around wolves more frequently than hikers (45%).

Table 55. A comparison of perceptions of risk to personal safety between non-hikers and hikers in each county cluster. ( $p < .000$  for all of wolf range.)

<b>Cluster</b>	<b>Segment sample</b>	<b>Agree</b>	<b>Neither</b>	<b>Disagree</b>
<b>All</b>	Non-hiker (44%)	52	21	27
	Hiker (56%)	45	17	38
<b>1</b>	Non-hiker (40%)	48	22	30
	Hiker (60%)	27	15	58
<b>2</b>	Non-hiker (40%)	54	16	30
	Hiker (60%)	45	17	39
<b>3</b>	Non-hiker (44%)	53	16	31
	Hiker (56%)	42	16	42
<b>4</b>	Non-hiker (45%)	61	18	21
	Hiker (55%)	51	19	30
<b>5</b>	Non-hiker (39%)	52	20	28
	Hiker (61%)	50	15	35
<b>6</b>	Non-hiker (48%)	45	21	34
	Hiker (52%)	49	15	36
<b>7</b>	Non-hiker (55%)	53	21	26
	Hiker (45%)	52	20	28
<b>8</b>	Non-hiker (45%)	51	25	24
	Hiker (55%)	46	20	33
<b>9</b>	Non-hiker (51%)	57	25	18
	Hiker (49%)	45	18	37
<b>10</b>	Non-hiker (41%)	52	22	26
	Hiker (59%)	47	15	38
<b>11</b>	Non-hiker (43%)	45	22	34
	Hiker (57%)	35	20	45

A majority of respondents from cluster 4 perceived risks when outdoors, with 61% of non-hikers and 51% of hikers agreeing that they would worry. Respondents from clusters 5, 7 and 9 are similar to cluster 4 in having a high frequency of respondents who would worry. Hikers and non-hikers within clusters 1 and 11 are very different—non-hikers tend to be more fearful but hikers tend to be less fearful.

### **Cluster Preferences for Population Goals**

Similar to the range-wide results presented earlier in this report, differences in wolf attitudes and risk perceptions among cluster residents influences their preference for the number of wolves they prefer at the state level (Table 56) and in their county of residence (Table 57). On a statewide scale, Douglas County residents were the most likely (31%) of residents of any clusters (including non-range) to support an increase in wolf populations. When it came to wolves in their county, only 20% of Douglas County respondents favored an increase in population, but that percentage was still highest among all clusters (Table 57).

Clusters 2 and 5 showed the highest frequencies of respondents wanting to have fewer wolves in the state and in their county of residence. Fifty-three percent of people living in Burnett, Washburn, Rusk and Taylor counties said they wanted fewer or zero wolves in the state; the 16% who wanted zero was the highest frequency expressing this preference of any of the clusters. In cluster 2 (Bayfield, Ashland, Iron, Sawyer, and Price counties), 52% of respondents wanted fewer or no wolves in the state. These clusters retained similar preference when it came to wolves in their county of residence.

Though cluster 4 (Florence and Forest counties) respondents had among the lowest wolf attitude scores, they were split regarding which direction to manage the trend in statewide wolf populations. Four in ten wanted more or the same number of wolves in the state; the same percentage of cluster residents wanted fewer or none. At the county scale, a plurality (47%) of cluster 4 residents wanted wolves reduced or eliminated, while 43% wanted the same number or an increase in wolves.

Respondents living with wolves in the central forest region of the state (e.g., clusters 9 & 10) showed a tendency to support maintaining or increasing wolves more frequently than the northern clusters with the exception of Douglas County. For example, nearly half of the respondents (48%) in cluster 9 wanted more or the same number of wolves in the state compared with 33% who wanted fewer or none. Over half of the respondents in cluster 10 indicated a preference for more or the same number of wolves in the state, a result most likely affected by urban influence of communities like Wausau, Stevens Point, and Wisconsin Rapids.

Table 56. Preferences for statewide wolf population goals by county cluster,  $p < .000$ .

<b>Cluster</b>	<b>More</b>	<b>About the Same</b>	<b>Fewer</b>	<b>Zero</b>	<b>Don't know</b>
<b>1:</b> Douglas	31	26	24	4	17
<b>2:</b> Bayfield, Ashland, Iron, Sawyer, Price	17	20	41	11	12
<b>3:</b> Oneida, Vilas	14	26	31	9	21
<b>4:</b> Florence, Forest	11	29	31	9	15
<b>5:</b> Burnett, Washburn, Rusk, Taylor	14	22	37	16	12
<b>6:</b> Lincoln, Langlade, Marinette	19	25	30	10	17
<b>7:</b> Menominee, Oconto, Shawano	14	25	30	12	20
<b>8:</b> Polk, Barron, Dunn, Chippewa	16	25	27	13	19
<b>9:</b> Clark, Jackson, Juneau, Adams	18	30	18	15	19
<b>10:</b> Marathon, Portage, Wood, Waupaca	22	29	26	9	14
<b>11:</b> Waushara, Marquette, Columbia	28	22	18	9	23
<b>12:</b> all others	28	28	13	3	28

Table 57. Preference for wolf population goals in county of residence by wolf range cluster,  $p < .000$ .

<b>Cluster</b>	<b>Increased</b>	<b>Maintain</b>	<b>Decreased</b>	<b>Eliminated</b>	<b>Not sure</b>
<b>1:</b> Douglas	21	40	17	9	13
<b>2:</b> Bayfield, Ashland, Iron, Sawyer, Price	11	31	33	15	11
<b>3:</b> Oneida, Vilas	9	43	21	14	14
<b>4:</b> Florence, Forest	9	33	27	20	11
<b>5:</b> Burnett, Washburn, Rusk, Taylor	9	31	32	19	9
<b>6:</b> Lincoln, Langlade, Marinette	14	34	21	14	17
<b>7:</b> Menominee, Oconto, Shawano	5	40	20	17	18
<b>8:</b> Polk, Barron, Dunn, Chippewa	10	43	16	18	13
<b>9:</b> Clark, Jackson, Juneau, Adams	11	42	16	19	12
<b>10:</b> Marathon, Portage, Wood, Waupaca	16	40	17	13	15
<b>11:</b> Waushara, Marquette, Columbia	19	38	9	16	18

Five of the 11 wolf range sample clusters had a majority of residents indicate a willingness to have wolves living near them (Table 58). Again, Douglas County residents were most likely to accept wolves among the wolf range clusters. When comparing rural residents to respondents from small towns and small cities, as well as overall frequencies within each cluster, they tend to be slightly less likely to accept having wolves nearby than are all members of their cluster (Figure 24). Meanwhile, residents of small towns and small cities were generally more accepting of wolves than were rural residents. The lone outlier in this pattern of findings was again Douglas County, where rural residents more frequently said they were willing to live near wolves than were county residents of towns and small cities.

Table 58. Willingness to have wolves living nearby according to sampling cluster in wolf range,  $p < .000$ .

Cluster	Frequency of response (%)		
	Yes	No	Not sure
1: Douglas	62	29	9
2: Bayfield, Ashland, Iron, Sawyer, Price	47	47	6
3: Oneida, Vilas	56	36	7
4: Florence, Forest	45	44	11
5: Burnett, Washburn, Rusk, Taylor	45	49	11
6: Lincoln, Langlade, Marinette	49	43	8
7: Menominee, Oconto, Shawano	40	11	49
8: Polk, Barron, Dunn, Chippewa	46	8	46
9: Clark, Jackson, Juneau, Adams	51	42	7
10: Marathon, Portage, Wood, Waupaca	53	43	5
11: Waushara, Marquette, Columbia	54	38	8

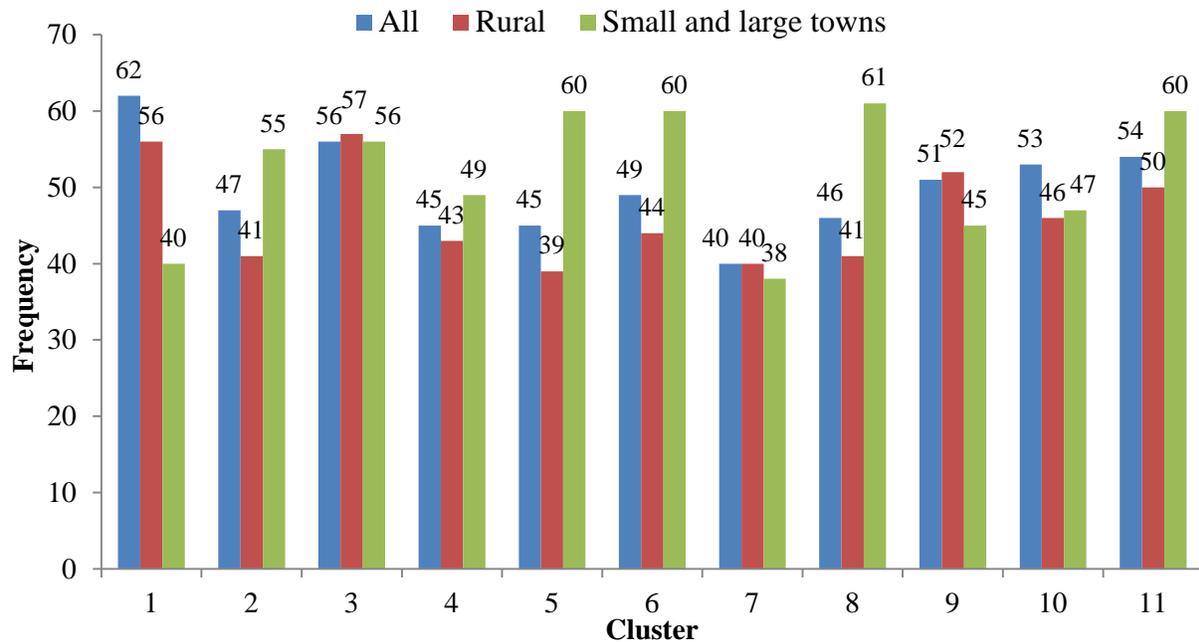


Figure 24. Comparing the frequency of *willingness to live near wolves* by size of area of residence for respondents in wolf range cluster.

### Acceptance of Lethal Control

The frequency of support for wolf harvest varied across clusters in a pattern similar to that observed with attitude and risk perception measures (Table 59). Though there were statistically significant differences in magnitude among cluster responses, most wolf range residents supported the regulated harvest of wolves in Wisconsin (Table 59). Support was highest in Florence, Forest, Burnett, Washburn, Rusk and Taylor counties, where approximately three in four respondents checked an affirmative response for harvesting wolves.

Only cluster 1 fell short of a majority (47%) indicating support for the state's wolf harvest (Table 59). Cluster one also had a high percentage (38%) of people who said they were undecided about wolf hunting. Elsewhere, one in four respondents in clusters 11 and 12 (non-range) were also undecided. Meanwhile, clusters 9 and 11 had the highest rates of opposition to wolf hunting among wolf range, where about one in five people opposed wolf hunting.

Table 59. A comparison of the support level for wolf harvest season by sampling clusters.

Segment sample	% Response		
	Yes	Undecided	No
<i>Range</i>	p < .000		
Wolf range	62	17	21
Non-wolf range	51	22	27
<i>Cluster</i>	p < .000		
1	47	15	38
2	65	16	20
3	62	14	25
4	75	12	13
5	73	12	15
6	67	17	17
7	67	17	17
8	64	14	22
9	56	21	24
10	63	19	17
11	53	22	25

The degree of support for lethal control measures in response to various wolf-human conflicts also varied across clusters, but in most cases differences in scale were substantively small (Table 60). Clusters 2 through 9 were essentially the same in their level of support and were generally more supportive of lethal control techniques than respondents from other clusters. The data indicate relatively low scores across all clusters when considering that the maximum score in the lethal control index was 18. As mentioned during the presentation of range-wide results in the management chapter, these results remind us that the public expects a conservative application of lethal control when addressing nuisance issues except when it is a matter of public safety.

Table 60. A comparison of average scores on lethal control support index by cluster,  $p < .000$ .

Cluster	n	Lethal control Mean	95% Confidence Interval	
			low	high
1	252	0.88	-0.13	1.89
2	294	3.85	2.93	4.76
3	267	4.07	3.09	5.06
4	250	5.16	4.22	6.09
5	287	4.50	3.48	5.51
6	248	4.67	3.69	5.65
7	276	4.48	3.61	5.35
8	255	4.21	3.22	5.19
9	260	3.99	3.08	4.90
10	287	3.56	2.65	4.47
11	257	2.36	1.28	3.45
12	540	2.18	1.54	2.82

### Agency Credibility

We chose to assess the credibility of the Wisconsin DNR through a four-item scale of shared salient values that has been used previously on questionnaires focused on natural resources issues. Generally speaking, state residents were largely neutral in their responses to these items (Table 61). In fact, over one-half of non-range respondents indicated they neither agreed nor disagreed that the Wisconsin DNR shares their values (51%), thinks in similar ways (54%), takes similar actions (54%), and shares similar goals (53%). In wolf range, a plurality of the respondents also selected neutral responses, with a slight tendency toward disagreement on the shared salient values measures. For example, 36% of the wolf range respondents disagreed or strongly disagreed that that Wisconsin DNR takes “similar [wolf population management] actions as I would,” whereas only 23% agreed or strongly agreed with this statement.

Table 61. Frequency of responses to Wisconsin DNR credibility indicators among survey respondents in wolf range and outside of wolf range.

“With respect to managing the wolf population in our state I feel that the Wisconsin DNR ...	Segment sample	Frequency of responses (%)				
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Shares similar values as me.	Range	4	27	39	21	10
	Non-range	5	30	51	12	3
Thinks in a similar way as me.	Range	3	25	40	22	10
	Non-range	3	27	54	13	3
Takes similar actions as I would.	Range	3	23	39	25	11
	Non-range	3	23	54	15	4
Shares similar goals as me.	Range	3	25	41	21	11
	Non-range	4	26	53	13	4

Respondents who viewed themselves as differing most from the Wisconsin DNR in their shared salient values tended to have more negative attitudes towards wolves (Ave.= -2.3), were more likely to reside in rural areas (60%), and were more likely to be a deer hunter (66%) than were the other survey respondents. Eight out of ten respondents in this “low credibility” group supported the wolf harvest season and 78% wanted fewer wolves in the state. Roughly one in four (27%) wanted zero wolves.

## **CLUSTER PROFILES:**

Cluster analyses:

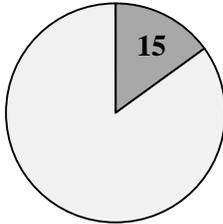
For the following cluster analyses, we identify responses to key measures of attitudes to provide a more detailed profile that is specific to responses from each of the 12 county clusters. These profiles highlight the proportion of deer hunters in each cluster, as well the areas respondents grew up, because these two factors account for many of the differences among respondent attitudes towards wolves and their preferences for wolf management goals. The additional descriptions in the “segment definition” section function to further describe the cluster of interest. Finally, these profiles include responses to multiple attitude measures such as overall feelings about wolves, statewide population goals, county population goals for all clusters except 12 (the non-wolf range cluster), attitude index scores, and risk scale scores.

DRAFT

**SAMPLE: Douglas County (Cluster 1)**

Segment definition:

**% deer hunter**



For the purposes of this analysis, this Douglas County is referred to as cluster 1. Fifteen percent of the adult population in Douglas County went deer hunting in 2013. This cluster has the highest percentage of residents who grew up in an urban area within wolf range. Among Douglas county residents, 41% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Thirty-two percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

<u>% of Cluster who grew up:</u>		
<u>RURAL</u>	<u>TOWNS</u>	<u>URBAN</u>
43	13	44

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Douglas county residents	36	27	19	9	9

The majority (63%) of respondents from Douglas County had favorable feelings about wolves, with over a third (36%) describing their feelings as very favorable. Eighteen percent of Douglas County residents had unfavorable feelings about wolves. One in five residents in this county felt neither favorably nor unfavorably about wolves.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/more	About the same number of	Many fewer/fewer	Zero	Don’t know
Douglas County residents	30	25	25	4	17

Over half (55%) of respondents from Douglas County would like to have more or about the same number of wolves in the state. One third of respondents from this county wanted many more or more wolves in the state. Twenty-nine percent of respondents from Douglas County would like to have fewer or zero wolves in the state.

**Question:** “In my county of residence I would like to see the wolf population...”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Douglas County residents	21	38	19	9	13

One out of five (21%) Douglas County residents would like to see the wolf population increased in their county, and 38% would like to see the wolf population maintained at similar levels to what it is currently. 19% of respondents in Douglas County would like to see the wolf population decreased there, and 9% would like to see wolves eliminated in their home county.

**Attitude Index Score:**

Douglas county residents, on average, scored positively on the attitude index score. This indicates that Douglas County residents have positive attitudes about wolves.

<b>4.4</b>
<b>Douglas Co. Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

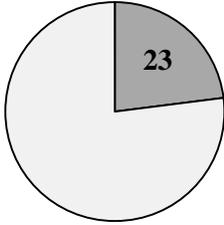
**Risk Scale Score:**

Douglas County residents, on average, scored positively on the risk scale score. This indicates that residents of this county do perceive risks to being in areas where wolves live.

<b>1.2</b>
<b>Douglas Co. Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details

**SAMPLE: Bayfield, Ashland, Iron, Sawyer, and Price Counties (Cluster 2)**

**% deer hunter**



Segment definition:

For the purposes of this analysis, this group of counties is referred to as cluster 2. Twenty-three percent of the adult population in cluster 2 went deer hunting in 2013. A plurality of respondents in this cluster grew up in a rural area. Among cluster 2 residents, 51% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Forty percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

<u>% of Cluster who grew up:</u>		
<u>RURAL</u>	<u>TOWNS</u>	<u>URBAN</u>
40	29	32

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**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Cluster 2 residents	24	19	23	17	17

Forty-three percent of respondents from cluster 2 feel favorably about wolves, and one in four respondents from cluster 2 describe their feeling as very favorable. Thirty-four percent of respondents from cluster 2 feel unfavorably about wolves. Close to a quarter (23%) described their feelings about wolves as neither favorable nor unfavorable.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Cluster 2 residents	17	21	39	11	12

Thirty-eight percent of respondents from cluster 2 would like to have more or about the same number of wolves in the state. One in five respondents would like about the same number of wolves. Half of respondents from this cluster would like to have fewer or zero wolves in the state, with one in ten respondents wanting zero wolves.

**Question:** “In my county of residence I would like to see the wolf population...”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Cluster 2 residents	11	32	31	15	11

Forty-three percent of respondents in cluster 2 would like to see the wolf population increased or maintained about the same in their home county. Forty-six percent would like to see the wolf population decreased or eliminated in their county of residence, with 15% of respondents preferring wolves to be eliminated.

**Attitude Index Score:**

Respondents from cluster 2, on average, scored positively on the attitude index score. This indicates that Bayfield, Ashland, Iron, Sawyer, and Price County residents have, on average, positive attitudes about wolves.

2.5
<b>Cluster 2 Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

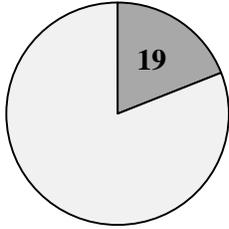
**Risk Scale Score:**

Respondents from cluster 2, on average, scored positively on the risk scale score. This indicates that Bayfield, Ashland, Iron, Sawyer, and Price County residents do perceive risks to being in areas where wolves live.

1.9
<b>Cluster 2 Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details

**SAMPLE: Oneida and Vilas Counties (Cluster 3)**

**% deer hunter**



Segment definition:

For the purposes of this analysis, this group of counties is referred to as cluster 3. Nineteen percent of the adult population in cluster 3 went deer hunting in 2013. Thirty-seven percent of residents in this cluster grew up in an urban area, and one third grew up in a rural area. Among cluster 3 residents, 41% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Thirty-nine percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

RURAL  
32

% of Cluster who grew up:  
TOWNS  
31

URBAN  
37

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Cluster 3 residents	24	27	20	14	15

Over half (51%) of respondents from cluster 3 feel favorably about wolves, and one in four respondents from cluster 3 describes their feeling as very favorable. Twenty-nine percent of respondents from cluster 3 feel unfavorably about wolves. One in five respondents from cluster 3 described their feelings about wolves as neither favorable nor unfavorable.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don't know
Cluster 3 residents	14	26	31	9	20

Forty percent of respondents from cluster 3 would like to have more or about the same number of wolves in the state. One in four respondents would like about the same number of wolves. Forty percent of respondents from this cluster would like to have fewer or zero wolves in the state, with one in ten respondents wanting zero wolves.

**Question:** “In my county of residence I would like to see the wolf population...”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Cluster 3 residents	9	43	21	14	13

Over half (52%) of respondents in cluster 3 would like to see the wolf population increased or maintained about the same in their home county. Forty-three percent would specifically prefer that the population be maintained at current levels. Thirty-five percent would like to see the wolf population decreased or eliminated in their county of residence, with 14% of respondents preferring wolves be eliminated.

**Attitude Index Score:**

Respondents from cluster 3, on average, scored positively on the attitude index score. This indicates that Oneida and Vilas County residents have, on average, positive attitudes about wolves.

<b>2.5</b>
<b>Cluster 3 Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

**Risk Scale Score:**

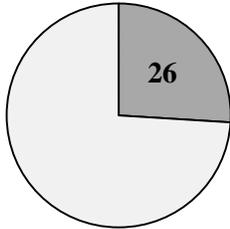
Respondents from cluster 3, on average, scored positively on the risk scale score. This indicates that Oneida and Vilas County residents do perceive risks to being in areas where wolves live.

<b>1.3</b>
<b>Cluster 3 Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details

**SAMPLE: Florence and Forest Counties (Cluster 4)**

Segment definition:

**% deer hunter**



For the purposes of this analysis, this group of counties is referred to as cluster 4. Twenty six percent of the adult population in cluster 4 went deer hunting in 2013. Respondents were evenly distributed in where they grew up, with one third growing up rural, one third growing up in towns, and one third growing up urban. Among cluster 4 residents, 44% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Thirty-five percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

<u>% of Cluster who grew up:</u>		
<u>RURAL</u>	<u>TOWNS</u>	<u>URBAN</u>
35	32	34

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**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Cluster 4 residents	18	21	21	19	21

Thirty-nine percent of respondents from cluster 4 feel favorably about wolves. Forty percent of respondents from cluster 4 feel unfavorably about wolves, with one in five respondents describing their feelings as very unfavorable. One in five respondents from cluster 4 described their feelings about wolves as neither favorable nor unfavorable.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/more	About the same number of	Many fewer/fewer	Zero	Don’t know
Cluster 4 residents	11	28	30	15	16

Thirty-nine percent of respondents from cluster 4 would like to have more or about the same number of wolves in the state. One in four respondents would like about the same number of wolves. Forty-five percent of respondents from this cluster would like to have fewer or zero wolves in the state, with fifteen percent of respondents wanting zero wolves.

**Question:** “*In my county of residence I would like to see the wolf population...*”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Cluster 4 residents	9	32	27	20	12

Forty-one percent of respondents in cluster 4 would like to see the wolf population increased or maintained about the same in their home county. One third prefers that the population be maintained at current levels. Forty-seven percent of cluster 4 respondents would like to see the wolf population decreased or eliminated in their county of residence, with one in five respondents preferring wolves be eliminated.

**Attitude Index Score:**

Respondents from cluster 4, on average, scored positively on the attitude index score. This indicates that Florence and Forest County residents have, on average, positive attitudes about wolves.

<b>1.5</b>
<b>Cluster 4 Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

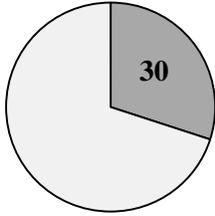
**Risk Scale Score:**

Respondents from cluster 4, on average, scored positively on the risk scale score. This indicates that Florence and Forest County residents do perceive risks to being in areas where wolves live.

<b>2.2</b>
<b>Cluster 4 Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details

**SAMPLE: Burnett, Washburn, Rusk, and Taylor Counties (Cluster 5)**

**% deer hunter**



Segment definition:

For the purposes of this analysis, this group of counties is referred to as cluster 5. Thirty percent of the adult population in cluster 5 went deer hunting in 2013. Over half of respondents from this cluster grew up in a rural area. Among cluster 5 residents, 41% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Thirty-one percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

<u>% of Cluster who grew up:</u>		
<u>RURAL</u>	<u>TOWNS</u>	<u>URBAN</u>
52	25	22

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Cluster 5 residents	17	19	22	19	23

Thirty-six percent of respondents from cluster 5 feel favorably about wolves. Forty-two percent of respondents from cluster 5 feel unfavorably about wolves, with one in four respondents describing their feelings as very unfavorable. One in five respondents from cluster 5 described their feelings about wolves as neither favorable nor unfavorable.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Cluster 5 residents	14	22	36	16	12

Thirty-six percent of respondents from cluster 5 would like to have more or about the same number of wolves in the state. Twenty-two percent respondents would like about the same number of wolves. Over half (52%) of respondents from this cluster would like to have fewer or zero wolves in the state, with sixteen percent of respondents wanting zero wolves.

**Question:** “In my county of residence I would like to see the wolf population...”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Cluster 5 residents	9	31	31	19	9

Forty percent of respondents in cluster 5 would like to see the wolf population increased or maintained about the same in their home county. One third (31%) prefers that the population be maintained at current levels. Half of respondents in cluster 5 would like to see the wolf population decreased or eliminated in their county of residence, with one in five (19%) respondents preferring wolves be eliminated.

**Attitude Index Score:**

Respondents from cluster 5, on average, scored positively on the attitude index score. This indicates that residents from Burnett, Washburn, Rusk, and Taylor Counties have, on average, positive attitudes about wolves.

<b>1.3</b>
<b>Cluster 5 Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

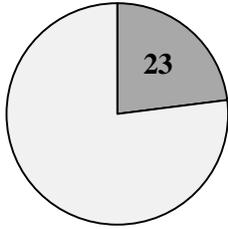
**Risk Scale Score:**

Respondents from cluster 5, on average, scored positively on the risk scale score. This indicates that residents from Burnett, Washburn, Rusk, and Taylor Counties do perceive risks to being in areas where wolves live.

<b>2.3</b>
<b>Cluster 5 Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details

**SAMPLE: Lincoln, Langlade, and Marinette Counties (Cluster 6)**

**% deer hunter**



Segment definition:

For the purposes of this analysis, this group of counties is referred to as cluster 6. Twenty-three percent of the adult population in cluster 6 went deer hunting in 2013. A plurality of respondents from this cluster grew up in a rural area. Among cluster 6 residents, 37% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Thirty percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

<u>% of Cluster who grew up:</u>		
<u>RURAL</u>	<u>TOWNS</u>	<u>URBAN</u>
46	31	24

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Cluster 6 residents	26	21	19	17	16

Forty-seven percent of respondents from cluster 6 feel favorably about wolves, with one quarter of respondents describing their feelings as very favorable. Thirty-three percent of respondents from cluster 6 feel unfavorably about wolves, with 16% of respondents describing their feelings as very unfavorable. One in five (19%) respondents from cluster 6 described their feelings about wolves as neither favorable nor unfavorable.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Cluster 6 residents	19	25	29	10	17

Forty-four percent of respondents from cluster 6 would like to have more or about the same number of wolves in the state. One quarter of respondents would like about the same number of wolves. Thirty-nine percent of respondents from this cluster would like to have fewer or zero wolves in the state, with one in ten respondents wanting zero wolves.

**Question:** “*In my county of residence I would like to see the wolf population...*”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Cluster 6 residents	14	34	21	14	17

Forty-eight percent of respondents in cluster 6 would like to see the wolf population increased or maintained about the same in their home county. One third (34%) of respondents prefer that the population be maintained at current levels. Thirty-five percent of respondents in cluster 6 would like to see the wolf population decreased or eliminated in their county of residence, with 14% preferring wolves be eliminated.

**Attitude Index Score:**

Respondents from cluster 6, on average, scored positively on the attitude index score. This indicates that residents from Lincoln, Langlade, and Marinette Counties have, on average, positive attitudes about wolves.

<b>2.8</b>
<b>Cluster 6 Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

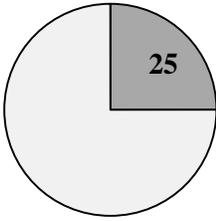
**Risk Scale Score:**

Respondents from cluster 6, on average, scored positively on the risk scale score. This indicates that residents from Lincoln, Langlade, and Marinette Counties do perceive risks to being in areas where wolves live.

<b>1.9</b>
<b>Cluster 6 Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.

**SAMPLE: Menominee, Oconto, and Shawano Counties (Cluster 7)**

**% deer hunter**



Segment definition:

For the purposes of this analysis, this group of counties is referred to as cluster 7. One quarter of adult residents in cluster 7 went deer hunting in 2013. A plurality of respondents in this cluster grew up in a rural area. Among cluster 7 residents, 39% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Twenty-six percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

<u>% of Cluster who grew up:</u>		
<u>RURAL</u>	<u>TOWNS</u>	<u>URBAN</u>
47	29	24

**Question:** “Overall, how would you describe your feelings about wolves?”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Cluster 7 residents	16	32	20	17	15

Forty-eight percent of respondents from cluster 7 feel favorably about wolves. Thirty-two percent of respondents from cluster 7 feel unfavorably about wolves, with 15% of respondents describing their feelings as very unfavorable. One in five (20%) respondents from cluster 7 described their feelings about wolves as neither favorable nor unfavorable.

**Question:** “Compared to the current level, I would like to have \_\_\_\_ wolves in the state?”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Cluster 7 residents	13	24	30	12	21

Thirty-seven percent of respondents from cluster 7 would like to have more or about the same number of wolves in the state. About one quarter (24%) of respondents would like about the same number of wolves. Forty-two percent of respondents from this cluster would like to have fewer or zero wolves in the state, with twelve percent of respondents wanting zero wolves.

**Question:** “*In my county of residence I would like to see the wolf population...*”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Cluster 7 residents	5	39	20	17	18

Five percent of respondents in cluster 7 would like to see the wolf population increased in their home county, and 39% would like to see the population maintained about the same in their home county. Thirty-seven percent of respondents in cluster 7 would like to see the wolf population decreased or eliminated in their county of residence, with 17% preferring wolves be eliminated.

**Attitude Index Score:**

Respondents from cluster 7, on average, scored positively on the attitude index score. This indicates that residents from Menominee, Oconto, and Shawano Counties have, on average, positive attitudes about wolves.

<h1>1.9</h1>
<b>Cluster 7 Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

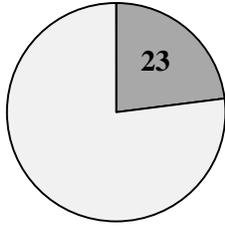
**Risk Scale Score:**

Respondents from cluster 7, on average, scored positively on the risk scale score. This indicates that residents from Menominee, Oconto, and Shawano Counties do perceive risks to being in areas where wolves live.

<h1>2.3</h1>
<b>Cluster 7 Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details

**SAMPLE: Polk, Barron, Dunn, and Chippewa Counties (Cluster 8)**

**% deer hunter**



Segment definition:

For the purposes of this analysis, this group of counties is referred to as cluster 8. Twenty-three percent of adult residents in cluster 8 went deer hunting in 2013. Over half of the respondents in this cluster grew up in a rural area. Among cluster 8 residents, 39% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Twenty-five percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

<u>% of Cluster who grew up:</u>		
<u>RURAL</u>	<u>TOWNS</u>	<u>URBAN</u>
52	19	29

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Cluster 8 residents	19	15	27	21	18

One third (34%) of respondents from cluster 8 feel favorably about wolves. Thirty-nine percent of respondents from cluster 8 feel unfavorably about wolves, with 18% of respondents describing their feelings as very unfavorable. Over a quarter (27%) of respondents from cluster 8 described their feelings about wolves as neither favorable nor unfavorable.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Cluster 8 residents	16	25	27	13	19

Forty-one percent of respondents from cluster 8 would like to have more or about the same number of wolves in the state. One quarter (25%) of respondents would like about the same number of wolves. Forty percent of respondents from this cluster would like to have fewer or zero wolves in the state, with thirteen percent of respondents wanting zero wolves.

**Question:** “In my county of residence I would like to see the wolf population...”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Cluster 8 residents	10	43	16	18	13

One in ten respondents in cluster 8 would like to see the wolf population increased in their home county, and 43% would like to see the population maintained about the same. One third (34%) of respondents in cluster 8 would like to see the wolf population decreased or eliminated in their county of residence, with 18% preferring wolves be eliminated.

**Attitude Index Score:**

Respondents from cluster 8, on average, scored positively on the attitude index score. This indicates that residents from Polk, Barron, Dunn and Chippewa Counties have, on average, positive attitudes towards wolves.

<b>1.4</b>
<b>Cluster 8 Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

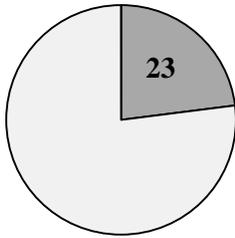
**Risk Scale Score:**

Respondents from cluster 8, on average, scored positively on the risk scale score. This indicates that residents from Polk, Barron, Dunn and Chippewa Counties do perceive risks to being in areas where wolves live.

<b>1.7</b>
<b>Cluster 8 Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details

**SAMPLE: Clark, Jackson, Juneau, and Adams Counties (Cluster 9)**

**% deer hunter**



Segment definition:

For the purposes of this analysis, this group of counties is referred to as cluster 9. Twenty-three percent of adult residents in cluster 9 went deer hunting in 2013. This cluster has the highest percentage of respondents who grew up in a rural area in wolf range. Among cluster 9 residents, 35% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Twenty-two percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

<u>% of Cluster who grew up:</u>		
<u>RURAL</u>	<u>TOWNS</u>	<u>URBAN</u>
62	19	19

**Question:** “Overall, how would you describe your feelings about wolves?”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Cluster 9 residents	20	22	25	14	19

Forty-two percent of respondents from cluster 9 feel favorably about wolves. Thirty-three percent of respondents from cluster 9 feel unfavorably about wolves, with 19% of respondents describing their feelings as very unfavorable. One quarter of respondents from cluster 9 described their feelings about wolves as neither favorable nor unfavorable.

**Question:** “Compared to the current level, I would like to have \_\_\_\_ wolves in the state?”

Segment	Many more/more	About the same number of	Many fewer/fewer	Zero	Don’t know
Cluster 9 residents	18	30	18	15	19

Forty-eight percent of respondents from cluster 9 would like to have more or about the same number of wolves in the state. Thirty percent of respondents would like about the same number of wolves. One third of respondents from this cluster would like to have fewer or zero wolves in the state, with fifteen percent of respondents wanting zero wolves.

**Question:** “In my county of residence I would like to see the wolf population...”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Cluster 9 residents	12	41	16	20	12

Twelve percent of respondents in cluster 9 would like to see the wolf population increased in their home county, and 41% would like to see the population maintained about the same. Thirty-six percent of respondents in cluster 9 would like to see the wolf population decreased or eliminated in their county of residence, with one out of five respondents preferring wolves be eliminated.

**Attitude Index Score:**

Respondents from cluster 9, on average, scored positively on the attitude index score. This indicates that residents from Clark, Jackson, Juneau, and Adams Counties have, on average, positive attitudes about wolves.

<b>2.1</b>
<b>Cluster 9 Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

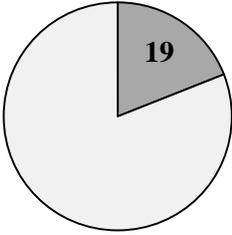
**Risk Scale Score:**

Respondents from cluster 9, on average, scored positively on the risk scale score. This indicates that residents from Clark, Jackson, Juneau, and Adams Counties do perceive risks to being in areas where wolves live.

<b>1.9</b>
<b>Cluster 9 Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details

**SAMPLE: Marathon, Portage, Wood, and Waupaca Counties (Cluster 10)**

**% deer hunter**



Segment definition:

For the purposes of this analysis, this group of counties is referred to as cluster 10. Nineteen percent of adult residents in cluster 10 went deer hunting in 2013. Similar proportions of respondents in this cluster grew up in rural and urban areas. Among cluster 10 residents, 35% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Seventeen percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

<u>% of Cluster who grew up:</u>		
<u>RURAL</u>	<u>TOWNS</u>	<u>URBAN</u>
40	22	38

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Cluster 10 residents	20	23	27	15	15

Forty-three percent of respondents from cluster 10 feel favorably about wolves, with one in five describing their feelings as very favorable. Thirty percent of respondents from cluster 10 feel unfavorably about wolves, with 15% of respondents describing their feelings as very unfavorable. Twenty-seven percent of respondents from cluster 10 described their feelings about wolves as neither favorable nor unfavorable.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/more	About the same number of	Many fewer/fewer	Zero	Don’t know
Cluster 10 residents	22	29	27	8	15

Half (51%) of the respondents from cluster 10 would like to have more or about the same number of wolves in the state. Thirty-five percent respondents from this cluster would like to have fewer or zero wolves in the state, with eight percent of respondents wanting zero wolves.

**Question:** “*In my county of residence I would like to see the wolf population...*”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Cluster 10 residents	15	41	16	13	15

Fifteen percent of respondents in cluster 10 would like to see the wolf population increased in their home county, and 41% would like to see the population maintained about the same. Twenty-nine percent of respondents in cluster 10 would like to see the wolf population decreased or eliminated in their county of residence, with thirteen percent of respondents preferring wolves be eliminated.

**Attitude Index Score:**

Respondents from cluster 10, on average, scored positively on the attitude index score. This indicates that residents from Marathon, Portage, Wood, and Waupaca Counties have, on average, positive attitudes about wolves.

<b>2.8</b>
<b>Cluster 10 Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

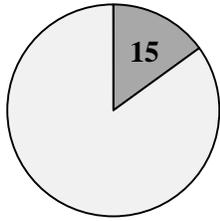
**Risk Scale Score:**

Respondents from cluster 10, on average, scored positively on the risk scale score. This indicates that residents from Marathon, Portage, Wood, and Waupaca Counties do perceive risks to being in areas where wolves live.

<b>1.5</b>
<b>Cluster 10 Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details

**SAMPLE: Waushara, Marquette, and Columbia Counties (Cluster 11)**

**% deer hunter**



Segment definition:

For the purposes of this analysis, this group of counties is referred to as cluster 11. Fifteen percent of adult residents in cluster 11 went deer hunting in 2013. A plurality of respondents in this cluster grew up in a rural area. Among cluster 11 residents, 34% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Twenty-two percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

<u>% of Cluster who grew up:</u>		
<u>RURAL</u>	<u>TOWNS</u>	<u>URBAN</u>
41	28	31

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Cluster 11 residents	26	25	24	14	11

Half (51%) of the respondents from cluster 11 feel favorably about wolves. One quarter of respondents feel unfavorably towards wolves, with one in ten (11%) respondents describing their feelings as very unfavorable. One quarter of respondents from cluster 11 described their feelings about wolves as neither favorable nor unfavorable.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Cluster 11 residents	27	23	18	9	24

Half of the respondents from cluster 11 would like to have more or about the same number of wolves in the state, with over a quarter (27%) of respondents indicating they would like to have more or many more wolves in the state. Twenty-seven percent of respondents from this cluster would like to have fewer or zero wolves in the state, with 9% of respondents wanting zero wolves.

**Question:** “In my county of residence I would like to see the wolf population...”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Cluster 11 residents	17	38	9	17	19

Over half (55%) of the respondents from cluster 11 would like to see the wolf population in their county of residence increased or maintained at current levels. One quarter (26%) of respondents in this cluster would like to see the wolf population decreased or eliminated in their home county, with 17% of respondents preferring wolves be eliminated.

**Attitude Index Score:**

Respondents from cluster 11, on average, scored positively on the attitude index score. This indicates that residents that live Waushara, Marquette, and Columbia counties have, on average, positive attitudes about wolves.

<b>3.8</b>
<b>Cluster 11 Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details

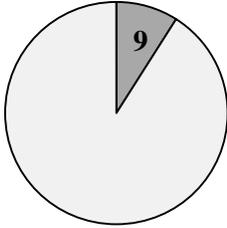
**Risk Scale Score:**

Respondents from cluster 11, on average, scored positively on the risk scale score. This indicates that residents from Waushara, Marquette, and Columbia counties do perceive risks to being in areas where wolves live.

<b>0.9</b>
<b>Cluster 11 Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

**SAMPLE: Non-wolf range counties (Cluster 12)**

**% deer hunter**



Segment definition:

There are 37 counties that are considered outside of wolf range, and for the purposes of this analysis, this group of counties is referred to as cluster 12. Nine percent of adult residents in cluster 12 went deer hunting in 2013. Over half of the respondents in this cluster live in urban areas. Among cluster 12 residents, 28% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Fourteen percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

<u>% of Cluster who grew up:</u>		
<u>RURAL</u>	<u>TOWNS</u>	<u>URBAN</u>
26	20	53

**Question:** “Overall, how would you describe your feelings about wolves?”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Cluster 12 residents	31	25	30	10	4

The majority (56%) of the respondents in cluster 12 feel favorably about wolves, with one in three respondents describing their feelings as very favorable. Fourteen percent of the respondents from cluster 12 feel unfavorably about wolves, with 4% percent of respondents describing their feelings as very unfavorable. Thirty percent of the respondents from cluster 12 described their feelings about wolves as neither favorable nor unfavorable.

**Question:** “Compared to the current level, I would like to have \_\_\_\_ wolves in the state?”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Cluster 12 residents	29	28	13	3	27

The majority (57%) of the respondents from cluster 12 would like to have more or about the same number of wolves in the state. Twenty nine percent would like to have many more or more wolves in Wisconsin. Sixteen percent respondents from this cluster would like to have fewer or zero wolves in the state, with three percent of respondents wanting zero wolves. Over a quarter (27%) of respondents in this cluster did not know how many wolves they wanted in the state compared to current levels.

**Attitude Index Score:**

Respondents from cluster 12, on average, scored positively on the attitude index score. This indicates that residents that live in counties outside of wolf range have, on average, positive attitudes about wolves.

<h1>4.8</h1>
<b>Cluster 12 Residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details

**Risk Scale Score:**

Respondents from cluster 12, on average, scored positively on the risk scale score. This indicates that residents that live in counties outside of wolf range do perceive risks to being in areas where wolves live.

<h1>1.2</h1>
<b>Cluster 12 Residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.

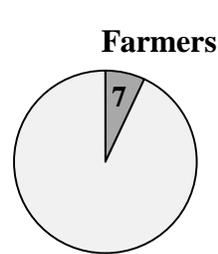
## **SEGMENT COMPARISONS:**

For the following segment comparison analyses, we compare two distinct segments from a given sample population to describe and contrast varying constituency groups. The “segment definition” sections function to provide a brief description of each segment group, and show the relative size of each segment within the larger sample population. These profiles also compare and contrast responses to multiple attitude measures such as overall feelings about wolves, statewide population goals, county population goals when applicable, attitude index scores, and risk scale scores. These comparisons aid in understanding the extent to which varying groups are similar or dissimilar in their attitudes towards wolves and their management.

DRAFT

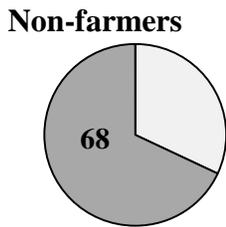
**SAMPLE: Wolf range**

**SEGMENT COMPARISON: Farmers vs. Non-farmers**



Segment definitions:

For this set of comparisons, “Farmers” were survey respondents who indicated that the label was “central” to their personal identity. Seven percent of residents within wolf range self-identified as farmers. Among farmers in the wolf range sample, 58% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Forty percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.



“Non-farmers” are survey respondents who indicated that the “farmer” label was not part of their identity at all. Sixty-eight percent of residents in wolf range self-identified as non-farmers. Among non-farmers in wolf range, 33% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Twenty percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

\*The darkly shaded segments of the pie charts represent the groups of farmers or non-farmers respondents within the entire wolf range sample. The remaining 25% are respondents who identified with the label “farmer” to a small or partial degree, and were not used in this comparison.

**Question:** “Overall, how would you describe your feelings about wolves?”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Farmers	21	12	14	19	35
Non-farmers	24	25	26	13	12

One third of farmers in wolf range have favorable feelings about wolves, compared to half (49%) of non-farmers who feel favorably about the animal. Over half (54%) of farmers have unfavorable feelings about wolves, and a quarter of non-farmers feel similarly. Three times as many farmers as non-farmers feel very unfavorably about wolves. Twice as many non-farmers as farmers have favorable feelings about wolves.

**Question:** “Compared to the current level, I would like to have \_\_\_\_ wolves in the state?”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Farmers	14	18	36	27	5
Non-farmers	20	30	23	7	20

A third (32%) of farmers in wolf range, and half of non-farmers in range, would like to have more or about the same number of wolves in the state. A majority of farmers and 30% of non-farmers would like to have fewer or zero wolves. Four times as many farmers as non-farmers would like to have zero wolves in the state.

**Question:** “In my county of residence I would like to see the wolf population...”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Farmers	12	27	24	36	2
Non-farmers	13	43	16	11	17

In wolf range, 39% of farmers, and a majority (56%) of non-farmers, would like to see the wolf population increased or maintained at current levels in their county of residence. A majority (60%) of farmers would like to see the wolf population decreased or eliminated in their county of residence, compared to 27% of non-farmers. Over three times as many farmers as non-farmers would like to see wolves eliminated in their county of residence.

**Attitude Index Score:**

In wolf range, farmers and non-farmers are significantly different ( $p < .000$ ) in their average attitude index score. Farmers, on average, scored slightly negatively, indicating that their attitudes towards wolves are slightly negative. Non-farmers, on average, scored positively, indicating that average attitudes towards wolves are positive in this group.

<b>-0.8</b>	<b>3.3</b>
<b>Farmers</b>	<b>Non-farmers</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.	

**Risk Scale Score:**

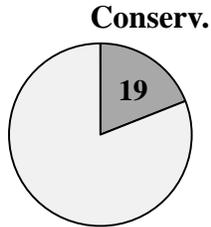
Both farmers and non-farmers in wolf range perceive safety risks in areas where wolves live. But, there were statistically significant differences ( $p < .000$ ) in the level of perceived risks towards wolves between these two groups. On average, respondents who self-identified as farmers perceived higher risks to safety in areas where wolves live than non-farmers did.

<b>2.5</b>	<b>1.5</b>
<b>Farmers</b>	<b>Non-farmers</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.	

**SAMPLE: Statewide**

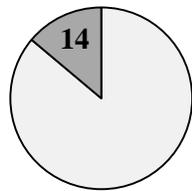
**SEGMENT COMPARISON: Conservationists vs. Non-conservationists**

Segment definitions:



**Conserv.** For this set of comparisons, “Conservationists” are survey respondents who indicated that the label was “central” to their personal identity. Nineteen percent of respondents statewide self-identified as conservationists. Of these conservationists, 59% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Forty-two percent of these conservationists had thought about wolves “*A lot*” prior to receiving the questionnaire.

**Non-conserv.**



“Non-conservationists” are survey respondents who indicated that the “conservationist” label was not part of their identity at all. Fourteen percent of respondents statewide self-identified as non-conservationists. Of these respondents that do not centrally identify as a conservationist, 21% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Fifteen percent of these respondents had thought about wolves “*A lot*” prior to receiving the questionnaire.

\*The darkly shaded segments of the pie charts represent the groups of conservationist and non-conservationist respondents from the entire statewide sample. The remaining 67% of the chart represents respondents who identified with the label “conservationist” to a small or partial degree, and were not used in this comparison.

**Question:** “Overall, how would you describe your feelings about wolves?”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Conservationist	43	20	12	12	13
Non-conservationist	13	12	38	18	19

The majority (63%) of conservationists, and a quarter of non-conservationists, have favorable feelings about wolves. A quarter of conservationists, and 37% of non-conservationists, have unfavorable feelings about wolves. Over three times as many conservationists as non-conservationists have very favorable feelings about wolves. Over a third of non-conservationists felt neither favorably nor unfavorably about the species.

**Question:** “Compared to the current level, I would like to have \_\_\_\_ wolves in the state?”

Segment	Many more/more	About the same number of	Many fewer/fewer	Zero	Don’t know
Conservationist	34	23	21	11	11
Non-conservationist	10	29	23	14	24

Over half (57%) of conservationists, and 39% of non-conservationists, would like to have more or about the same number of wolves in the state. A third (32%) of conservationists and 37% of non-conservationists would like to have fewer or zero wolves in the state. Three times as many conservationists as non-conservationists would like to have more wolves in the state.

**Attitude Index Score:**

On average, both conservationists and non-conservationists scored positively on the attitude index score, indicating positive attitudes about wolves. There were statistically significant different ( $p < .000$ ) between these two groups, however, with conservationists scoring higher than non-conservationists. This indicates that on average, conservationists have more positive attitudes towards wolves than non-conservationists.

<b>4.5</b>	<b>0.7</b>
<b>Conservationists</b>	<b>Non-conservationists</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.	

**Risk Scale Score:**

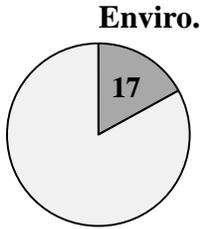
Both conservationists and non-conservationists, on average, perceive risks to safety in areas where wolves live. However, there are statistically significant differences ( $p < 0.000$ ) between the two groups in the level of perceived risks. On average, non-conservationists have a significantly higher level of perceived risks in areas where wolves live than conservationists do.

<b>0.7</b>	<b>2.8</b>
<b>Conservationists</b>	<b>Non-conservationists</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.	

**SAMPLE: Statewide**

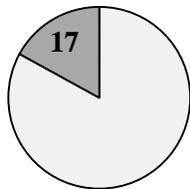
**SEGMENT COMPARISON: Environmentalists vs. Non-environmentalists**

Segment definitions:



For this set of comparisons, “Environmentalists” are survey respondents who indicated that the label was “central” to their personal identity. Seventeen percent of respondents statewide self-identified as environmentalists. Of these environmentalists, 59% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Forty percent of these respondents had thought about wolves “*A lot*” prior to receiving the questionnaire.

**Non-enviro.**



“Non-environmentalists” are survey respondents who indicated that the “environmentalist” label was not part of their identity at all. Seventeen percent of respondents statewide self-identified as non-environmentalists. Of these respondents, 25% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Seventeen percent of these respondents had thought about wolves “*A lot*” prior to receiving the questionnaire.

\*The darkly shaded segments of the pie charts represent the groups of environmentalist and non-environmentalist respondents from the entire statewide sample. The remaining 66% of the chart represents respondents who identified with the label “environmentalist” to a small or partial degree, and were not used in this comparison.

**Question:** “Overall, how would you describe your feelings about wolves?”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Environmentalist	45	22	13	11	9
Non-environmentalist	10	14	41	18	17

The majority (67%) of environmentalists feel favorably about wolves, compared to a quarter (24%) of non-environmentalists who feel similarly. One out of five environmentalists feels unfavorably about wolves, and one out of three non-environmentalists feels unfavorably as well. A plurality (41%) of non-environmentalists feels neither favorably nor unfavorably about wolves, compared to 13% of environmentalists who feel that way. Over four times as many environmentalists as non-environmentalists feel very favorably towards wolves.

**Question:** “Compared to the current level, I would like to have \_\_\_\_ wolves in the state?”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Environmentalist	34	24	20	8	14
Non-environmentalist	10	31	24	14	22

The majority (58%) of environmentalists would like to have more or about the same number of wolves in the state, and a plurality (41%) of non-environmentalists would like to have that as well. Over a quarter of environmentalists, and 38% of non-environmentalists, would like to have fewer or zero wolves in Wisconsin. Over three times as many environmentalists as non-environmentalists would like to have more wolves in the state.

**Attitude Index Score:**

On average, both environmentalists and non-environmentalists scored positively on the attitude index score, indicating positive attitudes about wolves. There were statistically significant differences ( $p < .000$ ) between these two groups, however, with environmentalists scoring higher than non-environmentalists. This indicates that on average, environmentalists have more positive attitudes toward wolves than non-environmentalists.

<b>5.2</b>	<b>1.0</b>
<b>Environmentalists</b>	<b>Non-environmentalists</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.	

**Risk Scale Score:**

Both environmentalists and non-environmentalists, on average, perceive risks to safety in areas where wolves live. However, there are statistically significant differences ( $p < .000$ ) between these two groups in the level of perceived risks. On average, non-environmentalists have a significantly higher level of perceived risks in areas where wolves live than environmentalists. Environmentalists are, on average, almost neutral in their perceptions of risks from wolves.

<b>0.4</b>	<b>2.5</b>
<b>Environmentalists</b>	<b>Non-environmentalists</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.	

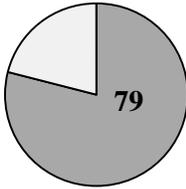


**SAMPLE: Wolf range**

**SEGMENT COMPARISON: Deer hunters vs. Non-deer hunters**

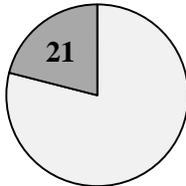
Segment definitions:

**Non-hunters**



Seventy-nine percent of respondents in wolf range indicated that they did not hunt deer in the past 12 months. For the purposes of this comparison, we labeled them “non-hunters.” Of these non-hunters, 34% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Eighteen percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

**Hunters**



Twenty-one percent of respondents in wolf range indicated that they did hunt deer in the past 12 months. Of these hunters, 52% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Forty-seven percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

\*The darkly shaded segments of the pie charts represent the groups of non-hunters and hunters within the entire wolf range sample.

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Non-hunters	26	25	26	13	10
Deer hunters	9	13	18	26	34

Half of non-hunters in wolf range feel favorably about wolves, compared to 22% of deer hunters in range who feel favorably. Twenty three percent of non-hunters, compared to 60% of deer hunters, feel unfavorably about wolves. Three times as many deer hunters as non-hunters in wolf range feel very unfavorably about wolves. One in four non-hunters indicated that they feel neither favorable nor unfavorable feelings about wolves.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/more	About the same number of	Many fewer/fewer	Zero	Don’t know
Non-hunters	22	29	21	7	20
Deer hunters	8	15	49	22	6

Half (51%) of non-hunters and about a quarter (23%) of deer hunters in wolf range would like to have more or about the same number of wolves in the state compared to the current level. Twenty-eight percent of non-hunters, compared to a majority (71%) of deer hunters, would like to have fewer or zero wolves in the state. Three times as many deer hunters as non-hunters in wolf range would like to have zero wolves. Over twice as many non-hunters as deer hunters would like many more or more wolves in Wisconsin.

**Question:** “In my county of residence I would like to see the wolf population...”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Non-hunters	14	44	15	11	16
Deer hunters	5	25	31	33	6

A majority (58%) of non-hunters in wolf range would like to see the wolf population increased or maintained in their county of residence, and one quarter (26%) of non-hunters would like the wolf population decreased or eliminated. Of deer hunters in wolf range, 30% would like to see the wolf population increased or maintained in their county of residence, and a majority (64%) would like to see wolves decreased or eliminated. Three times as many deer hunters than non-hunters would like to see wolves eliminated in their home county, and three times as many non-hunters than deer hunters would like to see wolves increased.

**Attitude Index Score:**

Non-hunters and deer hunters within wolf range were significantly different statistically in their average attitude index score ( $p < .000$ ). Non hunters, on average, scored positively, indicating positive attitudes towards wolves in the state. Deer hunters, on average, scored negatively, indicating negative attitudes towards wolves in the state.

<b>3.6</b>	<b>-1.4</b>
<b>Non-hunters</b>	<b>Deer hunters</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.	

**Risk Scale Score:**

Both non-hunters and deer hunters in wolf range did, on average, perceive risks to being in areas where wolves live. However, non-hunters and deer hunters were significantly different statistically ( $p < .000$ ) in their average risk scale scores, indicating that the levels of perceived risk around wolves are different between the two groups. Deer hunters on average scored higher than non-hunters, indicating that deer hunters perceive higher risks than non-hunters to being in areas where wolves live.

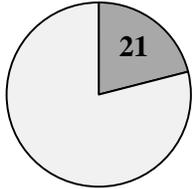
<b>1.4</b>	<b>2.6</b>
<b>Non-hunters</b>	<b>Deer hunters</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.	

**SAMPLE: Deer hunters**

**SEGMENT COMPARISON: Wolf range vs. Non-wolf range**

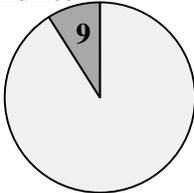
Segment definitions:

**Wolf range:  
hunter**



Of respondents that live within wolf range, 21% indicated they hunted deer in the past 12 months. Wolf range includes counties with known established wolf packs. Of these hunters that live in wolf range, 52% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Forty-seven percent of these hunters had thought about wolves “*A lot*” prior to receiving the questionnaire.

**Non-range:  
hunter**



Of respondents that live outside of wolf range, 9% indicated they hunted deer in the past 12 months. Non-wolf range includes counties without any known established wolf packs, although wolves may periodically pass through. Of these hunters that live outside of wolf range, 40% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Thirty-five percent of these hunters had thought about wolves “*A lot*” prior to receiving the questionnaire.

\*The darkly shaded segments of the pie charts represent the groups of respondents in wolf range or outside of wolf range

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Wolf range	9	13	18	26	34
Non-range	10	23	23	27	17

One out of five (22%) deer hunters in wolf range has favorable feelings about wolves, compared to one out of three deer hunters outside of wolf range who feels favorably about wolves. The majority (60%) of deer hunters in wolf range feel unfavorably towards wolves, and 44% of deer hunters outside of range feel similarly. Twice as many hunters in wolf range as hunters outside of range describe their feelings as “*very unfavorable*.”

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Wolf range	8	15	49	22	6
Non-range	16	24	40	10	10

Twenty-three percent of deer hunters in wolf range would like to have more or about the same number of wolves in the state, and to 40% of hunters outside of wolf range feel similarly. A majority (71%) of wolf range deer hunters would like to have fewer or zero wolves in the state, and half of non-range deer

hunters responded similarly. Twice as many non-range hunters as hunters in range would like to see many more or more wolves in the state. Twice as many hunters in wolf range as hunters outside of wolf range would like to have zero wolves in Wisconsin.

**Attitude Index Score:**

Of deer hunters, those that live in wolf range had a significantly ( $p < .05$ ) lower average attitude score than hunters outside of wolf range, indicating that hunters in wolf range have more negative attitudes towards wolves.

<b>-1.4</b>	<b>1.4</b>
<b>Wolf range hunters</b>	<b>Non-range hunters</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.	

**Risk Scale Score:**

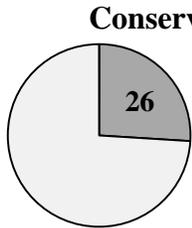
All hunters, regardless of whether they live within or outside of wolf range, perceive safety risks in areas where wolves live. The difference in average risk scale score between these two groups was not significantly different statistically ( $p = .438$ ), indicating that the level of perceived risks towards wolves in these two groups is similar.

<b>2.6</b>	<b>2.2</b>
<b>Wolf range hunters</b>	<b>Non-range hunters</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.	

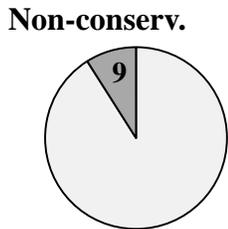
**SAMPLE: Deer hunters**

**SEGMENT COMPARISON: Conservationists vs. Non-conservationists**

Segment definitions:



**Conserv.** For this set of comparisons “Conservationists” are survey respondents who indicated that the label was “central” to their personal identity. Twenty-six percent of respondents statewide who indicated they hunted deer in the past 12 months self-identified as conservationists. Of these conservationists, 68% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Fifty-nine percent of these conservationists had thought about wolves “*A lot*” prior to receiving the questionnaire.



**Non-conserv.** “Non-conservationists” are survey respondents who indicated that the “conservationist” label was not part of their identity at all. Nine percent of respondents who indicated they hunted deer in the past 12 months self-identified as non-conservationists. Of these respondents that do not centrally identify as a conservationist, 37% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Forty-five percent of these respondents had thought about wolves “*A lot*” prior to receiving the questionnaire.

\*The darkly shaded segments of the pie charts represent the groups of conservationist and non-conservationist respondents from the sample of respondents who are deer hunters. The remaining 65% of the chart represents deer hunter respondents who identified with the label “conservationist” to a small or partial degree, and were not used in this comparison.

**Question:** “Overall, how would you describe your feelings about wolves?”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Conservationist	14	14	15	25	33
Non-conservationist	7	8	21	16	48

Twenty-eight percent of deer hunters who self-identify as conservationists have favorable feelings about wolves, compared to 15% of non-conservationist deer hunters who feel favorably. The majority of conservationist deer hunters feel unfavorably about wolves, with a third describing their feelings as “very unfavorable.” Of non-conservationist deer hunters, the majority feel unfavorably about wolves, with 48% describing their feelings as “very unfavorable.”

**Question:** “Compared to the current level, I would like to have \_\_\_\_ wolves in the state?”

Segment	Many more/more	About the same number of	Many fewer/fewer	Zero	Don’t know
Conservationist	8	17	47	24	3
Non-conservationist	8	9	42	34	6

One quarter of deer hunters who self-identify as conservationists and 17% of deer hunters who do not identify as conservationists want more or about the same number of wolves in the state. The majority (71%) of conservationist deer hunters, as well as the majority (76%) of non-conservationist deer hunters, would like to have fewer or zero wolves in the state. A third of non-conservationist deer hunters, and a quarter of conservationist deer hunters, would like to have zero wolves in the state.

**Attitude Index Score:**

On average, both conservationists and non-conservationists scored negatively on the attitude index score, indicating negative attitudes about wolves. There were statistically significant different ( $p < .05$ ) between these two groups, however, with conservationists scoring less negatively than non-conservationists. This indicates that on average, hunters who do not identify as conservationists have more negative attitudes towards wolves than hunters who do identify as conservationists.

<b>-0.9</b>	<b>-3.6</b>
<b>Deer hunter conservationists</b>	<b>Deer hunter non-conservationists</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.	

**Risk Scale Score:**

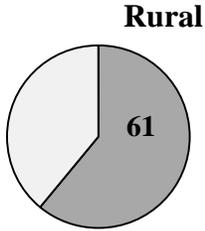
Both conservationists and non-conservationists, on average, perceive risks to safety in areas where wolves live. On average, non-conservationists have a higher level of perceived risks in areas where wolves live than conservationists do. However, the difference in the level of perceived risks between these two groups is not statistically significant ( $p = .263$ ).

<b>2.5</b>	<b>3.2</b>
<b>Deer hunter conservationists</b>	<b>Deer hunter non-conservationists</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.	

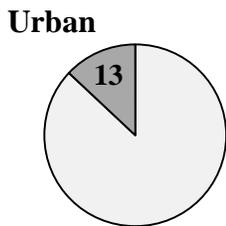
**SAMPLE: Deer hunters**

**SEGMENT COMPARISON: Rural residents vs. Urban residents**

Segment definitions:



Of respondents statewide that indicated they hunted deer in the past 12 months, 61% were *rural residents*, meaning they self-identified their current residence as being “*On a farm*” or “*In the country, but not on a farm.*” Of these rural hunters, 53% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Forty-nine percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.



Of respondents statewide that indicated they hunted deer in the past 12 months, 13% were *urban residents*, meaning they self-identified their current residence as a “*Small city or suburb (10,000-25,000)*” or “*Large City (over 25,000).*” Of these urban hunters, 52% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Forty-two percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

\*The darkly shaded segments of the pie charts represent the segments of urban or rural respondents within the entire sample of deer hunters in the state.

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Rural	7	13	16	27	37
Urban	14	18	23	21	24

One out of five deer hunters who lives in a rural area has favorable feelings about wolves, but a majority (64%) of rural deer hunters feel unfavorably about wolves. Of deer hunters that live in urban areas, one third have favorable feelings (32%) and 45% have unfavorable feelings towards wolves. Twice as many urban hunters than rural hunters feel very favorably about wolves.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/more	About the same number of	Many fewer/fewer	Zero	Don’t know
Rural	6	15	49	25	5
Urban	17	15	47	13	8

One out of five (21%) deer hunters that live in a rural area, compared to one out of three deer hunters that live in an urban area, would like to have more or about the same number of wolves in the state. Two thirds (74%) of deer hunters in rural areas would like to have fewer or zero wolves in the state, and 60% of deer hunters in urban areas feel similarly. One quarter of deer hunters that are rural residents would

like to have zero wolves in Wisconsin, which is twice the number of hunters in urban areas who want zero wolves. Three times as many urban deer hunters than rural deer hunters would like to see more wolves in the state.

**Attitude Index Score:**

Of deer hunters, those that live in rural areas had a significantly ( $p < .05$ ) lower average attitude score than urban residents, indicating that the rural hunters group has more negative attitudes towards wolves. The average attitude score for urban hunters was close to zero, indicating attitudes are, on average, more neutral.

<b>-2.0</b>	<b>0.5</b>
<b>Rural hunters</b>	<b>Urban hunters</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.	

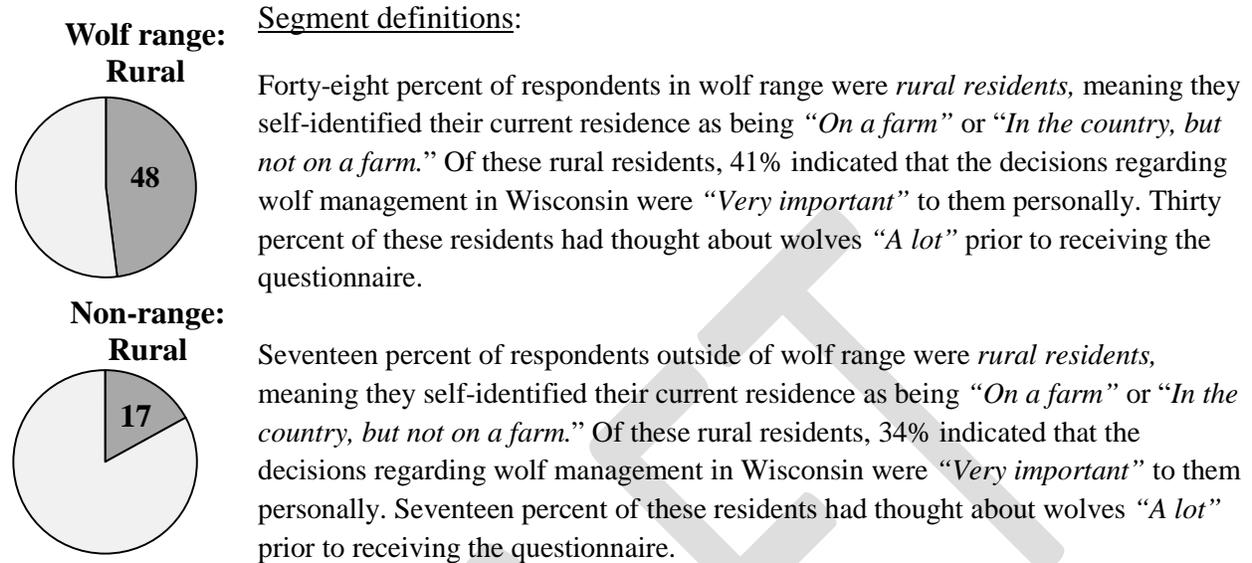
**Risk Scale Score:**

All hunters, regardless of whether they live in rural and urban areas, perceive safety risks in areas where wolves live. The difference in average risk scale scores between these two groups was not significantly different statistically ( $p = .420$ ), indicating that the level of perceived risks towards wolves in these two groups is similar.

<b>2.6</b>	<b>2.5</b>
<b>Rural hunters</b>	<b>Urban hunters</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.	

**SAMPLE: Rural residents**

**SEGMENT COMPARISON: Wolf range vs. Non-wolf range**



\*The darkly shaded segments of the pie charts represent the groups of rural respondents within the entire wolf range or non-wolf range samples.

**Question:** “Overall, how would you describe your feelings about wolves?”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Wolf range	18	20	22	20	20
Non-wolf range	24	17	29	17	12

Rural residents in wolf range are split, where one group has favorable (38%) and one group has unfavorable (40%) feelings about wolves. Outside of wolf range, 41% of rural residents have favorable feelings about wolves, and 29% of rural residents feel unfavorably about wolves. Outside of wolf range, twenty-nine percent of rural residents felt neither favorably nor unfavorably about wolves, and one fifth of rural residents within wolf range felt similarly.

**Question:** “Compared to the current level, I would like to have \_\_\_ wolves in the state?”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Wolf range	16	24	33	14	13
Non-wolf range	19	29	22	8	22

Within wolf range, 40% of rural residents indicated that they would like to have more or about the same number of wolves in the state. Outside of wolf range, that frequency increases to 48% of rural residents. Within wolf range, 47% of rural residents would like to have fewer or zero wolves in the state, and

outside of range 30% of rural residents feel similarly. Close to twice as many rural residents in wolf range than outside of wolf range would like to have zero wolves in the state.

**Attitude Index Score:**

On average, rural residents both within and outside of wolf range scored positively on the wolf attitude index score. This indicates positive attitudes towards wolves. The average score for non-range residents was higher than the average score for residents in wolf range, but the difference was not statistically significant ( $p = .107$ ).

<b>1.5</b>	<b>2.7</b>
<b>Rural wolf range</b>	<b>Rural non-range</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.	

**Risk Scale Score:**

On average, rural residents both within and outside of wolf range scored positively on the risk scale score. This indicates that rural residents do perceive risks to safety when in areas where wolves live. Although wolf range residents had a higher average score than residents outside of wolf range, the difference was not statistically significant ( $p = .321$ ).

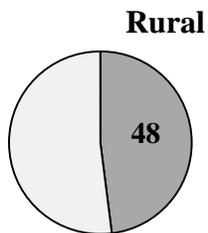
<b>1.9</b>	<b>1.5</b>
<b>Rural wolf range</b>	<b>Rural non-range</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.	



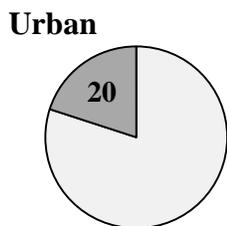
**SAMPLE: Wolf range**

**SEGMENT COMPARISON: Rural residents vs. Urban residents**

Segment definitions:



Forty-eight percent of respondents in wolf range were *rural residents*, meaning they self-identified their current residence as being “*On a farm*” or “*In the country, but not on a farm.*” Of these rural residents, 41% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Thirty percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.



Twenty percent of respondents in wolf range were *urban residents*, meaning they self-identified their current residence as a “*Small city or suburb (10,000-25,000)*” or “*Large City (over 25,000).*” Of these urban residents, 35% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Sixteen percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

\*The darkly shaded segments of the pie charts represent the groups of urban or rural respondents within the entire wolf range sample.

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Rural	18	20	22	20	20
Urban	26	24	28	10	12

Rural residents in wolf range are split, where one group has favorable (38%) and one group has unfavorable (40%) feelings towards wolves. Half (51%) of urban residents in wolf range have favorable feelings towards wolves. Twelve percent of urban residents in wolf range feel unfavorably towards wolves in Wisconsin. About one in four residents in both urban and rural areas feels neither favorably nor unfavorably towards wolves.

**Question:** “*Compared to the current level, I would like to have \_\_\_\_ wolves in the state?*”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Rural	16	24	33	14	13
Urban	24	24	21	5	26

Two out of five (40%) rural residents and just under half of urban residents (48%) in wolf range would like to have more or about the same number of wolves in the state. Forty-seven percent of rural residents would prefer fewer or zero wolves in Wisconsin. Twenty-six percent of urban residents would prefer this same scenario of fewer or zero wolves in Wisconsin. Three times as many residents in rural areas than in

urban areas would like to have zero wolves in the state. Twice as many urban residents than rural residents were unsure of the amount of wolves they would prefer.

**Question:** “*In my county of residence I would like to see the wolf population...*”

Segment	Increased	Maintained about the same	Decreased	Eliminated	Not sure
Rural	10	39	22	20	9
Urban	19	39	14	8	20

Just under half (49%) of rural residents and a majority (58%) of urban residents would like the wolf population in their county of residence to be increased or maintained at current levels. Forty-two percent of rural residents would like to see wolves decreased or eliminated, compared to twenty-two percent of urban residents who feel the same way. Over two times as many rural residents as urban residents would like to see wolves eliminated in their county of residence.

**Attitude Index Score:**

In wolf range, urban residents had a significantly ( $p < .000$ ) higher average attitude score than rural residents, indicating that the urban resident group has, on average, more positive attitudes towards wolves. However, both urban and rural residents had positive average scores indicating positive attitudes towards wolves.

<b>1.5</b>	<b>3.7</b>
<b>Rural residents</b>	<b>Urban residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.	

**Risk Scale Score:**

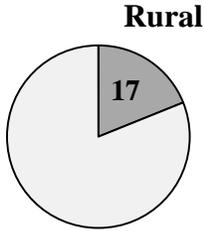
Both rural and urban residents in wolf range perceive safety risks in areas where wolves live. But, there were statistically significant differences ( $p < .000$ ) in the level of perceived risks towards wolves between these two groups. On average, rural residents were more worried about safety around wolves than urban residents were.

<b>1.9</b>	<b>1.2</b>
<b>Rural residents</b>	<b>Urban residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.	

**SAMPLE: Non-wolf range**

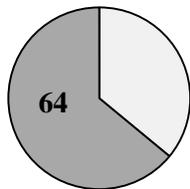
**SEGMENT COMPARISON: Rural residents vs. Urban residents**

Segment definitions:



Seventeen percent of respondents outside of wolf range were *rural residents*, meaning they self-identified their current residence as being “*On a farm*” or “*In the country, but not on a farm.*” Of these rural residents, 34% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Seventeen percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

**Urban**



Sixty-four percent of respondents in wolf range were *urban residents*, meaning they self-identified their current residence as a “*Small city or suburb (10,000-25,000)*” or “*Large City (over 25,000).*” Of these urban residents, 12% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Fifteen percent of these residents had thought about wolves “*A lot*” prior to receiving the questionnaire.

\*The darkly shaded segments of the pie charts represent the groups of urban or rural respondents within the entire non-wolf range sample.

**Question:** “*Overall, how would you describe your feelings about wolves?*”

Segment	Very favorable	Somewhat favorable	Neither favorable nor unfavorable	Somewhat unfavorable	Very unfavorable
Rural	24	17	29	17	12
Urban	30	29	30	8	3

Forty-one percent of rural residents outside of wolf range have favorable feelings towards wolves, and the majority (59%) of urban residents outside of wolf range feel favorably as well. About one in three rural residents in wolf range feel unfavorably towards wolves, and one in ten of urban residents indicated that they feel similarly. Similar proportions of residents in rural and urban areas felt neither favorably for unfavorably towards wolves.

**Question:** “*Compared to the current level, I would like to have \_\_\_ wolves in the state?*”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Rural	19	29	22	8	22
Urban	26	30	10	1	33

A plurality (48%) of rural residents outside of wolf range would like to have more or about the same number of wolves in the state, and about a third (30%) of rural residents would like to have fewer or zero wolves in the state. A majority of urban residents (56%) would like to have more or about the same

number of wolves, and one in ten urban residents outside of wolf range would like to see fewer or zero wolves in the state. One in three urban residents and one if five rural residents outside of wolf range were unsure how many wolves they would prefer in the state.

**Attitude Index Score:**

Outside of wolf range, urban residents had a significantly ( $p < .000$ ) higher average attitude score than rural residents, similar to the trend within wolf range. Both urban and rural residents averaged positive wolf attitude scores, indicating positive attitudes towards wolves.

<b>2.7</b>	<b>5.3</b>
<b>Rural residents</b>	<b>Urban residents</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.	

**Risk Scale Score:**

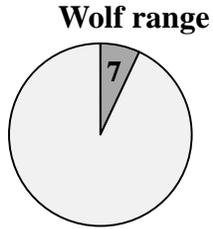
Outside of wolf range, both rural and urban residents perceive some risks to safety in areas where wolves live. The differences between these two groups of residents were not statistically significant ( $p = .58$ ) which indicates that area of residence is not tied to perceptions of risk for people living outside of wolf range as it is for people living within wolf range.

<b>1.5</b>	<b>1.2</b>
<b>Rural residents</b>	<b>Urban residents</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.	

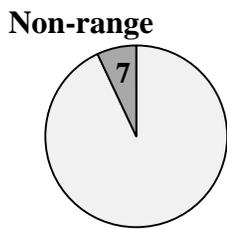
**SAMPLE: Wolf advocates**

**SEGMENT COMPARISON: Wolf range vs. Non-wolf range**

Segment definitions:



Of respondents that live in wolf range, 7% indicated that “Wolf advocate” is a label that is “central” to their identity. Wolf range includes counties with known established wolf packs. Of these wolf advocates that live in wolf range, 74% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Sixty-one percent of these wolf advocates had thought about wolves “*A lot*” prior to receiving the questionnaire.



Of respondents that live outside of wolf range, 7% indicated that “Wolf advocate” is a label that is “central” to their identity. Non-wolf range includes counties without any known established wolf packs, although wolves may periodically pass through. Of these wolf advocates that live outside of wolf range, 78% indicated that the decisions regarding wolf management in Wisconsin were “*Very important*” to them personally. Fifty-eight percent of these wolf advocates had thought about wolves “*A lot*” prior to receiving the questionnaire.

\*The darkly shaded segments of the pie charts represent the groups of respondents that self-identified as wolf advocates in wolf range and outside of wolf range.

**Question:** “Overall, how would you describe your feelings about wolves?”

Segment	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
Wolf range	77	11	4	3	5
Non-range	94	3	3	0	0

The majority (88%) of wolf advocates in wolf range have favorable feelings about wolves, and 8% had unfavorable feelings. Almost all of wolf advocates outside of wolf range (97%) had favorable feelings about wolves, and none of these respondents had unfavorable feelings about the animals. A higher percentage of wolf advocates outside of wolf range than in wolf range had very favorable feelings about wolves.

**Question:** “Compared to the current level, I would like to have \_\_\_\_ wolves in the state?”

Segment	Many more/ more	About the same number of	Many fewer/ fewer	Zero	Don’t know
Wolf range	60	25	5	6	4
Non-range	72	14	0	0	14

A majority of wolf advocates in wolf range as well as outside of wolf range would like to have many more or more wolves in the state compared to the current level. One quarter of wolf advocates in wolf range, and 14% of advocates outside of wolf range would like to have about the same number of wolves

as current levels. One in ten respondents in wolf range who indicated that they were a wolf advocate wanted fewer or zero wolves in the state, but outside of wolf range no wolf advocates indicated they wanted fewer or zero.

**Attitude Index Score:**

Both wolf advocates in wolf range and outside of wolf range scored, on average, positive positively on the wolf attitude index score which indicates positive attitudes towards wolves. The differences in attitudes between these two groups is not significantly different statistically ( $p = .127$ ), indicating that living in or outside of wolf range does not, on average, influence differences in attitudes towards in wolf advocates.

<b>8.6</b>	<b>10.0</b>
<b>Wolf range advocates</b>	<b>Non-range advocates</b>
Attitude index scores range from -12 (the most negative) to +12 (the most positive), with zero being a neutral score. See methods for details.	

**Risk Scale Score:**

On average, wolf advocates, both within and outside of wolf range, do not perceive risks to safety in areas where wolves live. The difference in the average risk scale scores between these two groups was not significantly different statistically ( $p = .664$ ).

<b>-1.6</b>	<b>-1.9</b>
<b>Wolf range advocates</b>	<b>Non-range advocates</b>
Risk scale scores range from -6 (lowest level of perceived risks) to +6 (highest level of perceived risks), with zero being a neutral score. See methods for details.	

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DRAFT

## **APPENDICES**

**A-Literature Review**

**B- Copy of questionnaire with weighted wolf range frequencies**

**C- Copy of questionnaire with weighted non-wolf range frequencies**

DRAFT

## **Literature Review**

### **Introduction**

The number of studies that have investigated people's attitudes towards wolves and their preferences for managing (or not managing) wolves pales in comparison to the work that's been done to understand the species' behavior and biology (Heberlein, 2013). To some extent this imbalance reflects the relatively nascent stage of the human dimensions research compared to the more established science of wildlife ecology. The fact there are relatively few studies on this topic also reflects the priorities of previous generations of wildlife managers, who were focused primarily on learning what wolves needed to survive to avoid extinction. With wolf recovery now fully accomplished in Wisconsin, identifying and successfully responding to public sentiment regarding the size and distribution of wolf populations is integral to the success of a management plan. There also needs to be *some degree* of consensus on the strategies employed to manage the species. In North American and Scandinavian counties, researchers are increasingly focusing their attention on how demographic variables, social-psychological variables, and personal experiences with wolves are shaping people's attitudes. This section provides a brief summary of relevant research that can shed some light on that challenge.

### **Attitude categories extant in social conflict**

Attitudes are defined as positive or negative evaluations of some object. Attitudes are often the focus of social science because they are thought to indicate deeply held core values, are easier to measure than values, and are one important influence on individual behavior (Fulton et al. 1996). The seminal work on public attitudes toward wildlife by Yale Professor Stephen Kellert in the late 1970's still provides a good foundation for illustrating the basis of differing viewpoints toward wolves and their management (Nie 2004). Kellert's (1996) research identified 10 basic attitude dispositions that highlight the features or ways in which people evaluate wildlife species, as well as reflecting fundamental values.

The attitude labels most relevant to the discussion of wolves include those that Kellert termed the utilitarian, ecologicistic, moralistic, symbolic, and negativistic attitudes. The utilitarian attitude reflects an underlying value in the material use and benefits of nature. Wolves that prey on livestock or are perceived to reduce deer populations may create a negativistic attitude that result from a direct threat to utilitarian values. This, in essence, explains why past research has consistently shown that those involved in farming and ranching professions hold negative attitudes toward wolves (Chaves et al. 2005; Ericsson and Heberlein 2003; Williams et al. 2002; Pate et al. 1996; Thomson 1992).

Negativistic attitudes toward wolves also result from fear or direct encounters where wolves have harmed a pet or hunting dog (Kellert 1996). It is somewhat surprising that few studies have explicitly measured public fear of wolves. Lohr et al. (1996) found fear of hiking where wolves occurred was one of the variables associated with opposition to reintroduction in the Greater

Yellowstone ecosystem. Kellert (1990) found residents of the Lower Peninsula expressed more fear than UP residents did. Among the wolf risk factors assessed by Peyton et al. (2007), concern for human safety as a result of wolf sightings near homes rated the highest among UP residents. A longitudinal study of Wisconsin residents in wolf country suggests that fear of wolves has increased as wolf numbers have increased (Treves et al. 2013).

Ecologistic attitudes represent a favorable evaluation of the function that a species provide in an ecosystem, including their interactions with other organisms. Those functions may or may not have direct or tangible human benefits associated with them, but there is tacit recognition that every role is important for the system to maintain stability. For example, wolves and other predators play a role to “regulate” ecosystems by controlling prey species and thereby reducing the negative ecological effects that herbivores can cause, such as overbrowsing. Biologists and wildlife professionals typically have strong ecologistic attitudes, while members of the lay public may not (Holsman and Peyton 2003; Diefenbach et al. 1997). It is difficult to tout or advance ecologistic attitudes within society, for example through education about wolves, because the benefits derived from ecology are abstract, intangible, and often deferred to future generations.

Moralistic attitudes represent a perspective that is often in conflict with ecologistic and utilitarian attitudes. The moralistic attitude focuses on the intrinsic right of individual animals to live free from human-imposed harm (i.e., killing). Viewed narrowly, the moralistic attitude can be equated with any number of animal protection and welfare organizations. Lawsuits challenging wolf delisting or lethal removal are most often associated with the moralistic attitude (Nie 2004). This attitude is in direct opposition to the utilitarian attitude because the welfare of individual animals is valued more than material use or gain by people.

Moralistic attitudes are seldom associated with ecologistic attitudes that recognize and prioritize the well-being of populations and ecosystem over the welfare of individuals. In fact, from an ecologistic perspective it is acceptable to manage for the removal of individuals to benefit the whole (Williams 2008). Those strong moralistic attitudes often oppose lethal control of animals, especially for the purpose of recreational hunting. Finding ways to accommodate the protection on individual animals as is often preferred by people holding moralistic attitudes is challenging for institutions whose fundamental precepts of wildlife management rely on population manipulation to achieve socially defined objectives (The Wildlife Society 2011).

Some attitudes about wolves crystalize around their role as symbols, and these attitudes can run in both directions. Many who view wolves positively see them as symbols of wilderness, and their recovery from the brink of extinction is seen as a symbol of restoration. Some who oppose wolves and their recovery see the animals as symbol of the tyranny of elite, urban values and a potential threat to the “good country life” (Skogen and Thrane 2007; Wilson 1999). These kinds of attitude conflicts like ones mentioned earlier tend to be rooted in deep ideological or value differences among people, often reinforced through personal experiences and cultural influences.

## **Other important findings from past wolf attitude work**

### *1) Most people tend to view wolves positively*

In most studies on wolves to date, a majority of survey respondents have positive attitudes towards wolves and their restoration. For example, Williams et al. (2002) reviewed 38 studies that have measured attitudes toward wolves conducted between 1972 and 2000. Overall, more than half of survey respondents (61%) expressed positive attitudes toward wolves and 60% supported wolf restoration. Positive wolf attitudes were positively correlated with level of education and income. They found negative attitudes toward wolves were correlated with age, rural residence, and ranching and farming occupations.

The last statewide survey that measured wolf attitudes using a random selection of Wisconsin residents occurred in 1997 (Wilson as cited in WDNR 1999). At that time, there was an estimated 148 wolves in Wisconsin, and the species was listed as endangered on both a state and federal level. Wilson found that a slim majority (51%) supported DNR efforts to increase the wolf population, while 15% opposed such efforts. Another question from that study suggested broad support whereby 79% of Wisconsin citizens said it was extremely or somewhat important to protect predators such as “wolves, barn owls, and lynx.”

Several notes of caution should be taken when interpreting past, positive survey results. First, much of the apparent support for wolves is not rooted in direct experience with wolves and is therefore superficial. For example, positive attitudes toward wolves in the Adirondack region of New York showed rapid and dramatic erosion when a proposal to reintroduce them tapped resident fears about losing property rights (Heberlein 2013). By contrast, opponents of wolves often have strongly held attitudes that are less likely to change over time (Ericsson and Heberlein 2003; Heberlein 2013, 2008). Second, those most supportive of wolves are often least impacted by the risks and effects of living among wolves creating challenges for resolving conflict (Peyton et al. 2007). This creates challenges for balancing public interest with mitigation of wolf conflicts. Third, many of these studies took place when wolf populations in representative sample areas were recovering (i.e., were low) and therefore may not reflect how people evaluate recovered wolf populations. Fourth, the positive relationship between education level and support for wolves may suggest a false promise that we can “educate” our way out of wolf conflict. Our experience in human dimensions research tells us that the most strongly held beliefs are difficult if not impossible to change because information (i.e., facts) is rejected as means of cultural resistance, to maintain cognitive consistency or “confirmation bias”, or simply because they are incongruent with a deeply held world view or value orientation (Morewedge and Kahneman 2010; Nickerson 1998).

### *2) Urban and rural residents tend to view wolves differently.*

Several studies have examined the difference between wolf attitudes among urban and rural residents. Generally speaking, there is more support for wolves among urban residents, though

the relationship is not as straightforward as it first appears. Sponarski et al. (2013) warned against homogenizing people on a rural-urban dichotomy and found diverse attitudes toward wolves among rural Albertans. Heberlein and Ericsson (2003) similarly found that urban residents differed in their attitudes toward wolves based on the area of their upbringing and their connections to the rural areas (for example, through recreation). The upshot of these findings is that urban and rural classifications have more predictive validity if they are couched in a cultural context of identity rather than merely the physical location of a person's current residence.

Skogen and Thrane (2007) tested a multifactor model that suggested the urban-rural variable, as well as other demographic predictors such as age and education level, lose their explanatory power when value orientations and cultural capital variables are also included. In the case of the urban-rural split, they suggest class (working class vs. new middle class) may be what is truly influencing the observed differences in wolf attitudes. According to their theory, urban areas tend to attract a higher percentage of college educated adults than rural areas because that is where white collar job centers occur. These people are also less likely to hold occupations that involve resource extraction, farming, and general labor by virtue of where they live.

Researchers in Colorado studying wildlife value orientations have similarly suggested that economic development and detachment from material production tends to shift people away from utilitarian values toward nature (Manfredo et al. 2003). Social conflict over basic value systems occurs when rural people see urbanites trying to force values on their livelihoods and cultural norms (Wilson 1997). Consequently, differing wolf opinions that are found between rural and urban residents reflect differing worldviews about human-nature relationships that should not be mistaken as simply matters of education level or size of primary residence. -

*3) Residents within wolf range are more negative toward wolves, regardless of direct contact or experiences with wolves.*

Proximity to wolf packs is also a variable that consistently shows a negative correlation with wolf attitudes or support for wolf conservation measures (Karlsson and Sjoström, 2007; Peyton et al. 2007). People living among wolves have more negative feelings towards wolves than people that do not live in wolf range. Heberlein (2008) has suggested that people living with wolves and confronting the human problems wolves create leads to "more balanced" views about the animal. At least two studies, one in neighboring Minnesota (Chavez et al. 2005) and one in Sweden (Karlsson and Sjoström, 2007) have found that this relationship holds true regardless of direct experience with wolves. In other words, attitudes of residents within wolf range who have never experienced wolves tend to be similarly negative to those residents who have experienced depredation issues. These findings likely illustrate the powerful influence that social networks, rural culture and the media have on influencing public opinion toward wolves (Heberlein 2013; Karlsson and Sjoström, 2007; Chavez et al. 2005). This is important considering that actual wolf encounters are relatively low even among wolf range residents (Hogberg et al. 2013).

#### *4) Hunters attitudes toward wolves appear to be becoming more negative.*

Studies that have examined how hunters evaluate wolves and wolf restoration efforts have revealed somewhat mixed results (Williams et al. 2002). For example, Kellert (1990) found that deer hunters in Michigan showed the most knowledge, interest, and affection for wolves among the groups he examined. Later studies (Beyer et al. 2006; Mertig 2003) found that attitudes toward wolves by hunters had become more negative as wolf populations had increased. Usually, negative hunter attitudes towards wolves are associated with beliefs that wolves will negatively impact ungulate hunting opportunities (Hogberg et al. 2013; Lohr et al. 1996; Pate et al., 1996).

Wilson's work in Wisconsin (1997) found that hunters were less likely than the general public to support an increase in the wolf population. However, more hunters (46%) did support an increase than opposed (20%) it. More recent research on wolf attitudes within Wisconsin (Hogberg et al. 2013; Treves et al 2013; Treves and Martin 2011) found that negative attitudes have increased among hunters living among wolves over the past decade. Based on survey work in Wisconsin and the northern Rockies, Treves and Martin (2011) have questioned whether current hunter attitudes will compromise on-going wolf conservation efforts, and Treves et al (2013) has predicted that unless efforts are made to change current negative attitudes, incidences of wolf poaching will rise. Bruskotter and Fulton (2011) provided a contrasting perspective, suggesting that tolerance among hunters could simply amount to a passive acceptance of wolves without necessarily liking them or being active partners in recovery efforts.

#### *5) Wolf Social Carrying Capacity is a risk-benefit analysis*

The concept that public support is a limiting factor for wildlife populations operating akin to biological carrying capacity has received a lot of attention (Riley and Decker 2000). More often than not, studies of SCC and its related concept of tolerance have focused on measuring the point at which focal wildlife species become too numerous and their resulting conflicts with people are judged as intolerable (Riley and Decker 2000). However, Peyton et al. (2007) pointed out that stakeholder intolerance can also occur when wildlife populations are too low. Formal challenges to wolf delisting, and opposition to efforts to reduce wolves through hunting and other lethal control, can be indicative of intolerance of low populations. Peyton's model also hypothesizes that tolerance can occur even without stakeholder preferences being met and can be indicated by an absence of political or legal action on the issue. Bruskotter and Fulton (2012) developed a similar model that positing that intolerance of wildlife and stewardship of wildlife represent opposite ends of a continuum of public response to species populations. Both Peyton and Bruskotter's models define acceptance of wildlife as characterized by a lack of public behaviors (e.g., see Slagle et al. 2013) that challenge or undermine management authority or objectives. Stakeholder acceptance for carnivores is determined through an evaluation of tradeoffs between the risks and the benefits (Peyton et al. 2007; Riley and Decker 2000).

Recent research suggests that the evaluation process about wolf preferences is heavily influenced by emotions (Vaske et al. 2013; Slagle et al. 2012) and may be biased by group identity (Lutes and Gore 2014; Stets and Biga 2003). Work by Slagle and colleagues (2013) have found that emotion may precede cognitive judgment about wolves for many individuals. Their conclusion was that while rationale decision making and information processing “is ideal from a standpoint of natural resource agencies, the idea that one can divorce emotion from other biases from decisions is not consistent with prevailing scientific evidence”.

## Summary

Past research on public attitudes towards wolves reveals insights into the kinds of variables that predict and explain differences in wolf attitudes within the public. Development of a wolf management plan in the state will benefit from an updated and comprehensive of examination of current attitudes of state residents. Based on past research, we hypothesize that attitudes toward wolves will be more positive among residents in counties outside current wolf range, non-hunters, urban residents, and those who perceive ecological benefits of wolf predation. We expect that opinion differences that exist within the Wisconsin public will generate management implications for engaging stakeholders more fully in the underlying cultural value differences that underlie controversy and conflict surrounding wolves.

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# Wisconsin Wolf Opinion Survey

Gray wolves are native to Wisconsin. They were eliminated from the state by a bounty system in the early 1900's. Beginning about 1970, wolves returned to the state naturally from Minnesota. They were a protected species under Federal law in 1973, allowing their population to grow. We now have wolf packs living in half of the counties in the state. In 2012, they were removed from protected status and Wisconsin opened its first regulated wolf season (i.e., hunting and trapping).



Wolves evoke strong feelings among people and a diversity of views. Understanding those views is important to us.

1. Are you willing to participate in this study of public opinion regarding wolves?

**Yes >>> Go to next page and take survey**

**No >>> If NOT, Please help us by taking 60 seconds to answer questions 1a-1e and return this questionnaire. *Thank you for sending this questionnaire back.***

1a. Why have you declined to participate? Check all that apply.

- I am not interested in the topic.
- I trust the DNR to manage wolves without my input.
- I feel my opinion will be ignored.
- I feel I do not know enough to participate.
- I am too busy.
- Other: \_\_\_\_\_

1b. Are you?       Male       Female

1c. Are you a hunter?       Yes       No

1d. What is your age? \_\_\_\_\_

1e. What best describes where you live now? *Check one.*

- On a farm
- In the country, but not on a farm
- Small town (less than 2,000)
- Large town or village (2,000-9,999)
- Small city or suburb (10,000-25,000)
- Large city (over 25,000)
- Tribal reservation

## YOUR THOUGHTS ABOUT WOLVES

2. Overall, how would you describe your feelings about wolves? *Check one.*

- 22 Very favorable
- 22 Somewhat favorable
- 24 Neither favorable nor unfavorable
- 16 Somewhat unfavorable
- 16 Very unfavorable

3. To what extent do agree or disagree with the following statements about wolves?  
*Check one box in each row.*

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Wolves are special animals that deserve our admiration.	21	33	24	12	10
Wolves provide no benefits to people.	12	15	25	31	17
People and wolves should be able to co-exist.	22	40	15	14	9
The previous generations were right in eliminating wolves from the landscape.	10	12	17	31	29
Predators like wolves keep nature in balance.	25	43	13	11	8
Wolves are a nuisance for people.	12	22	30	21	15

4. Considering your experiences with wolves *in Wisconsin*, please answer the questions below by circling the number that best applies to you.

About how many times have you .....	Never	Once	More than once	Don't know
seen a wolf <i>in the wild</i> .....	35	26	37	2
heard a wolf howl.....	28	13	52	7
had a domestic animal killed by a wolf....	92	3	2	3
known someone else who had a domestic animal that was killed by a wolf.....	61	16	18	5
seen wolf tracks.....	35	14	42	10

5. People have discussed a number of different reasons for having wolves in Wisconsin. To what extent do you agree or disagree with each of the following reasons for maintaining a sustainable population of wolves in the state?

*Check one box in each row.*

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree nor disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
So future generations can enjoy them	22	37	20	13	8
To be able to harvest their fur	4	16	29	28	23
Because they are important members of the ecological community	26	39	16	12	7
To photograph them	11	34	31	13	11
Because of their value to science and research	13	33	30	14	10
Because they may attract tourists	5	18	35	26	16
Because we are one the few places in the United States with wolves	14	33	28	15	11
Because they have a right to exist	31	38	16	7	8
So that some people will be able to hunt them	5	22	29	23	21
So that some people will be able to trap them	5	18	25	25	27
To help keep deer in balance with their habitat	18	37	15	13	16

## WOLF POPULATION SIZE AND LOCATION

What is your preference for the number of wolves in the state?

6. Compared to the current level, I would like to have \_\_\_\_\_ wolves in the state.

*Check one.*

4	Many more	15	Fewer
15	More	12	Many fewer
26	About the same number of	11	Zero
		17	I don't know

7. Indicate the extent to which you agree or disagree with the following two statements:

- a) I would like to have as FEW wolves as possible in the state. *Check one.*

17 Strongly agree    15 Agree    19 Unsure    28 Disagree    21 Strongly disagree

- b) I would like to have as MANY wolves as the habitat in the state will support. *Check one.*

12 Strongly agree    24 Agree    20 Unsure    22 Disagree    22 Strongly disagree

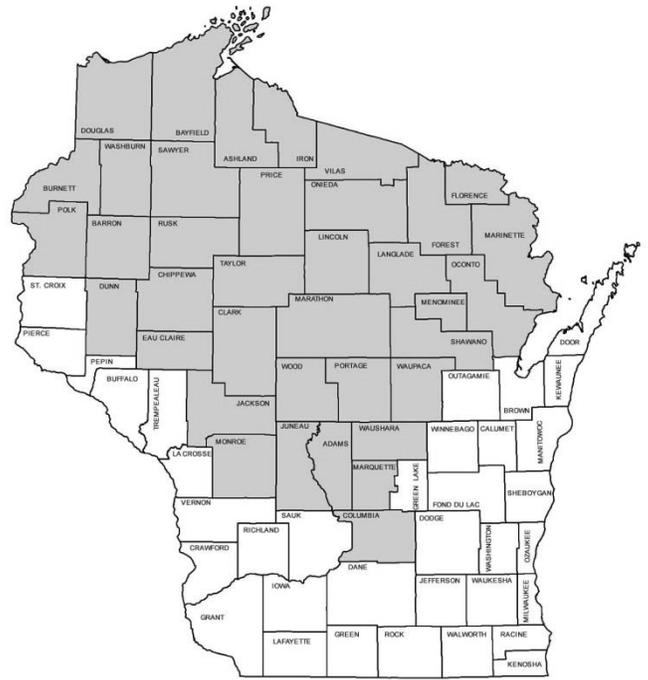
8. In which kinds of areas would you support allowing wolves to exist in Wisconsin?

*Check all that apply.*

39	Anywhere wolves become established on their own
58	Primarily forested areas with large blocks of public land
32	Primarily forested areas that are largely privately owned
12	Areas with a mix of forests and farms and ranches
4	Areas that are primarily farmland near small towns
5	Rural areas on the fringes of suburban development
16	Nowhere
10	I am not sure

**Please read:** Take a moment to review the map.

The shading represents counties with known, established wolf packs, keeping in mind that most wolves are concentrated in northern or central counties with more forest cover. Counties that are shown as white do not have established wolf packs and much of this area has unsuitable habitat (i.e., urban areas).



■ Wolf packs present      □ No wolf packs

9. Is your primary residence located in a shaded county?

- 99 Yes
- 1 No >>> *If no, SKIP to Q #13*

10. Are you willing to have wolves near where you live?

- 28 Yes, absolutely
- 21 Yes, maybe
- 7 Not sure
- 24 No, rather not
- 19 Absolutely not

11. In my opinion, the number of wolves occurring in **my county of residence** can be considered...

- 6 Very abundant
- 14 Abundant
- 45 Present but not abundant
- 14 Rare
- 4 Very rare
- 17 I have no idea

12. In **my county of residence** I would like to see the wolf population...

- 13 Increased
- 40 Maintained about the same
- 18 Decreased
- 15 Eliminated
- 14 Not sure

13. Do you regularly visit a vacation home, cabin, cottage, or hunting land **in a shaded county** on the map on the previous page?

38 Yes >>> *If yes, in which county:* \_\_\_\_\_ *Continue to Q #14...*

62 No >>> *If no, SKIP to Q #17*

14. Do you hunt on or from that vacation property?

49 Yes                      51 No

15. In my opinion, the number of wolves occurring in **my vacation county** can be considered...

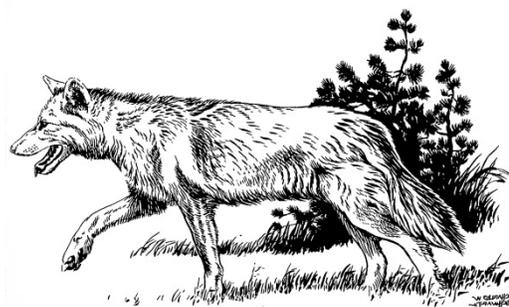
- 15 Very abundant
- 29 Abundant
- 41 Present but not abundant
- 7 Rare
- 3 Very rare
- 5 I have no idea

16. In **my vacation county**, I would like to see the wolf population...

- 11 Increased
- 33 Maintained about the same
- 27 Decreased
- 21 Eliminated
- 8 Not sure

17. How much have you thought about wolves in Wisconsin prior to receiving this questionnaire in the mail? *Check one.*

- 25 A lot
- 49 Somewhat
- 21 Very little
- 6 Not at all



## SAFETY PERCEPTIONS

People have different levels of comfort regarding wildlife species. In the next series of questions (#18-20), we are going to ask you about three different predators in Wisconsin.

18. Please indicate the extent to which you agree or disagree with the following statements about **WOLVES**. *Please check one box in each row.*

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Does not apply
I would worry about <u>my personal safety</u> while outdoors in areas where wolves live.	17	26	19	25	12	0
I would worry about the <u>safety of my pets</u> while outdoors in areas where wolves live.	29	40	12	11	4	5
I would worry about the <u>safety of children</u> who are outdoors in areas where wolves live.	30	33	15	15	6	1

19. Please indicate the extent to which you agree or disagree with the following statements about **BEARS**. *Please check one box in each row.*

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Does not apply
I would worry about <u>my personal safety</u> while outdoors in areas where bears live.	14	33	18	25	10	0
I would worry about the <u>safety of my pets</u> while outdoors in areas where bears live.	15	32	19	22	8	5
I would worry about the <u>safety of children</u> who are outdoors in areas where bears live.	22	38	16	17	6	1

20. Please indicate the extent to which you agree or disagree with the following statements about **COYOTES**. *Please check one box in each row.*

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree nor disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Does not apply</b>
I would worry about <u>my personal safety</u> while outdoors in areas where coyotes live.	8	17	19	37	18	1
I would worry about the <u>safety of my pets</u> while outdoors in areas where coyotes live.	16	39	15	17	8	5
I would worry about the <u>safety of children</u> who are outdoors in areas where coyotes live.	15	30	17	25	11	1

### **OPINIONS ABOUT WOLF MANAGEMENT OBJECTIVES**

21. How important are the decisions regarding wolf management in Wisconsin to you personally? *Check one.*

- 38 Very important
- 42 Somewhat important
- 15 Neither important nor unimportant
- 3 Somewhat unimportant
- 2 Very unimportant

22. Please indicate the extent to which you agree or disagree with the following statements regarding the Department of Natural Resources in their role as the management authority for wolves in Wisconsin. *Check one box in each row.*

<b>With respect to managing the wolf population in our state, I feel that the Wisconsin DNR...</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree nor disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
shares similar values as me.	4	27	39	21	10
thinks in a similar way as me.	3	25	40	22	10
takes similar actions as I would.	3	23	39	25	11
shares similar goals as me.	3	25	41	21	11

23. To what extent should the following objectives be given priority in wolf management decisions? *Please check one box for each objective listed.*

Potential management objective	High priority	Medium priority	Low priority	Not at all a priority	Not sure
Eliminate wolves from areas where they are attacking domestic livestock.	53	30	10	4	3
Create refuge areas to protect wolves from removal or harvest.	33	26	18	19	4
Reduce wolf populations on public lands where they are killing bear hunting dogs.	24	27	25	21	4
Reduce the number of wolves living near the state's reintroduced elk herd.	30	31	24	10	6
Promote diverse animal communities that include wolves.	30	26	22	16	6
Maintain enough wolves to allow for a yearly public hunting and trapping season.	8	18	28	39	6
Promote public opportunities to see and hear wolves.	17	25	26	30	3
Reduce wolf populations in northern counties to address deer hunter concerns about predation on deer.	26	18	27	24	4
Kill wolves that show aggression or threatening behavior toward people.	69	16	8	4	3
Leave wolves alone and let nature decide how many we have.	15	20	20	33	12
Increase law enforcement efforts to reduce the illegal shooting of wolves in the state.	30	20	21	25	3

24. Which statement best describes your opinion about the regulated wolf season (hunting and trapping) in Wisconsin? *Check all that apply.*

21 I oppose having a season for wolves. >>> **Continue to Q #25**

17 I am undecided. >>> **SKIP to Q #26**

40 I support a season for wolves as a tool to reduce the population. >>> **SKIP to Q #26**

26 I support hunting wolves as long as it can be done sustainably. >>> **SKIP to Q #26**

25. For which reasons do you oppose having a regulated season on wolves?  
*Check all that apply.*

- 16 I think all forms of hunting are cruel.
- 50 I support some forms of hunting, but not for wolves.
- 30 I am fond of wolves.
- 53 I am worried wolves will become endangered again.
- 23 Hunting wolves is offensive to Native Americans.
- 53 I do not think we need to hunt wolves.
- 44 I do not think hunting wolves will reduce human-wolf conflicts.
- 16 Other: \_\_\_\_\_

26. We would like to know your level of support for using three different options to try to reduce various kinds of human-wolf conflicts.

	Check this box only	<u>OR</u>	Check all that apply			
Type of wolf-human conflicts	I do not support reducing the number of wolves for this type of conflict.		I support the killing of individual wolves by wildlife professionals for this type of conflict.	I support issuing permits to landowners to kill individual wolves for this type of conflict.	I support a public hunting and trapping season for overall population reduction for this type of conflict.	I am unsure.
Attacks on domestic livestock (cattle, sheep).	6	OR	47	64	30	3
Hunting dogs being killed on public lands.	30	OR	30	30	28	9
Predation impacts to white-tail deer.	31	OR	23	23	41	10
Predation impacts to the state's reintroduced elk herd.	19	OR	39	21	36	13
Wolves which regularly approach humans.	9	OR	59	40	29	7
Wolves that have attacked pets near residences.	8	OR	57	49	28	5

## GENERAL INFORMATION

27. Are you?                      57 Male                      43 Female
28. What is your age? \_\_\_\_\_ years
29. What is your occupation? \_\_\_\_\_
30. Please indicate the extent to which the following labels fit you in terms of how you think about yourself. *Circle one number in each row.*

Identity labels.....	<b>This is <u>not</u> me at all</b>	<b>This is only a small part of who I am</b>	<b>This applies to me, but is not the central part of who I am</b>	<b>This is central to who I am</b>
Bear hunter.....	86	8	5	1
Birdwatcher.....	19	36	32	13
Conservationist.....	13	29	38	20
Deer hunter.....	58	14	13	14
Environmentalist.....	17	33	33	17
Farmer.....	68	16	9	7
Grouse hunter.....	77	11	8	4
Hound hunter.....	94	3	2	1
Nature lover.....	4	14	39	43
Trapper.....	91	5	2	2
Wolf advocate.....	48	26	19	7

31. Please check all of the following outdoor activities that you participated in during the past 12 months in Wisconsin.

34 ATV riding	51 Biking	59 Bird watching	45 Camping
12 Cross-county skiing	21 Deer Hunting	56 Fishing	57 Hiking
11 Horseback riding	40 Photography	20 Snowmobiling	21 Snowshoeing
3 Trapping	54 Walking dog(s)	39 Foraging (berries, mushrooms, etc.)	
5 None of the above		11 Other _____	

32. What best describes where you live now? *Check one.*
- |                                      |   |
|--------------------------------------|---|
| 10 On a farm                         | 17 Large town or village (2,000-9,999)  |
| 38 In the country, but not on a farm | 13 Small city or suburb (10,000-25,000) |
| 15 Small town (less than 2,000)      | 7 Large city (over 25,000)              |
|                                      | 0 Tribal reservation                    |
33. What best describes the area where you grew up? *If you lived in more than one area, select the place you lived the longest while growing up. Check one.*
- |                                      |   |
|--------------------------------------|---|
| 24 On a farm                         | 12 Large town or village (2,000-9,999)  |
| 21 In the country, but not on a farm | 12 Small city or suburb (10,000-25,000) |
| 12 Small town (less than 2,000)      | 20 Large city (over 25,000)             |
|                                      | 0 Tribal reservation                    |
34. Please check your highest completed level of education.
- |                                 |                     |
|---------------------------------|---------------------|
| 3 Less than high school         | 16 Some college     |
| 25 Completed high school or GED | 12 Two-year degree  |
| 12 Vocational or trade school   | 19 Four-year degree |
|                                 | 13 Advanced degree  |
35. Please enter additional comments or thoughts you have in the space below.

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Bureau of Science Services  
 Wisconsin Department of Natural Resources  
 P.O. Box 7921  
 Madison, WI 53707-7921



# Wisconsin Wolf Opinion Survey

Gray wolves are native to Wisconsin. They were eliminated from the state by a bounty system in the early 1900's. Beginning about 1970, wolves returned to the state naturally from Minnesota. They were a protected species under Federal law in 1973, allowing their population to grow. We now have wolf packs living in half of the counties in the state. In 2012, they were removed from protected status and Wisconsin opened its first regulated wolf season (i.e., hunting and trapping).



Wolves evoke strong feelings among people and a diversity of views. Understanding those views is important to us.

1. Are you willing to participate in this study of public opinion regarding wolves?

**Yes >>> Go to next page and take survey**

**No >>> If NOT, Please help us by taking 60 seconds to answer questions 1a-1e and return this questionnaire. *Thank you for sending this questionnaire back.***

1a. Why have you declined to participate? Check all that apply.

- I am not interested in the topic.
- I trust the DNR to manage wolves without my input.
- I feel my opinion will be ignored.
- I feel I do not know enough to participate.
- I am too busy.
- Other: \_\_\_\_\_

1b. Are you?       Male       Female

1c. Are you a hunter?       Yes       No

1d. What is your age? \_\_\_\_\_

1e. What best describes where you live now? *Check one.*

- On a farm
- In the country, but not on a farm
- Small town (less than 2,000)
- Large town or village (2,000-9,999)
- Small city or suburb (10,000-25,000)
- Large city (over 25,000)
- Tribal reservation

## YOUR THOUGHTS ABOUT WOLVES

2. Overall, how would you describe your feelings about wolves? *Check one.*

- 29 Very favorable
- 26 Somewhat favorable
- 31 Neither favorable nor unfavorable
- 10 Somewhat unfavorable
- 4 Very unfavorable

3. To what extent do agree or disagree with the following statements about wolves?  
*Check one box in each row.*

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Wolves are special animals that deserve our admiration.	27	41	22	7	2
Wolves provide no benefits to people.	3	9	27	42	20
People and wolves should be able to co-exist.	27	50	11	10	3
The previous generations were right in eliminating wolves from the landscape.	2	9	18	38	33
Predators like wolves keep nature in balance.	31	51	13	4	2
Wolves are a nuisance for people.	3	19	33	27	18

4. Considering your experiences with wolves *in Wisconsin*, please answer the questions below by circling the number that best applies to you.

About how many times have you .....	Never	Once	More than once	Don't know
seen a wolf <i>in the wild</i> .....	56	25	18	1
heard a wolf howl.....	43	15	37	6
had a domestic animal killed by a wolf....	97	2	0	1
known someone else who had a domestic animal that was killed by a wolf.....	81	10	5	3
seen wolf tracks.....	52	14	24	10

5. People have discussed a number of different reasons for having wolves in Wisconsin. To what extent do you agree or disagree with each of the following reasons for maintaining a sustainable population of wolves in the state?

*Check one box in each row.*

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree nor disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
So future generations can enjoy them	28	44	20	6	3
To be able to harvest their fur	2	14	25	32	28
Because they are important members of the ecological community	34	47	13	4	2
To photograph them	14	41	32	9	4
Because of their value to science and research	16	45	28	8	4
Because they may attract tourists	6	25	42	19	8
Because we are one the few places in the United States with wolves	16	42	31	7	4
Because they have a right to exist	42	41	11	4	2
So that some people will be able to hunt them	3	20	30	24	24
So that some people will be able to trap them	2	15	25	25	33
To help keep deer in balance with their habitat	22	45	22	6	5

## WOLF POPULATION SIZE AND LOCATION

What is your preference for the number of wolves in the state?

6. Compared to the current level, I would like to have \_\_\_\_\_ wolves in the state.

*Check one.*

6	Many more	8	Fewer
21	More	6	Many fewer
29	About the same number of	3	Zero
		28	I don't know

7. Indicate the extent to which you agree or disagree with the following two statements:

- a) I would like to have as FEW wolves as possible in the state. *Check one.*

6 Strongly agree    11 Agree    22 Unsure    35 Disagree    26 Strongly disagree

- b) I would like to have as MANY wolves as the habitat in the state will support. *Check one.*

14 Strongly agree    34 Agree    25 Unsure    18 Disagree    9 Strongly disagree

8. In which kinds of areas would you support allowing wolves to exist in Wisconsin?

*Check all that apply.*

42	Anywhere wolves become established on their own
66	Primarily forested areas with large blocks of public land
42	Primarily forested areas that are largely privately owned
20	Areas with a mix of forests and farms and ranches
7	Areas that are primarily farmland near small towns
8	Rural areas on the fringes of suburban development
6	Nowhere
12	I am not sure



13. Do you regularly visit a vacation home, cabin, cottage, or hunting land **in a shaded county** on the map on the previous page?

36 Yes >>> *If yes, in which county:* \_\_\_\_\_ *Continue to Q #14...*

64 No >>> *If no, SKIP to Q #17*

14. Do you hunt on or from that vacation property?

34 Yes                      66 No

15. In my opinion, the number of wolves occurring in **my vacation county** can be considered...

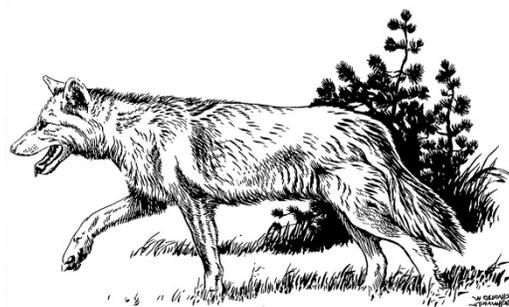
- 2 Very abundant
- 15 Abundant
- 42 Present but not abundant
- 11 Rare
- 3 Very rare
- 27 I have no idea

16. In **my vacation county**, I would like to see the wolf population...

- 16 Increased
- 45 Maintained about the same
- 14 Decreased
- 5 Eliminated
- 20 Not sure

17. How much have you thought about wolves in Wisconsin prior to receiving this questionnaire in the mail? *Check one.*

- 14 A lot
- 38 Somewhat
- 34 Very little
- 14 Not at all



## SAFETY PERCEPTIONS

People have different levels of comfort regarding wildlife species. In the next series of questions (#18-20), we are going to ask you about three different predators in Wisconsin.

18. Please indicate the extent to which you agree or disagree with the following statements about **WOLVES**. *Please check one box in each row.*

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Does not apply
I would worry about <u>my personal safety</u> while outdoors in areas where wolves live.	9	24	27	28	11	1
I would worry about the <u>safety of my pets</u> while outdoors in areas where wolves live.	19	43	14	10	4	11
I would worry about the <u>safety of children</u> who are outdoors in areas where wolves live.	21	41	16	15	5	2

19. Please indicate the extent to which you agree or disagree with the following statements about **BEARS**. *Please check one box in each row.*

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Does not apply
I would worry about <u>my personal safety</u> while outdoors in areas where bears live.	16	43	15	19	7	1
I would worry about the <u>safety of my pets</u> while outdoors in areas where bears live.	17	39	15	14	6	10
I would worry about the <u>safety of children</u> who are outdoors in areas where bears live.	26	46	10	12	5	2

20. Please indicate the extent to which you agree or disagree with the following statements about **COYOTES**. *Please check one box in each row.*

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree nor disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Does not apply</b>
I would worry about <u>my personal safety</u> while outdoors in areas where coyotes live.	8	22	19	34	17	0
I would worry about the <u>safety of my pets</u> while outdoors in areas where coyotes live.	19	44	12	11	6	9
I would worry about the <u>safety of children</u> who are outdoors in areas where coyotes live.	17	36	16	20	9	2

### **OPINIONS ABOUT WOLF MANAGEMENT OBJECTIVES**

21. How important are the decisions regarding wolf management in Wisconsin to you personally? *Check one.*

- 28 Very important
- 43 Somewhat important
- 20 Neither important nor unimportant
- 7 Somewhat unimportant
- 2 Very unimportant

22. Please indicate the extent to which you agree or disagree with the following statements regarding the Department of Natural Resources in their role as the management authority for wolves in Wisconsin. *Check one box in each row.*

<b>With respect to managing the wolf population in our state, I feel that the Wisconsin DNR...</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree nor disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
shares similar values as me.	5	30	51	12	3
thinks in a similar way as me.	3	27	54	13	3
takes similar actions as I would.	3	23	54	15	4
shares similar goals as me.	4	26	53	13	4

23. To what extent should the following objectives be given priority in wolf management decisions? *Please check one box for each objective listed.*

Potential management objective	High priority	Medium priority	Low priority	Not at all a priority	Not sure
Eliminate wolves from areas where they are attacking domestic livestock.	40	34	18	3	6
Create refuge areas to protect wolves from removal or harvest.	43	32	13	8	4
Reduce wolf populations on public lands where they are killing bear hunting dogs.	17	24	29	20	10
Reduce the number of wolves living near the state's reintroduced elk herd.	21	34	25	9	10
Promote diverse animal communities that include wolves.	37	29	19	7	7
Maintain enough wolves to allow for a yearly public hunting and trapping season.	8	20	23	39	10
Promote public opportunities to see and hear wolves.	23	26	30	17	4
Reduce wolf populations in northern counties to address deer hunter concerns about predation on deer.	12	20	31	30	8
Kill wolves that show aggression or threatening behavior toward people.	55	25	8	5	7
Leave wolves alone and let nature decide how many we have.	18	22	26	19	15
Increase law enforcement efforts to reduce the illegal shooting of wolves in the state.	34	27	21	11	7

24. Which statement best describes your opinion about the regulated wolf season (hunting and trapping) in Wisconsin? *Check all that apply.*

27 I oppose having a season for wolves. >>> **Continue to Q #25**

23 I am undecided. >>> **SKIP to Q #26**

25 I support a season for wolves as a tool to reduce the population. >>> **SKIP to Q #26**

30 I support hunting wolves as long as it can be done sustainably. >>> **SKIP to Q #26**

25. For which reasons do you oppose having a regulated season on wolves?  
*Check all that apply.*

- 24 I think all forms of hunting are cruel.
- 45 I support some forms of hunting, but not for wolves.
- 42 I am fond of wolves.
- 65 I am worried wolves will become endangered again.
- 22 Hunting wolves is offensive to Native Americans.
- 59 I do not think we need to hunt wolves.
- 57 I do not think hunting wolves will reduce human-wolf conflicts.
- 14 Other: \_\_\_\_\_

26. We would like to know your level of support for using three different options to try to reduce various kinds of human-wolf conflicts.

	<b>Check this box only</b>	<b><u>OR</u></b>	<b>Check all that apply</b>			
<b>Type of wolf-human conflicts</b>	<b>I do not support reducing the number of wolves for this type of conflict.</b>		<b>I support the killing of individual wolves by wildlife professionals for this type of conflict.</b>	<b>I support issuing permits to landowners to kill individual wolves for this type of conflict.</b>	<b>I support a public hunting and trapping season for overall population reduction for this type of conflict.</b>	<b>I am unsure.</b>
Attacks on domestic livestock (cattle, sheep).	8	OR	45	56	21	6
Hunting dogs being killed on public lands.	28	OR	34	23	18	15
Predation impacts to white-tail deer.	37	OR	20	13	28	16
Predation impacts to the state's reintroduced elk herd.	21	OR	38	15	28	17
Wolves which regularly approach humans.	13	OR	59	29	21	11
Wolves that have attacked pets near residences.	8	OR	59	38	21	8

## GENERAL INFORMATION

27. Are you?                      52 Male                      48 Female
28. What is your age? \_\_\_\_\_ years
29. What is your occupation? \_\_\_\_\_
30. Please indicate the extent to which the following labels fit you in terms of how you think about yourself. *Circle one number in each row.*

Identity labels.....	<b>This is <u>not</u> me at all</b>	<b>This is only a small part of who I am</b>	<b>This applies to me, but is not the central part of who I am</b>	<b>This is central to who I am</b>
Bear hunter.....	92	5	2	1
Birdwatcher.....	24	39	29	8
Conservationist.....	15	30	41	15
Deer hunter.....	72	12	10	6
Environmentalist.....	19	29	35	17
Farmer.....	78	14	5	4
Grouse hunter.....	87	8	4	2
Hound hunter.....	96	1	2	1
Nature lover.....	4	15	37	44
Trapper.....	96	3	1	0
Wolf advocate.....	45	32	16	7

31. Please check all of the following outdoor activities that you participated in during the past 12 months in Wisconsin.

22 ATV riding	56 Biking	54 Bird watching	43 Camping
11 Cross-county skiing	9 Deer Hunting	45 Fishing	61 Hiking
6 Horseback riding	40 Photography	12 Snowmobiling	14 Snowshoeing
1 Trapping	51 Walking dog(s)	23 Foraging (berries, mushrooms, etc.)	
7 None of the above		9 Other _____	

32. What best describes where you live now? *Check one.*
- |                                      |   |
|--------------------------------------|---|
| 3 On a farm                          | 13 Large town or village (2,000-9,999)  |
| 13 In the country, but not on a farm | 22 Small city or suburb (10,000-25,000) |
| 6 Small town (less than 2,000)       | 43 Large city (over 25,000)             |
|                                      | 0 Tribal reservation                    |
33. What best describes the area where you grew up? *If you lived in more than one area, select the place you lived the longest while growing up. Check one.*
- |                                      |   |
|--------------------------------------|---|
| 12 On a farm                         | 13 Large town or village (2,000-9,999)  |
| 13 In the country, but not on a farm | 17 Small city or suburb (10,000-25,000) |
| 7 Small town (less than 2,000)       | 38 Large city (over 25,000)             |
|                                      | 0 Tribal reservation                    |
34. Please check your highest completed level of education.
- |                                 |                     |
|---------------------------------|---------------------|
| 1 Less than high school         | 16 Some college     |
| 17 Completed high school or GED | 9 Two-year degree   |
| 9 Vocational or trade school    | 27 Four-year degree |
|                                 | 20 Advanced degree  |
35. Please enter additional comments or thoughts you have in the space below.

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