

**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Parts 32 and 71**

**[Docket No. FWS–HQ–NWRs–2021–0027; FXRS1261090000–212–FF09R20000]**

**RIN 1018–BF09**

**2021–2022 Station-Specific Hunting and Sport Fishing Regulations**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule.

Attention:

**Shannon A. Estenoz,**

*Principal Deputy Assistant Secretary for Fish and Wildlife and Parks, Exercising the Delegated Authority of the Assistant Secretary for Fish and Wildlife and Parks.*

Dear Ms. Estenoz,

These comments are submitted on behalf of two national conservation organizations – Project Coyote and The Rewilding Institute. We appreciate the opportunity to present our review and critique of the U.S. Fish and Wildlife Service’s (USFWS) proposal to expand hunting and fishing on 90 National Wildlife Refuges (NWRs).

The primary authors of these comments are David Parsons, Michelle Lute and Adrian Treves. Mr. Parsons is a retired career wildlife biologist with the USFWS. He has a Master of Science degree in Wildlife Ecology from Oregon State University and currently serves as a Science Advisor to Project Coyote and as the Carnivore Conservation Biologist for The Rewilding Institute. Dr. Lute is the National Carnivore Conservation Manager for Project Coyote. She has a PhD in wildlife management from Michigan State University. Dr. Treves is a Professor of Environmental Studies at the University of Wisconsin–Madison, founder of the Carnivore Coexistence Lab since 2007 and also serves as a Science Advisor to Project Coyote. He earned his PhD at Harvard University in 1997 and has authored >133 scientific papers on predator-prey ecology and conservation. Additional signatories include premier wildlife scientists from across North America (see below).

Project Coyote (PC) is a national non-profit organization whose mission is to promote compassionate conservation and coexistence between people and wildlife through education, science and advocacy. PC representatives, advisory board members and supporters include scientists, educators, ranchers and citizen leaders who work together to change laws and policies to protect native carnivores from abuse and mismanagement, advocating coexistence instead of killing. PC seeks to change negative attitudes toward coyotes, wolves and other misunderstood predators by replacing ignorance and fear with understanding, respect and appreciation.

The mission of The Rewilding Institute (TRI) is to develop and promote ideas and strategies to advance continental-scale conservation in North America, particularly the need for widely distributed and ecologically effective populations of large carnivores and effective landscape

corridors for their movement. TRI offers a bold, scientifically credible, practically achievable, and hopeful vision for the future of wild Nature and human civilization in North America.

### **General Comments**

We find the proposed rule to significantly expand hunting and fishing on 90 NWRs to be substantially flawed and unjustified with regard to the National Environmental Policy Act (NEPA) process, the application of best science, existing policies and mandates, and the Public Trust Doctrine.

We believe that a higher purpose and more appropriate role for our NWRs would be served by designating all NWRs as wildlife sanctuaries, rather than public hunting grounds. Refuges provide a critical contribution as refugia for wildlife and wild landscapes in a time of unprecedented crisis. The dual and interrelated extinction and climate crises threaten more than the species found within NWRs (Jurriaan et al. 2015), but also untold billions of dollars in ecosystem services that stem from preserving the health and integrity of ecosystems and natural processes. NWRs and other protected areas are key to preserving ecosystem health and function. Yet, expansion of hunting in critical refugia erodes the services and functions of wild landscapes and requires them to be yet another human-dominated landscape of which we are asking too much. NWRs can serve multiple uses, including outdoor recreation and hunting, but the current proposal expands one consumptive use at the detriment of other more ecologically supportive non-consumptive uses, from wildlife watching to hiking. Moreover, hunting is already permitted on 372 (66%) of all 567 NWRs.

An expansion of hunting on NWRs works at cross-purposes to another federal initiative, the President's '30 by 30' plan. The *Executive Order on Tackling the Climate Crisis at Home and Abroad* is a laudable plan to address climate and extinction crises as well as equitable outdoor recreation. Hunting is an activity dominated by a particular demographic (i.e., white males), experiencing a decreasing user base and has an outsized impact on all other users. Further expansion of hunting sends the wrong message to diverse citizens and erodes the Executive Branch's commitment to conservation, diversity and inclusion. To illustrate this point, consider the Harbor Island NWR in Michigan. The NEPA preferred alternative expands hunting of multiple species into the summer when most visitors are not hunters, rather than choosing the alternative to close hunting during the summer. Such a decision prioritizes hunting opportunities--of which are already abundant, especially given declining hunter recruitment and retention--over public safety by inviting proximity between non-hunting visitors and shooting sportsmen and women.

We respectfully offer the following comments in support of our opposition to this proposed rule.

### **Statutory Authority**

The proposed rule cites the following statutory authority:

*The Administration Act, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act; Pub. L. 105–57), governs the administration and public use of refuges, and the Refuge Recreation Act of 1962 (16 U.S.C. 460k–460k–4) (Recreation Act) governs the administration and public use of refuges and hatcheries.*

*Amendments enacted by the Improvement Act were built upon the Administration Act in a manner that provides an “organic act” for the Refuge System, similar to organic acts that exist for other public Federal lands. The Improvement Act serves to ensure that we effectively manage the Refuge System as a national network of lands, waters, and interests for the protection and conservation of our Nation’s wildlife resources. The Administration Act states first and foremost that we focus our Refuge System mission on conservation of fish, wildlife, and plant resources and their habitats. The Improvement Act requires the Secretary, before allowing a new use of a refuge, or before expanding, renewing, or extending an existing use of a refuge, to determine that the use is compatible with the purpose for which the refuge was established and the mission of the Refuge System. The Improvement Act established as the policy of the United States that wildlife-dependent recreation, when compatible, is a legitimate and appropriate public use of the Refuge System, through which the American public can develop an appreciation for fish and wildlife. The Improvement Act established six wildlife-dependent recreational uses as the priority general public uses of the Refuge System. These uses are hunting, fishing, wildlife observation and photography, and environmental education and interpretation.*

*The Recreation Act authorizes the Secretary to administer areas within the Refuge System and Hatchery System for public recreation as an appropriate incidental or secondary use only to the extent that doing so is practicable and not inconsistent with the primary purpose(s) for which Congress and the Service established the areas. The Recreation Act requires that any recreational use of refuge or hatchery lands be compatible with the primary purpose(s) for which we established the refuge and not inconsistent with other previously authorized operations.*

*The Administration Act and Recreation Act also authorize the Secretary to issue regulations to carry out the purposes of the Acts and regulate uses.*

*We develop specific management plans for each refuge prior to opening it to hunting or sport fishing. In many cases, we develop station-specific regulations to ensure the compatibility of the programs with the purpose(s) for which we established the refuge or hatchery and the Refuge and Hatchery System mission.*

We note that the overriding mandate and purpose for NWRs is to protect and conserve our Nation’s wildlife resources. We also note that while the Recreation Act authorizes hunting on NWRs, it does not mandate hunting on NWRs. USFWS policy as stated above prioritizes “first and foremost” the “conservation of fish, wildlife, and plant resources and their habitats.” Wildlife-dependent public uses of NWRs must be compatible with the purposes for establishing the refuge, appropriate, and serve the purpose of developing an “appreciation for fish and wildlife” by the American public. The above statement states that required station-specific

compatibility assessments have been completed “in many cases,” which is an admission that such assessments have not been conducted in some cases, making this proposal legally insufficient.

Since compatibility with the primary refuge mission is a legal requirement prior to authoring incidental or secondary uses of refuges, compatibility assessments for all 90 NWRs should have been made easily available for public review of this proposal. They were not, nor has information been provided on how to find the compatibility assessments.

### **The Public Trust Doctrine**

U.S. common law includes the doctrine of the public trust (PTD) which has been applied by the Supreme Court to wildlife in *Martin v Waddell* 1842 and *Geer v Connecticut* 1896. The wildlife trust obligation on states was reaffirmed in *Hughes v Oklahoma* 1979 when that court decision struck down the legal fiction of state ownership of wildlife.

Although there remains uncertainty about whether the U.S. PTD imposes a trust duty on the federal government, there are Supreme Court decisions that seem to extend the duty to all U.S. governments and federal land parcels (*Shively v Bowlby* 1894, *Illinois Central Railroad v Illinois* 1892), recent attempts to compel the U.S. federal government to uphold its trust duties as proto-constitutional rights of youth and the broader public under the Constitution’s due process, equal protections, and reserved rights provisions (*Juliana v US* 2016), and one district court awarding monetary damages to a National Wildlife Refuge for private party’s damage to wildlife under public trust logic (*U.S. v Burlington Northern Railroad* 1989) -- there seem to be lingering doubts among plaintiffs considering litigation whether such cases can reach federal Appeals courts to set useful precedents. Nevertheless, here we put the Department of Interior on notice that U.S. Supreme Court precedent in *Illinois Central* seems to assign a duty to all U.S. governments and an affirmative duty that cannot be abdicated, a duty that cannot prefer some private interests over others, forbids substantial impairment of the trust, and requires remedies if errors are made that impair the trust held for current and future generations (*Illinois Central Railroad v State of Illinois* 1892). Over three dozen, prominent U.S. legal scholars endorsed that view of the PTD and added details about the resulting duty to account transparently for legal and illegal uses of wildlife to all beneficiaries, and prioritize preservation over use (see Wood 2004, 2009, 2014, Nie et al. 2017 for a review of federal wildlife managers’ obligations under the PTD; also see Treves et al. 2017, 2018, Santiago-Ávila et al. 2020 for specific descriptions of trust duties with regard to wild animals).

Indeed, the Department of Interior promulgated a 2016 policy on endangered species which embraces a trustee role (Rodgers et al. 2013; Department of the Interior and Department of Commerce, 2016). Therefore, the DOI’s own policy may impose trustee duties on the FWS without the need for plaintiff litigators to convince a court.

Finally, efforts to shift responsibility to the states and tribes are likely to be challenged in court under the Supremacy Clause and the enabling statutes of many federal agencies (Nie et al.

2017). Furthermore, evidence that many western States are failing in their own (state) PTD duties would not help the FWS' case (Nie et al. 2020).

### **Hunting is Not Conservation**

Hunting, per se, is not “conservation” (see Appendix 1 and Treves et al. 2018b). Hunting is the pursuit and killing of wild animals, usually for food or sport. Since 1896, the U.S. Supreme Court in *Geer v Connecticut* has defined such activities as private take and such activities should be regulated for the public good rather than for the benefit of private individuals or for the benefit of the state itself. Hunting results in the private possession and exclusive use (sometimes for economic gain) of a public trust asset. Ethical hunting requires that such killing of wild animals be for a “legitimate purpose.”

“Conservation” of wild nature must provide protection and security to wildlife and their habitats at scales where wildlife populations can achieve natural patterns of distribution and abundance, ecosystems can achieve their maximum potential for supporting biological and genetic diversity and other important ecological services, and natural evolutionary processes are preserved. The increasing pace of climate change and its detrimental effects on wildlife and their habitats, underscore the necessity to conserve the capacity and ability of diverse biological communities to evolve and adapt to changing environmental conditions (Carroll and Ray 2021). Such conservation is one of the dual purposes of the 30x30 initiative to protect nature and reverse climate change, and conservation of wildlife and their ecosystems is the primary purpose of NWRs..

Given that more than seven times as many members of the American public prefer viewing wildlife over hunting, public agencies should give great weight to their views and preferences. In addition there is a documented shift in the public's view of the relationship between humans and wildlife. More people today hold a mutualistic, or preservation, view toward wildlife than dominionistic view that wildlife should be available to humans for taking and conversion to private possession and use (Manfredo et al. 2018). The simple desire of state game and fish agencies or hunting organizations for access to NWRs for expanded hunting opportunities is not a justification for accommodating such wishes.

Given the Department of the Interior's and USFWS's public trust obligations, and the preference of most Americans for viewing, rather than hunting, wildlife, decisions to allow hunting on NWRs should not be made lightly. This proposal seems to promote an implied assumption that wild animals living on NWRs that are “secondary” to the primary mission of the refuge are expendable and therefore should be made available to hunters for killing and possessing them. Yet, the “secondary” wildlife supported on NWRs are often equally enjoyed and appreciated by wildlife viewers.

We recommend that the proposal include a discussion of the application of federal public trustee responsibilities relevant to the decision to allow hunting, and that the proposal be made

consistent with the Public Trust Doctrine, the dominant public views toward the preservation of wildlife, and the goals of the 30x30 initiative.

### **Application of Best Science**

We note that the proposed rule identifies the following authority which requires the use of the best available science in formulating this new regulation:

*E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas.*

We are hard pressed to find evidence of the application of the best available science, or any science at all, in the development of this proposed regulation.

### **National Environmental Policy Act**

This proposed rule identifies 90 separate actions on 90 different National Wildlife Refuges to either initiate hunting and fishing programs for the first time (7 refuges) or expand existing hunting and fishing opportunities (83 refuges). The proposed rule presents no results of NEPA analyses conducted separately for each refuge. The rule challenges public reviewers to independently find each of the 90 NEPA documents to examine the analyses for each of the 90 proposals to determine the results of each analysis. This requirement is unrealistically onerous for reviewers and serves to subvert meaningful public review, analyses and comments.

Furthermore, language from the proposed rule (page 14) suggests that some, if not all, of these refuge-specific proposals may have avoided any meaningful analysis by a determination that each individual proposal qualified for a “categorical exclusion” from any further review or analysis under NEPA. We note that changes to NEPA regulations enacted by the Trump Administration eliminated the requirement for “cumulative” analyses, which prevents reviewers from knowing the full scope of impacts from the combined 90 proposals. Below is a relevant excerpt from the proposed rule.

#### *National Environmental Policy Act*

*We analyzed this proposed rule in accordance with the criteria of the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4332(C)), 43 CFR part 46, and 516 Departmental Manual (DM) 8.*

*A categorical exclusion from NEPA documentation applies to publication of proposed amendments to station- specific hunting and fishing regulations because they are technical and procedural in nature, and the environmental effects are too broad, speculative, or conjectural to lend themselves to meaningful analysis (43 CFR 46.210 and 516 DM 8). Concerning the actions that are the subject of this proposed rulemaking, we have complied with NEPA at the project level when developing each proposal.*

We are concerned by the admission above that the environmental effects of some, or all, of the proposed actions were considered “too broad, speculative, or conjectural to lend themselves to meaningful analyses.”

When an activity raises threats of harm to the environment, precautionary measures should be taken when cause-and-effect relationships are not fully established scientifically. In this context the responsible agency, rather than the public, should bear the burden of proof. The process of applying the Precautionary Principle must be open, informed, and democratic and must include potentially affected parties. It must also involve an examination of the full range of alternatives, including no action.

Because the impacts of this proposal have not been presented and, apparently, cannot be accurately determined, described, or quantified, the Precautionary Principle applies and this proposal should be terminated. We provide additional science-based justification below for terminating this proposal.

### **The Need for More Hunting Opportunities Has Not Been Demonstrated**

The first and most important question to consider is: Does an unmet demand or need for more hunting opportunities exist in the United States? And if an unmet demand/need can be shown, are National Wildlife Refuges the most appropriate areas for meeting that demand?

Hunting as an outdoor recreational pursuit is in decline. National surveys conducted every 5 years show this decline. Only about 3.5% of American adults over the age of 16 engage in hunting – a 4% decline over the past 5 years. At the same time, participation in wildlife viewing is increasing, with the most recent survey showing that 26% of adults actively participate in wildlife viewing, representing an increase of 20% from 2011 with an associated 29% increase in their expenditures (U.S. Department of the Interior 2016).

Public lands available for hunting include nearly all of the 154 National Forests, which comprise over 188 million acres. Similarly, nearly all Bureau of Land Management areas are open to hunting. BLM holdings comprise about 12% of the landmass of the United States or approximately 245 million acres of “public lands.” Most, if not all state wildlife management agencies own or manage state public hunting areas, totaling another 190 million acres. Incredibly, a total of 51,097,000 acres managed by the National Park Service are open to hunting, representing approximately 60% of the total acreage of the National Park Service system. Additionally, there are 372 refuges and wetland management districts currently open to hunting

(<https://www.doi.gov/blog/hunting-and-fishing-national-parks-and-fish-and-wildlife-refuges>).

And in many western states, additional hunting opportunities are offered on millions of acres of state trust lands. It is estimated that public hunting is available on nearly 700 million acres of public lands in the United States

(<https://www.backcountrychronicles.com/public-hunting-land/>). Not accounted for here is the availability of hunting on private lands.

With an estimated 15 million hunters age 6 and over in the United States in 2019 (<https://www.statista.com/statistics/191244/participants-in-hunting-in-the-us-since-2006/201>), and participation in hunting on the decline, 700+ million acres of public hunting land seems more than adequate.

This proposed rule must include a credible analysis of the need for additional hunting opportunities in the United States.

### **Economic Analyses of Proposed Additional Hunting on Refuges are Flawed**

The proposed rule goes to great lengths to demonstrate the potential economic benefits to local and regional economies of the proposed increased hunting opportunities (Table 3). Estimates are presented for each of the 90 NWRs addressed in the proposed rule. With only three exceptions, the additional economic benefits to local economies is estimated to be less than 0.01% (one hundredth of one percent) for each refuge. The effect is so minimal that the proposal concludes:

*With the small change in overall spending anticipated from this proposed rule, it is unlikely that a substantial number of small entities will have more than a small impact from the spending change near the affected stations.*

A substantial flaw in these economic analyses is a failure to analyze changes in visitation by wildlife viewers as a result in increased hunting activity on these refuges. With guns being fired as close as 100 feet from access roads in some instances, we expect that some wildlife viewers will curtail visits to these refuges during active hunts. The only way to know for sure would be through a survey of wildlife viewers at each refuge. The results of such a survey are not presented in the economic analysis. The claims of the potential of even a “small impact” to local economies are purely speculative and unsupported by the flawed economic analyses.

### **Ecological Impacts of Hunting on NWRs**

In reviewing the various proposals for additional hunting on various NWRs presented in this proposed rule, we note some disturbing details. Especially concerning is the number of carnivores and non-traditional “game” species that are allowed to be killed intentionally or incidentally while hunting other species. These include mountain lions, coyote, bobcat, kit fox, gray fox, red fox, black bear, moose, beaver, muskrat, river otter, mink, skunk, woodchucks, armadillo, javelina, frogs, raccoon, opossum, crawfish, porcupine, crow, fisher, weasel, American alligator, and more! These permissive rules (or lack thereof) turn NWRs into shooting galleries for almost any critter that moves. This is not ethical or science-based hunting.

Night hunting for raccoons and opossum is allowed on some refuges. Some species can be killed with no bag limits (e.g., coyotes). Hunting can occur as close as 100 feet from roads. Dogs can be used in accordance with state regulations. Tree stands and blinds can be left in place



throughout the open season. Many of these rules differ among refuges creating a confusing array of rules and regulations; and some of these rules fall short of even minimal “fair chase” standards.

Among the possible harms of opening hunting with hounds in any reserve is that non-target wildlife may be attacked by the hounds. Claims of zero non-target pursuit by hunting hounds are not credible given the evidence from the Midwest of wolf-hound interactions when gray wolves were a federally listed species (Treves et al. 2002; Wydeven et al. 2004; Ruid et al. 2009). Also evidence from Michigan’s hound hunting shows black bears were displaced to permanent surfaced roads and away from back country roads during the hounding season, which raises the specter of more vehicle collisions and more damage to property near roads, such as camp sites, feeders, garbage facilities, crops, and livestock.

Studies of attendance at trap sites (Shivik & Gruver 2002) and non-target killing at trap sites (killing non-target individuals: Gipson 1975, Sacks et al. 1999; killing non-target species Bergstrom et al. 2014) should give pause to any agency expanding trapping into reserves.

And of significant concern is the amount of hunting of waterfowl and other migratory birds proposed on waterfowl and migratory bird “refuges.” This clearly seems to be a case where hunting is antithetical to the “primary” purpose of waterfowl and migratory bird refuges.

We find no attempt to assess the impacts of proposed hunting on the natural function and health of ecosystems on refuges impacted by hunting. We are aware of little science that supports the need to, or benefit of, hunting carnivores, whether “incidental” or specifically targeted. By contrast there is abundant evidence from ten peer-reviewed meta-analyses by >25 scientists from a dozen or more nations showing that lethal management of predators has an unreliable record of protecting domestic animals with frequent counterproductive effects leading to more losses of property after bears, coyotes, wolves, and other carnivores were killed (Eklund, 2017; Khorozyan, 2019; Lennox, 2018; Miller, 2016; Moreira-Arce, 2018; Treves, 2016; Treves, 2019; van Eeden, 2018; van Eeden, 2018; Khorozyan, 2020). Moreover, an upcoming review of whether predator-killing improves ungulate populations finds equivocal results (Clark & Hebblewhite, in press), with some studies showing subsequent declines of ungulates. Furthermore, few carnivores are hunted for human consumption. Many carnivores are self-regulating with regard to their distribution and abundance and do not need to be controlled by human hunting. Peer-reviewed scientific journals are replete with research findings on the importance of carnivores, especially apex predators, to maintaining the health and biodiversity of ecosystems (Estes et al. 2011; Gilbert et al. 2017; Ripple et al. 2014). Of all protected federal lands in the United States, NWRs should prioritize natural ecological processes with minimal human disturbances.

We can agree that hunting may be a necessary management tool in some circumstances. An example would be where ungulate populations, such as whitetail deer, have exceeded the carrying capacity of the ecosystem due to the lack of their natural predators. In such circumstances, the feasibility of restoring missing apex predators such as wolves and cougars

should be considered as an ecologically preferred alternative to hunting. And, if hunting is determined to be the preferred tool, it should be limited to the species deemed to be in need of “control.” The principle of demonstrating an ecological need for the killing of the public’s wildlife on federal NWRs should apply to all decisions to allow public hunting on refuges. In no case should the authorization of hunting allow blanket killing of all species of wildlife not considered to be of any value toward achieving the “primary” mission of the refuge.

As Aldo Leopold (A Sand County Almanac, second printing 1969:177) poignantly stated:

*“The last word in ignorance is the man who says of an animal or plant, “What good is it?” If the land mechanism as a whole is good, then every part is good, whether we understand it or not. If the biota, in the course of eons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering.”*

Leopold wrote these words over seven decades ago. It is not too late to heed them.

### **The Biodiversity Crisis and 30x30 Goals for Saving Nature and Reversing Climate Change**

Wild nature is under assault both within the United States and globally. Both species and the abundance of animals are in sharp decline at a pace not experienced on Earth for approximately 60 million years. A sixth mass extinction of life on earth is clearly under way, with measured extinction rates of 100-1000 times normal background levels (Jurriaan et al. 2015).

The Biden Administration has endorsed a goal of protecting Nature on 30% of our nation’s lands and waters by the year 2030 – the 30x30 initiative. This goal has been endorsed by both houses of Congress and by a presidential proclamation

(<https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/>). It

has become recognized that the dual goals of protecting species and their ecosystems and abating climate change through carbon sequestration and other means are compatible and essential to maintaining our planet's capacity to support life, both human and non-human (Dinerstein et al, 2019).

Setting aside lands and waters under high levels of protection (e.g., USGS GAP1 or GAP2 standards – see Appendix 2) had been deemed essential to halting and reversing climate change and mass species extinctions (Ceballos et al. 2015, 2017; Rosenberg et al. 2019). Meeting such standards on NWRs would significantly support the goals of the 30x30 initiative.

### **Recommendations**

1. Abandon this ill-conceived and unjustified proposed rule.
2. Prioritize public wildlife viewing over public hunting on NWRs

3. Prioritize the conservation of natural ecological and evolutionary processes on NWRs
4. Authorize hunting on NWRs only for the sole purpose of correcting an identified problem or an identified imbalance in the refuge ecosystem, and only after the development of a science-based, peer-reviewed justification.
5. Initiate a modern reassessment of the mission of the NWR System in light of the existential crises of biodiversity loss, species extinctions, and climate change.

Thank you for your attention and consideration of our of views and recommendations on this important matter,



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#### References:

Bergstrom, B.J., L.C. Arias, A.D. Davidson, A.W. Ferguson, L.A. Randa, and S.R. Sheffield, License to kill: reforming federal wildlife control to restore biodiversity and ecosystem function. *Conservation Letters*, 2014. 7(2): p. 131–142.

Bergstrom, B.J., Carnivore conservation: shifting the paradigm from control to coexistence. *Journal of Mammalogy*, 2017. 98(1): p. 1-6.

Ceballos, G., Ehrlich, P.R., Barnosky, A.D., García, A., Pringle, R.M. & Palmer, T.M. (2015) Accelerated modern human – induced species losses : Entering the sixth mass extinction. *Science Advances*, 1, e1400253.

Ceballos, G., Ehrlich, P.R. & Dirzo, R. (2017) Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines. *PNAS*, 114, E6089–E6096.

Carroll, C. and J.C. Ray. 2021. Maximizing the effectiveness of national commitments to protected area expansion for conserving biodiversity and ecosystem carbon under climate change. *Global Change Biology* 2021; 00: 1-20.

Department of the Interior and Department of Commerce, Revised Interagency Cooperative Policy Regarding the Role of State Agencies in Endangered Species Act Activities. *Federal Register*, 2016. 81: p. 8663-8664.

Dinerstein E., E.,C. Vynne, E. Sala, A. R. Joshi, S. Fernando, T. E. Lovejoy, J. Mayorga, D. Olson, G. P. Asner, J. E. M. Baillie, N. D. Burgess, K. Burkart, R. F. Noss, Y. P. Zhang, A. Baccini, T. Birch, N. Hahn, L. N. Joppa, E. Wikramanayake. A Global Deal For Nature: Guiding principles, milestones, and targets. *Science Advances*, 2019.

Eklund, A., J. V. López-Bao, M. Tourani, G. Chapron and J. Frank (2017). "Limited evidence on the effectiveness of interventions to reduce livestock predation by large carnivores." *Scientific Reports* 7: 2097 | DOI:2010.1038/s41598-41017-02323-w.

Estes, J.A., J. Terborgh, J.S. Brashares, M.E. Power, J. Berger, W.J. Bond, S.R. Carpenter, T.E. Essington, R.D. Holt, J.B.C. Jackson, R.J. Marquis, L. Oksanen, T. Oksanen, R.T. Paine, E.K. Pikitch, W.J. Ripple, S.A. Sandin, M. Scheffer, T.W. Schoener, J.B. Shurin, A.R.E. Sinclair, M.E. Soulé, R. Virtanen, and D.A. Wardle, Trophic Downgrading of Planet Earth. *Science*, 2011. 333(6040): p. 301-306.

Gilbert, S.L., Sivy, K.J., Pozzanghera, C.B., Dubour, A., Overduijn, K., Smith, M.M., et al. (2017) Socioeconomic Benefits of Large Carnivore Recolonization Through Reduced Wildlife-Vehicle Collisions. *Conservation Letters*, 10, 431-439.

Gipson, P.S., Efficiency of trapping in capturing offending coyotes. *Wildlife Management*, 1975. 39: p. 45-47.

Juliana et al. v U.S. et al. 2016, U.S. District Court Oregon. 6:15-cv-01517-TC

Jurriaan M. De Vos, Lucas N. Joppa, John L. Gittleman, Patrick R. Stephens, Stuart L. Pimm. 2015. Estimating the normal background rate of species extinction. *Conservation Biology* 29: 452-462.

Khorozyan, I. and M. Waltert (2019). "How long do anti-predator interventions remain effective? Patterns, thresholds and uncertainty." *Royal Society Open Science* 6(9).

Khorozyan, I. and M. Waltert (2020). "Not all interventions are equally effective against bears: patterns and recommendations for global bear conservation and management." *Scientific Reports* in press.

Lennox, R. J., A. J. Gallagher, E. G. Ritchie and S. J. Cooke (2018). "Evaluating the efficacy of predator removal in a conflict-prone world." *Biological Conservation* 224: 277-289.

Manfredo, M.J., Sullivan, L., Don Carlos, A.W., Dietsch, A.M., Teel, T.L., Bright, A.D. & Bruskotter, J. (2018.) America's wildlife values: the social context of wildlife in the U.S. National report from the research project entitled "America's Wildlife Values". Fort Collins, CO: Colorado State University, Department of Human Dimensions of Natural Resources.

Miller, J., K. Stoner, M. Cejtin, T. Meyer, A. Middleton and O. Schmitz (2016). "Effectiveness of Contemporary Techniques for Reducing Livestock Depredations by Large Carnivores." *Wildlife Society Bulletin* 40: 806-815.

Moreira-Arce, D., C. S. Ugarte, F. Zorondo-Rodríguez and J. A. Simonetti (2018). "Management Tools to Reduce Carnivore-Livestock Conflicts: Current Gap and Future Challenges." *Rangeland Ecology & Management*.

Nie, M., C. Barns, J. Haber, J. Joly, K. Pitt, and S. Zellmer, Fish and wildlife management on federal lands: Debunking state supremacy. *Environmental Law*, 2017. 47: p. 797-932.

Nie, M., N. Landers, and M. Bryan, The Public Trust in Wildlife: Closing the Implementation Gap in 13 Western States. *Environmental Law Reporter*, 2020. 50: p. 10909-10919.

Ripple, W.J., J.A. Estes, R.L. Beschta, C.C. Wilmers, E.G. Ritchie, M. Hebblewhite, J. Berger, B. Elmhagen, M. Letnic, M.P. Nelson, O.J. Schmitz, D.W. Smith, A.D. Wallach, and A.J. Wirsing, Status and ecological effects of the world's largest carnivores. *Science*, 2014. 343(6167): p. 1241484.

Rodgers, W.H.J., John Davidson, Joseph Sax, Erwin Chemerinsky, Michael Blumm, John Davidson, Gerald Torres, Mary Christina Wood, B. Weston, K.J. Lynch, Maxine Burkett, T.P. Duane, D. Badrinarayana, S. Chinn, R. Longest, J.P. Hand, Z. Plater, J.G. Speth, Charles Wilkinson, P.C. McGinley, E.T. Freyfogle, C.A. Arnold, P. Parenteau, F. Cheever, M.S. Davis, J.R. May, D. Antolini, A.C. Flournoy, D. Takacs, M. Robinson-Dorn, K. Coplan, O. Houck, and D.L. Grant, Brief for Law Professors as Amici Curiae Supporting Plaintiffs-Appellants, Alec L. et al. v. McCarthy, No. 13-5192 (C.A.D.C. Dec. 18, 2013), 2013 WL 6672484. 2013.

Rosenberg, K. V, Dokter, A.M., Blancher, P.J., Sauer, J.R., Smith, A.C., Smith, P.A., et al. (2019) Decline of the North American avifauna. *Science*, 366, 120–124.

Ruid, D.B., W.J. Paul, B.J. Roell, A.P. Wideven, R.C. Willging, R.L. Jurewicz, and D.H. Lonsway, Wolf-human conflicts and management in Minnesota, Wisconsin, and Michigan, in *Recovery of Gray Wolves in the Great Lakes Region of the United States: An Endangered Species Success Story*, A.P. Wydeven, T.R. Van Deelen, and E.J. Heske, Editors. 2009, Springer: New York. p. 279-295.

Shivik, J.A. and K.S. Gruver, Animal attendance at coyote trap sites in Texas. *Wildlife Society Bulletin*, 2002. 30(2): p. 502-57.

Stillfried, M., J. Belant, N. Svoboda, D. Beyer, and S. Kramer-Schadt, When top predators become prey: Black bears alter movement behaviour in response to hunting pressure. *Behavioural Processes*, 2015. 120: p. 30-39. 0.1016/j.beproc.2015.08.003.

Treves, A., R.L. Jurewicz, L. Naughton-Treves, R.A. Rose, R.C. Willging, and A.P. Wydeven, Wolf depredation on domestic animals: control and compensation in Wisconsin, 1976-2000. *Wildlife Society Bulletin*, 2002. 30: p. 231-241. <https://www.jstor.org/stable/3784658>.

Treves, A., M. Krofel and J. McManus (2016). "Predator control should not be a shot in the dark." *Frontiers in Ecology and the Environment* 14: 380-388.

Treves, A., G. Chapron, J.V. López-Bao, C. Shoemaker, A. Goeckner, and J.T. Bruskotter, Predators and the public trust. *Biological Reviews*, 2017. 92: p. 248-270.

Treves, A., K.A. Artelle, C.T. Darimont, W.S. Lynn, P.C. Paquet, F.J. Santiago-Avila, R. Shaw, and M.C. Wood, Intergenerational equity can help to prevent climate change and extinction. *Nature Ecology & Evolution*, 2018. 2: p. 204-207. <https://doi.org/10.1038/s41559-018-0465-y>.

Treves, A., M. Krofel, O. Ohrens and L. M. Van Eeden (2019). "Predator control needs a standard of unbiased randomized experiments with cross-over design." *Frontiers in Ecology and Evolution* 7 402-413.

Treves, A., K.A. Artelle, and P.C. Paquet, Differentiating between regulation and hunting as conservation interventions. *Conservation Biology* 2018. 33(2): p. 472-475. DOI:10.1111/cobi.13211.

U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

van Eeden, L.M., Eklund, A., Miller, J.R.B.B., López-Bao, J.V., Chapron, G., Cejtin, M.R., et al. (2018) Carnivore conservation needs evidence-based livestock protection. *PLoS Biology*, 16, 1-e2005577. Public Library of Science.

Virgós, Emilio, Lozano, Jorge, Cabezas-Díaz, Sara, Macdonald, David W., Zalewski, Andrzej, Atienza, Juan Carlos, Proulx, Gilbert, Ripple, William J., Rosalino, Luis M., Santos-Reis, Margarida, Johnson, Paul J., Malo, Aurelio F., and Baker, Sandra E., A poor international standard for trap selectivity threatens carnivore conservation. *Biodiversity and Conservation*, 2016. 25: p. 1409-1419.

Wood, M.C., *Nature's Trust*. 2013, New York: Cambridge University Press.

Wood, M.C., *Protecting the Wildlife Trust: A reinterpretation of Section 7 of the Endangered Species Act*. *Environmental Law*, 2004. 34: p. 605-643.

Wood, M.C., Advancing the sovereign trust of government to safeguard the environment for present and future generations (Part I): Ecological realism and the need for a paradigm shift. *Environmental Law*, 2009. 43: p. 44-88.

Wydeven, A.P., A. Treves, B. Brost, and J.E. Wiedenhoef, Characteristics of wolf packs in Wisconsin: Identification of traits influencing depredation, in *People and Predators: From Conflict to Coexistence*, N. Fascione, A. Delach, and M.E. Smith, Editors. 2004, Island Press: Washington, D. C. p. 28-50.

U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

## APPENDIX 1

# Why Hunting Isn't Conservation, and Why It Matters

By [Kevin Bixby](#)

In late December 2014, I received a call from a friend. He and his wife had made a gruesome discovery while exploring the desert outside of Las Cruces. They had stumbled upon the bodies of 39 dead coyotes.

I knew what had happened.

Wildlife killing contests are just what the name suggests. Participants compete for prizes to see who can kill the most coyotes, bobcats, foxes or whatever the target species happens to be. The animals are not eaten, nor are their pelts generally taken. They are simply killed for fun and profit. After the prizes are awarded, the victims are unceremoniously dumped, often by the side of the road.





*Coyote (Canis latrans) (c) Larry Master, masterimages.org*

The coyotes my friend found had been shot in a killing contest held the previous week by a local predator hunting club. I had been tracking the group on Facebook. “Smoke a pack a day” emblazoned over a photo of a dead coyote was one of their favorite memes.

Normal people find these events abhorrent. The hunters I know do not participate in them and tell me privately that they find them distasteful. But few hunting organizations have taken a public position against them<sup>[1]</sup>, and many, like the Sportsmen’s Alliance and [Congressional Sportsmen’s Foundation](#), oppose efforts to ban them. The fact that the public face of the hunting community condones wildlife killing contests, and that these competitions remain legal in all but six states, is emblematic of the deep divide over wildlife management in the U.S. today.

#### *A System in Need of Reform*

It is sometimes said that hunting is conservation. The idea is expressed in various ways—hunters pay for conservation, hunters are the true conservationists, hunting is needed to



manage wildlife—but they all suggest that hunters, and hunting, are indispensable to the continued survival of wildlife in America.<sup>[iii]</sup>

As an occasional hunter who has spent my entire career in wildlife conservation, I disagree. Hunting can be many things—family tradition, outdoor recreation, a source of healthy meat—but the claim that hunting is the same as conservation just isn't supported by the facts.

But there's more to the statement than harmless hyperbole. The assertion that hunting is conservation has unmistakable meaning in the culture wars. It has become a rallying cry in the battle over America's wildlife, part of a narrative employed to defend a system of wildlife management built around values of domination and exploitation of wild "other" lives, controlled by hunters and their allies, that seems increasingly out of step with modern ecological understanding, changing public attitudes and a global extinction crisis.

In August 2018, more than 100 advocates and academics from around the country gathered in Albuquerque to talk about how to transform state wildlife management. It was the first national conference held on the topic.

Some speakers decried the fundamentally undemocratic nature of state wildlife decision making. Others recited the litany of state wildlife management failures, such as sanctioning controversial practices opposed by most people, e.g. trophy hunting and leghold trapping. Underlying all this animus was a shared sense that states are not doing nearly enough to protect wildlife, and that the root problem is the stranglehold hunters, as an interest group, have on state wildlife management.

The issue is hugely significant in conservation circles. States play a critical role in wildlife management, sharing legal jurisdiction over wildlife with the federal government. The conventional wisdom is that the feds are responsible for a subset of organisms—threatened and endangered species listed under the Endangered Species Act, migratory birds protected by international treaties—while the states have authority over everything else (except on Native American lands, where tribes have jurisdiction). Although not everyone agrees with this assessment,<sup>[iiii]</sup> the reality in America today is that, for most wild animals, states dictate how they are used, by whom, and if they are protected at all.

So who are the proponents of the hunting as conservation idea? Not surprisingly, they include organizations that promote hunting, such as the Rocky Mountain Elk Foundation whose "Twenty-five Reasons Why Hunting is Conservation" is probably the most elaborate articulation of the concept. The hunting as conservation view is also popular with gun groups like the National Rifle Association that like to conflate their second amendment advocacy with a "defense" of the hunting tradition. But it might be unexpected, and disconcerting, to learn that this view is also widely shared by the state and federal agencies charged with protecting America's wildlife.

What these entities all have in common is a vested interest in preserving the status quo in wildlife management in the U.S.—a system that was developed to a large extent by hunters, is

supported financially by hunters, and continues to be operated primarily for the benefit of hunters.



*Elk (Cervus elaphus) – bull and young bull (c) Larry Master, masterimages.org*

This is especially true at the state level where hunters are disproportionately represented on appointed wildlife commissions, where wildlife agencies overseen or advised by those commissions are staffed largely by people who are either hunters themselves or share their [values](#), and where the opinions of the [82 percent](#) of the public that do not hunt or fish are routinely discounted or ignored.

I want to be clear. Hunters deserve a great deal of credit for their historic role in saving some of America's "game" species (i.e. species pursued by hunters, such as white-tailed deer, bighorn sheep, elk and pronghorn). Without their organizing and lobbying for game protection laws and their willingness to purchase licenses that generated revenue for the enforcement of those laws, these species might have disappeared. However, the institution of wildlife management that hunters helped to create, and that today exists primarily to serve hunters, is simply not focused nor equipped to meet the extraordinary challenge of preserving species and ecosystems in the face of a mass extinction crisis that is unraveling the fabric of life everywhere.

#### *Teddy Roosevelt and the Rise of the "Sport" Hunter*

To understand how the current system came to exist, we need to look at the history of wildlife in America over the past century and a half, a time span that encompasses the most efficient destruction of wildlife in human history. The steady retreat of wildlife in the face of European settlement greatly accelerated after the Civil War, when a convergence of technological, social

and economic factors ignited a massive expansion of market hunting to satisfy the demand for wild meat, hides, furs and feathers. In the absence of any effective regulations to control this free-for-all, staggering numbers of animals were killed in the course of just a few decades. An estimated 10-12 million bison in 1865<sup>[iv]</sup> were reduced to approximately one thousand in all of North America in 1890. Massive numbers of pronghorn, bighorn sheep, elk and deer were also killed. Passenger pigeons were hunted to extinction.

In response, influential recreational hunters like Teddy Roosevelt, George Grinnell, and Gifford Pinchot began to organize in the late 1800s into groups like the Boone and Crockett Club and lobby for game laws to protect the species they enjoyed hunting. Over time, “sport” hunters became a major source of funding for state wildlife agencies through their purchase of licenses and later through their payment of federal taxes on equipment used for hunting and fishing. Hunters remain a significant source of agency revenues today. Not surprisingly, agencies came to view hunters as their most important constituents.

This financial relationship aligned nicely with the prevailing view of conservation during the same period, which was focused on restoring depleted game populations and managing them to produce a “harvestable surplus” for the benefit of hunters. Aldo Leopold, often considered the father of modern wildlife management, defined game management in his influential 1933 book on the subject as “...the art of making land produce sustained annual crops of wild game for recreational use.”



*Theodore Roosevelt on horseback. (ca. 1910. March 14. Photograph. Dawson, Warrington.  
<https://www.loc.gov/item/2007677075/>)*

He likened it to other forms of agriculture where various factors needed to be controlled in order to enhance the yield, which, in the case of game animals, included things like regulating hunting and killing predators. This approach led to the successful rescue of certain game species from near extinction.

Although Leopold embraced a more ecological perspective in later writings, much of wildlife management as practiced in the U.S. today still reflects his earlier agricultural view. As the concept of conservation has evolved, state wildlife institutions and policies haven't kept pace.

We now understand that species interact as parts of ecosystems, and that these systems generate the services—clean air and water, healthy soils, pollination, medicines, etc.—that sustain all life on the planet, including humans. In this holistic view, *all* species are important. The context for conservation has changed dramatically as well. The world is currently undergoing a mass extinction crisis in which plants and animals around the world are disappearing at a frightening rate due to a host of human activities. Since 1970, North America has seen a 29 percent drop in bird numbers. Populations of terrestrial vertebrates—mammals, birds, fish, reptiles and amphibians—have declined by an average of 60 percent across the globe

in this period. Insect numbers are [plummeting](#) worldwide. An estimated [one million](#) species are now facing extinction. Scientists have called this a “[biological annihilation](#)” and warn that urgent action is needed to stop it.

Informed by these facts, the goal of wildlife conservation is, or ought to be, to protect and restore the diversity of life at all levels; but that remains less important to state wildlife managers than ensuring a harvestable surplus of game animals for human hunters. To be fair, most states also have programs to protect endangered and threatened species, but these tend to be underfunded and a lower priority than game management programs.

I would add that any definition of conservation that does not include a measure of compassion and justice for individual animals is out of step with public attitudes, which are [moving away](#) from regarding wildlife as strictly a resource for human use and toward respecting wild creatures for their intrinsic right to exist as well. Killing contests are a prime example. While they don’t usually cause a long-term decline in populations of targeted species, and are legal in most states, most people find these events immoral and not in keeping with a conservation paradigm that includes concern for individual animals.

#### *Game Management vs Wildlife Conservation*

The on-the-ground differences between ecological-based conservation versus traditional wildlife management are often dramatic. There are countless examples of this, but let’s look at three general categories: exotic species, “nongame” animals, and carnivores.

The introduction of alien species around the world is recognized by biologists today as a major [threat](#) to biodiversity. In the past, however, exotic game animals were brought in by state wildlife managers to provide novel hunting opportunities. In my state, the New Mexico Game and Fish Department maintains huntable populations of several introduced ungulates (oryx, barbary sheep, and ibex) despite their [competition](#) with native species and the ecological [havoc](#) they wreak.

While most states are no longer in the business of importing exotic terrestrial animals, fish are a different story. States continue to raise and stock literally millions [\[v\]](#) of non-native fish in their waters every year, solely for the benefit of anglers. These introduced fish often prey on, hybridize with, or [compete](#) with native fishes and [harm](#) aquatic ecosystems. New Mexico dumps more than [15 million](#) non-native fish into the state’s waterways annually, all of them predatory species like rainbow trout and walleye. Some of these naïve captive-raised fish, which frequently don’t survive more than a [few weeks](#) in the wild because they fall easy prey to human anglers or other predators, have to be [obtained](#) from other states to meet perceived demand.

When it comes to fish, state wildlife agencies are, in effect, operating as monopoly industries. They have co-opted a public resource—native aquatic ecosystems—in order to produce a consumer product—fishing opportunities for non-native fish—which they then sell to generate revenues for themselves. [\[vi\]](#) The agencies exercise exclusive control over access to their product—you can’t fish in a public water without a license—and their high volume stocking programs maintain consumer demand (“angler expectation”) for their product at a level far beyond what could be satisfied by native fish populations alone. These “put and take” stocking



programs sell a lot of licenses, but to say they have anything to do with conservation is ludicrous, and irresponsible, given that freshwater fishes as a group are more endangered and going extinct [faster](#) than other vertebrates worldwide.



*Black-tailed Prairie Dog (Cynomys ludovicianus) (c) Larry Master, masterimages.org*

The divergence in management results is also apparent in how “nongame” species are treated. Prairie dogs, for example, are considered by biologists to be a [keystone species](#) because of their outsized ecological importance. Approximately 170 other vertebrate species depend on prairie dogs in one way or another. Conservation-driven management would prioritize their restoration and protection; but in most states where they exist, prairie dogs are considered pests and used for target practice and killing contests.

The disparity between game management and ecologically-focused conservation is nowhere more evident than when it comes to native carnivores. Top predators like wolves and mountain lions play a [vital role](#) in ecosystems. Most were wiped out from large parts of their historic ranges by the mid-20<sup>th</sup> century. Conservation would prioritize restoring them as widely as possible across the landscape, but hunting-driven management seeks to do just the opposite. Carnivores have historically been vilified by hunters and wildlife managers as competitors for game animals and threats to livestock, and that attitude is reflected in state policies today. Coyotes are unprotected and persecuted in most states. Where wolves have been taken off the federal endangered species list, states have responded by subjecting them to intensive hunting and trapping intended to suppress their numbers to keep them just above the level that would trigger federal oversight again. Wyoming allows wolves to be killed year-round, with no limits, over 85 percent of the state. Idaho’s wildlife agency pays shooters to [kill wolves](#) in remote wilderness areas and has reinstituted [bounties](#) on them.

The argument is often made by defenders of the status quo that, without hunting, wildlife populations would grow unchecked and run amok, but this is not supported by science. Leaving

aside the question of what happened in the millions of years before modern humans appeared, there is ample [evidence](#) that top carnivores such as wolves, mountain lions, bears and coyotes, regulate their own numbers. They do this by defending territories, limiting reproduction to alpha individuals within a group, investing in lengthy parental care, and infanticide. Hunting is not needed to keep populations of top predators in check; and indeed, it has the opposite effect, because it disrupts the social interactions through which self-regulation is achieved. Predation can influence the numbers of ungulates like deer and elk, but by which predators? Most state wildlife managers oppose the reintroduction of top carnivores that have been extirpated from their borders, or if they are present, try to keep their numbers [artificially low](#) to reduce competition for game animals with human hunters. In essence, then, past and current management policies, driven by antipathy toward carnivores and a desire to improve hunting success, have created a “problem”—scarcity of predators—to which hunting is offered as the only “solution.”

### *The Myth that Hunters Pay for Conservation*

Probably the most common reason for claiming that hunting is conservation, and for justifying hunters’ privileged status in wildlife matters, is that hunters contribute more money than non-hunters to wildlife conservation, in what is usually described in positive terms as a “user pays, public benefits” model. That is, the “users” of wild animals—hunters—pay for their management, and everyone else gets to enjoy them for free, managers commonly claim.

This is disputable. The financial contribution of hunters to agency coffers, while significant, is nearly always overstated.

It is true that hunters contribute substantially to two sources of funding which comprise almost 60 percent, [on average](#), of state wildlife agency budgets: license fees and federal excise taxes. But there are at least three major problems in leaping from this fact to the conclusion that hunters are the ones who “pay for conservation.”

First, as discussed, there is a considerable difference between conservation and what state wildlife agencies actually do. Secondly, even if one assumes that everything state wildlife agencies do constitutes conservation, much of their funding still comes from non-hunters, as explained below. And third, some of the most important wildlife conservation efforts take place outside of state wildlife agencies and are funded mainly by the general public.

State wildlife agencies undertake a wide [variety](#) of activities, including setting and enforcing hunting regulations, administering license sales, providing hunter safety and education programs, securing access for hunting and fishing, constructing and operating firearm ranges, operating fish hatcheries and stocking programs, controlling predators, managing land, improving habitat, responding to complaints, conducting research and public education, and protecting endangered species. A substantial portion of these activities are clearly aimed at managing opportunities for hunting and fishing, and not necessarily the conservation of wildlife.



*White-tailed Deer (Odocoileus virginianus) (c) Larry Master, masterimages.org*

The second problem with saying that hunters are the ones who foot the bill for conservation is that it discounts the substantial financial contributions of non-hunters. To begin with, more than 40 percent of state wildlife agency revenues, on average, are from sources not tied to hunting. These vary by state, but include general funds, lottery receipts, speeding tickets, vehicle license sales, general sales taxes, sales taxes on outdoor recreation equipment, and income tax check-offs.

In addition, the non-hunting public contributes more to another significant source of wildlife agency revenues—federal excise taxes—than is generally acknowledged. These taxes are levied on a number of items, including handguns and their ammunition, and fuel for jet skis and lawnmowers, that are rarely purchased for use in hunting or fishing. Although exact numbers are hard to come by, my initial calculations suggest that non-hunters account for at least one-third of these taxes, and probably a lot more.



Third, significant wildlife conservation takes place outside state agencies, as [others](#) have pointed out, and it is mostly the non-hunting public that pays for this. For example, more than one quarter of the U.S. is federal public land managed by four agencies—the U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, and U.S. Forest Service. These 600-plus million acres are vital to wildlife, providing habitat for [thousands](#) of species, including hundreds of endangered and threatened animals. The cost to manage these lands is shared more or less equally by the taxpaying public. (Hunters also contribute to public land conservation by mandatory purchases of habitat stamps and voluntary purchases of duck stamps, but these are relatively insignificant compared to tax revenues.)

#### *Wildlife for All?*

Even if it were true that hunters contribute more financially to agency budgets than non-hunters, it's worth asking if that means they deserve a greater voice in wildlife decisions. Is it fair that one, small user group—hunters—monopolize wildlife management simply because a system has evolved under which their expenditures, opaque (excise taxes) and involuntary (license fees) as they are, end up supporting the agencies tasked with protecting wildlife more than does the non-hunting public? Another user group—wildlife watchers—are nearly twice as numerous as hunters, according to a 2016 U.S. Fish and Wildlife Service (FWS) [survey](#). Yet another “user” group is even larger: all of us, because we all “use” wildlife to keep ecosystems healthy and benefit from the results. Why should these groups be relegated to minority status, or excluded entirely, when it comes to deciding how wildlife is managed?

Under our system of law, wildlife is considered a public trust. Wild animals do not belong to anybody. The government as trustee is expected to manage wildlife for the benefit of the public, including future generations, and balance competing uses to ensure that the trust is not harmed and the broad public interest is served. It is antithetical to this concept that one group would be granted greater access to wildlife because, for whatever reason, they contribute more financially to its management. It would be like saying that only rich people should be allowed to send their kids to public schools because they pay more in taxes.

It is a question of equity. Everyone benefits from wildlife, everyone should share in the cost of protecting wildlife, and everyone deserves a say in determining how best to conserve wildlife. If hunters' claim that they pay more than their share for wildlife conservation is true, the solution is not to exclude others from a seat at the table, but to find new, more equitable sources of funding to support the work.

#### *Struggle for Power*

If the idea that “hunting is conservation” is not factually true, why does it continue to have currency? The answer, I believe, has to do with a struggle over power, identity and values. Wildlife management is now firmly ensconced in the culture wars.

The public is increasingly concerned about wildlife and wants a voice in management, something that has long been the exclusive purview of hunters and their allies. Promoting a narrative that wildlife can't survive without hunters is part of a larger effort to defend the status

quo in wildlife governance by those who currently enjoy privileged status and don't want to give it up.

As with many other social inequities in America today, the people who hold disproportionate power when it comes to wildlife are mostly white men. Hunters and anglers are 74 percent male and 80 percent white (non-Hispanic), according to the 2016 FWS survey. Looking just at hunters, the demographics are even more skewed. Eighty-nine percent are male and 96 percent are white (non-Hispanic). This demographic bias is reflected at state wildlife agencies where [72 percent](#) of personnel are male and more than 90 percent are white.

It could be argued that the undemocratic nature of the current system of wildlife management is a legacy of its elitist origins in which affluent white men like Teddy Roosevelt played such an important role. The term "sportsmen" was adopted, at least in part, to distinguish men of means who hunted for fun rather than for subsistence or market. The [roster](#) of the Boone and Crockett Club in its early years reads like a who's who of New York high society. These individuals were instrumental in getting laws passed to protect game animals, but one wonders if their influential role in shaping the system that emerged also imbued it with a sense of entitlement for men like themselves.

Efforts to equate hunting with conservation gained momentum in the mid-1990s in response to mounting challenges to the status quo. The number of hunters was [declining](#), relative to the general population. Litigation by advocacy groups to protect species under the federal Endangered Species Act was on the rise. State wildlife managers viewed these lawsuits as a threat to their management authority, and still do.

This was about the time that the Ukrainian-born Canadian wildlife biologist (and hunter) Valerius Geist came up with the idea of the North American Model of Wildlife Conservation. As he described it in a 2001 article he co-authored entitled "Why hunting has defined the North American Model of Wildlife Conservation," recreational hunters were the ones who rescued wildlife from extinction, built the system of wildlife management we have today, and continue to make the most significant contributions to conservation. By implication, he suggested that the interests of hunters should be prioritized over those of other stakeholders.

A full discussion of the North American Model is beyond the scope of this article, but suffice to say that it has rapidly become something of a sacred doctrine in wildlife management circles, widely heralded as the premier model of wildlife conservation in the world. The [problem](#) that is it is both an incomplete framing of history which downplays the contributions of non-hunters, and it is an inadequate set of guidelines for preserving species and ecosystems in the face of the current mass extinction crisis. Nonetheless, its unchallenged acceptance within the wildlife management community has helped fuel the narrative that hunting is indispensable to conservation.

It was around this time also that hunters and their allies began to respond to perceived threats to their control of wildlife decision-making by passing [right-to-hunt laws](#) and amendments to their constitutions that affirmed the right of their residents to hunt, fish and trap.

Adopting [language](#) advocated by groups such as the Congressional Sportsmen's Foundation, these measures often enshrined hunting as the preferred method of wildlife management and

protected “traditional” methods of hunting which were often controversial, such as using dogs or bait stations. Alabama was the first to pass such a law in 1996 (excluding Vermont, which passed its law in 1777). At last count, 27 states have enacted them.

The struggle over wildlife reflects a clash of competing values. In a 2018 national [survey](#), researchers identified two major orientations toward wildlife, which they called domination and mutualism. People with domination values tend to believe that animals are subordinate and should be used for the benefit of humans. Those with a mutualistic bent embrace the idea that animals are part of their extended social network and possess intrinsic rights to exist. These orientations shape not just a person’s attitudes toward wildlife but the way they view the world in general.

Among the general public, more people hold a mutualistic outlook (35%) than domination (28%).<sup>[vii]</sup> The mutualistic orientation has been ascendant in the U.S. at least since 2004, according to the survey. Hunters and wildlife managers, on the other hand, tend to hold a domination orientation—a set of values that are in retreat.

As people tend to do when they perceive their values and personal identity to be under attack, those of the domination perspective resist change. The hunting as conservation narrative is part of that resistance. So too is the strident rhetoric employed by many hunting and gun groups to characterize any perceived critique of the status quo as an attack on their hunting “tradition.” I find the quickness of these groups to attribute even modest proposals for change as representing the spear tip of a chimerical “radical anti-hunting, animal rights” agenda baffling, since the general public overwhelmingly approves of hunting for food, as do most major wildlife groups. Even the Humane Society of the U.S., frequently identified by those in the hunting community as their [arch enemy](#), does not oppose hunting for food.

The domination orientation that prevails among hunters and wildlife managers leaves little room for a definition of conservation that includes consideration of the rights or interests of individual animals. Traditional wildlife management is concerned almost exclusively with the status of animals in the aggregate, i.e. populations and species. Talk of animals having rights—for instance, the right to not be subjected to cruel methods of capture such as leghold traps, or to not have their families broken apart as invariably happens when intensely social animals like wolves and coyotes are killed by hunters—is dismissed as soft-headedness.

Hunters and their allies are quick to assert that wildlife management decisions should be dictated solely by science, not emotion, as if science could adjudicate among what are essentially value matters. Science can tell us, for example, how many mountain lions can be removed by hunters without causing an unsustainable decline in their numbers, but it can’t tell us whether we ought to be hunting mountain lions in the first place. Under our current system of wildlife management, it is simply assumed that if hunters want to hunt an animal, and the species is not endangered, then hunting will be allowed, regardless of public opinion.



*Mountain lion aka Cougar (Puma concolor) (c) Larry Master, masterimages.org*

This is why wildlife advocates have launched dozens of ballot and legislative initiatives since 1990 dealing with controversial wildlife-related matters aimed at circumventing state agencies and commissions. Not surprisingly, hunting groups and wildlife managers generally oppose these efforts, which they deride as “ballot box biology.”

It is possible to see a connection between the efforts to democratize wildlife management with other social justice movements, such as Black Lives Matter and #MeToo. Just as not all cops are racist, neither do all hunters view the world through a domination lens. But like police, hunters are participants in a system that has its origins in the desire to control and exploit the less powerful, in this case wild animals.

#### *Wildlife Conservation at the Crossroads*

For their part, state wildlife agencies face a dilemma. As the already small number of hunters continues to decline, the agencies are threatened with a loss of revenues while facing demands from the non-hunting public to take on more responsibilities. They have two choices. They can embrace a more ecological mission and new constituencies, or they can double down on the status quo by trying to convince more people to take up hunting and fishing.

Many state agencies seem to prefer the latter approach. Every state wildlife agency now has a Recruitment, Retention and Reactivation (3R) program designed to increase participation in hunting and fishing. Nationally, there is an effort to “modernize” the Pittman Robertson Act to allow states to use Pittman Robertson funding for 3R programs, something that is currently not



permitted. This is a legislative priority of the Association of State Fish and Wildlife Agencies, which bills itself as the voice of state wildlife agencies.

To be fair, state wildlife agencies cannot magically create new funding on their own. Legislatures have to approve new funding mechanisms, which few have been willing to do.

It's unfortunate that we're having this debate in America over wildlife management because it distracts from the urgent business at hand. The challenge of protecting biodiversity in the face of the ongoing mass extinction crisis is enormous. Scientists warn us we have maybe a decade remaining before we reach a tipping point for protecting biodiversity as well as avoiding irreversible effects of climate change. Both are existential threats to human society and life on Earth, and neither crisis can be solved without protecting and restoring intact ecosystems and species. There is a growing call among scientists to prioritize biodiversity preservation on half of Earth's land area and seas by 2050. This improbably ambitious goal—currently less than 15 percent of land and about 5 percent of the oceans are protected—is increasingly seen as a crucial step for dealing with these interconnected crises.

In contrast to nearly every other nation in the world, the U.S. does not have a national biodiversity action plan. We may never have one under our federalist system. To preserve the diversity of life in this country, we need the states to be leaders, not obstacles, and that won't happen without a radical reinvisioning of wildlife management at the state level.

The steps in that transformation are clear. It begins with new marching orders. State legislatures need to equip their wildlife agencies with the mandate and legal authority to protect all species, including invertebrates, which are essential to ecosystem functioning. Many states currently lack this comprehensive authority. In New Mexico, for example, the Department of Game and Fish has only been delegated legal authority over about 60 percent of the state's vertebrates, despite the fact that the state is home to more species of birds, reptiles and mammals than almost anywhere else in the U.S.

Legislators also need to provide their wildlife agencies with the resources to support their expanded missions, including new funding sources that are not tied to hunting. For one thing, it is not fair to saddle hunters with more of the financial burden of protecting wildlife. The public should share this burden broadly. Secondly, state wildlife agencies will be reluctant to embrace a broader mission and new constituencies if their longstanding financial dependency on hunters is not severed.

States also need to democratize wildlife decision-making. In most states, the wildlife agency is overseen or advised by a commission, whose members are usually appointed by the governor. Hunters constitute a majority on most of these boards. If wildlife is a public trust, shouldn't the general public be better represented on commissions tasked with managing that trust? There will always be a seat at the table for hunters, but it's long past time to start appointing more people to represent the overwhelming majority of the public that does not hunt.

And finally, state wildlife agencies need to welcome new partners. Preserving nature in the face of the current extinction crisis is a massive challenge. Wildlife managers will need broad public support to be successful, but first they must earn the trust of the non-hunting public.

A good first step is to stop saying that hunting is conservation. At best, this statement acknowledges the historic role hunters have played in protecting America's wildlife. At worst, it is inaccurate, polarizing, and a distraction from the real work. Like other monuments to the past that now serve to divide, it needs to come down.

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[i] Of the more than 50 major hunting organizations that are members of the American Wildlife Conservation Partners, none publicly opposes wildlife killing contests.

[ii] For the purposes of this article, the term "hunting" includes both hunting and fishing.

[iii] One speaker at the conference, University of Montana's Martin Nie, gave a presentation based on his lengthy law journal article entitled "[Fish & Wildlife Management on Federal Lands: Debunking State Supremacy.](#)"

[iv] Per environmental historian Dan Flores in his book *American Serengeti*. Others have put the number of bison at this time higher.

[v] Information gleaned from state wildlife agency websites puts the number well over one billion.

[vi] Every state has enacted a law, as a condition of eligibility to receive federal grants under the Wildlife and Sport Fish Restoration Program, requiring that revenues from the sale of hunting and fishing licenses cannot be used for anything other than the administration of its wildlife agency.

[vii] A substantial number of people (21%) score high on both scales, while another 15 percent show little interest in wildlife and score low on both scales.

## APPENDIX 2

### Definitions of GAP 1 and 2 Land Protection Standards

#### Gap Status 1

An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a natural state within which disturbance events (of natural type, frequency, intensity, and legacy) are allowed to proceed without interference or are mimicked through management (USGS-GAP). This status correlates with the IUCN classifications Ia, Ib, and II.

**Gap Status 2**

An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a primarily natural state, but which may receive uses or management practices that degrade the quality of existing natural communities, including suppression of natural disturbance (USGS-GAP). This status correlates with IUCN classifications III, IV, V, and VI.