PUBLIC BELIEFS AND ATTITUDES TOWARD WOLVES AND WOLF MANAGEMENT IN MICHIGAN, 2021

A 2021-2022 grant completion report to the Michigan Applied Public Policy Research, Michigan State University

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For a full report of the data please see:

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During 2021–2022, The Michigan Department of Natural Resources (DNR) engaged in an update to the Michigan Wolf Management Plan (Michigan Department of Natural Resources 2022*a*). The premise behind the plan was to base policy and decisions about wolf conservation in Michigan on insights from contemporary research, which includes insights from not only environmental sciences (e.g., wolves and their habitats), but also social sciences (e.g., stakeholders in wolf management), as well as input from the Michigan public. We report herein on results from one form of public engagement—a questionnaire about Michigan residents' perspectives on wolves and wolf management. This research and outreach was partially funded through a Michigan Applied Public Policy Research (MAPPR) grant.

Ecology, policy, and management of gray wolves (*Canis lupus*) have been exhaustively reviewed in the literature; another review is beyond the scope of this report. Wolf management has been and continues to be one of the most contentious issues within the wildlife management enterprise of North America and elsewhere throughout the species' range. Often, the most contentious issues are rooted in differing values and in perceived differences in political power between urban and rural interests. The context for Michigan wolf management is positioned to be contentious because approximately 3% of Michigan's human population lives with 100% of the state's wolf population in the rural Upper Peninsula (UP), whereas nearly 92% of Michiganders reside in the more urban-suburban-exurban landscapes of the Southern Lower Peninsula (SLP). Across Michigan, there are fairly extreme heterogenous ideologies, experiences with wolves, and attitudes toward management of wildlife.

Our goal was to provide a contemporary assessment of stakeholders' beliefs and attitudes in Michigan—inclusive of social considerations for managing wolves—that enables the DNR to fulfill its mission of conservation, protection, management, use, and enjoyment of the state's natural and cultural resources for current and future generations.

Objectives of this study, developed in collaboration with the DNR Wolf Management Plan Update Team, were to determine:

1. Characteristics of stakeholders in terms of where they recreate, what types of recreation they most frequently participate in, what sorts of interactions they have with wolves, and what their beliefs are about wildlife in general and wolves specifically;
2. Acceptability to Michigan residents from different regions and sociocultural categories toward past and future wolf populations;
3. Acceptability of plausible management practices related to the conservation of wolf populations under varying degrees of severity regarding interactions with wolves (i.e., ranging from sighting of wolves to attacks on humans);
4. Factors affecting acceptability of lethal control actions toward wolves under different scenarios of potential conflict;
5. Acceptability of a regulated season for hunting of wolves and acceptability of a regulated season for trapping of wolves in Michigan;

6. Comparisons between results of this survey and research findings from the Great Lakes Ecosystem and elsewhere that addressed similar questions aimed at informing policy.

We used a multi-pronged approach that included email push-to-web, web survey platforms, and traditional mail-back questionnaires. Questionnaires were distributed to 60,973 individuals: 15,000 residents statewide, 22,909 deer hunters statewide, 22,705 fur harvesters statewide, and 359 livestock producers in the UP. There were 4 surveys administered simultaneously: 1) general Michigan public, 2) licensed deer hunters in Michigan, 3) licensed fur harvesters in Michigan, and 4) livestock producers focused in the UP.

We used a stratified, random selection of households across Michigan (5,000 each for the UP, the Northern Lower Peninsula [NLP], and the SLP) for the general public survey. We intentionally did not use a probability sample (e.g., a simple random selection statewide) in this survey, which would have resulted in nearly all questionnaires being delivered to urban areas in the SLP. Our sampling scheme of the general public was organized to ensure that people who live with wolves or are likely those most directly affected by wolves and wolf management had the opportunity to participate. Because of this sampling scheme, respondents' characteristics do not reflect those of an average Michigander yet do reflect the beliefs and attitudes of people sufficiently engaged to respond to a fairly complex and lengthy questionnaire about wolves and wolf management. The data from the general population survey, however, were weighted to better reflect the state's demographics (sex, age, location of residence). Data from the other 3 samples were not weighted because of relatively large, well-distributed sample sizes.

We can infer several broad conclusions from our questionnaire data. The first is that moderation—not the extremes—in wolf populations, wolf management interventions, and the nature of wolf management is acceptable to the most people in most places. The majority of residents value wolves and the sustainability of the wolf population is a concern throughout the state and among different types of stakeholders. Considerable differences exist, however, from north to south, which correspond with rural environments—and where wolves live or plausibly could live (i.e., the UP and the NLP)—and the SLP. These differences are consistent in responses to almost all questions and indicate that most statewide generalizations about wolves and wolf management are mostly unreliable. They are also consistent with results from similar questionnaires administered in Minnesota and Wisconsin, other states within the Great Lakes Ecosystem.

Michiganders participate in a wide range of outdoor-related activities. There are, however, regional differences that likely influence beliefs about wolves and wolf management. Participation rates in the UP, NLP, and SLP were similar for non-consumptive activities such as wildlife viewing, photography, and bird watching. However, a greater proportion of UP residents reported participating in consumptive activities such as hunting, fishing, or trapping than NLP or SLP residents; a greater proportion of NLP residents reported participating in these activities than residents in the SLP.

Our second objective was to assess acceptability to Michigan residents from different regions and sociocultural categories toward past and future wolf populations. Most Michiganders believe

that the wolf population has increased, or at least the level of human-wolf interactions had increased, during the 5 years (2016–2021) prior to the survey. People in the UP were more likely to believe the population of wolves had increased while people in the SLP were nearly twice as likely to believe the wolf population had decreased. Residents in the NLP were intermediate between the UP and SLP responses.

When asked about the desired future wolf population trend during the period 2021–2026, nearly half of Michiganders were estimated to desire an increase of some sort in the Michigan wolf population. A split is apparent, however: nearly 25% desire a decrease while another 25% want the wolf population to remain the same. Residents in the UP are more likely to desire a decrease while SLP residents are more likely to desire an increase in the Michigan wolf population. This observation has remained the same through 3 surveys since the early 2000s. Responses to this question about desired population trends, however, are usually interpreted to indicate peoples' desire for fewer negative interactions and more positive interactions rather than a strict desire for change in the actual numbers of animals. Interactions, positive or negative, are how people formulate opinions about future population trends.

We presented different plausible wolf population scenarios to further substantiate desired future conditions of Michigan's wolf population. Our data indicate the extremes (no wolves or the maximum sustainable population) are not desired by most people. Statewide, the most acceptable scenarios were "Moderately low numbers of wolves" (52.6%) or "Moderate numbers of wolves" (53.1%). As with the question on desired population change, differences among stakeholders were most apparent in the extremes. An estimated nearly 27% of UP residents are estimated to consider a scenario with no wolves acceptable in comparison with only 13.5% of residents in the SLP. Residents in the SLP were more likely than those in the UP (39.1% vs. 23.6%) to find "Greatest numbers of wolves that can be sustained" to be acceptable. Residents in the NLP were intermediate between the UP and the SLP. We interpret these insights to mean that active population management is desirable as long as it is conducted in moderation with an aim to sustain the wolf population but not at the maximum possible numbers. Deer hunters and livestock producers, who view risks from wolves differently than the general public, desire lower wolf populations and are more accepting of lethal control of wolves.

Acceptability of plausible management practices related to conservation of wolves varied with the perceived severity of interactions with wolves (i.e., ranging from sighting of wolves to attacks on humans). Similar to results from other studies on human-wildlife interactions (especially with large carnivores), lethal control or population reduction of wolves does not become acceptable to the majority of people until there are threats to human health or safety. Killing of wolves and reducing the wolf population were acceptable to a greater proportion of UP residents than residents elsewhere in the state, yet even in the UP, a sizeable proportion of residents reported it was unacceptable to take lethal actions unless the incident involved threats to humans. Capture and relocation of wolves appears most acceptable under all situations except threats to humans. Doing nothing was not acceptable under any situation.

Nearly 50% of the Michigan residents are estimated to support a legal, recreational season for the hunting of wolves in Michigan if biologists and the DNR believe the wolf population could

safely sustain such a hunting season. Regional differences in acceptability of hunting are readily apparent: opposition to a hunting season is greatest in the SLP and support for a hunting season is greatest in the UP; residents of the NLP are intermediate. Support for a hunting season by SLP residents is estimated to be less than 50%; the undecided proportion of the public, however, is also greatest in the SLP. The greater proportion of people in the SLP who do not support a legal hunting season is consistent with the greater proportion of people there with value orientations described as mutualistic and with the greater proportion of UP residents who expressed value orientations described as traditional. The relatively high proportion of undecided people may indicate people in the SLP do not feel they have enough information or direct experience on which to base an opinion, or that they do not believe the outcome materially affects them. Key to support for the hunting season, regardless of geographic area, is that hunting is for the purpose of population control, is sustainable, and does not create a situation where wolves become endangered. Support for a legal trapping season is substantially less than support for a hunting season, regardless of geographic location of residency.

Our results are generally similar to those from previous research in other locations within the Great Lakes Ecosystem. Throughout, a majority of people value wolves as part of the ecosystem, yet those living with wolves tend to desire lower populations, be more accepting of lethal control or of hunting seasons, desire active management of human-wolf interactions, and have less trust in the state wildlife agency to make decisions about wolves on their behalf.

Our working hypothesis was that the acceptability of wolves and associated wolf management practices, such as lethal control, are predicted by a person's basic beliefs about wildlife, their experiences with wolves, their perceptions of wolf population trends, and the perceived severity of interactions with wolves, as well as variables immune to control by management such as people's geographic location of residence, demographic characteristics, and sources of income (e.g., agricultural vs. non-agricultural). Statistical analyses of the questionnaire data support this hypothesis and also emphasize the importance of trust in the management agency.

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PUBLICATIONS

Results from this research supported in part by a MAPPR Grant contributed to the following publications (at time of report submission):

Norton, D. C., B. J. Roell, E. Pomeranz, S. Riley, and J. L. Belant (compilers). 2022. Review of social and biological science relevant to wolf management in Michigan. Michigan Department of Natural Resources, Lansing, MI, USA.

Riley, S. J., M. Cross, and E. F. Pomeranz. 2022. An assessment of public beliefs and attitudes toward wolves and wolf management in Michigan, 2021. Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI, USA

These two reports were highly influential in development of a revised management plan for wolves and wolf management in Michigan, which at the time of this report was out for public review and will be present to the Natural Resource Commission in November 2022.

Scientific journal articles are in preparation and will be submitted throughout the next fiscal year.

PRESENTATIONS

Results from this research supported in part by a MAPPR Grant contributed to the following presentations (at time of report submission):

1. Michigan Wolf Advisory Committee, Escanaba, MI, USA (January 2022)
2. Michigan Natural Resource Commission, Lansing, MI, USA (April 2022)
3. Michigan Wolf Advisory Committee, Higgins Lake, MI, USA (May 2022)
4. Natural Resources Institute of Finland, Helsinki (October 2022)
5. Annual Conference of The Wildlife Society, Spokane, WA, USA (November 2022).
6. Institute for Public Policy and Social Research monthly public policy forum series (early 2023).