Informing the Debate

Michigan Applied Public Policy Brief

Michigan Citizens' Response to Gray Wolf-Related Risks

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Michigan Applied Public Policy Briefs

Informing the Debate

The paper series, Informing the Debate, is generated out of grant-funded, policy-relevant research sponsored by the Institute for Public Policy and Social Research (IPPSR).

The IPPSR program, Michigan Applied Public Policy Research Program or MAPPR, generates research on current issues held in urban communities with special attention to Michigan. Policy researchers author summary briefs of their research outcomes and their implications. The funded research projects and related policy briefs focus on main headings of discussion being held in the policy arena.

When developing the paper series initiative in 1992, the topics of the papers were submitted following a two-day meeting with leaders from the business sector, nonprofit agencies, foundations, and university faculty and staff. That group evolved into the Urban Research Interest Group.

The Urban Research Interest Group recognized the pressure on urban core leaders to make critical decisions that continue to impact people long into the future. A commitment to generating background research to add to the core of debate on possible solutions to complex, urban problems was made.

The expected outcomes of the paper series include discussion that fosters and strengthens multidimensional connections between the policy, academic, and practitioner community. The series continues to cultivate research interest in policy-relevant issues for consideration of decision makers in urban communities.

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Informing the Debate

MAPPR Policy Research Brief

Michigan Citizens' Response to Gray Wolf-Related Risks

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Acknowledgements

Abstract

Public opinion about wolf management and policy can relate to stakeholders' perceptions about wolves' threats to human safety and livelihoods. This study aimed to identify risk perception and public support for various wolf management strategies; we conducted an internet-based survey of 505 randomly selected Michigan residents during October 2014. A majority of respondents preferred that the Michigan wolf population remain constant in the future. Perceptions of wolf-related risks varied by region, and a majority in each region agreed that the risks were difficult to understand for those living outside wolf range. Individuals' willingness to accept wolf presence varied depending on whether a single wolf or a pack were involved. A majority agreed that management should be based on state agency-generated scientific recommendations, with pluralities supporting inputs from a public vote and university-generated science. Pluralities opposed a decision-making role for the state legislature and federal government agencies. These preferences varied by age, gender, education level, region, self-identified ideology, and level of fear towards wolves. Finally, results indicate opportunities for further education about wolf behavior and current policies.

"A majority of respondents preferred that the Michigan wolf population remain constant in the future."

Policy Implications

This study provides two primary implications for wolf management in the evolving policy context. First, if wolves continue to be listed under the US Endangered Species Act, there is little flexibility for empowering new decision-makers at the state level. However, if wolves are delisted again, interagency collaborations and multi-sectoral decision making, as opposed to

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single-sector decision-making would reflect Michigan citizen preferences. Second, physical geography influences some but not all public attitudes about some human dimensions of wolf management, therefore some but not all policy interventions may need to vary by location within the state.

GRAY WOLVES & THEIR MANAGEMENT HISTORY

Historically, gray wolves were distributed throughout Canada, U.S., and Mexico. Predator and pest eradication campaigns, aided by government-issued bounties, resulted in the killing off of wolves and many other carnivores in the U.S. and Mexico by the twentieth century. Wolf eradication was predicated upon multiple justifications, including increasing abundance of game species such as white-tailed deer and elk, protecting livestock and controlling disease. Wolves were also removed from more human-populated areas due to residents' fear of the animal.

Wolves were one of the first species to be listed on the U.S. Endangered Species Act (ESA) in 1974, and while listed, the Fish and Wildlife Service (USFWS) oversaw their management. In 1995, the USFWS reintroduced wolves to central Idaho and Yellowstone National Park as "experimental populations" (i.e., populations outside the species current range but within historical range). This designation allowed greater flexibility in managing an endangered species that could potentially conflict with the interests of people. Having reintroduced wolf populations to the Greater Yellowstone ecosystem, wolf recovery in the Northern Rockies region was deemed successful, leading to the first attempt to delist wolves in 2002. During this time, wolves began naturally recolonizing states in the Western Great Lakes from Canada and northern Minnesota, where wolves were never completely eradicated (Lute, 2014).

In early 2012, U.S. Congress and USFWS deemed wolves to be recovered and delisted from the ESA in the Northern Rockies (i.e., Idaho, Montana, Wyoming) and Western Great Lakes (i.e., Michigan, Minnesota, Wisconsin) although current wolf distribution in the contiguous U.S. is still a fraction (<5-20% by US region) of its original range. Delisting returned management responsibility to states where wolves were present. Legislation to hunt wolves, and lawsuits or ballot initiatives to overturn such

legislation, followed in many states. All six Northern Rockies and Western Great Lakes states have since had at least one season of wolf hunting and/or trapping (Lute, 2014).

As of January 2013, an estimated 650 wolves exist in Michigan's Upper Peninsula (Michigan Department of Natural Resources, 2014) (Figure 1). The first statewide wolf recovery plan was signed by the Director of the Michigan Department of Natural Resources (MDNR) in 1997. Since that time a number of wolf recovery activities have occurred, including the 2005 Wolf Roundtable, which was convened to replace the existing wolf management plan. In 2008, the Michigan Wolf Management Plan was approved and focused on management that fostered coexistence between humans and a viable and recovered wolf population (MDNR, 2008). In December 2012, almost one year after wolves were delisted from the ESA, a bill designating wolves a game species passed state congressional review and was signed into law by Michigan's governor (Public Act 520). The law transferred authority for wolf management to MDNR. The MDNR makes management recommendations to the final decision-making body, the Natural Resources Commission (NRC), which consists of seven governor-appointed individuals who delineate allowable hunting measures for game species. The recommendations from MDNR take into consideration information from public stakeholder meetings throughout the state, as well as structured meetings with stakeholder group representatives.

In March 2013, MDNR sought stakeholder input from regional public meetings as well as ongoing meetings with the Wolf Management Advisory Council (WMAC) consisting of 22 individuals representing various stakes and organizations throughout Michigan. MDNR then made recommendations to the NRC, which determined acceptable methods for legally hunting wolves. In 2013, Michigan's first wolf hunting season occurred with the goal of addressing human-wolf conflicts in specific zones. A quota of 43 hunted wolves was set.

Figure 1. Map of Michigan and current wolf range. As of early 2015, wolf populations (range denoted in gray) were limited to the Upper Peninsula.[1]

In November 2014, two ballot initiatives addressed whether wolves would be hunted in Michigan. Proposal 14-1 was a "Referendum of Public Act 520 of 2012, establishing a hunting season for wolves and authorizing annual wolf hunting seasons." The proposal, which designated wolves as a game species for hunting purposes and allowed the Natural Resources Commission to schedule annual hunting seasons, was rejected. Proposal 14-2 was a "Referendum of Public Act 21 of 2013, granting the Natural Resources Commission the power to designate wolves and certain other animals as game without legislative action." This proposal primarily granted the National Resources Commission the authority to designate wolves and other animals as game without the input of the state legislature, as well as giving the legislature the sole authority to remove an animal from the game list. Proposal 14-2 was also rejected. While the public votes rejected wolf hunting in Michigan, the issue became moot in December 2014 after a federal judge ordered Western Great Lakes wolves to be reinstated on the ESA.

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[1] One gray wolf has been sighted in the Northern Lower Peninsula, though there is not sufficient evidence to determine whether its presence indicates wolf colonization in this region.

In addition to state-level management, the 2007 Consent Decree outlined Native American sovereign rights to natural resources throughout the region, and tribal lands are therefore managed separately in terms of hunting regulations. However, many Native American individuals and tribes have publically stated they will not hunt wolves. Wolf hunting zones in Michigan did not include tribal lands.

SOCIAL SCIENCE RESEARCH ON WOLVES AND THEIR MANAGEMENT IN MICHIGAN

Several prior social science studies have explored public perceptions of wolves in Michigan over the past three decades. At the time, wolves were federally managed and Michigan was crafting its statewide management plan.

➤ Hook and Robertson (1982) first assessed wolf-related attitudes in the state. They uncovered support for wolf recovery but also fear of wolves. Negative (i.e., skeptical, derisive) attitudes towards animals generally were the most robust predictors of anti-wolf attitudes, suggesting perhaps that wolves were not seen as somehow different from other predators, such as cougar or bear. In addition, lower education and income levels as well as age, anti-MDNR sentiment, residence in the Upper Peninsula (where wolves are located) and rural upbringing also correlated with anti-wolf attitudes.

➤ Kellert (1990) conducted a statewide study of public attitudes, knowledge, and behavioral intentions in Michigan. His study revealed relatively strong support for wolf recovery among diverse stakeholders with the exception of farmers. Interestingly, deer hunters demonstrated the most interest, affection and concern related to wolves; trappers were highly appreciative and most knowledgeable about wolves. Lower Peninsula (LP) residents, in comparison to Upper Peninsula residents, expressed greater affection for the wolf but also more fear, incomprehension and less outdoor recreational interest related to wolves.

➤ Mertig (2004) surveyed public attitudes and found high overall support for wolf recovery; support increased with more distance

from established wolf range and decreased with greater fear of wolves. Awareness of and indirect experience with wolves (e.g., watching television programs, reading) increased but knowledge remained low compared to Kellert's (1990) findings. The majority of respondents supported a hands-off approach to wolf management as long as humans were not injured. Support for killing wolves to reduce population size was low. Similar to Kellert's (1990) findings, Mertig found most Michigan citizens did not support consumptive uses of wolves (e.g., hunting for recreation, trapping for pelts).

➢ Beyer and colleagues (2006) reported that tolerance for wolves in the Upper Peninsula (i.e., acceptance of living near wolves) was strongly related to basic beliefs about the benefits of wolves and moderately related to concerns about negative impacts of wolves. Similar to the studies discussed above, tolerance was similarly predicted by participant's region of residence and hunting participation. Support for measures to prevent attacks (e.g., fladry/flagging, guard dogs, donkeys) was weak. Despite considerable support for Upper Peninsula wolves, polarity between tolerant and intolerant groups suggested controversy existed over wolf management (Peyton, Bull, & Holsman, 2007).

"Despite considerable support for Upper Peninsula wolves, polarity between tolerant and intolerant groups suggested controversy existed over wolf management."

➢ Lute explored how conservation ethics, risk perception, and social identity influenced acceptability of management actions and stewardship behaviors among diverse Michigan stakeholders. Along with others, Lute delineated the complex relationship between power and knowledge within Michigan wolf management (Lute & Gore, 2014a), showing that political power may be more influential than scientific evidence in some contexts (though Lute & Axelrod (2015) find broad support for scientific inputs to wolf management). She further demonstrated that Michigan stakeholders' management preferences are correlated with social group identities (Lute & Gore, 2014b), including stakeholder concerns about hunting wolves (Lute et al., 2014). Michigan stakeholders engage in diverse stewardship actions that indirectly influence wolf management, some of which require significant contribution of time and other resources (i.e., volunteering time, educating others). On average, 15% of respondents, all of whom were active and highly involved wolf stakeholders, engaged in any single stewardship activity.

WOLF-RELATED RISKS

Risk perception is an important consideration in human interactions with wildlife. Wildlife-related risks can include attacks on humans or pets, livestock depredation or competition over game species. Risk perceptions are subjective, value-laden and intuitive judgments related to an individual's risk. Such perceptions often influence behaviors. Because of the subjective nature and uncertainty surrounding risk, stakeholders often conflict with each other over how to mitigate assessed and perceived wildlife-related risks.

Wolf management includes a clear political dimension; disagreements are often divided along political party lines and wolf-related decisions can be made within a political arena involving legislators, governor-appointed commissioners and voters. Human-wildlife conflict (HWC) related to wolves in Michigan, and often elsewhere, centers overwhelmingly on wolf depredation of livestock (e.g., cattle, sheep) and hunting dogs as well as wolves' impact on abundance of game species such as white-tailed deer (Thompson, 1993).

THE CURRENT STUDY

Public opinion about gray wolves can relate to perceptions of those species' impacts on human livelihoods and recreational activities. In particular, opinion shifts as people identify a specific species as "perpetrator" of harm against humans, ecosystems or other animals (Muter, Gore, and Riley, 2009). These changes in public opinion can have direct bearing on support or opposition to management strategies, especially those involving lethal control activities such as hunting, but the predictive relationship is not well understood. Thus, managers are limited in their ability to anticipate public support for or opposition to management activities and engaging stakeholders as part of the management process.

Exploring answers to these questions can help identify factors that predict public support for particular policies and programs. This study, therefore, addresses a key research objective: identify risk perception and public support for various wolf management strategies.

Stakeholder conflict over wolves and their management in Michigan is currently dominated by whether wolves should be hunted.

Although much social science of wolf management research has occurred, no studies to date have examined broad scale public preferences or how the broader policy context affects public perceptions.

To achieve our objective, we conducted an internet-based survey of 505 randomly selected Michigan residents during October 2014. The sample was stratified to ensure that Upper Peninsula (UP) and Northern Lower Peninsula (NLP) communities – who may have nearby wolves now (UP) or in the near future (NLP) – were overrepresented, with approximately 40% (206) of respondents hailing from counties in the UP or NLP. Therefore, some descriptive statistics may overestimate public opinion about knowledge of and threats from wolf populations. We therefore present findings regarding the level of concern statewide, as well as specifically in the UP and NLP.

The survey asked participants to answer a series of questions about their knowledge of basic wolf biology and policies. Participants were then asked about their preferred policies for wolf management in Michigan, as well as which actors (state or federal agencies, legislature, scientific panels, or public vote) should have responsibility for selecting these policies. They were then asked about their perception of the threats posed by wolves, and any actions they – as individuals – may have taken to support management efforts. All survey data are publically available electronically on researchgate.net. Regression analyses are available from the second author.

PUBLIC OPINION ABOUT GRAY WOLVES AND THEIR MANAGEMENT

The survey questions focused on Michigan residents' knowledge of gray wolf ecology, behavior, and distribution. In response to questions about wolf facts, many participants indicated they were unsure of whether or not the statement was true or false. Responses indicated that there are multiple entry points for increasing awareness and nuanced understanding about gray wolves among Michigan residents.

• Just under half of respondents were unsure about when natural colonization of wolves began in Michigan (45% total respondents, 45% NLP respondents, 41% UP respondents).
• Many respondents incorrectly believed that MDNR estimates more than 1000 wolves throughout Michigan (43% total, 44% NLP, 49% UP).

• One-quarter of respondents were unsure if wolves prefer to eat wild versus domestic animals (25% total, 29% NLP, 22% UP).
• On the other hand, an overwhelming majority of respondents accurately believed wolves prey on a variety of species (85% total, 88% NLP, 89% UP), though that variety is mostly limited to ungulates (i.e., hooved animals including pigs, horses, and deer).

Knowledge and opinions about wolf management

A suite of questions focused on wolf management policies, hunting, and management authority. A second suite of questions were directed at experiences with wolves (Figures 2 and 3). Results indicate opportunity exists to increase Michigan residents' awareness and understanding about wolf management policy, particularly regarding who has authority over setting wolf hunting rules, what the wolf hunting rules are, and wolves' protected status.

• Approximately one-third of respondents were unsure if wolves may be legally hunted (33% total respondents, 23% NLP, 28% UP).
• Forty-two percent of respondents were unsure whether the Michigan legislature was responsible for the recent rule change to allow wolf hunting (32% NLP, 38% UP), with regional variation suggesting targeted opportunities for awareness interventions.
• Approximately 42% of total respondents (58% NLP, 62% UP) were correctly aware that wolves had been removed from the federal Endangered Species List at that time (since reversed) and 40% total respondents (28% NLP, 27% UP) were unsure about this status.

"Approximately one-third of respondents were unsure if wolves may be legally hunted (33% total respondents, 23% NLP, 28% UP)."
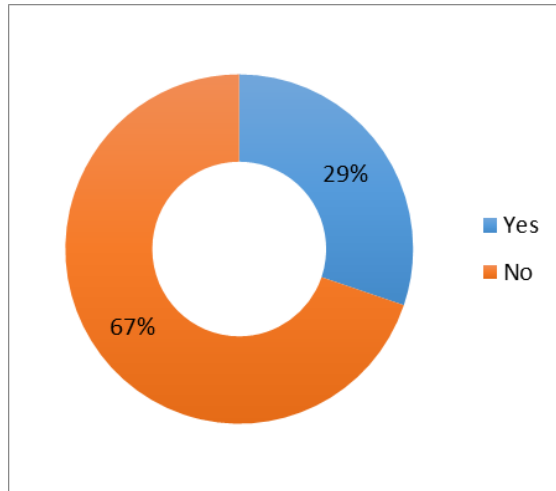
Figure 2. Personal experience with wolves. Less than 30% of total respondents reported seeing a wolf in Michigan.
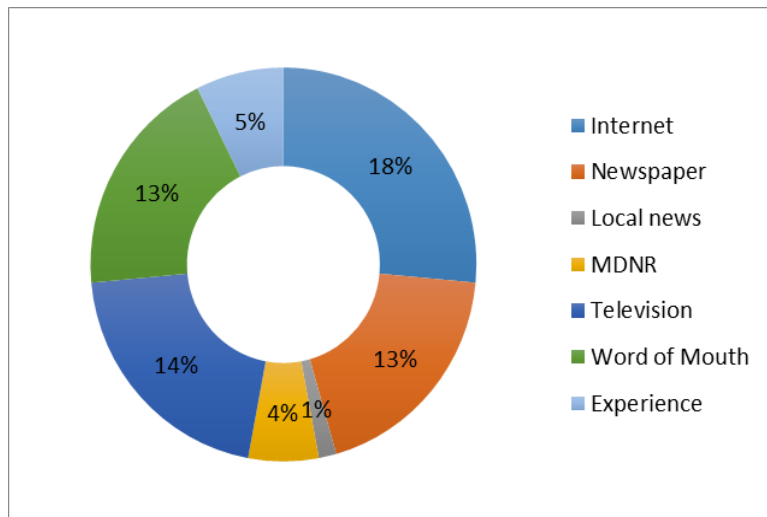

Figure 3. Information sources. The most commonly reported primary sources of information about wolves in Michigan include internet, television, newspaper and word of mouth.

Wolf-related risk perceptions

Risk perceptions are intuitive judgments about risks as opposed to technical assessments made by experts. A number of questions therefore addressed perceptions of risk associated with wolves. Results were mixed, indicating opportunities exist to equalize perceptions across groups.

• About the same percentage of total respondents indicated that they personally feared and did not fear wolves (40% feared wolves, 38% did not); UP residents indicated a relatively similar pattern (43% feared wolves, 37% did not); NLP residents indicated a different pattern (30% feared wolves, 48% did not). Among all regions, approximately 20% were ambivalent.

• Respondents were mixed in their perceptions of risk from wolves to non-human animal life; among the total sample of respondents, 39% agreed and 27% disagreed that wolves harm animal life; 33% of NLP respondents agreed versus 32% disagreed that wolves harm other animals; 41% of UP residents agreed versus 29% disagreed that wolves harm animals.

• An overwhelming majority of all strata disagreed that the presence of wolves made it a burden to live in Michigan; only 2% of total respondents, 0% NLP respondents, and 5% UP respondents strongly agreed that wolves pose such a burden.

• A majority of all respondents agreed wolf-related risks are hard to understand for people not living in wolf range (65% total respondents, 66% NLP respondents, 70% UP respondents).

"An overwhelming majority of all strata disagreed that the presence of wolves made it a burden to live in Michigan."

Wolf acceptance capacity

One way for wildlife managers to consider the human dimensions of wolf management is to measure how accepting stakeholders are of certain types of human-wolf interactions and potential management responses. Acceptance capacity varied according to whether or not interactions involved single animals or packs of wolves (Figure 4).
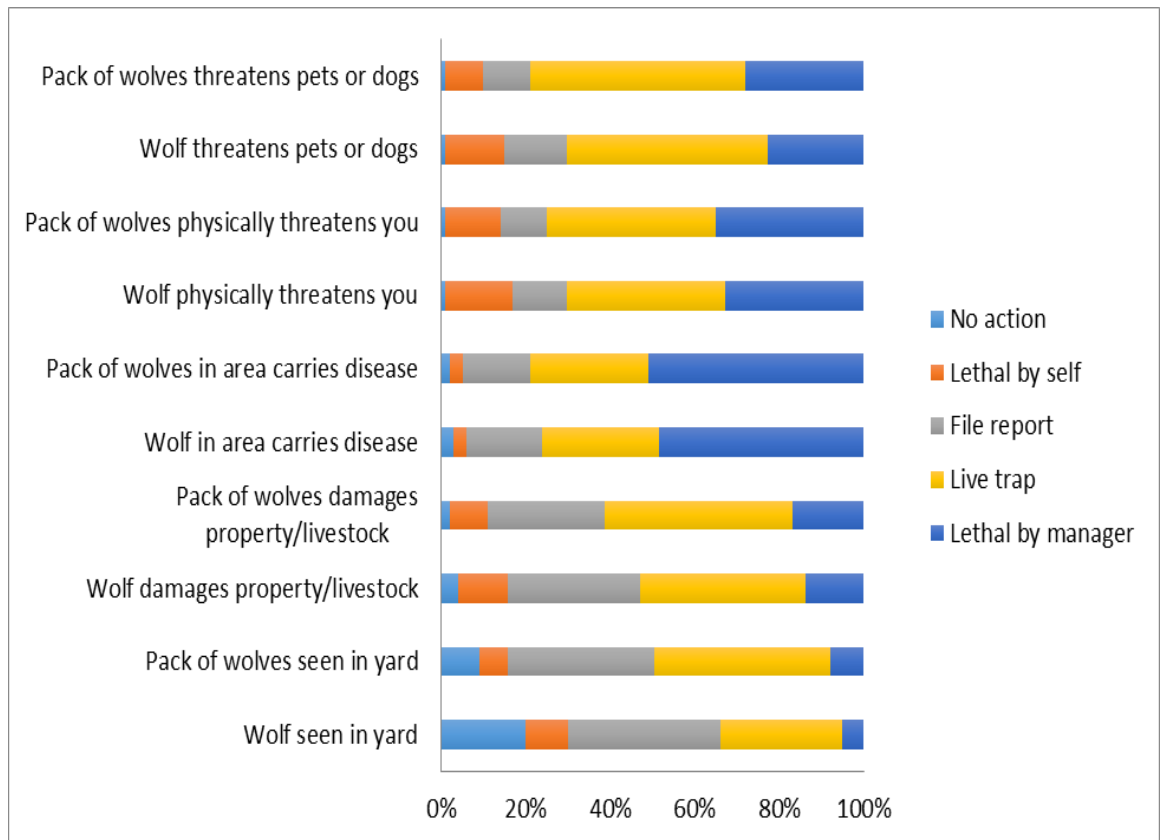

Figure 4. Interactions with pack versus individual wolf. Respondents' acceptance of various management responses by authorities depends on the nature of the interaction.

Attitudes about decision makers

Decision-making authority over wolves and their management has evolved over time alongside changes in protected species status (e.g., endangered, recovered, delisted, hunted). Survey questions gauged citizen preferences regarding the appropriateness of certain decision makers in relation to wolves and wolf management in Michigan. Results indicated substantial variation in support for wolf management by different decision makers as well as diversity in factors predicting attitudes (Figure 5).

• Just under a majority of total, NLP, and UP respondents agreed a public vote was appropriate (42% total, 44% NLP, 44% UP).
• Attitudes about the state legislature varied by geography. Approximately one-third (32%) of total respondents supported the state legislature in decision-making as did NLP respondents (33%). One-quarter (25%) of UP respondents supported the legislature's role in wolf management decisions.
• Pluralities in each region agreed that state agency-generated scientific recommendations should be supported (52% total respondents agreed versus 14% disagreed, 55% NLP respondents agreed versus 14% disagreed, 49% UP respondents agreed versus 18% disagreed).

Controlling for other influences, the following factors demonstrate statistically significant correlation with support for each proposed decision-making process:

Public Vote
• higher education level
• more liberal ideology

State Agency Science
• fearing wolves
• being female
• lower education level
• more conservative ideology

State Legislature
• fearing wolves
• older age
• more liberal ideology
• UP resident

Federal Agency
• fearing wolves
• older age
• more conservative ideology
• UP resident

University Science
• older age
• lower education level
• more conservative ideology
• UP resident

Figure 5. Influences on attitudes about decision-making. Factors correlating with different wolf management decision-making authorities.

Wolf population size

Although wolf management in Michigan is currently based on a combination of social and ecological dimensions, population size remains an important management consideration. Respondents varied in their opinion about whether or not wolf population numbers should be capped at a certain level (whether higher, lower, or same as the status quo). Among total respondents, 42% agreed population numbers should be capped; 39% NLP respondents and 52% UP respondents agreed. Figure 6 illustrates respondents' preferences for future wolf population sizes. Controlling for other factors, the more respondents feared wolves, the more likely they supported capping the state-wide wolf population; self-identified hunters or trappers were less likely to support a population cap. Age and UP residency were correlated with stronger preferences for decreasing the state-wide wolf population whereas liberal ideology correlated with stronger preferences for increasing the wolf population.

"Age and UP residency were correlated with stronger preferences for decreasing the state-wide wolf population whereas liberal ideology correlated with stronger preferences for increasing the wolf population."
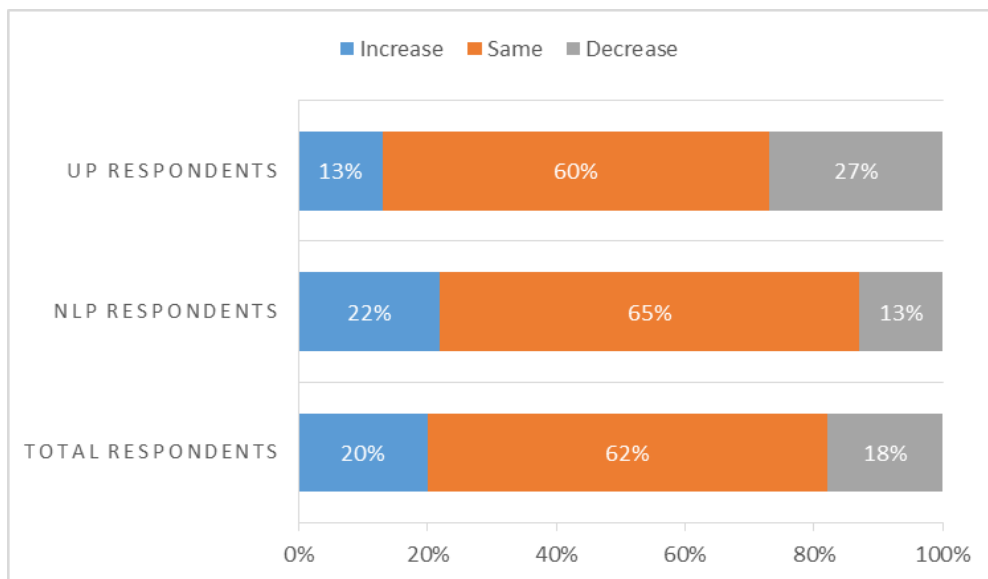
Figure 6. Percentage of Total, NLP, and UP respondents who believed state-wide wolf populations should be increased, kept at current levels, or decreased.

POLICY IMPLICATIONS

Understanding public opinion about various human dimensions of wolf management in Michigan can enable more nimble and

responsive management, strategic planning, and stakeholder engagement. The legal and protected status of wolves continues to change in Michigan. Given this evolving policy context, there are a number of policy implications from this work, **particularly for a post-delisting management climate**.

First, *preferences for decision-making authority indicate opportunities for collaboration across sectors, as opposed to within a single sector.* If wolves are delisted again, interagency collaborations and multi-sectoral decision making would reflect respondent preferences. If wolves continue to be listed under the ESA, there is much less flexibility with decision-making authority, however. Michigan has a long history of cross-sectoral collaborations for natural resource management, for example with invasive species or zoonotic disease management. These collaborations might manifest as resource sharing, partnerships in response to stakeholder conflicts, educational initiatives, or other stewardship activities. Drawing upon existing institutional knowledge and capacity building initiatives outside of wolf management would likely provide useful starting points for collaboration.

Second, *wolf management in Michigan involves stakeholders of place* <u>as well as</u> *stakeholders of interest.* Although wolves currently have colonized only the UP, it is overly simplistic to consider wolf management to be a UP versus NLP issue. This is not to say that any particular decision-making authority is promoting such a dichotomy, but rather it is an easy assumption to make because of wolves' geographically limited distribution through the state. Physical geography clearly can define public attitudes about some human dimensions of wolf management; *stakeholders of place* are clearly an important group to consider in developing, implementing, and evaluating policy.

In other contexts, geographical differences between UP and NLP respondents were absent; in such instances, considering the public opinions of *stakeholders of interest* may be optimal. Interests can be delineated by social identity (e.g., political ideology). Policy and management opportunities exist to be more reflexive of the nuanced nature of public preferences for wolf management. Again, this point is most relevant under a delisted management context.

"First, preferences for decision-making authority indicate opportunities for collaboration across sectors, as opposed to within a single sector."

"Second, *wolf management in Michigan involves stakeholders of place* <u>as well as</u> *stakeholders of interest."*

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APPENDIX: Wolf Management Survey Questions, October 2014

How many years have you lived in Michigan?

In which Michigan County do you currently reside?

Although wolves are native to Michigan, they no longer existed in most of Michigan by the mid 1900's. Since the late 1980's, the gray wolf population has been recovering naturally in Michigan's Upper Peninsula as wolves from other areas have moved to the area.

Before receiving this survey, did you know that wolves live in Michigan?

❍ Yes
❍ No
❍ Unsure

Please indicate to what extent you agree or disagree with the following statements.

I enjoy knowing wolves exist in Michigan.	❍	❍	❍	❍	❍
I enjoy knowing wolves exist in the Great Lakes Region.	❍	❍	❍	❍	❍

All of the questions in this survey refer only to wild wolves, not wolves in zoos, animal parks, or wolf-dogs.

The following questions focus on your familiarity with and awareness of wolves in Michigan. Have you ever seen a wolf in Michigan?

❍ Yes
❍ No
❍ Unsure

Have any of your friends or family ever told you that they have seen a wolf in Michigan?

❍ Yes
❍ No
❍ Unsure

Have you ever seen evidence or sign of a wolf, such as paw prints, scat, or a den, in Michigan?

○ Yes
○ No
○ Unsure

Have any of your friends or family ever told you that they have seen evidence or sign of a wolf, such as paw prints, scat (droppings), or a den, in Michigan?

○ Yes
○ No
○ Unsure

Have you ever had a direct encounter with a wolf in Michigan?

○ Yes
○ No
○ Unsure

Have any of your friends or family ever told you that they had a direct encounter with a wolf in Michigan?

○ Yes
○ No
○ Unsure

Have you ever read or heard of a wolf being killed by authorities in Michigan?

○ Yes
○ No
○ Unsure

What is your primary source of information about wolves in Michigan?

We are interested in learning more about what people know about wolves. For the next two sets of questions, please indicate whether you think each statement is true or false, or whether you are unsure. In Michigan . . .

Wolves prey on a variety of species.	○	○	○
A pack of wolves typically includes 4-6 animals.	○	○	○
The natural recolonization of wolves began in the 1990s.	○	○	○
Wolves are most active at night.	○	○	○
Wolf packs actively mark and defend their territory.	○	○	○
Wolves prefer to eat wild animals.	○	○	○
The average weight of a male wolf is more than 100 pounds.	○	○	○
Wolves are active and on the move more than 15 hours a day.	○	○	○
Up to 60% of wolf pups die of natural causes in their first 6 months of life.	○	○	○
The Michigan Department of Natural Resources (MDNR) currently estimates there are more than 1,000 wolves throughout Michigan.	○	○	○

In Michigan . . .

Wolves are currently managed as a game species.	○	○	○
Wolves may be legally hunted.	○	○	○
Wolves may be legally trapped.	○	○	○
Livestock producers may obtain permits to kill wolves on their property any time of year.	○	○	○
Scientists at the Michigan Department of Natural Resources (MDNR) make suggestions to the Natural Resource Commission about how wolves can be managed.	○	○	○
The legislature is responsible for the recent rule change regarding wolf hunting.	○	○	○
The number of wolves that could be legally hunted in 2013 was less than 100.	○	○	○
The process for obtaining a wolf hunting license is the same process as obtaining a deer hunting license.	○	○	○
Individuals may be issued a fine for killing a wolf in Michigan without a permit.	○	○	○
Wolves have been removed from the Endangered Species List.	○	○	○

This set of questions focuses on wolf management in Michigan. By management, we mean the process of making and implementing decisions and policies about wolves. Please indicate to what extent you agree or disagree with each of the following statements about wolf management.

The decision to hunt wolves should be made by public vote.	○	○	○	○	○
The decision to hunt wolves in Michigan should be based on state agency generated scientific recommendations.	○	○	○	○	○
Wolves should only be hunted if there is scientific evidence that the wolf population can sustain a hunt.	○	○	○	○	○
Wolves in Michigan should not be hunted even if there is scientific evidence that the wolf population won't be affected by a hunt.	○	○	○	○	○
Decisions about wolf management in Michigan should be made by the state legislature.	○	○	○	○	○
Decisions about wolf management in Michigan should be made by federal agencies.	○	○	○	○	○
Decisions about wolf management should be based on university-generated science.	○	○	○	○	○
If a public vote for wolf management differs from scientific recommendations, the public vote should be given priority.	○	○	○	○	○
If scientific recommendations for wolf management differ from the legislature's recommendation, scientific recommendations should be given priority.	○	○	○	○	○
If the legislature's recommendations on wolf management differ from a public vote, the legislature's recommendations should be given priority	○	○	○	○	○

The next set of questions focus on risks associated with wolves and their management. Please indicate to what extent you agree or disagree with each of the following statements.

Wolves are risky because of human activities that harm nature.	○	○	○	○	○
Wolves harm animal life.	○	○	○	○	○
Wolves pose risks that cannot be reversed.	○	○	○	○	○
I fear wolves.	○	○	○	○	○
The presence of wolves makes it a burden to live in Michigan.	○	○	○	○	○
Wolves have a right to exist in Michigan.	○	○	○	○	○
Humans should learn to live with some conflicts with wolves.	○	○	○	○	○
The wolf population in Michigan should be capped at a certain level.	○	○	○	○	○

The next set of questions focus on wolf-related risks. By wolf-related risks we mean risks to humans and animals (including livestock and pets) from attacks and bites. Please indicate to what extent you agree or disagree with each of the following statements about wolf-related risks.

Wolf-related risks are new and unknown to people living in locations where wolves are known to exist (i.e., wolf-range).	❍	❍	❍	❍	❍
Wolf-related risks are hard to understand for people not living in locations where wolves are known to exist (i.e., wolf-range).	❍	❍	❍	❍	❍
Wolf-related risks are hard for scientists to measure.	❍	❍	❍	❍	❍
Wildlife management is changing because of wolf-related risks.	❍	❍	❍	❍	❍
Wolf-related risks are unfair to humans.	❍	❍	❍	❍	❍
Wolf-related risks will have effects that increase over time.	❍	❍	❍	❍	❍
Wolf-related risks are the result of human arrogance.	❍	❍	❍	❍	❍
Current wolf-related risks are a warning that much worse risks will happen.	❍	❍	❍	❍	❍
Wolf-related risks, such as direct injury, are ignored by wildlife managers	❍	❍	❍	❍	❍
Wolf-related risks are deterred by wildlife managers.	❍	❍	❍	❍	❍
Wolf-related risks are welcomed as a challenge to be solved by wildlife managers.	❍	❍	❍	❍	❍

For each of the following scenarios involving wolves, please indicate how you would most likely handle each situation if it happened to you or your family.

A wolf is seen in your yard.

❍ Take no action
❍ Use non-lethal methods on my own to address the situation
❍ Call authorities and file a report
❍ Call authorities to live trap and move the wolf
❍ Call authorities to kill the wolf

A pack of wolves is seen in your yard.

❍ Take no action
❍ Use non-lethal methods on my own to address the situation
❍ Call authorities and file a report
❍ Call authorities to live trap and move the wolves
❍ Call authorities to kill the wolves

A wolf damages your property or livestock.

❍ Take no action
❍ Use non-lethal methods on my own to address the situation
❍ Call authorities and file a report
❍ Call authorities to live trap and move wolf
❍ Call authorities to kill the wolf

A pack of wolves damages your property or livestock.

❍ Take no action
❍ Use non-lethal methods on my own to address the situation
❍ Call authorities and file a report
❍ Call authorities to live trap and move the wolves
❍ Call authorities to kill the wolves

A wolf in the area is known to be carrying diseases that are harmful to you and your family.

❍ Take no action
❍ Use non-lethal methods on my own to address the situation
❍ Call authorities and file a report
❍ Call authorities to live trap and move the wolf
❍ Call authorities to kill the wolf

A pack of wolves in the area are known to be carrying diseases that are harmful to you and your family.

- ○ Take no action
- ○ Use non-lethal methods on my own to address the situation
- ○ Call authorities and file a report
- ○ Call authorities to live trap and move the wolves
- ○ Call authorities to kill the wolves

A wolf physically threatens you or your family.

- ○ Take no action
- ○ Use non-lethal methods on my own to address the situation
- ○ Call authorities and file a report
- ○ Call authorities to live trap and move the wolf
- ○ Call authorities to kill the wolf

A pack of wolves physically threatens you or your family.

- ○ Take no action
- ○ Use non-lethal methods on my own to address the situation
- ○ Call authorities and file a report
- ○ Call authorities to live trap and move the wolves
- ○ Call authorities to kill the wolves

A wolf threatens your family's animals such as your pets or hunting dogs.

- ○ No action
- ○ Use non-lethal methods on my own to address the situation
- ○ Call authorities and file a report
- ○ Call authorities to live trap and move the wolf
- ○ Call authorities to kill the wolf

A pack of wolves threatens your family's animals such as your pets or hunting dogs.

- ○ Take no action
- ○ Use non-lethal methods on my own to address the situation
- ○ Call authorities and file a report
- ○ Call authorities to live trap and move the wolves
- ○ Call authorities to kill the wolves

A wolf consistently threatens your way of life.

○ Take no action
○ Use non-lethal methods on my own to address the situation
○ Call authorities and file a report
○ Call authorities to live trap and move the wolf
○ Call authorities to kill the wolf

A pack of wolves consistently threatens your way of life.

○ Take no action
○ Use non-lethal methods on my own to address the situation
○ Call authorities and file a report
○ Call authorities to live trap and move the wolves
○ Call authorities to kill the wolves

Next we would like to know which of the following actions related to wolves, if any, have you undertaken in the past year. (Please select all that apply)

❑ Contacted the Michigan Department of Natural Resources (MDNR) for information.
❑ Contacted the Michigan Department of Natural Resources for a removal permit.
❑ Tried to address a wolf problem myself.
❑ Hired a private animal control agent to address a wolf problem.
❑ Asked a state agent to address a wolf problem
❑ Asked a federal agent to address a wolf problem.
❑ Given a presentation about wolves.
❑ Donated money to an organization that is involved with wolf management.
❑ Supported in some way an organization that is involved with wolf management.
❑ Taken some other action related to wolves in Michigan in the last year. (please specify)
_____
❑ Taken no action.

In the next five years, should efforts be made in Michigan to increase the wolf population, decrease the wolf population, or should the wolf population remain the same as it is currently?

❍ Increase
❍ Decrease
❍ Remain the same

How important is it to you that the wolf population in Michigan (FILL CHOICE) over the next five years?

❍ Very important
❍ Somewhat important
❍ Neither important nor unimportant
❍ Somewhat unimportant
❍ Very unimportant

For each of the statements below, please indicate to what extent you think it is representative of you. If the statement is very much like you, you would choose "5". If the statement is not at all like you, you would choose "1". Use the numbers in the middle if you think you fall somewhere in between.

I believe the things I do today can affect me later.	○	○	○	○	○
I act now even if the results are years away.	○	○	○	○	○
I must satisfy my needs now; I believe the future will take care of itself.	○	○	○	○	○
How I act is determined by the immediate results of my behavior.	○	○	○	○	○
My convenience is a big factor in the decisions I make or the actions I take.	○	○	○	○	○
Sometimes it is better to enjoy less today so you can enjoy more tomorrow.	○	○	○	○	○
I think it is important to take warnings about bad things seriously even if the bad things will not happen for several years.	○	○	○	○	○
I think it is more important to do things that get bigger results in the future, than to do things that get less important results right now.	○	○	○	○	○
I generally ignore warnings about problems that may come up in the future, because I think that they will be taken care of before they reach crisis level.	○	○	○	○	○
Sacrificing now is not necessary since future outcomes can be dealt with later.	○	○	○	○	○
I deal with problems when they appear.	○	○	○	○	○
Since my day- to-day work has quick results, it is more important to me than behavior that has far off results.	○	○	○	○	○

So that we can better understand our results, please answer the following questions about you.

Are you:

◯ Male
◯ Female

What is your age?

Including yourself, how many individuals 18 years of age or older currently live in your household?

How many children age 17 and under currently live in your household?

What is your marital status?

◯ Married
◯ Divorced
◯ Separated
◯ Widowed
◯ Member of an unmarried couple
◯ Single, never been married

What is the highest level of education you have completed?

○ Did not go to school
○ 1st grade
○ 2nd grade
○ 3rd grade
○ 4th grade
○ 5th grade
○ 6th grade
○ 7th grade
○ 8th grade
○ 9th grade
○ 10th grade
○ 11th grade
○ High school graduate or GED holder
○ 1st year of college
○ 2nd year of college
○ Technical or junior college graduate
○ 3rd year college
○ College graduate (4 years)
○ Some post graduate
○ Graduate degree

Are you of Hispanic, Latino, or Spanish origin?

○ Yes
○ No

Are you of Arab or Chaldean origin?
○ Yes
○ No

Which one or more of the following describes your race? (Please check all that apply)

❑ White or Caucasian
❑ African American or Black
❑ Hawaiian or other Pacific Islander
❑ Asian
❑ American Indian or Alaska Native
❑ Other (please specify) _____

What is the religious group which you feel most closely represents your religious views?

○ None, no religious group
○ Catholic, Roman Catholic, Orthodox
○ Islamic/Muslim
○ Jewish
○ Protestant (Baptist, Methodist, Lutheran, Episcopalian, etc)
○ Other non-Christian
○ Other Christian (Jehovah Witness, Mormon, 7th Day Adventist, etc)
○ Other (please specify) _____

Generally speaking, do you think of yourself as a Republican, a Democrat, an Independent or something else?

○ Democrat ⟶ Would you call yourself a strong Democrat, or not a very strong Democrat?
○ Republican ⟶ Would you call yourself a strong Republican, or not a very strong Republican?
○ Independent ⟶ Do you generally think of yourself as closer to the Democratic Party or the Republican Party?
○ Something else (please specify) _____

Generally speaking, do you think of yourself as a conservative, a moderate, or a liberal?

○ Conservative ⟶ Would you consider yourself very Conservative, or somewhat Conservative?
○ Moderate ⟶ Do you generally think of yourself as closer to the conservative side or the Liberal side?
○ Liberal ⟶ Would you consider yourself very Liberal or somewhat Liberal?

We are interested in learning about the different ways people may earn their living. Which one of the following best describes your employment situation last week? Were you …

○ Working full-time
○ Working part-time
○ Have a job, but I was not at work last week (on vacation, sick leave, etc)
○ Working and going to school
○ School full-time
○ Homemaker
○ Serving in the Armed Forces
○ Disabled
○ Unemployed, laid off, looking for work
○ Retired
○ Other (please specify) _____

In which industry are you currently employed?

○ Forestry, fishing, hunting or agriculture
○ Mining
○ Utilities
○ Construction
○ Manufacturing
○ Wholesale trade
○ Retail trade
○ Transportation or warehousing
○ Information
○ Finance or insurance
○ Real estate or rental and leasing
○ Professional, scientific or technical services
○ Management of companies or enterprises
○ Admin, support, waste management or remediation services
○ Educational services
○ Health care or social assistance
○ Arts, entertainment or recreation
○ Accommodation or food services
○ Other services (except public administration)
○ Other

Is your primary employment associated with farming or the ranching of cattle?

○ Yes
○ No

In which, if any, of the following activities do you currently participate? (Please check all that apply)

❑ Hunting
❑ Trapping
❑ Watching wildlife

Do you own or rent your home?
○ Own
○ Rent

Would you say you live in a rural community, a small city or town, a suburb, or an urban community?

❍ Rural community
❍ Small city or town, village
❍ Suburb
❍ Urban community

What is your zip code?

To get a picture of people's financial situations, we'd like to know the general range of incomes of all people we interview.   Thinking about your household's total annual income from all sources (including your job), what was your household's total annual income in 2013?

❍ Less than $10,000
❍ $10,000 - $19,999
❍ $20,000 - $29,999
❍ $30,000 - $39,999
❍ $40,000 - $49,999
❍ $50,000 - $59,999
❍ $60,000 - $69,999
❍ $70,000 - $79,999
❍ $80,000 - $89,999
❍ $90,000 - $99,999
❍ $100,000 - $150,000
❍ More than $150,000

In the past few weeks, have you read, seen, or heard any advertisements related to wolves in Michigan?

❍ Yes
❍ No

Informing the Debate

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