

15 May 2021

To: Wisconsin Natural Resources Board,
Wisconsin Department of Natural Resources,
Wolf Management Plan Committee, and
Wolf Harvest Advisory Committee

Via: Randy Johnson, WDNR Large Carnivore Specialist, randy.johnson@wisconsin.gov
Laurie J. Ross, Board Liaison, Laurie.Ross@wisconsin.gov

Re: 2021 Wolf Harvest Season and Future of Wolf Management

My name is Francisco J. Santiago-Ávila, a PhD and Postdoctoral Researcher at the University of Wisconsin-Madison with a focus on large carnivore conservation and environmental ethics. My doctoral dissertation focused on an interdisciplinary evaluation of wolf management in the Western Great Lakes, more specifically in MI and WI. (1–3) My postdoctoral work focuses on analyzing how reducing protections for large carnivores impacts their mortality and, more specifically, their illegal killing (i.e., poaching). (2,4)

First, I would like to explicitly express my opposition any future wolf harvests or any quotas above 0 wolves, given robust scientific and ethical evidence of harmful effects. Given the latest scientific findings as well as the current scientific gaps in understanding of wolf population dynamics and wolf mortality, a wolf hunt will undoubtedly harm Wisconsin's wolf population, domestic ungulates, hounds, their owners, and constituents' trust in Wisconsin's wolf management. Recent, robust scientific evidence suggest a wolf hunt would be detrimental to all the beings above through not only harms (e.g., injury and death), but also loss of public confidence in agency management charged with following public trust obligations supported by the best available science. Second, the arguments and evidence discussed below are also relevant to future wolf management in WI; especially to the place of deliberation, ethics and science in the protection of and coexistence with nonhuman nature, and specifically wolves.

Scientific-empirical matters

Reducing protections for wolves is associated with an increase in their concealed, illegal killing
Various independent peer-reviewed studies in the past two decades, the best-available science on this topic, have confirmed that reducing protections for Wisconsin wolves (i.e. permitting their killing) is associated with more intolerant attitudes and behaviors (e.g., poaching) towards them. This claim is supported by both social science and demographic data on the WI wolf population: attitudes towards wolves are more negative after protections are reduced, and wolf population growth is reduced through illegal killings. (5–7) On this point, it is important to remember that policies sanction values and behaviors. To put it simply, one protects those which one values highly and respects, and removes protections from those not deemed worthy of such. Wolf policies should promote respect for and coexistence with wolves through their continued protection, rather than their instrumentalization through the removal of said protections.

Additionally, the latest and strongest empirical evidence to date, from WI, suggests an increased rate of *concealed and previously unmeasured*, illegal killing of wolves during periods of reduced federal/state protection, and even without wolf hunting. (2,8) Importantly, this research found no support for the argument that reducing protections for wolves will reduce total poaching or anthropogenic mortality. Poaching is the largest source of wolf mortality and is largely underreported in Wisconsin wolf management, which also leads to consistently overestimating the size of the wolf population. (9,10) Further reducing protections for wolves by establishing a wolf hunt may send a stronger policy signal that further devalues wolves, increasing illegal killing, (2,4) harming the social dynamics of the wolf population (11) and potentially its viability. Indeed, our most recent work (under review) suggests reducing protections for wolves and the February 2021 wolf hunt combined resulted in a 27-33% decrease in the wolf population since April 2020 when considering the additional mortality caused by reducing protections for wolves. (12) Incentivizing the resulting concealed, illegal killing by reducing protections for wolves runs counter to the public trust responsibilities of the NRB, the WDNR and involved committees. Instead, an objective of any wolf management plan should be to mitigate poaching to the extent possible, and evidence suggests increased protections and enforcement, coupled with education, are more effective strategies.

Anthropogenic mortality may harm population health, not only viability

Anthropogenic mortality, legal and illegal, also harms the health of the wolf population through its social impacts, breaking up packs where each member plays a critical role, increasing pup mortality, and increasing the risk of conflict with nearby domestic animal breeders. (3,11,13–15) Given we are talking about long-living, apex predators capable of intrinsically regulating their own populations without any predation pressure and in which this self-regulation depends on social stability (16), such killing will undoubtedly harm the social health of the wolf population. That risk may prompt federal relisting based on lack of adequate regulatory mechanisms to protect the *health and viability* of the population, as has happened multiple times before with WI wolves in the past two decades. Ignoring these risks for the sake of a minority of constituents amounts to a violation of agency responsibility to the broad public, including valued non-human beings and future generations. On this point, it is imperative that future wolf management research and provide information on the social health of the wolf population and how it is affected by anthropogenic mortality (e.g., see 11), rather than relying simply on population numbers (which only speak to viability). To my knowledge, there is no such research for WI wolves, nor any literature on the matter cited in the current 1999 Wolf Management Plan (see next section on dismissal of wolf claims). Any consideration of lethal management by responsible trustees should come only after such research is conducted, and in light of its results.

Increased protections for wolves and non-lethal interventions minimize harm to wolves, domestic animals and landowners

Lethal killing of wolves by agency personnel has a mixed track-record at reducing wolf predation on domestic animalsⁱ (17–19), and research from various contexts, including most notably Michigan (with similar environmental conditions and management), has found that it may be counterproductive: wolf-killing by agency personnel disrupts pack structure, forcing wolves to go for easier, non-wild prey, increasing the risk of harm to domestic animals in adjacent properties. (3,11,20) Moreover, this increase in risk from lethal management to adjacent properties comes without any major reductions in risk for the target property relative to ‘doing

nothing'. Plus, 'doing nothing' did not increase the risk of conflicts in adjacent properties, arguably because packs were left intact and thus able to hunt wild prey more effectively. (3,20)

Similarly, the latest empirical research from WI found that in addition to increasing concealed poaching, reducing protections for wolves also increases their risk of being killed legally by managers and landowners as a response to conflicts *at an accelerating rate* over a wolf's lifetime. (2) Essentially, allowing the killing of wolves results in an increased incidence of complaints over time from landowners to kill more wolves (potentially linked to break-up of pack structure and the increased risk to adjacent properties discussed above), suggesting again increasing risk of *perceived or actual* conflicts, reduced tolerance for wolves, and increased harm to wolves, domestic animals, and their caretakers. This negative effect of reducing protections for wolves runs counter to trustees' responsibility to mitigate harms to both humans and nonhumans. Moreover, the indiscriminate killing sanctioned by a wolf hunt can only exacerbate these harms: no method of indiscriminate killing by the public, such as hunting wolves, has been proven effective at reducing wolf-human conflicts. (21) At the very least, given the evidence presented, the burden should be on the WDNR and NRB to prove that these harms will not materialize with the establishment of a wolf hunt.

As conflict-mitigating alternatives, there are scientifically-proven, functionally-effective non-lethal methods of preventing conflicts with wolves, such as (turbo/electrified) fladry and livestock-guarding dogs, both tested with gold-standard experiments and proven effective in mitigating wolf-predation in MI properties. (22,23) In addition to being more effective at mitigating conflicts on target properties, such non-lethal interventions can be employed without the risk of any spill-over predation risk to adjacent properties (as may be the case with lethal methods). Therefore, any future wolf management concerned with improving coexistence and reducing conflicts should, at the very least, promote and prioritize the funding and implementation of non-lethal interventions which can effectively reduce harms to all beings.

Politics, policy and ethics

More importantly, the ethics of current wolf management are misguided and lack the necessary justification for the harm caused to wolves. (e.g., see 24,25) Scholarly work from multiple fields (e.g., traditional ecological knowledge, biology, ethology, ethics, social science, philosophy) now regard wolves as holding many of the same morally-relevant traits and relationships (e.g., sentience, awareness, sociability, dialects, culture, companions, families) that humans have and that make the latter non-killable for any of the reasons used to kill wolves, least of all killing for recreation. (26–31) However, the documents relevant to WI wolf management do not even acknowledge the scientific evidence relevant to the internal capabilities, and thus ethical treatment, of these highly cognitive, emotional and social nonhuman animals. (see 25 for a discussion) Instead, the state plan includes only evidence relevant to human interests (e.g., 'how much can we kill?') instead of, first and foremost, who we are dealing with (e.g., 'who is this being?'; 'how much should we value it?'). This dismissal demands but lacks robust justification, suggesting the NRB and WDNR share in an anthropocentric, consumptive paradigm dismissive of nonhuman nature and its advocates. Correction of this anthropocentric bias through inclusive, pluralist participation and deliberation (see below) seems critical for rebuilding trust in state wolf management.

The current scientific evidence and increasingly considerate worldviews towards nonhumans converge with the traditional Ojibwe view of considering wolves as persons worthy of compassion and justice, despite the metaphysical differences. (1 [Conclusion],29,30) This value shift is worth noting because the Ojibwe generally oppose any population targets, hunts and other lethal interventions for wolves. Such views are increasing among other constituents as well, evidenced by social science documenting shifts to increasingly considerate, rather than traditionally dominating, views of large carnivores and nature in general. (32,33) Social scientists have also documented an increasing gap on ethical issues related to the harmful treatment of wildlife between public agencies and this growing constituency, a gap which is characteristic of Wisconsin wolf policy. (34) That shift in worldviews is also evidenced by plummeting numbers of recreational hunters nationally. (35) This view of nonhuman animals, including wolves, as worthy of care and respect is more holistic, with a much more robust basis in not only traditional ecological knowledge, but also ethics, philosophy and the ‘Western, natural’ sciences. The advance of such a holistic view should be viewed as an opportunity to revamp wildlife protection to align with the views of non-consumptive users, while allowing them to contribute more equitably to both funding and decision-making.

Acknowledgement of such holistic views should begin with equitable consideration of said views, as well as of wolves themselves. Currently, WI laws and regulations lack consideration of wolves and their claims when intervening in their lives. (see 25 for a discussion) Correcting the stark lack of consideration of these views and of wolves themselves in Wisconsin wolf management (see 25 for a detailed treatment) is indispensable for ethical coexistence.

Such ethical corrections are impossible without the equitable deliberation and participation in management for currently underrepresented views. On this point, the NRB and WDNR would benefit from creating a space (e.g., an advisory committee or working group) for the exploration of diverse values and worldviews within the policy-process, e.g., through transparent discussion of the following: ‘Why are ethics indispensable to the policy process and wolf management?’; ‘What are the ethical points of departure (for each/all views)?’; ‘What values inform them? What do each of these consider, enshrine, and/or dismiss?’; ‘How do we consider wolves as beings? How do these views compare to what we know about wolves and who they really are (as evidenced in the scientific literature)?’; ‘What does ‘coexistence’ with wolves on the landscape mean?’. Importantly, this exploration should include discussing human activities and worldviews that either harm or are prejudiced against wolves and wolf claims (1 [Introduction and Conclusion],25,29,36).

To facilitate such dialogues, I would suggest approaching trained experts on environmental/animal/nature ethics and policy (rather than any professional mediation service), which are indispensable to guide such efforts through education, training/workshops, and ethical guidance for organizations, advocates, policy committees, agency staff and policy-makers (see 25,37,38). These trainings are indispensable given the need to establish a basic common language and understanding among the public of the ethical issues involved in wolf management, as well as how to approach them in a way that encourages convergence of values but respects disagreements; i.e., establish a ‘learning community’ (see 37,38). Importantly, there is precedent for the institutionalization of ‘mixed-method approaches for ethics-based policy dialogue’ by the USFWS, and this is consistent with the National Environmental Policy Act (37). After the above

deliberation, the agency can conduct or commission ethics ‘reviews’ or ‘briefs’ on wolf management by experts, with the goal of analyzing the results of the ethical training/workshops and deliberation (also proposed for wolves in http://www.williamlynn.net/pdf/HSUS-2014-Comments-on-the-Removal-of-Gray-Wolves_Final.pdf). Such an ethical policy review would also discuss the robustness of the arguments for each ethical position in the same manner a scientific assessment discusses the robustness of the relevant science. Ethics briefs/reviews can then guide decision-makers through the ethical implications of various management approaches and techniques. Ideally, they would serve as a complement to any scientific assessment/review relevant to wolf-human coexistence. Without the expertise and assistance of professionals trained to analyze ethical stances and arguments, how are we to resolve ethical disputes or clarify what’s at stake? For scientific matters, these disputes are clarified by scientific panels. Similarly, if deliberation of ethics is a critical component of wolf policy, then there should be both inclusive, participatory deliberation and briefs/reviews to clarify the ethical concerns involved.

Needless to say, such a process may take more time and resources than what the NRB and WDNR have allocated for deciding on a 2021 wolf hunt and the future of wolf management. Moreover, such improvements in participation and deliberation would entail substantial changes in the ethical, ethnic, racial, gender, socio-economic, etc. composition of policy-making bodies such as the NRB and wolf-policy advisory committees. I strongly encourage the acting NRB and WDNR staff to promote and engage in such changes in member composition, which would go a long way to building trust with constituents, rather than promote the scientifically-evidenced gap in values between managers and the public.

Conclusions

I submit the above for the NRB, WDNR, and relevant committees, to consider regarding the implementation of future wolf harvests and the future of WI wolf management. Regarding any future wolf harvest seasons, given the lack of ethical and scientific justification, the harms to all beings mentioned above, and given the state has been forced to implement a wolf hunt by statute, the most adequate course of action, ethically and scientifically, would be to establish a quota of 0 wolves from non-reservation lands. This quota is the only one supported by the best available scholarly work on wolf management and our improved consideration of non-human beings. A 0-wolves quota would preserve the well-being of wolves, domestic animals, hounds, and that of the humans legally responsible for them. It would also build trust with Tribal co-sovereigns as well as constituents in general that are increasingly pushing back against the blatantly unethical practice of killing for recreation.

Regarding the future of state wolf management, there is much to do to make it conform to robust ethics and science. Given what we know about wolves, our interactions with them, and changing societal values increasingly considerate of nonhuman beings, the goal of wolf policies should be peaceful coexistence, respect and equitable consideration of their claims alongside ours. The above discussion of WI wolf policy and cited literature suggest such a goal is achievable, and harms minimized, through a pluralist approach to ethical and scientific deliberation and decision-making that clarifies the values at stake and promotes mutual understanding. I hope my discussion and recommendations to that effect prove useful.

Thank you for taking the time to consider the above concerns.

Sincerely,



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Literature cited:

1. Santiago-Ávila FJ. An interdisciplinary evaluation of large carnivore management: The gray wolf (*Canis lupus*) in the Western Great Lakes. University of Wisconsin - Madison; 2019.
2. Santiago-Ávila FJ, Chappell RJ, Treves A. Liberalizing the killing of endangered wolves was associated with more disappearances of collared individuals in Wisconsin, USA. *Sci Rep* [Internet]. 2020;1–14. Available from: <https://doi.org/10.1038/s41598-020-70837-x>
3. Santiago-Ávila FJ, Cornman AM, Treves A. Killing wolves to prevent predation on livestock may protect one farm but harm neighbors. *PLoS One* [Internet]. 2018;13(1):1–20. Available from: <https://doi.org/10.1371/journal.pone.0189729>
4. Louchouart N, Santiago-Ávila FJ, Parsons DR, Treves A. Evaluating how lethal management affects poaching of Mexican wolves. *R Soc Open Sci*. 2021;8(200330).
5. Treves A, Naughton-Treves L, Shelley V. Longitudinal analysis of attitudes toward wolves. *Conserv Biol* [Internet]. 2013;27(2):315–23. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23293913>
6. Hogberg J, Treves A, Shaw B, Naughton-Treves L. Changes in attitudes toward wolves before and after an inaugural public hunting and trapping season: early evidence from Wisconsin's wolf range. *Environ Conserv*. 2015;43(1):45–55.
7. Browne-Núñez C, Treves A, MacFarland D, Voyles Z, Turng C. Tolerance of wolves in Wisconsin: A mixed-methods examination of policy effects on attitudes and behavioral inclinations. *Biol Conserv*. 2015;189:59–71.
8. Chapron G, Treves A. Blood does not buy goodwill: allowing culling increases poaching of a large carnivore. *Proc R Soc London B Biol Sci* [Internet]. 2016;283(1830):20152939. Available from: <http://rspb.royalsocietypublishing.org/content/royprsb/283/1830/20152939.full.pdf>
9. Treves A, Artelle KA, Darimont CT, Parsons DR. Mismeasured mortality: correcting estimates of wolf poaching in the United States. *J Mammal*. 2017;1–9.
10. Treves A, Langenberg JA, López-Bao J V., Rabenhorst MF. Gray wolf mortality patterns in Wisconsin from 1979 to 2012. *J Mammal* [Internet]. 2017;98(1):17–32. Available from: <http://dx.doi.org/10.1093/jmammal/gyw145>
11. Haber GC. Biological, Conservation, and Ethical Implications of Exploiting and Controlling Wolves. *Conserv Biol* [Internet]. 1996;10(4):1068–81. Available from: <http://doi.wiley.com/10.1046/j.1523-1739.1996.10041068.x>

12. Treves A, Santiago-Ávila FJ, Putrevu K. Quantifying the effects of delisting wolves after the first state began lethal management. *PeerJ*.
13. Treves A, Vucetich JA, Rabenhorst M, Cornman A, Indians LRB of O, Indians LRB of O. An evaluation of localized wolf control efforts to prevent subsequent livestock depredation in Michigan. *Nat Resour Rep No 2013-4 Little River Band Ottawa Indians*. 2013;
14. Brainerd SM, Andrén H, Bangs EE, Bradley EH, Fontaine JA, Hall W, et al. The effects of breeder loss on wolves. *J Wildl Manage*. 2008;72(1):89–98.
15. Milleret C, Wabakken P, Liberg O, Åkesson M, Flagstad Ø, Andreassen HP, et al. Let's stay together? Intrinsic and extrinsic factors involved in pair bond dissolution in a recolonizing wolf population. *J Anim Ecol* [Internet]. 2017;86(1):43–54. Available from: <http://dx.doi.org/10.1111/1365-2656.12587>
16. Wallach AD, Izhaki I, Toms JD, Ripple WJ, Shanas U. What is an apex predator? *Oikos*. 2015;
17. Treves A, Krofel M, Ohrens O, van Eeden LM. Predator Control Needs a Standard of Unbiased Randomized Experiments With Cross-Over Design. *Front Ecol Evol*. 2019;7(December):1–14.
18. Eeden LM Van, Eklund A, Miller JRB, Lopez-Bao J V, Chapron G, Cejtin MR, et al. Carnivore conservation needs evidence- based livestock protection. *PLoS Biol*. 2018;16(9):1–8.
19. Bruns A, Waltert M, Khorozyan I. The effectiveness of livestock protection measures against wolves (*Canis lupus*) and implications for their co-existence with humans. *Glob Ecol Conserv* [Internet]. 2020;21:e00868. Available from: <https://doi.org/10.1016/j.gecco.2019.e00868>
20. Santiago-Ávila FJ, Cornman AM, Treves A. Correction : Killing wolves to prevent predation on livestock may protect one farm but harm neighbors. *PLoS One*. 2018;209716.
21. Decesare NJ, Wilson SM, Bradley EH, Gude JA, Inman RM, Lance NJ, et al. Wolf-Livestock Conflict and the Effects of Wolf Management.
22. Davidson-Nelson SJ, Gehring TM. Testing fladry as a nonlethal management tool for wolves and coyotes in Michigan. *Human–Wildlife Interact*. 2010;4:87–94.
23. Gehring TM, VerCauteren KC, Provost ML, Cellar AC. Utility of livestock-protection dogs for deterring wildlife from cattle farms. *Wildl Res*. 2010;37(8):715–21.
24. Vucetich J, Nelson MP. Wolf hunting and the ethics of predator control. In: Kalof L, editor. *The Oxford Handbook of Animal Studies*. Oxford, UK: Oxford University Press; 2014.
25. Santiago-Ávila FJ, Lynn WS, Treves A. Inappropriate consideration of animal interests in predator management: Towards a comprehensive moral code. In: Hovardas T, editor. *Large Carnivore Conservation and Management: Human Dimensions and Governance*. New York: Routledge; 2018. p. 227–51.
26. Midgley M. *Animals and Why They Matter*. Athens, GA: University of Georgia Press; 1998.
27. Donaldson S, Kymlicka W. *Zoopolis: A political theory of animal rights*. Oxford, UK: Oxford University Press; 2011.
28. Treves A, Santiago-Ávila FJ, Lynn WS. Just preservation. *Biol Conserv*. 2018;229(January):134–41.

29. Santiago-Ávila FJ, Lynn WS. Bridging compassion and justice in conservation ethics. *Biol Conserv* [Internet]. 2020;248:108648. Available from: <https://doi.org/10.1016/j.biocon.2020.108648>
30. David P. Ma'iingan and the Ojibwe. In: Wydeven AP, Van Deelan TR, Heske E, editors. *Recovery of Gray Wolves in the Great Lakes Region of the United States*. New York: Springer; 2009. p. 267–77.
31. Kimmerer RW. *Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants*. Milkweed Editions; 2013.
32. George KA, Slagle KM, Wilson RS, Moeller SJ, Bruskotter JT. Changes in attitudes toward animals in the United States from 1978 to 2014. *Biol Conserv* [Internet]. 2016;201:237–42. Available from: <http://www.sciencedirect.com/science/article/pii/S0006320716302774>
33. Manfredo MJ, Sullivan L, Don Carlos A, Dietsch AM, Teel TL, Bright AD, et al. *America's Wildlife Values The Social Context of Wildlife Management in the U.S*. Fort Collins, CO; 2018.
34. Koval MH, Mertig AG. Attitudes of the Michigan public and wildlife agency personnel toward lethal wildlife management. *Wildl Soc Bull*. 2004;32(1):232–43.
35. *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*. 2016.
36. Treves A, Santiago-Ávila FJ. Myths and assumptions about human-wildlife conflict and coexistence. *Conserv Biol*. 2020;00(0):1–8.
37. Lynn WS. Barred owls in the Pacific Northwest: An ethics brief. In Worcester, MA: George P. Marsh Institute, Clark University; 2012.
38. Lynn WS. Bringing Ethics to Wild Lives: Public Policy for Barred and Northern Spotted Owl. Ogra M, Urbanik J, editors. *Soc Anim Spec Issue Wildl*. 2018;26(2):217–38.

ⁱ It is worth noting that wolf predation on domestic animals is minor from an industry perspective, with 86 confirmed and probable wolf-related losses (<https://dnrx.wisconsin.gov/wdacr/public/depredation/2020#confirmedDepredations>) among over 3.4 million head of cattle in Wisconsin in 2020. Compensation is provided for losses.