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for Wisconsin's Natural Resources

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Creating A Shared Vision for Wolves in Wisconsin

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VOICES FOR CONSERVATION

Creating A Shared Vision for Wolves in Wisconsin

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About this Work:

Opportunities Now is an issue paper series published by Wisconsin's Green Fire that summarizes the science and background of key conservation and environmental issues and makes policy recommendations that support pro-conservation outcomes.

Each of the papers in our Opportunities Now series is the product of an analysis of current literature, interviews with agency staff and experts, and the consensus of our subject matter teams. Policy makers, conservation organizations, and concerned citizens are all welcome to use and distribute Opportunities Now papers without restrictions.

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Cover photo Gray wolf in winter in Wisconsin. Photo Credit: WDNR

Photo Credit: WDNR

Creating A Shared Vision for Wolves in Wisconsin

Since being extirpated in the mid-1900s, the return of gray wolves in Wisconsin is a conservation success story. Yet there are few conservation issues that ignite as much emotion and division than that of wolves' and their presence on the landscape here in the Badger State.

GRAY WOLVES began returning to Wisconsin in the 1970's after being effectively eliminated during the 1950's. Today, at least 1034 animals in 256 packs are estimated to reside in Wisconsin.

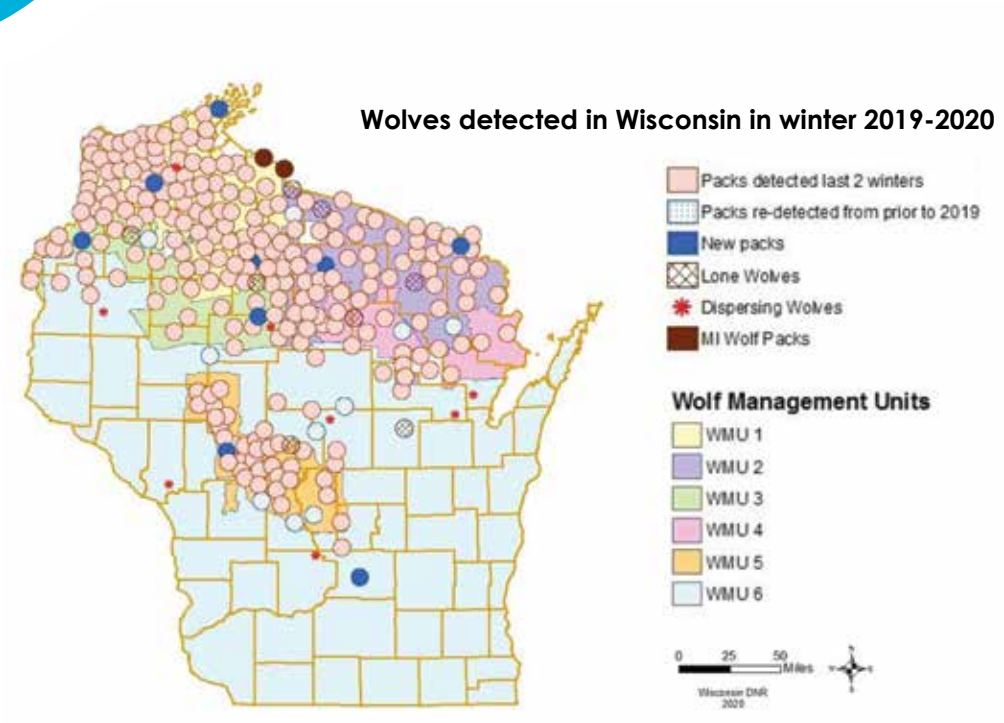
Wisconsin needs a new wolf conservation plan, new policies, and legislation to provide appropriate conservation for this iconic species. If the people of Wisconsin are to successfully co-exist with wolves, our actions as a state will need to be grounded in sound science and a transparent and democratic governance process. This report provides a vision for the future of gray wolves (Canis lupus) in Wisconsin, and discusses the history, management, background, and provides detailed recommendations for new policies and practices to support successful wolf conservation.

The gray wolf has been on a rollercoaster of varying management practices and legal status since the mid-1800s. Gray wolves were first listed as a federal endangered species in 1974 under the Endangered Species Act (ESA).

Between 2003 and 2014, wolves went through a back-and-forth series of down-listings to Threatened status, delisting, and relisting. During the delisting period of 2012-2014, legal wolf hunting and trapping occurred for three seasons. Following a federal court order in 2014, wolves were again listed as an Endangered Species in most of the Western Great Lakes. When they are federally listed states have no authority to kill wolves except in human safety situations. When wolves are delisted, they again fall under state management which allows states to authorize lethal control for problem wolves and regulated hunting and trapping seasons.

Wolf populations have fluctuated from year to year depending on the availability of prey, disease outbreaks, and human and non-human factors. Since being extirpated in the 1950's wolf populations in Wisconsin have grown to a minimum count of 1,034 wolves and an estimated population of 1,195 animals based on occupancy modeling.[1]

The current gray wolf population in Wisconsin appears to be well connectedthrough the Great Lakes region and is approaching biological carrying capacity.[2,3]



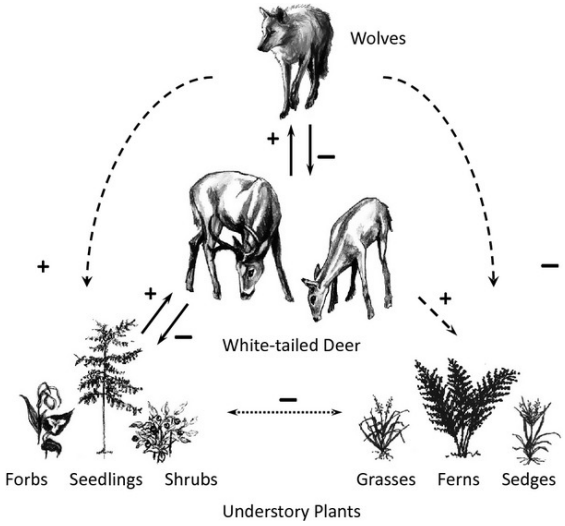
On November 3, 2020, the United States Fish and Wildlife Service (USFWS) published its decision to remove gray wolves from the federal Endangered and Threatened Species List. The rule will go into full effect when it is implemented on January 4, 2021. The wolf delisting has significant implications for wolves on the landscape because states once again will have the responsibility to protect and manage the species in keeping with the best science and Public Trust commitments.

In order to manage wolves effectively, Wisconsin needs an updated wolf conservation plan based on current science and population data and that is informed by robust and balanced public and scientific input.

Under state law, the Wisconsin Department of Natural Resources (WDNR) is required to open a season to allow hunting and trapping once wolves are no longer federally protected under the ESA or the state's list of threatened and endangered species. In a departure from almost all other statutory authority for wildlife, Wisconsin's 2011 Act 169 significantly limits the ability of the WDNR, Tribes, and the public from deciding when, where, and how wolf hunting and trapping should occur. In addition to heavily prescriptive legislation, state management of wolves in Wisconsin is also limited by an outdated state 1999 Wolf Management Plan that does not reflect the current conservation status of wolves in our region or the latest ecological and social science in wolf conservation.

Background

Wolves are considered a keystone species and fill a crucial niche within an ecosystem. Although wolves have a relatively minor impact on deer populations, they significantly alter the habitats of deer and other prey species by reducing those species' tendency to concentrate in favorable areas and increasing seasonal movements. This effect is generally associated with increases in forest habitat and biodiversity across the landscape and with reduction in the well-documented impacts of deer browsing on forest regeneration and vegetation.[4], [5], [6], [7] Modeling research has also suggested that wolves may be an important factor in culling



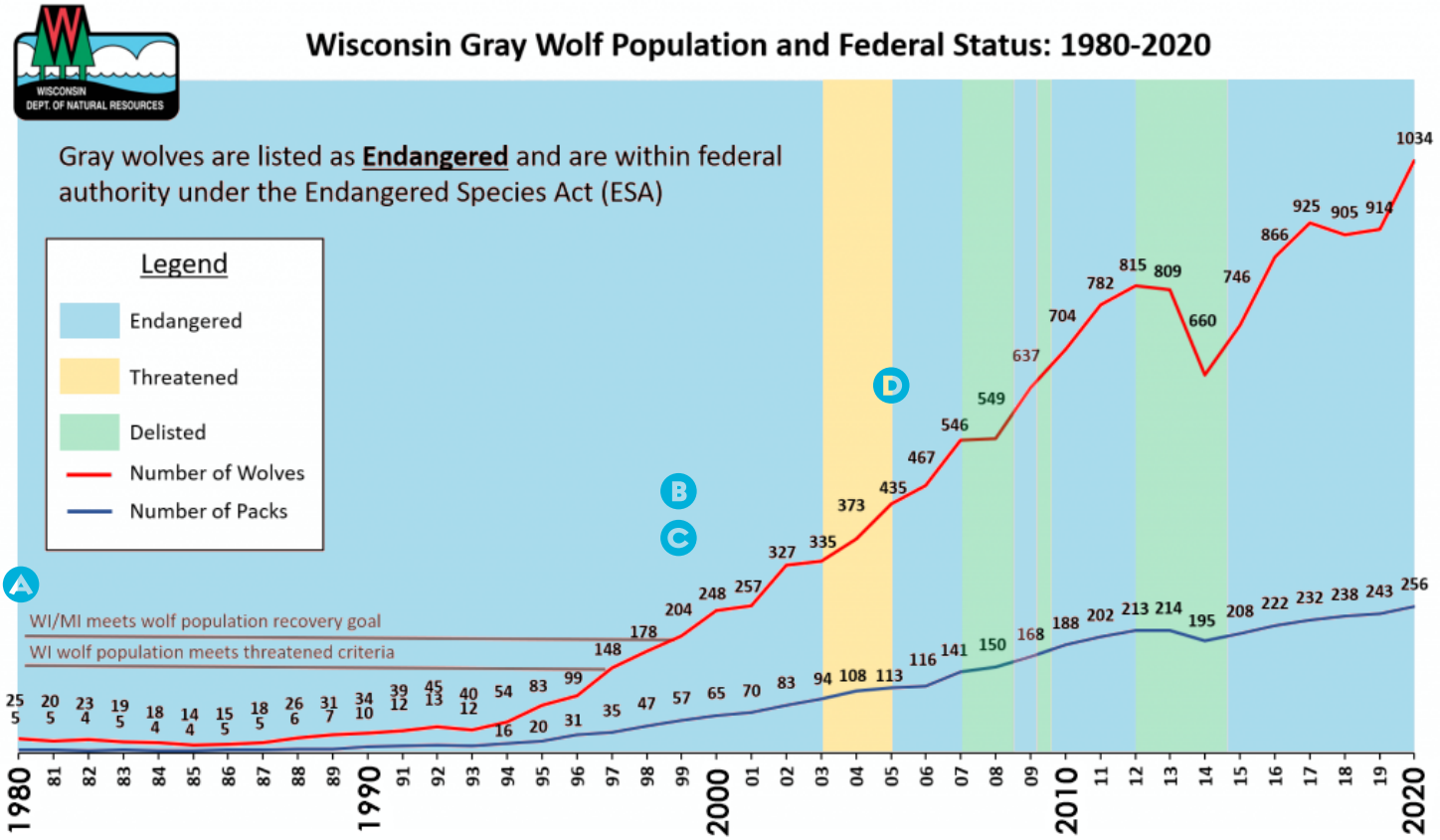
Generalized interactions between wolves, deer, and trees and vegetation in forest habitats.

diseased animals and reducing the numbers of deer infected with Chronic Wasting Disease.[8]

Wolf populations in Wisconsin and the Upper Peninsula of Michigan are beginning to saturate favorable habitat. As saturation occurs, wolves are likely to disperse from northern habitat through central and southern Wisconsin. As wolves occupy and saturate suitable Wisconsin habitat, biologists expect the population to show density-dependent responses to further growth and mortality factors.

Wolves' territorial pack behavior suggests that as saturation occurs population growth will slow or stop and reach a more stable equilibrium. At equilibrium, annual pup production and survival can offset moderate mortality causes to maintain the population. Large changes in the availability of prey species or habitat can raise or lower the equilibrium level. The duration of such changes will regulate how long the equilibrium level is impacted as well.[3]

Credit: Michigan DNR



Wisconsin Minimum Winter Count of Gray Wolf Population and Federal Status from 1980 to 2020. Source: WDNR, 2020.

As many as 3,000 to 5,000 wolves are estimated to have roamed Wisconsin in the early 1800s prior to widespread European settlement. Hatred and fear of wolves as a predator were common attitudes among European settlers. Between 1865 and 1957 a cash bounty for wolves reduced Wisconsin's wolf population to what has been estimated as fewer than 50 animals by the early 1950s.[9]

In 1957 the Wisconsin Legislature eliminated the wolf bounty and designated wolves as a protected wild animal, but the designation came too late to reverse the de-population trend that by the end of the 1950s, resulted in the complete loss of the breeding population of wolves in the state.[9, 10]

Since 1974, when the US Fish and Wildlife Service first listed gray wolves as Endangered, the Wisconsin gray wolf population has seen periods of listing and de-listing.

Some notable milestones for gray wolves in Wisconsin include:

- **A** 25 wolves detected in 5 packs in 1980 when WDNR began to formally survey the wolf population through winter surveys.[10]
- **B** Rapid growth of the wolf population in the 1990s brings the population to 204 by 1999.
- **C** A statewide management plan is developed in 1999 setting a state delisting goal at a minimum of 250 wolves outside of Indian reservations, and a state management goal of 350 wolves.
- **D** Between 2005 and today, gray wolf management has been in and out of the courts with various periods of federal delisting, including one that lasted nearly 3 years (January 27 2012-December 19 2014).[11]

In 2012, within weeks of the federal delisting, Wisconsin lawmakers introduced legislation mandating wolf

hunting and trapping. Act 169 required WDNR to institute a wolf hunting and trapping season once wolves were delisted under federal and state law. Act 169 also authorized use of controversial hunting practices including hunting of wolves with dogs, a method not permitted in any other state with regulated wolf hunts. The emergency rulemaking process that followed Act 169's enactment was held without the involvement of WDNR staff scientists or the public comment period that normally informs agency rulemaking. Wolf hunting and trapping seasons occurred under the requirements of Act 169 in 2012, 2013, and 2014.[11, 12, 13]

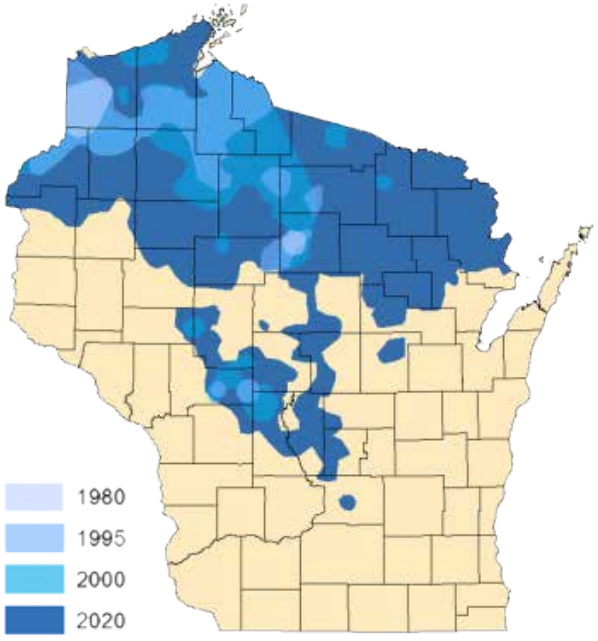
During the 2012 delisting, the state management approach also changed significantly. Management responsibility for wolves within WDNR shifted from the Bureau of Endangered Resources to the Bureau of Wildlife Management and wolves were considered a game species.

Two previous wolf advisory bodies – a Science Committee and a Stakeholder Advisory Committee were disbanded and replaced by a single Wolf Advisory Committee. The 2012 Wolf Advisory Committee consisted primarily of agency specialists and interest groups, weighted toward representation by hunters, trappers, and farmers. Wisconsin Tribes also were largely excluded from wolf management at WDNR during this period. One representative from the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) served on the committee to provide input on wolf stewardship in the Chippewa Ceded Territories, but no other tribal representatives were appointed.

Condensing the two advisory bodies into a single Wolf Advisory Committee made it more difficult to combine diverse perspectives and scientific expertise in decision-making and created barriers to advancing priorities effectively.

On December 19, 2014, a federal court ruling re-instated federal protections for gray wolves in the Great Lakes region. In an extensive opinion, the court identified some of the following as a basis for relisting wolves: disagreement of how Significant Portion of Ranges had been used; disagreement over designating a Distinct Population Segment (DPS) and delisting at the same time; lack of protection or conservation plans in other states outside the breeding population in the DPS; liberal lethal controls in agricultural portions of Minnesota; and concerns about disease and other mortality factors on wolves.

Since the 2014 re-listing, the gray wolf population in Wisconsin has continued to grow. With another federal de-listing slated to occur on January 4, 2021, Wisconsin is at a crossroads for building consensus around sound, scientifically based wolf management.



Changes in Wisconsin Gray Wolf Minimum Winter Counts and Range from 1980 to 2020[1].

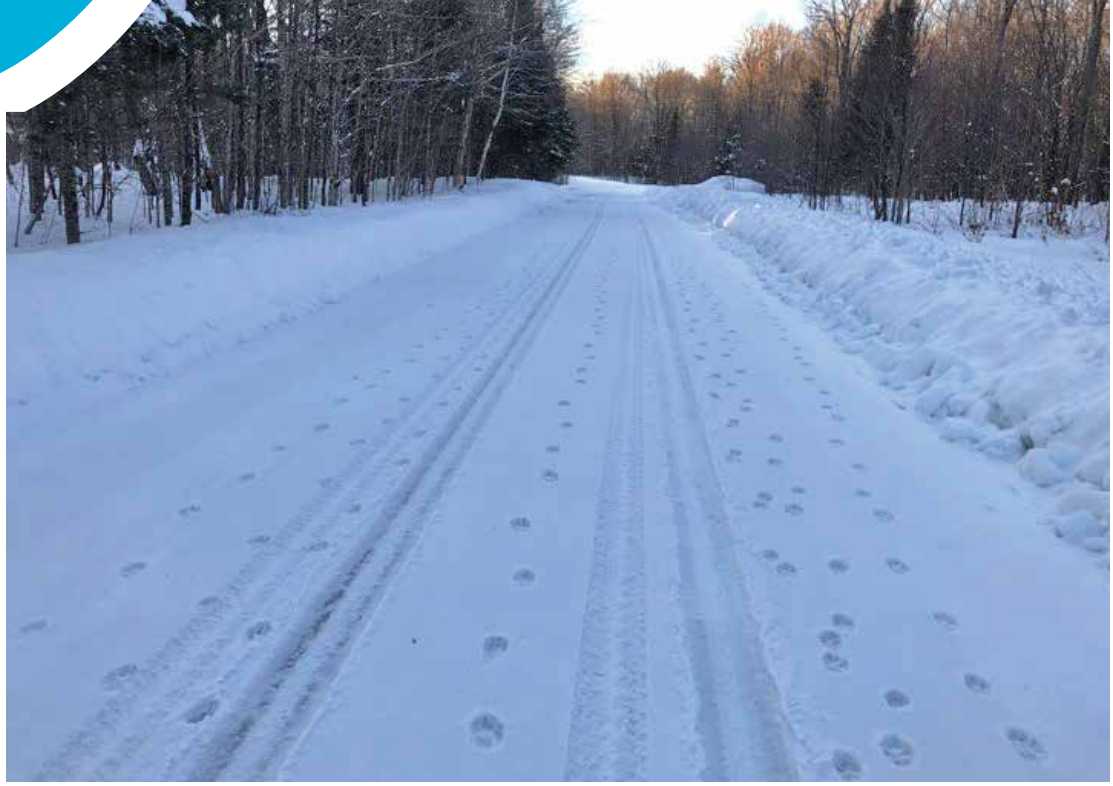


Photo Credit: Adrian Wydeven.

Wolf-Human Conflicts

Wolves are largely shy and elusive, but they do on occasion become habituated to humans. Due to their territorial nature, wolves will guard their territories from other wolves, coyotes, and domestic dogs. Wolves tend to be especially aggressive toward strange wolves and dogs at kill sites, at dens, and at rendezvous sites where pups are reared.

Wolves are also opportunistic hunters and they are known to cause depredations to farm livestock, including cattle, sheep, goats, and chickens. Farmers and pet owners within wolf range can protect their animals by employing best practices that include close monitoring, properly disposing of refuse, installing motion sensors, and by avoiding known rendezvous sites and active threat areas.

The WDNR is required by law (Wis. Stats. 29. 59 (3) to investigate any complaint on damage caused by wolves. The WDNR has entered into a cooperative agreement with United States Department of Agriculture (USDA) Wildlife Services to conduct all wolf damage investigations and, if needed, follow-up mitigation. USDA-Wildlife Services has extensive state and national experience in investigating human-wolf conflicts, as well as knowledge of the effectiveness of the full range of conflict mitigation techniques including non-lethal and lethal options.

Field staff surveying a wolf den. Credit: Adrian Wydeven

The recolonization of wolves in northern Wisconsin has been accompanied by a corresponding growth in farms with wolf depredation to cattle, reaching a peak in about 2010-2011. The number of livestock and pet depredations in Wisconsin fell during three years when public harvest and lethal depredation controls occurred, although reactive depredation control was probably the main factor in the reduction.

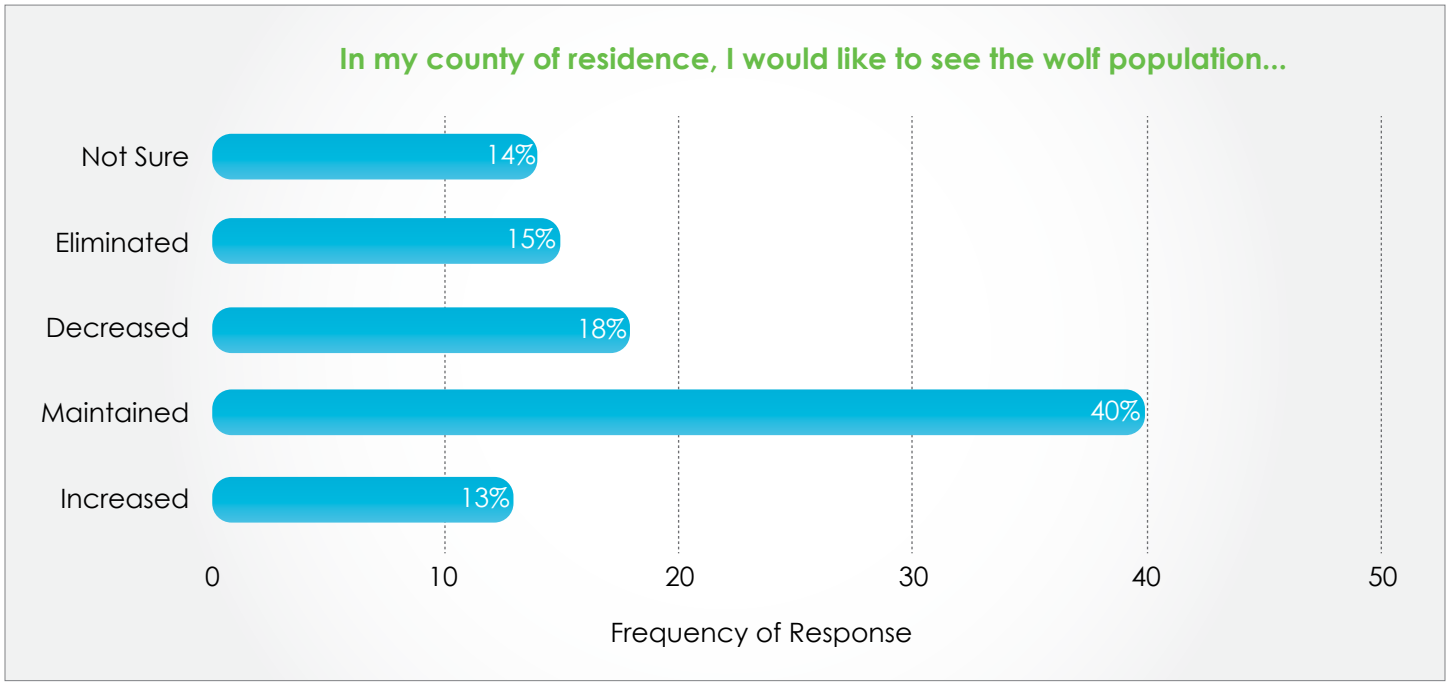
The long-term impact of wolf harvests on wolf depredation reduction remains unclear. With delisting, USDA-Wildlife Services and WDNR have more flexibility to use an integration of lethal and non-lethal controls to reduce wolf depredations.

Wolves do cause depredations on hunting dogs in Wisconsin, mainly hounds used for hunting bears. In recent years wolves killed about 20 dogs per year (range 6-41). These conflicts occur mainly on public lands near wolf rendezvous sites. Hunters are reimbursed for dogs killed by wolves, and email warnings are sent to hunters when specific packs start to cause depredation. There is evidence that the long baiting season for bears (mid-April to early October) is a contributing factor on high rate of wolf depredations on hounds in Wisconsin.[14] Depredations on hounds and other depredation on domestic animals are all depicted on an interactive map by the WDNR. WDNR's Interactive Wolf Depredation and Threats Mapping Application is one information source for employing precautionary strategies.

Diverse Perspectives

Opinions and attitudes towards wolves are often divided and can evoke strong emotions among residents in and out of wolf country.

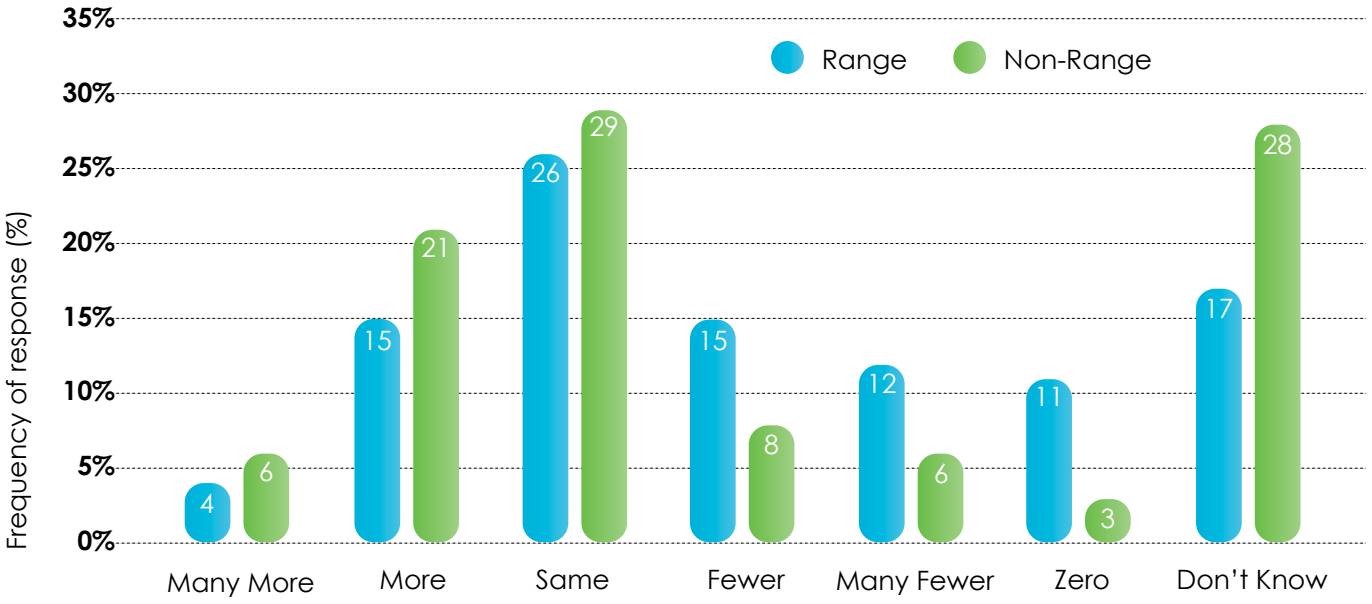
The WDNR conducted an extensive public attitude survey on wolves in 2014. The Wisconsin-specific study included people living both inside and outside of wolf country and found that attitudes towards wolves were slightly more favorable than unfavorable – by a small margin within wolf range and by a larger margin outside of wolf range. Within wolf range, 53% of respondents wanted numbers "maintained" or "increased" at current levels in their county of residence. 33% of respondents indicated wanting wolf numbers to "decrease" or be "eliminated." The remaining 14% were "not sure."[15]



Preferences for local wolf population goals, indicated by those living within wolf range.[15]

Another analysis compared preferences for the total state wolf population between people living outside of wolf range and those within wolf range. Attitudes were more positive toward wolves among those living outside of wolf range, as shown in the Figure below. Respondents from outside of wolf range were somewhat more likely to favor maintaining wolves at current levels and significantly more likely to favor increasing wolves than respondents living within wolf range. The finding is consistent with research suggesting that people with less exposure to wolves tend to view them more positively.[15]

Notably, the study found that living and/or growing up in a rural area and being a deer hunter are generally associated with less favorable attitudes towards wolves.



Comparison between residents residing in wolf range compared with non-range regarding their preferences for the number of wolves in the state compared to conditions in the winter of 2014.[15]

Wolves are considered culturally significant to Wisconsin's diverse American Indian Nations. Wisconsin is home to 11 federally recognized tribes with legal rights to natural resources. For the Anishinaabe which includes the Ojibwe and Potawatomi peoples, wolf, or Ma'iingan, is the brother to the original man. The Anishinaabe believe that the well-being of wolves and man are intricately linked to a healthy wolf population and crucial to their people's survival.[16]

The Ojibwe of the Great Lakes have off-reservation treaty-reserved usufructuary rights (the legal rights accorded to Native Americans to enjoy renewable natural resources) in the ceded territories that encompass much of the northern third of the state, where wolves are mostly found. Although they could legally claim half of the allowable harvest of wolves from the ceded territory, the Ojibwe oppose the hunting and trapping of wolves and want to ensure the protection of wolf packs that roam between tribal lands, ceded territories and off-reservation, so that they yield the benefits that healthy *Ma'iingan* populations provide.

Scientists collar a gray wolf in Wisconsin. Photo credit: WDNR.

Wolf Population Monitoring

WDNR leads the wolf monitoring program in Wisconsin and has traditionally relied on a combination of methods to determine the size of the wolf population. Until 2020, multiple sampling methods used included radio telemetry, winter snow track surveys, public reports, and summer howl surveys which were all used together to develop minimum winter population counts.

Used together, these techniques have a goal of producing a minimum tally of the number of wolves in the state at the low point of their annual population cycle. Minimum counts are time intensive to conduct and have become increasingly expensive as wolf numbers and pack distribution have grown.

Wisconsin conducted its last minimum count in 2019-2020 and is now utilizing a less expensive statistically-based method known as "occupancy modelling." Instead of providing a minimum population count, occupancy modeling yields an estimate of the total population size, along with a confidence interval, thus establishing a numerical range that the population likely falls within.

While occupancy modeling is a valid approach, it is less precise than a minimum counting system and its use will make it difficult to compare past and future wolf population figures. These differences in population estimating methods will have important implications in future conservation of the species.

Managing Human-Wolf Conflicts

Lethal controls generally refer to management actions to kill wolves known or believed to have caused depredations of livestock or pets, or otherwise believed to be a threat to humans or property. Lethal controls are distinguished from recreational hunting and trapping and are usually employed by or performed under the authority of state or federal wildlife agencies. Landowners also have limited authority to conduct their own lethal controls under certain circumstances, such as shooting wolves in the act of attacking domestic animals on private land or receiving permits to shoot wolves after depredations.

Fladry being used as a wolf deterrent to protect a livestock.

Credit: USDA Wildlife Services

Non-lethal controls include a wide array of practices that reduce wolf depredation on pets, livestock, or people. Typical non-lethal controls include, but are not limited to, improving animal husbandry practices, protecting livestock with fencing or guard animals, harassment through noisemakers, and the use of lights or fladry (flagging).

The topic of lethal vs. non-lethal methods for depredation control remains a complicated and often contested topic. There is an extensive body of research on the causes and effects of lethal and non-lethal controls but unfortunately many findings are conflicting, and complex factors in the real-world make this a difficult subject for statistically rigorous research. Sample sizes are frequently too small to be statistically valid, confounding variables often occur, and few landowners living in wolf range are willing to serve as control groups for studies.

Although recreational hunting and trapping seasons will predictably reduce wolf populations, there is little evidence that hunting and trapping alone would eliminate or significantly reduce human-wolf conflicts.

Under any scenario where hunting and trapping wolves is restored, effectively minimizing human-wolf conflicts will still require a broadly integrated approach that includes consistent and pro-active use of non-lethal controls that can be tailored to the variation in types of depredations, locations, pack histories, landscapes, and affected landowners, and will also require lethal controls where needed.

Residents in wolf range, interested citizens, wildlife experts, and elected leaders all have a role to play in engaging in respectful dialogue and sharing fact-based information and education about wolves.

Living with wolves requires a commitment to understanding wolf behavior and employing a range of pro-active measures to avoid wolf-human conflicts and property losses.

A Framework for Managing Wolves

Under North American wildlife law, wolves are considered a Public Trust resource. The Public Trust Doctrine establishes a trustee relationship of government to "hold and manage wildlife, fish and waterways for the benefit of the resources and the public."[17]

Best practices in wildlife governance (also known as Wildlife Governance Principles or WGPs) also provide a framework for considering diverse perspectives and guiding agencies in addressing especially complex wildlife conversation issues. WGPs help increase participation in wildlife governance by ensuring consideration of diverse perspectives – especially important for issues that span social and ecological boundaries.

With federal de-listing and renewed management authority, the WDNR should proceed conservatively by maintaining wolf populations within current population ranges until a new wolf conservation plan that reflects best available science and current public opinion is developed and approved.

Successfully carrying out Wisconsin's trustee responsibility will require adequate and sustained funding to support wolf conservation work. Current funding comes primarily from hunting license fees and federal excise taxes. Funding sources should be broadened to recognize the broad ecological and societal benefits Wisconsin citizens enjoy from having wild wolves in our state. Passage of the Recovering America's Wildlife Act or similar federal legislation to help fund state wildlife conservation would be extremely beneficial to wolf conservation in Wisconsin.

The relatively recent experience of recovering and expanding wolf populations and the evolving scientific understanding of human-wolf interactions suggests that the *precautionary principle*, favoring conservative decisions in the face of uncertainty, should inform policies and practices in wolf management.

Finally, the reestablishment of a state stakeholder committee should reflect the diverse perspectives on wolf management and allow an open and transparent process for discussing wolf hunting season procedures and control actions.

Conclusion

The next chapter of our long relationship between humans and wolves in the Great Lakes region is about to begin. With wolf populations stabilizing and wolf packs believed to have occupied most favorable territories, the people of Wisconsin have the opportunity to create a sustainable co-existence with this iconic species for the first time since European settlement.

With full implementation of delisting slated for January 2021, Wisconsin again needs to determine how to assure the future for wolves in a way that balances the full spectrum of interests, helps minimize human - wolf conflicts, respects the rights and interests of all citizens, and assures a healthy and viable population over time.

Recommended Actions

= Executive Action = Budget = Policy **(Lead Agency)**

1. **Manage wolf populations conservatively by maintaining the population within 2016-2020 levels (winter minimum counts between 866-1,034 wolves) until a new wolf conservation plan is developed and approved by the Natural Resources Board. (WDNR)**

2. **Resume work immediately on developing a new state wolf conservation plan using the best science and public attitudes data available on wolves. In proceeding with an updated wolf conservation plan for Wisconsin, we strongly recommend that the WDNR reestablish a two-faceted advisory committee structure, comprised of (i) a science and technical advisory committee expert in wolf biology and science bearing on wolf management and (ii) a diverse stakeholder advisory committee broadly representative of parties interested in wolves. (WDNR)**

3. **Create an inclusive and transparent wolf governance process that reflects public perceptions and incorporates the latest social and ecological science to inform decisions around wolf management activities, and especially around wolf hunting and trapping. (WDNR)**

4. **Recognize tribal sovereignty and respect the cultural views of wolves held by Native American tribes through meaningful collaboration. (WDNR)**

   a. Consult with tribes within wolf range to designate buffer zones around reservations that would prohibit wolf harvest to better protect packs on tribal lands and contribute to wolf conservation.

   b. Maintain wolf populations on ceded lands at levels that maximize the ecological benefits wolves provide and which protect treaty-reserved rights.

   c. Expand tribal representation on WDNR Wolf Technical and Wolf Advisory committees, while maintaining regular and meaningful government-to-government consultation on wolf issues.

   d. Work with Great Lakes Indian Fish and Wildlife Commission and its member tribes to develop a stipulation that addresses wolf conservation on ceded lands.

= Executive Action = Budget = Policy **(Lead Agency)**

5. Restore adequate funding and authority for wolf hunting and trapping to WDNR based on the stakeholder and science-based process described above, as with almost all other wildlife and fisheries management programs.

- **a.** Remove the current statutory mandate that a harvest must occur once wolves are delisted; instead, leaving the authorization of a harvest, its duration, methods of take and regulation to the WDNR with strong public input.
- **b.** Allow WDNR, with public input, to decide portions of the state that would be open for a wolf harvest or identify areas that should be closed to harvest for ecological, scientific, conservation, or cultural purposes.
- **c.** Work with the Legislature and Governor to create wolf conservation funding that recognizes the broad ecological and societal benefits Wisconsin citizens enjoy.
- **d.** Support passage of the Recovering America's Wildlife Act by Wisconsin representatives to the U.S. Congress.

6. Continue to support citizen science efforts to monitor Wisconsin's wolf population through winter track surveys, summer howl surveys, encourage public reporting of wolf observations, and programs such as Snapshot Wisconsin. Engage WDNR's existing volunteer base to help continue vital winter track surveys and summer howl surveys. (WDNR)

7. Convene a scientific panel of experts in the biological and social science disciplines to review existing estimates of Wisconsin's biological carrying capacity for wolves and develop an updated best estimate based on current population data and science, and provide findings and recommendations to the two committees outlined in recommendation #2. (WDNR)

In particular, the expert panel should:

- **a.** Identify prime wolf habitat in the state, and the ecological effects imparted by wolves, e.g. on the state's deer herd, forest systems, biodiversity.
- **b.** Evaluate and predict, through modeling and reliance on data, the areas in the state with low or no likelihood of wolf livestock depredation versus those with a greater likelihood.
- **c.** Evaluate the trade-offs (social, economic, and ecological) likely to occur if the state were to set a numerical population management objective for Wisconsin wolves (e.g. 75% or 100% of biological carrying capacity), together with an evaluation of lethal and non-lethal depredation measures.
- **d.** Provide findings to the wolf advisory committees and be available to the public to help guide development of the wolf conservation plan.

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