

FOSTERING



October 15, 2014

Joe Kraayenbrink, District Manager Liz Townley, Outdoor Recreation Planner BUREAU OF LAND MANAGEMENT Salmon Field Office 1405 Hollipark Drive Idaho Falls, Idaho 83467

Via email: blm_id_predatorhuntderby@blm.gov

Re: #DOI-BLM-ID-I000-2014-0002-EA

Dear Ms. Townley & Mr. Kraayenbrink:

We the undersigned scientists and attorneys submit these comments in opposition to the issuance of a Special Recreation Permit to Idaho for Wildlife to conduct a multi-year "predator hunt derby" awarding prizes to contestants for killing the most and/or largest coyotes, wolves, and other animals on public lands located in the Challis, Salmon, and Upper Snake Field Offices.

COE

ENCE

The Environmental Assessment (EA) fails to assess the appropriateness of the proposed Predator Hunt Derby relative to overarching policies of the Bureau of Land Management (BLM).

The Federal Land Policy and Management Act of 1976 (FLPMA; Public Law 94-579) guides the activities of the BLM. FLPMA establishes public land policy "to provide for the management, protection, development, and enhancement of the public lands; and for other purposes.

Under Section 102(a)(8) Congress declares that it is the policy of the United States that "the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use."

The BLM Mission Statement states "It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations."

BLM's consideration of the proposed Predator Hunt Derby, a contest where shooters compete to see who can kill the most predators, must first be evaluated against these lofty policy and mission standards for our national public lands. These lands are managed to a higher standard because they belong to all Americans.

A decision metric based simply on whether the proposed predator hunt derby violates any state wildlife laws does not rise to that standard.

Guiding criteria for BLM decision-making taken from FLPMA and BLM's Mission Statement include the proposal's contribution to:

- Protection and enhancement of the public lands;
- Protection of scientific values;
- Protection of scenic values;
- Protection of ecological values;
- Protection of environmental values;
- > Protection of certain public lands in their natural condition;
- Providing food and habitat for fish and wildlife;
- Providing for outdoor recreation; and
- > Sustaining the health, diversity, and productivity of the public lands.

The proposed Predator Hunt Derby contributes to none of these values or goals that guide BLM decision-making. Furthermore, it would be detrimental to most, if not all, of these values.

With regard to outdoor recreation, it provides no new opportunities for outdoor recreation than already exist on these BLM lands. It simply entices a large group of up to 500 hunters into the activity of killing as many predators as they can.

We view the proposed hunt derby as nothing more than a governmentsanctioned massacre of wildlife serving no purpose besides the entertainment of those who enjoy killing for the sake of killing.

Neither the number of hunters or the number and species of animals to be killed can be known in advance. This makes a legitimate impact analysis impossible and should provide the only reason needed by BLM to deny Idaho for Wildlife's request for a permit.

And while the proposed activity may not violate existing wildlife laws, it does violate a standing policy of the Idaho Fish and Game Department (IFGD).

" the Department will not support any contests or similar activities

involving the taking of predators which may portray hunting in an unethical fashion, devalue the predator, and which may be offensive to the general public. The Department opposes use of bounties as a predator control measure." (emphasis added) Source: http://www.fishandgame.idaho.gov/public/wildlife/?getPage=331

Thus, the proposed Predator Hunting Derby is inconsistent with both State and Federal policies, serves no identifiable public good, will have impacts that cannot be predicted in advance, and in our view and the view of the IFGD is unethical.

COMPLIANCE WITH THE ANIMAL WELFARE ACT

Furthermore, this activity should be permitted and regulated under the provisions of the Animal Welfare Act (AWA). While we raised this requirement in our scoping comments, BLM has failed to address it in the EA. Apparently BLM has not communicated with the U.S. Department of Agriculture (USDA) about AWA licensing and registration for the Predator Hunt Derby.

Many commercial sponsors have signed on to promote the event, clearly intending that their investment and use of images of dead animals will help to sell their products and services and encourage participation in subsequent hunts.

According to the federal Animal Welfare Act, 7 USC 2132, Section 2(g), the treatment of wild animals which are *"exhibited*" in zoos and *other venues* are covered by the provisions of the Act. According to Section 2(g), any live <u>or dead</u> warm-blooded animal that is intended for use for research or *exhibition purposes*, may come under the AWA restrictions. Since the sponsors and promoters of the derby will use photos and images of the dead wildlife to promote themselves (see photos below), and the public will be invited to view the collection of predator corpses, this contest falls squarely within the mandates and restrictions of the AWA.

According to the USDA/APHIS Licensing and Registration rules under the AWA, "anyone who uses regulated animals to promote or advertise goods and services must be licensed" and this also includes "using animals to promote photographs..." Tourist attractions exhibiting regulated animals must be licensed according to the rules and "if you have animals on display, you must become licensed as an exhibitor." There is an exception to the licensing requirements for hunting, however sponsors are not considered exhibitors only if they keep animals for sport and "not for exhibition purposes."

Since dead warm-blooded animals will be exhibited to the public, photographs will be taken and distributed, and compensation to the organizers for the images and public viewing will come from hunting participant entry fees, sponsorship fees as well as any refreshments and souvenirs that might be sold at the event, the requirements of AWA should apply. Similarly, prize money will be offered as

inducements to hunters, changing the activity from hunting for sport to hunting for compensation. Accordingly, this event could run afoul of the AWA, which was intended to oversee such indiscriminate public display of wild animals, dead or alive.

The event sponsors therefore must be required to obtain licenses for animal exhibitions from the USDA, and the license fee would, according to APHIS rules, be determined by the number of animals exhibited. The BLM should deny the application for the derby until after it has confirmed that a USDA license has been secured under the AWA provisions.

IMPACTS UPON NATURAL HABITATS AND WILDLIFE POPULATIONS

The five years of "predator derbies" proposed by Idaho for Wildlife will negatively impact the natural balance provided by predators in controlling populations of prey species. Without this balance, many animals which compete with livestock for use of limited grazing grounds will have unintended and undesirable population increases.

The proposed derbies will take place on designated "Wilderness Study Areas" (WSAs) – lands under consideration for full Wilderness designation. Lands classified as "wilderness" are "an area where the earth and its community of life are untrammeled by man." Predator derbies represent serious trammeling by man.

A large body of scientific, peer-reviewed literature establishes the ecological value of predators and the ecologically deleterious consequence of unwarranted removal of top predators. See, for example, Estes, J.A., Terborgh, J., Brashares, J.S., et al. (2011) Trophic downgrading of Planet Earth. Science 333: 301-306.

Indiscriminate hunting by hundreds of people in a short timeframe removes the healthiest and strongest animals together with the weaker and younger animals from the population, further degrading the balance of predator and prey and making unforeseen ecological damage more likely. Please see the attached Project Coyote letter signed by 36 distinguished scientists that provides a scientific analysis how wildlife killing contests can be detrimental to predator/prey dynamics and contravene sound wildlife management (see ATTACHMENTS 1 & 2).

The hunters who pay their entry fee for the derby are required only to have a state hunting license and the standards of marksmanship and sportsmanship for obtaining such licenses are far from exacting. Conscientious hunting skills, strict adherence to BLM rules and good marksmanship would not be stressed, demanded or monitored.

Encouraging participants to kill as many predatory animals as possible in as

short a time period as possible makes it far more likely that non-predatory animals will be killed, including protected species. Given the competitive nature of the hunt and the lack of skill on the part of many participants, many animals will be injured, not killed, and will suffer inhumane deaths by starvation or infection.

Lead in bullets used as ammunition is an environmental pollutant deadly to many species not intended as targets of the contest. Such animals may ingest the lead by eating non-retrieved animals that eventually die. This could result in long-term degradation of non-targeted species populations.

Simply put, a free-for-all hunting contest with prizes, few rules, and inexpert participants is not a sensible means of managing or preserving a healthy wildlife ecosystem. The environmental effects of this activity cannot be known or controlled.

EFFECT OF KILLING CONTEST ON NON-TARGET VICTIMS

The National Environmental Policy Act requires federal agencies to consider the consequences hunting has on the natural environment and also mandates that agencies consider all the facts available regarding detrimental effects of hunting on the human environment as well as on wild animals' habitats and survival. See Anderson v. Evans, 371 F3d 475 (9th Cir, 2002) in which the court found that a proposed hunt of gray whales in Alaska did not comply with NEPA's requirement that a detailed analysis be done regarding the effects of the hunt on natural resources and ecosystems as well as the human environment.

Companion animals and people enjoying BLM land will be at heightened risk of injury or even death, especially given the aggressive nature of the derby. Because of the risk that people in or near federal BLM lands may be injured or killed by stray bullets, or would be inadvertently viewed as targets, such contests threaten public safety and diminish public confidence in the federal government's ability to provide them with safe and quiet enjoyment of public lands. Idaho's public lands are revered for wildlife viewing and for providing the public with quiet solitude and wilderness experiences, especially during the winter. Crowds of hunters and loud gunfire would disturb residents and visitors. Injury or death of non-target victims (including people) is a serious risk. The EA makes no attempt to acknowledge or assess this risk.

As an example of the dangers of killing contests, on February 14, 2014 California Fish and Wildlife warden, Bob Perra was seriously injured by a predator killing contestant who was targeting coyotes in El Dorado County, California. Officer Perra was shot in his truck while conducting surveillance of the contest that targeted both coyotes and foxes and took place at night. Bullet fragments entered Perra's neck and he was rushed to the hospital in critical condition. After an investigation of the incident, the El Dorado County sheriff's department recommended that the coyote hunter who shot Perra be charged with "reckless discharge of a firearm creating great bodily injury." The case is still pending.

The display of animal carcasses taken during the hunt often laid out and physically accessible to the public presents a potential vector for disease.

In similar events, young children have engaged with the piles of dead animals (see photo). Local water sources could be fouled by runoff from concentrated numbers of decaying carcasses (some with lead bullets or fragments), resulting in unintended animal deaths and a health risk to humans.



A federal action approving permits for five years of predator derbies would have significant and cumulative detrimental effects on the quality of the natural and human environments. Given that the BLM lands include 17 WSAs, encouraging access by a large, uncontrolled and unrestricted group of hunters would be contrary to the mandate of the Wilderness Act of 1964 which defines wilderness (including potential wilderness) as "an area where the earth and its community of life are untrammeled by man" and would erode the public confidence in wildlife conservation efforts.

Allowing a large concentration of hunters of indeterminable shooting ability to roam the public lands shooting animals indiscriminately, putting people and non-

target animals at risk, is not what was intended when large tracts of land were set aside for the public benefit. The public believes that the BLM carefully restricts, maintains and conserves natural resources in WSAs and other public lands in ways that are sensible, scientific, environmentally balanced, and consistent with federal laws and policies.

The harm resulting from granting this permit vastly outweighs the benefits and, once started, the derby will be out of the BLM's control, with likely significant detrimental effects.



According to BLM policies (BLM Manual 6330- "Management of BLM Wilderness Study Areas") in WSAs, "the BLM has an additional responsibility to assure that management techniques and tools do not cause impairment to wilderness characteristics and that fish and wildlife management activities emphasize the continuation of natural processes to the greatest extent possible." Additionally, "predator control activities must be directed at the specific offending animal." Allowing large numbers of hunters who are neither highly skilled nor discriminate to enter the derby, with no way to manage them once they have begun the hunt, is inconsistent with these policies.

Sanctioning the increased risk of injury or death to humans would also appear to establish the derby as unacceptably dangerous. Approving the permit for five consecutive derbies represents a threat to public health and safety, to ecosystem health, to target and non-target wildlife, and to the agency's reputation for effectively managing BLM lands as the Public Trustee.

NEPA CONSIDERATIONS

We note that the EA reveals that "approximately 56,500 comments were received during the scoping period" and that "Roughly 56,490 commentors [sic] indicated opposition to the event." Apparently BLM received only ten comments in favor of permitting the Predator Hunt Derby. An opposition-to-support ratio of 5,650 to 1 suggests to us that the proposed event is highly controversial.

We believe that the extremely high level of controversy, the potential risk to public health and safety involved, and the potential for significant ecological effects demand that this proposal be evaluated in an Environmental Impact Statement (EIS) to ensure that a well-reasoned, legal, and proper decision is made in compliance with the National Environmental Policy Act (NEPA), and in compliance with BLM's legal and policy mandates.

40 CFR 1508.25(b) indicates that an EIS would be required for proposed activities that are highly controversial, involve unique or unknown risks, may affect public health or safety, may establish a precedent for future actions with significant effects, or represent a decision in principle about a future consideration. All of these conditions apply to the proposed action.

Clear legal precedent exists for our claims. In <u>Native Ecosystems Council v.</u> <u>US Forest Service</u> 428 F3d 1233 (9th Cir), the court found that an action is highly controversial when a "*substantial dispute exists as to the size, nature or effect of the major federal action*." The Court in <u>Humane Society of US v.</u> <u>Lock,</u> 626 F3d 1040 (9th Cir), found that a *substantial dispute* exists when evidence casts serious doubts upon the reasonableness of an agency's conclusion.

In <u>Fund For North American Wild Sheep v. United States</u>, 681 F2d 1172 (9th cir, 1982) the Court concluded that the defendant's decision <u>not</u> to prepare an EIS was in error, stating that the BLM was required to address certain critical factors, consideration of which is essential to a truly informed decision not to prepare an EIS. In <u>Native Ecosystems Council v. US Forest Service</u>, supra, the court further wrote *"if opposition to an agency's proffered action creates a substantial dispute, and EIS would seemingly always be required.*" Given that the vast majority of written comments so far have argued vigorously against a multi-year permit for predator hunting on BLM lands, it would appear to clearly constitute a "*substantial dispute.*"

The Court in **<u>Blue Mountains v. Backwood</u>** (161 F3d 1208 (9th cir, 1998)), importantly stated that plaintiffs need *not* demonstrate that a significant effect will occur, only that substantial questions are raised.

In Anderson v. Evans (371 F.3d 475, 483 (9th Cir. 2004)), the court blocked a gray whale hunt by a native tribe because the EIS was deemed inadequate. The

defendants argued that only a few whales would be killed each year and that the overall population of pacific gray whales would not be significantly impacted. The defendant argued that only five whales from a small group would be killed annually or every two years, an insufficient number to cause a significant environmental impact. However, the court took a narrower approach and ruled that *local effects* of an action had to be considered and that the summer whale population in the local area may be significantly affected.

The proposal under consideration could result in significant local effects that must be analyzed in an EIS in accordance with NEPA.

Based on the legal precedent and the information and evidence we have provided, we believe that the BLM is compelled by law and policy to prepare an EIS for this proposed action.

Finally we note that Special Recreation Permits are required for "*shooting ranges*" on BLM lands. These permits require exclusive insurance coverage, license fees and exclusive recreational use site approval. The contest under consideration could be viewed as one big shooting range. Will BLM enforce similar requirement for Idaho for Wildlife for the proposed Predator Hunt Derby?

For all the reasons set forth in this letter and its attachments, Project Coyote and the undersigned scientists and attorneys are opposed to the proposed Predator Hunt Derby. Further we believe that by permitting this activity, BLM would be in violation of federal law and established federal and state policies.

Thank you for this opportunity to comment.

Sincerely,

Camilla H.Fox Founder & Executive Director Project Coyote

David R. Parsons, M.S. Wildlife Biologist (U.S. Fish and Wildlife, Retired) Project Coyote Science Advisor

Michael Soule, Ph.D. Professor Emeritus, Envir. Studies Dept. Univ. of California Santa Cruz Project Coyote Science Advisor Brad Bergstrom, Ph.D. Professor of Biology Valdosta State University Project Coyote Science Advisor

Franz J. Camenzind Ph.D Executive Director (Retired) Jackson Hole Conservation Alliance Project Coyote Science Advisor

Robert Crabtree, Ph.D. Project Coyote Science Advisor

Marc Bekoff, Ph.D. Professor Emeritus University of Colorado Project Coyote Science Advisor

Shelley M. Alexander, Ph.D. Project Coyote Science Advisor

Adrian Treves, Ph.D. University of Wisconsin-Madison Project Coyote Science Advisor

Brad Purcell Ph.D. Churchill Fellow 2010 Research fellow School of Science and Health University of Western Sydney Project Coyote Science Advisor

Ed Goodman, Esq. Attorney Project Coyote Legal Advisor

Larry Fahn, Esq. Counselor At Law Project Coyote Legal Advisor

Gloria McCary, Esq. Project Coyote Legal Advisor

Letter Sent to California Fish and Game Commission in Support of a Ban on Wildlife Killing Contests

This letter provides additional science-based information for consideration by the BLM in its decision on whether to grant a permit to Idaho for Wildlife to conduct Predator Hunt Derbies on BLM public lands for five consecutive years.



Dear Commissioners, April 16, 2014

On behalf of Project Coyote's Science Advisory Board and the undersigned scientists we express our support for a prohibition on wildlife killing contests (WKC), derbies and tournaments.

The most general reason to prohibit WKC is that hunters and wildlife managers believe, as a community, that killing an animal without an adequate reason is unjustified and unsportsmanlike. Killing an animal for a prize or trophy constitutes killing without an adequate reason. Insomuch as WKC are primarily motivated by killing for a prize or trophy, they are wrong.

Some advocates argue that WKCs are not primarily motivated by killing for a prize, but rather are important means for achieving other management objectives. For many species, such as mule deer or ground squirrels, that claim appears incredulous. If leaders in the hunting and wildlife management community believe that WKCs, in general, serve important objectives, then the principles of wildlife management mandate that (1) these objectives need to be articulated and vetted by the best-available science, and (2) some reasonable, science-based case needs to be made to justify WKC as an appropriate means for achieving these objectives. In the absence of such an evaluation, WKCs should be prohibited.

Advocates might also argue that WKCs – when they are directed at predators, especially coyotes – are an important means for realizing one or both of these objectives: (1) decrease the loss of livestock to depredation, and (2) increase the abundance of prey species in the interest of maximizing hunting success by humans.

With respect to objective (1), a great deal of science has been developed on how to

effectively manage depredations, both lethal and non-lethal. Managing to reduce the loss of livestock is a common goal for all stakeholders. As such our scientific opinion is that WKCs do not contribute to this goal and may work against it. Lessons from that science include:

(i) Indiscriminate killing is ineffective and it is plausible, perhaps likely, that when associated with a WKC it would lead to increased risk of depredations. A primary reason for this concern is that only some, often few, individual predators participate in depredation. Indiscriminate and pre-emptive killing of predators associated with

WKCs can lead to the disruption of predators' social and foraging ecology in ways that increase the likelihood of depredations. In coyote populations, for example, the number of surviving pups that must be fed by the alpha parents increases, and surviving pack members that become transient individuals, may be predisposed to depredate livestock.

(ii) The indiscriminate killing associated with WKC does not target: (a) the offending predator, (b) the site where depredation has occurred, and (c) the time where depredation has occurred. This renders WKCs ineffective as a means of depredation control.

With respect to objective (2), a great deal of science has been developed which indicates that killing predators, especially under the circumstances that are associated with WKCs, is not a reliable means of increasing ungulate abundance. The circumstances most likely to result in increased ungulate abundance are also the circumstances most likely to impair important ecosystem benefits and services that predators provide. Even when predators are killed to the point of impairing the ecosystem services, there is still no assurance that ungulate abundance will increase. The reason being is that ungulate abundance is frequently limited by factors other than predators – factors such as habitat and climate.

Beyond objectives (1) and (2), which focus on the valid concern of WKC affecting game populations and livestock depredations, lies the need for increased recognition of the valuable role predators play in maintaining healthy ecosystems and their contribution to ecosystem services. When not killed (exploited), they self-regulate their populations by means of dominant individuals defending non-overlapping territories. This structure can be disrupted by killing as little as one individual, which can then result in dispersal of remaining individuals that may seek novel prey items including livestock. There is also an extant scientific literature on the ecosystem services they provide to humans though rodent control and disease prevention. Recent research has also shown that apex predators play a vital role in maintaining ecosystem structure and function by facilitation of 'trophic cascades' leading to positive changes in plant communities, soil fertility, and physical processes (e.g., erosion and stream geomorphology). Thus, reduction of the distribution and numbers of apex predators can have profound negative effects that contribute to ecological instability and loss of services to humans. The Boone and Crockett Club, founded by Theodore Roosevelt in 1887 "over the concerns that we might someday lose our hunting privileges and the wildlife

populations for future generations^{"¹}, is still considered one of the most respected sportsmen's institutions in North America. The Club "does not support programs, contests or competitions that directly place a bounty on game animals by awarding cash or expensive prizes for the taking of

wildlife"² because WKCs contravene the Club's "fair-chase" motto.

¹ From B&C's website: http://www.boone-

crockett.org/join/associates_faq.asp?area=join ² See: http://www.boonecrockett.org/bgRecords/position statements.asp?area=bgRecords

Thank you for your consideration of these concerns on this important issue. If the Commission were interested to know about the support for any of the claims in this letter, we would be honored to further present and discuss the science and scholarship with the Commission.

Respectfully submitted,

Robert Crabtree, PhD Victoria, BC Founder & Chief Scientist Yellowstone Ecological Research Center, Research Associate Professor, Department of Ecosystem and Conservation Science, University of Montana Science Advisory Board, Project Coyote

John A. Vucetich, PhD Houghton, MI Associate Professor School of Forest Resources and Environmental Science Michigan Technological Univ.

Science Advisory Board, Project Coyote

David Parsons, MS Albuquerque, NM Carnivore Conservation Biologist, Rewilding Institute, Science Advisory Board, Project Coyote

Michael P. Nelson, PhD Corvallis, OR Professor, and Ruth H. Spaniol Chair of Renewable Resources Oregon State University Science Advisory Board, Project Coyote

Michael Soulé, PhD Paonia, CO Professor Emeritus Dept. Environmental Studies, University of California, Santa Cruz Co-founder, Society for Conservation BiologyScience Advisory Board, Project Coyote

Jeremy T. Bruskotter, PhD Columbus, Ohio Associate Professor School of Environment & Natural Resources The Ohio State University Science Advisory Board, Project Coyote

Marc Bekoff, PhD Boulder, CO Professor Emeritus, University of Colorado, Boulder

Science Advisory Board, Project Coyote

Bradley J. Bergstrom, Ph.D. Valdosta, GA Professor of Biology, Valdosta State University Science Advisory Board, Project Coyote

Shelley M. Alexander, PhD Associate Professor, Geography, University of Calgary Science Advisory Board, Project Coyote

Adrian Treves, PhD Madison, WI Associate Professor University of Wisconsin-Madison Science Advisory Board, Project Coyote

Jennifer Wolch, PhD Berkeley California Dean, College of Environmental Design Science Advisory Board, Project Coyote

William J. Ripple, PhD Corvallis, OR Distinguished Professor of Ecology, Oregon State University

Rick Hopkins, PhD San Jose CA Principal and Senior Conservation Biologist, Live Oak Associates, Inc. President of the Board, Cougar Fund

Paul Beier, PhD Regents' Professor, School of Forestry, Northern Arizona University, Flagstaff AZ Past President, Society for Conservation Biology

David Mattson, PhD Livingston, MT Lecturer and Senior Visiting Scientist, Yale School of Forestry & Environmental Studies USGS Colorado Plateau Research Station Leader (retired) USGS Research Wildlife Biologist (retired) Past Western Field Director, MIT-USGS Science Impact Collaborative

Melissa Savage, PhD Los Angeles, CA Professor Emerita University of California, Los Angeles

Reed F. Noss, PhD Orlando, Florida Provost's Distinguished Research Professor University of Central Florida Past-President, Society for Conservation Biology Past Editor-in-Chief, Conservation Biology

Philip Hedrick, PhD Tempe, AZ Ullman Professor of Conservation Biology Arizona State University

Megan Isadore, Co-founder and Executive Director River Otter Ecology Project Forest Knolls, CA Member, IUCN Otter Specialist Group Founder, Good Riddance! Wildlife Exclusions, LLC

David Fraser, PhD Vancouver, Canada Professor University of British ColumbiaBernard E. Rollin, PhD University Distinguished Professor Professor of Philosophy Professor of Animal Sciences Professor of Biomedical Sciences University Bioethicist

Malcolm R. MacPherson, PhD Santa Fe, New Mexico Retired scientist Member AAAS and the Society for Conservation Biology

Simon Gadbois, PhD Halifax, NS, Canada Director of the Canid Behaviour Research Team Dalhousie University, Canada

Zoe Jewell, Vet MB, MRCVS Durham, NC Visiting research scientist, Duke University

Chris Dairmont, PhD Victoria, BC Hakai-Raincoast Professor University of Victoria

Dale Jamieson, PhD New York, NY Professor of Environmental Studies, Philosophy, and Bioethics, Affiliated Professor of Law, Director of the Animal Studies Initiative New York University

Kevin Crooks, PhD Fort Collins, CO Monfort Professor, Department of Fish, Wildlife, and Conservation Biology Colorado State University

William Lynn, PhD Marlborough, MA Research Scientist Marsh Institute, Clark University

Jonathan Way, PhD Osterville, MA Eastern Coyote Research Research Scientist, Clark University

Bob Ferris, MA Eugene, OR Executive Director, Cascadia WildlandsGeri T. Vistein, MS Brunswick, Maine Carnivore Conservation Biologist Founder of Coyote Lives in Maine

Lisa Micheli, PhD Santa Rosa, CA Executive Director Pepperwood's Dwight Center for Conservation Science

Winston Thomas, PhD San Mateo, CA Founder and CEO, Canine Genetics, LLC

Megan M. Draheim, PhD Washington, DC Visiting Assistant Professor Virginia Tech

Stephen F. Stringham, PhD Soldotna, AK Predator Biologist President, WildWatch Consulting Chair, Advisory Committee, BEAR League

Bonny Laura Schumaker, PhD La Canada, CA Physicist & Technical Manager, Retired (Theoretical Astrophysics and Remote Sensing) California institute of Technology / Jet Propulsion Laboratory Founder and President, OnWingsOfCare.org

PH: 415-945-3232 · FAX: 415-373-3826 · P.O. BOX 5007 · LARKSPUR, CA

INFO@PROJECTCOYOTE.ORG · WWW.PROJECTCOYOTE.ORG

Attachment 2

Science-Based Analysis Of Two Common Misunderstandings Of The Effects Of Wildlife Killing Contests.

(1) Some advocates of wildlife killing contests (WKCs) believe they are necessary or beneficial for effective management of livestock depredation. WKCs are unlikely to have this effect. The reason why is that most individual predators do not participate in livestock depredations (Gipson 1975; Knowlton et al. 1999; Sacks et al. 1999a, 1999b; Linnell et al. 1999; Stahl and Vandel 2001; Blejwas et al. 2002; Treves et al. 2002; Treves and Naughton-Treves 2005). Consequently, the effective management of depredation requires (1) targeting the offending individual(s), and (2) intervening close to the site where the depredations occurred as well as responding in a timely manner (Gipson 1975; Sacks et al. 1999a, 1999b; Smith et al. 2000; Bangs and Shivik 2001). WKCs do not represent the kind of targeted effort required for effective management of livestock depredations.

Moreover, indiscriminate killing of predators can exacerbate risks to livestock. Killing social carnivores like coyotes and wolves can lead to the disruption of predators' social and foraging ecology in ways that increase the number of transient individuals (Bjorge and Gunson 1985; Haber 1996; Treves and Naughton-Treves 2005; Brainerd et al. 2008). These transient individuals that have not been acculturated (aversively conditioned) to living in areas with livestock may be more likely to kill livestock. Studies by USDA's Wildlife Services clearly indicate that many, if not most, depredations are inflicted by the breeders (i.e., alphas) in coyote social groups (Knowlton et al. 1999; Sacks et al. 1999b). Even if the offending individuals are removed, they can be replaced by other members of the social group or from populations outside the area where the WKC is occurring. In some cases, this can also increase reproductive performance in coyotes (Crabtree and Sheldon 1999; Knowlton et al. 1999).

(2) Some advocates of wildlife killing contests believe they are necessary or **beneficial for increasing the abundance of ungulate populations.** WKCs are unlikely to have this effect.

Killing predators cannot result in increased ungulate abundance in cases where the ungulate population is not limited by predators, but is instead limited by other factors, such as climatic conditions or food availability (Sæther 1997; Forchhammer et al. 1998; Coulson et al. 2000; Parker et al 2009). Without careful study, the claim that killing predators will improve wild ungulate populations is simply an unsupported assumption. Moreover, it is scientifically difficult to identify specific conditions that cause a population to be limited by predators as opposed to other factors (Vucetich et al. 2005; Wilmers et al. 2006). For example, an experimental study in Idaho (Hurley et al. 2011) found that annual removal of coyotes was not an effective method to increase mule deer populations because coyote removal increased neonate fawn survival only under particular combinations of prey densities and weather conditions.

Even in cases where predators do limit prey abundance, human-caused mortality of

predators (HCM) could only lead to an increase in prey abundance if the rate of HCM was sufficient to result in a significant reduction in predator abundance. Human-caused mortality is not a reliable means of reducing wolf abundance unless the rate of HCM exceeds ~30% (Fuller et al. 2003; Adams et al. 2008; Creel and Rotella 2010; Sparkman et al. 2011; Gude et al. 2011). For coyotes, the rate of HCM needs to be greater than 70% to result in a reliable chance of reducing abundance (Connolly and Lonhurst 1975). It is difficult to imagine that any set of WKCs would be intense enough or frequent enough to result in that rate of HCM.

Finally, the interest of some advocates of WKCs (i.e., increased ungulate abundance) is antithetical to good natural resource management practices in cases where increased ungulate abundances present a risk of overbrowsing (e.g., Côté et al. 2004).

Citations

Adams, L. G., Stephenson, R. O., Dale, B. W., Ahgook, R. T., & Demma, D. J. (2008). Population dynamics and harvest characteristics of wolves in the central Brooks Range, Alaska. Wildlife Monographs, 170(1), 1-25.

Bangs, E., & Shivik, J. A. (2001). Managing wolf conflict with livestock in the northwestern United States. USDA National Wildlife Research Center-Staff Publications, 550.

Blejwas K.M., Sacks B.N., Jaeger M.M., McCullough D.R. (2002). The effectiveness of selective removal of breeding coyotes in reducing sheep predation. J Wildl Manage 66, 451-462.

Brainerd, S. M., Andrén, H., Bangs, E. E., Bradley, E. H., Fontaine, J. A., Hall, W. & Wydeven, A. P. (2008). The effects of breeder loss on wolves. The Journal of Wildlife Management, 72(1), 89-98.

Bjorge, R. R., and J. R. Gunson. (1985). Evaluation of wolf control to reduce cattle predation in Alberta. Journal of Range Management 38:483-486.

Connolly, G. E., and W. M. Longhurst. (1975). The effects of control on coyote populations: A simulation model. Division Agricultural Science, University of California, Davis, Bulletin 1872.

Côté, S. D., Rooney, T. P., Tremblay, J. P., Dussault, C., & Waller, D. M. (2004). Ecological impacts of deer overabundance. Annual Review of Ecology, Evolution, and Systematics, 113-147.

Coulson, T., Milner–Gulland, E. J., & Clutton–Brock, T. (2000). The relative roles of density and climatic variation on population dynamics and fecundity rates in three contrasting ungulate species. Proceedings of the Royal Society of London. Series B: Biological Sciences, 267(1454), 1771-1779.

Crabtree, R. L., and J. W. Sheldon. (1999). Coyotes and canid coexistence. In Carnivores in ecosystems: The Yellowstone experience, ed. T. W. Clark et al., 127–163. New Haven: Yale University Press.

Creel, S., & Rotella, J. J. (2010). Meta-analysis of relationships between human offtake, total mortality and population dynamics of gray wolves (Canis lupus). PLoS One, 5(9), e12918.

Forchhammer, M. C., Stenseth, N. C., Post, E., & Landvatn, R. (1998). Population dynamics of Norwegian red deer: density–dependence and climatic variation. Proceedings of the Royal Society of London. Series B: Biological Sciences, 265(1393), 341-350.

Fuller, T. K., Mech, L. D., & Cochrane, J. F. (2003). Wolf population dynamics. Wolves: behavior, ecology, and conservation. University of Chicago Press, Chicago, 161-191.

Gipson P.S. (1975). Efficiency of trapping in capturing offending coyotes. Wildlife Management 39, 45-47.

Gude, J. A., Mitchell, M. S., Russell, R. E., Sime, C. A., Bangs, E. E., Mech, L. D., & Ream, R. R. (2012). Wolf population dynamics in the US Northern Rocky Mountains are affected by recruitment and human-caused mortality. The Journal of Wildlife Management, 76(1), 108-118.

Knowlton F.F., E. M. Gese, Jaeger M.M. (1999). Coyote depredation control: An interface between biology and management. Journal of Range Management **5**2, 398-412.

Haber, G. C. (1996). Biological, conservation, and ethical implications of exploiting and controlling wolves. Conservation Biology 10:1068-1081.

Linnell J.D.C., Odden J., Smith M.E., Aanes R., Swenson J.E. (1999). Large carnivores that kill livestock: do problem individuals really exist? Wildl Soc Bull 27, 698-705.

Parker, K. L., Barboza, P. S., & Gillingham, M. P. (2009). Nutrition integrates environmental responses of ungulates. Functional Ecology, 23(1), 57-69.

Ritchie EG, Elmhagen B, Glen AS, Letnic M, Ludwig G, McDonald RA. (2012). Ecosystem restoration with teeth: what role for predators? In: Trends Ecol. Evol. 27(5):265-271.

Sacks B.N., Blejwas K.M., Jaeger M.M. (1999a). Relative vulnerability of coyotes to removal methods on a northern California ranch. J Wildl Manage 63, 939-949;

Sacks, B. N., M. M. Jaeger, J. C. C. Neale, and D. R. McCullough. (1999). Territoriality and breeding status of coyotes relative to sheep predation. Journal of Wildlife Management 63:593-605.

Sæther, B. E. (1997). Environmental stochasticity and population dynamics of large herbivores: a search for mechanisms. Trends in Ecology & Evolution, 12(4), 143-149.

Smith, M. E., Linnell, J. D., Odden, J., & Swenson, J. E. (2000). Review of methods to reduce livestock depredation II. Aversive conditioning, deterrents and repellents. Acta Agriculturae Scandinavica, Section A-Animal Science, 50(4), 304-315.

Sparkman, A. M., Waits, L. P., & Murray, D. L. (2011). Social and demographic effects of anthropogenic mortality: A test of the compensatory mortality hypothesis in the red wolf. PloS one, 6(6).

Stahl P., Vandel J.M. (2001). Factors influencing lynx depredation on sheep in France: Problem individuals and habitat. Carnivore Damage Prevention News 4, 6-8.

Treves A., Naughton-Treves L. (2005). Evaluating lethal control in the management of human-wildlife conflict. pp. 86-106 in R.

Woodroffe, S. Thirgood, A. Rabinowitz editors. People and Wildlife, Conflict or Coexistence. Cambridge University Press, Cambridge, UK.

Treves, A., R. L. Jurewicz, L. Naughton-Treves, R. A. Rose, R. C. Willging, and A. P. Wydeven. (2002). Wolf depredation on domestic animals: control and compensation in Wisconsin, 1976-2000. Wildlife Society Bulletin 30:231-241.

Vucetich, J. A., Smith, D. W., & Stahler, D. R. (2005). Influence of harvest, climate and wolf predation on Yellowstone elk, 1961-2004. Oikos, 111(2), 259-270.

Wilmers, C. C., Post, E., Peterson, R. O., & Vucetich, J. A. (2006). Predator disease outbreak modulates top-down, bottom-up and climatic effects on herbivore population dynamics. Ecology Letters, 9(4), 383-389.