



September 10, 2012

BY ELECTRONIC MAIL

Submitted via <http://parkplanning.nps.gov/commentFormbasic.cfm?documentID=46728>

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RE: Pre-decision Environmental Assessment - Wildlife Services Gray Wolf Damage Management in Oregon

To Whom It May Concern:

On behalf of the Animal Welfare Institute (AWI) and The Humane Society of the United States (The HSUS) and its 12 million supporters, nearly 175,000 of whom live in Oregon, please accept the following comments on the pre-decision environmental assessment (EA) for Wildlife Services' (WS) gray wolf damage management in Oregon dated July 2012.

WS identifies three decisions that are to be made based on the information and analysis contained in the EA:¹

- Should the Oregon WS program respond to Oregon Department of Fish and Wildlife (ODFW) requests for assistance with Phase I and II wolf damage management activities as authorized by Oregon Administrative Rule (OAR) 635-110 (Appendix A) and Oregon Wolf Conservation and Management Plan (OWCMP) (ODFW 2010a) as well as assisting Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and other sovereign tribal governments?
- Might there be other reasonable alternatives that could be selected?
- What are the likely environmental effects of the alternatives, and could the proposed action have significant effects on the quality of the human environment and therefore require preparation of an EIS?

The following comments are submitted in response to these questions and WS' corresponding analysis of proposed alternatives. Based on the EA and other available information, we conclude that WS improperly excluded from consideration an alternative that would restrict WS' involvement in Oregon's wolf management efforts to the use of nonlethal measures that minimize animal suffering. WS' weak scientific analysis and justification for selecting Alternative 3, pursuant to which

¹ USDA WILDLIFE SERVICES, PRE-DECISION ENVIRONMENTAL ASSESSMENT: WILDLIFE SERVICES GRAY WOLF DAMAGE MANAGEMENT IN OREGON 14 (2012) [hereinafter EA].

WS would implement lethal and otherwise inhumane wolf “management” measures, are inconsistent with the mandate of the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 *et seq.*, as well as gray wolf recovery objectives. Because killing wolves in Oregon will have significant environmental impacts, WS must prepare a complete environmental impact statement (EIS) including a detailed analysis of predicted impacts on wolves, other threatened and endangered species in the region, other species, and the public if it elects to proceed with its lethal control proposal.

I. The Oregon Wildlife Services program should not respond to ODFW or CTUIR requests for assistance with lethal wolf management activities

a. The EA overstates the damage caused by wolves

In its discussion of the purpose and need for the proposed action, WS overstates the threat posed by wolves to livestock. The EA states that “[i]t is important to recognize that the numbers of livestock that have been confirmed to be killed by wolves to date in Oregon may represent only the minimum numbers of livestock actually killed and injured by wolves, and that more livestock were probably killed but not confirmed as wolf predation.”² WS points to a rancher’s unsupported claims concerning unconfirmed losses, and implies that losses of unrecovered cattle can be presumed to be wolf kills. WS also refers to a 2003 study to support its assertion that wolf depredation rates are likely much higher than is the number of confirmed kills. The study suggested that for each confirmed livestock loss, seven additional losses could be attributed to wolf depredation.³ However, the authors’ conclusion was based on data gathered in extreme conditions in which the environment and livestock management practices left cattle particularly susceptible to depredation. Moreover, the study in fact concluded that “[i]he overall effect of wolves on the calf population within the [study area] was not significant.”⁴

In contrast to WS’ presumption that wolf kills far exceed reported figures, studies show that wolf depredation rates are widely exaggerated.⁵ Wolves are often blamed for kills attributable to other causes, such as disease or depredation by other carnivores.⁶ In some instances, ranchers have reported that nonexistent livestock have been killed by wolves, possibly motivated by enticing compensation programs designed to reimburse ranchers for losses to wolves. It is inappropriate for WS to base its decision on speculation about missing livestock; rather, WS must establish its plan based on the number of confirmed wolf depredations and the conditions surrounding them.

It appears that WS turns to lethal wolf management methods by default, even where there is substantial doubt as to whether wolves were involved in particular instances of depredation. The

² EA at 6.

³ EA at 7 (citing John K. Oakleaf et al., *Effects of wolves on livestock calf survival and movements in central Idaho*, 67 J. WILDLIFE MGMT. 299 (2003)).

⁴ Oakleaf et al., *supra* n. 3, at 304.

⁵ See Edward E. Bangs et al., *Control of Endangered Gray Wolves in Montana*, in *ECOLOGY AND CONSERVATION OF WOLVES IN A CHANGING WORLD* 127 (Ludwig N. Carbyn et al. eds., 1995).

⁶ See, e.g., Steven H. Fritts, *Wolf Depredation on Livestock in Minnesota*, U.S. Fish and Wildlife Serv. Res. Pub. No. 145 (1982); J. Christopher Haney et al., *Wilderness Discount on Livestock Compensation Costs for Imperiled Gray Wolf *Canis lupus**, USDA Forest Serv. Proc. RMRS-P-49 (2007).

2011 Oregon Wolf Management Report illustrates that WS may not always make accurate determinations about wolf depredation in the state. As discussed in that report, an independent panel reviewed investigations of livestock depredations attributed to wolves and found that WS held wolves responsible for livestock losses in instances where there was not sufficient evidence of wolf involvement.⁷ WS' conclusions "appeared to the Panel to be inconsistent with evidence presented and in a number of instances appeared to be the result of misidentification of evidence," and "[t]he Panel found it difficult to understand how WS investigators reached their conclusions from their written reports."⁸ We are greatly concerned, in light of WS' willingness to broadly attribute livestock losses to wolves, that WS is now proposing to kill wolves that may or may not be responsible for harming livestock.

b. The EA does not provide a sufficiently detailed plan for WS' implementation of nonlethal wolf management measures

In discussing its preferred alternative, WS provides little detail about the extent to which it will make use of individual wolf management methods. The program's track record with wolf management leaves us questioning how much it will rely on nonlethal measures. Assurances that nonlethal tools will be used where possible are vague, unsupported by past actions, and unconvincing. WS has a long history of relying heavily on lethal and inhumane wildlife control methods. We want to see tangible evidence of its commitment to advancing nonlethal practices. We are greatly concerned that, although the EA suggests that WS will balance lethal and nonlethal approaches to wolf management in Oregon, it provides no insight into the extent to which certain methods will be used, or the impacts that this so-called balance will have on the region's ecosystems.

Wildlife Services' reasoning and justification for the use of lethal control is also suspect. The EA states that ODFW will conduct lethal control regardless of WS' involvement with the state's wolf management program.⁹ It goes on to explain that "[b]y providing ODFW with lethal depredation management assistance, ODFW would be able to focus its resources on its program to enhance wolf recovery including: funding for nonlethal control supplies..."¹⁰ In essence, WS asserts that by killing wolves, it will enable ODFW to expand nonlethal control measures and threatens that if WS does not kill wolves, ODFW will do so itself. WS provides no detail concerning the specific shifts in ODFW practices that are to be expected, nor does it provide any support for the untenable notion that WS' killing of wolves will somehow ultimately serve to protect wolves.

It is unclear how ODFW will have additional resources to expand conservation efforts if WS implements lethal control on ODFW's behalf. WS operates on a cooperative funding basis. Lethal control of wolves would have to be cooperatively funded. If ODFW is cooperatively funding WS' lethal control of wolves, it will not have those resources to devote to conservation. WS' implementation of lethal control measures in Oregon would not advance conservation goals by promoting the advancement of nonlethal control strategies; rather, it would further engrain the notion that lethal control is essential to the coexistence of livestock and wildlife—an outdated and

⁷ OREGON DEP'T OF FISH AND WILDLIFE, 2011 OREGON WOLF MANAGEMENT REPORT 27 (2012).

⁸ *Id.*

⁹ *See, e.g.*, EA at vi, vii, 24.

¹⁰ EA at 70.

inaccurate view that reflects much-needed change both to the proposed wolf management plan and, more broadly, to WS' activities.

II. Other reasonable alternatives are available; WS should have considered an alternative consisting solely of nonlethal wolf management methods that minimize animal suffering

a. WS should not rely on leghold traps, neck snares, or other inhumane and indiscriminate wolf management methods for wolf management in Oregon

Under both Alternative 2 and Alternative 3, WS would use steel jaw leghold traps and snares as nonlethal wildlife management tools. While we strongly support the use of practical and effective nonlethal livestock protection practices—such as the use of shed-lambing, fencing, electronic sensors, and noise-making devices—in place of lethal approaches, we oppose WS' use of traps and snares to capture and harm wildlife. These devices inflict substantial pain and suffering on animals, many of whom die as a result of being trapped; to describe them as nonlethal or humane methods of livestock protection is a profound misrepresentation of their impacts.

Steel jaw leghold traps are internationally recognized as inhumane and have been banned in many countries. These devices subject animals to severe trauma, often inflicting damage to the trapped limb and to the mouth and teeth. Wolves and other mammals, upon being trapped, frantically struggle to free themselves both by attempting to pull the trapped limb out of the device and by chewing at the trap itself. This struggle often leads to further mangled of the limb, fractures, damage to muscles and tendons, lacerations, injury to the face and mouth, broken teeth, loss of circulation, and amputation.¹¹ In addition to the pain and fear associated with the struggle to get free, animals captured in leghold traps and snares are left unable to protect themselves from predation or return to their young.

The EA erroneously suggests that relying on steel jaw leghold traps with offset and laminated jaws or so-called padded jaws will prevent the injury and pain associated with capture. However, these variations do not prevent long-drawn out pain and fear. USDA itself found that 97 percent of coyotes trapped in “padded” traps experienced edematous swelling or hemorrhage in the restrained limb, while 94 percent of coyotes captured in offset traps and 95 percent of those in laminated traps experience such injury.¹² Many other injuries were observed, and some of the coyotes examined had broken bones.¹³ Leghold traps are fundamentally inhumane, and cannot be modified to operate in a manner that does not cause significant animal suffering.

Snares can be similarly inhumane. Neck snares are particularly worrisome. Even if wildlife captured in snares is not killed prior to release, it is subjected to a great deal of discomfort and stress. Animals captured in snares experience joint luxation, soft tissue erosion, tooth fractures, severe lacerations,

¹¹ See, e.g., Robert L. Phillips et al., *Leg Injuries to Coyotes in Three Types of Leghold Traps*, 24 WILDLIFE SOCIETY BULLETIN 260 (1996); Detlef K. Onderka et al., *Injuries to Coyotes and Other Species Caused by Four Models of Legholding Devices*, 18 WILDLIFE SOCIETY BULLETIN 175 (1990).

¹² See Phillips et al., *supra* n. 11, at 262.

¹³ *Id.*

damage to neck and throat tissue, internal bleeding, and other injuries.¹⁴ The EA suggests that snare modifications such as stops may be used to reduce the likelihood of injury or death, but such features can be difficult to operate effectively, and the EA provides no detail concerning the extent to which it would equip its snares with these devices.

Traps set for wolves may catch other animals, including endangered species, protected raptors, and regulated game animals; this is an occurrence with broad and significant environmental consequences that should be reflected in the EA.¹⁵ Likewise, wolves in Oregon might already have been caught in unknown numbers in traps and snares set for other species, but never reported by WS. This incidental and non-targeted taking of wolves by WS should be factored into the EA. It has been well-documented that WS cultivates an internal practice of encouraging its trappers to hide the trapping and deaths of non-target animals.¹⁶

Although WS categorizes leghold traps and snares as nonlethal tools, animals captured in these devices often die from injuries while trapped or must be euthanized upon discovery. WS' own records show that nearly every animal captured in leghold traps and foot and neck snares is killed, including the majority of non-target animals captured using these methods.¹⁷ Even animals that are released may not survive, as they are left susceptible to gangrene following loss of circulation in the trapped limb, as well as stress-related illness and death.¹⁸ Accordingly, WS cannot rely on these devices for “nonlethal” wildlife management in Oregon.

Leghold traps and neck snares are not only inhumane and often lethal, but are also nonselective and environmentally damaging. In an effort to address the nonselective nature of these devices, EA suggests that steel jaw leghold traps and snares can be modified to prevent indiscriminate killing. With respect to snares, WS suggests that modifications such as stops can reduce both suffering and non-target capture, but provides no detail concerning its plans for use of these features. Similarly, WS suggests that leghold traps can be modified to promote selectivity through the use of pan-tension devices.¹⁹ While these devices may enable WS to exclude a limited number of animals from leghold traps, they cannot exclude all non-target wildlife, as WS acknowledges. Anecdotal evidence suggests that even when pan-tension devices are in use, leghold traps nonetheless capture many non-target animals.²⁰

Wildlife Services fails to consider additional measures that have the potential to reduce the suffering of trapped and snared animals. The EA omits any discussion of trap monitoring devices and

¹⁴ For a review of relevant literature, see IRENE ROCHLITZ, *THE IMPACTS OF SNARES ON ANIMAL WELFARE* 14–20 (2010).

¹⁵ See Julia Bayly, *Experts Euthanize Eagle Hurt in Trap*, BANGOR DAILY NEWS, Dec. 20, 2001, at B2; Born Free USA Non-Target Trapping Incidents Database, http://www.bornfreeusa.org/database/trapping_incidents.php (last visited Sept. 10, 2012).

¹⁶ Tom Knudson, *The Killing Agency: Wildlife Services' Brutal Methods Leave a Trail of Animal Death*, SACRAMENTO BEE, Apr. 29, 2012, at 1A.

¹⁷ USDA WILDLIFE SERVICES, *ANIMALS TAKEN BY COMPONENT/METHOD TYPE AND FATE BY WILDLIFE SERVICES IN OREGON – FY 2011* (2012).

¹⁸ See ROCHLITZ, *supra* n. 14, at 9–10, 18.

¹⁹ EA at 27, 28, 55.

²⁰ Tom Knudson, *Long Struggles in Leghold Device Make for Gruesome Deaths*, SACRAMENTO BEE, Apr. 29, 2012, at 15A.

tranquilizer trap devices (TTDs), both of which have been shown by the agencies' own data to reduce animal suffering. Although leghold traps cannot be used without causing some amount of animal suffering, these tools can reduce the duration of a captured animal's pain and struggle. Trap monitoring devices consist of transmitter equipment that serves to notify WS staff when an animal has been captured in a trap. A WS agent, once aware of the capture, may go to the trap site and release or euthanize the animal. These devices are characterized by a high degree of accuracy, and WS itself has identified many benefits associated with the use of trap monitoring devices, including not only improved animal welfare, but also savings in agency time and resources.²¹

TTDs also have the potential to reduce the suffering of trapped and snared animals. TTDs are devices that contain a tranquilizer and are attached to traps or snares. They are intended to subdue captured animals and prevent excessive struggle and associated physical harm. USDA itself has determined that TTDs can substantially reduce injury to animals captured in foothold traps,²² and similar results have been observed when TTDs are used with snares.²³ Despite these promising findings, WS failed to consider these options in its EA. As noted, we firmly oppose the use of leghold traps and unmodified snares, but if, inconsistent with our recommendations, WS proceeds with its proposal to use these traps to capture wolves in Oregon, we urge the agency to consider the significant advantages of trap monitoring devices and TTDs.

b. Nonlethal wolf management methods that minimize animal suffering are effective and should be adopted if WS becomes involved in Oregon's gray wolf management efforts after additional, far more thorough, environmental review

If WS elects to work with ODFW to manage the state's wolves, the program's resources should be directed strictly toward the implementation of nonlethal and noninvasive controls and the provision of technical assistance to encourage the use of such tools. If WS proceeds with its proposed lethal control plan, it should exhaust all nonlethal options before resorting to lethal control—an alternative that was considered but rejected with little explanation in the EA.²⁴ As noted, a variety of alternative methods have been successfully used to prevent livestock depredations. WS improperly dismisses these methods because no single approach is universally effective, ignoring the fact that when properly combined and adjusted to the size and nature and location of a livestock operation, these tools are ultimately more effective and cost-efficient than traditional lethal methods.

The EA repeatedly suggests that nonlethal control methods are “generally ineffective.”²⁵ In practice, however, a number of nonlethal wildlife management practices have proven highly effective in preventing depredation. The EA glosses over these findings to reach what appears to be a predetermined decision that it will rely on lethal control in Oregon. For instance, WS dismisses

²¹ WILDLIFE SERVICES NATIONAL WILDLIFE RESEARCH CENTER, EVALUATION OF REMOTE TRAP MONITORS (2008).

²² Doris E. Zemlicka et al., Development and Registration of a Practical Tranquilizer Trap Device (IID for Foot-hold Traps, Proc. Great Plains Wildlife Damage Control Workshop (1997).

²³ Shelley D. Pruss et al., *Evaluation of a Modified Neck Snare to Live-Capture Coyotes*, 30 WILDLIFE SOC'Y BULLETIN 508 (2002).

²⁴ EA at 36–37.

²⁵ EA at 62.

frightening devices and fladry because they are not permanent deterrents, yet studies that WS references conclude that these tools can assist in reducing depredation rates.²⁶

It should be noted that lethal control does not permanently stop livestock predation—if wolves are removed from suitable habitat, others will move in to replace the animals who have been killed. Thus lethal control must be repeated time and again. There is a risk that non-depredating animals will be removed, only to have animals who might prey on livestock fill the niche. Nonlethal methods must not be judged by unrealistic criteria while lethal control is given minimal scrutiny. The EA does not give adequate weight to the fact that nonlethal methods can provide protection to livestock during critical periods of vulnerability, such as calving seasons, and are therefore viable management options. Similarly, the EA summarily dismisses any relationship between husbandry and livestock disposal practices and depredation, despite substantial evidence that husbandry practices focused on reducing livestock vulnerability can reduce depredation risks.²⁷

The utility of nonlethal livestock protection tools is evidenced by successful programs in the United States. A demonstration project in central Idaho revealed that the use of nonlethal methods including turbo-fladry, increased human presence, and light- and sound-generating devices was highly successful in preventing wolf depredation.²⁸ Over the course of four years, fewer than 20 of the approximately 40,000 sheep that occupied the study area were lost to wolves—a significant decline from the frequency of depredation prior to the project’s implementation.²⁹ An independent cost-benefit analysis, accounting for both economic and non-economic values, suggested that the social benefits derived from the demonstration program totaled between \$80,000 and \$4.66 million in 2011 dollars.³⁰

Marin County, California provides another strong illustration of the advantages associated with nonlethal predator control. In 2000, Marin redirected funds toward nonlethal measures. Funds were allocated for the provision tools such as night corrals, fencing, lamb sheds, noise- and light-generating devices, and compensation to farmers for livestock losses. These measures proved less expensive and more effective than lethal control; average annual losses declined from five percent to 2.2 percent. Marin’s experience demonstrates that lethal control practices are unnecessary, and that nonlethal wildlife management tools are both effective and affordable.

With these successes in mind, we urge WS to direct its attention and resources toward promoting nonlethal wolf management and providing technical assistance to producers to implement nonlethal wildlife control methods that will minimize animal suffering if it decides to become involved with wolf management in Oregon following more extensive environmental review. The EA states that “[p]resumably, producers are now doing everything reasonable to prevent damages and avoid

²⁶ See, e.g., Sarah J. Davidson-Nelson & Thomas M. Gehring, *Testing Fladry as a Nonlethal Management Tool for Wolves and Coyotes in Michigan*, 4 HUMAN–WILDLIFE INTERACTIONS 87 (2010).

²⁷ See, e.g., ERIC M. GESE ET AL., LINES OF DEFENSE: COPING WITH PREDATORS IN THE ROCKY MOUNTAIN REGION 13–14 (2005).

²⁸ DEFENDERS OF WILDLIFE, FINAL REPORT: TURBO-FLADRY EXPERIMENTAL PROJECT (2012).

²⁹ *Id.*

³⁰ Ashley L. Abernethy, *Coexisting with Carnivore: A Cost-Benefit Analysis of Non-lethal Wolf-Depredation Management in Central Idaho* (Apr. 28, 2011) (M.E.M. thesis, Duke University).

losses.”³¹ In reality, this is not the case; many ranchers are not aware of the effective, nonlethal livestock protection tools that are available to them.³² Some engage in practices that specifically leave their animals vulnerable. Producers would benefit from WS’ direct assistance in implementing nonlethal methods, in addition to technical assistance. If WS partners with ODFW to manage wolves in Oregon, it should focus its attention on using and promoting nonlethal control methods that minimize animal suffering and providing ranchers and wildlife managers with technical assistance and education about coexistence with wolves.

III. The proposed action will significantly affect the quality of the human environment and warrants preparation of an environmental impact statement (EIS)

Because lethal wolf management would have significant environmental impacts, WS must prepare an EIS. 42 U.S.C. § 4332(2)(C). Under Alternative 3, the preferred alternative, WS would adopt lethal methods to manage wolves in Oregon. The EA states that there is “no reason to expect that wolf removals would result in significant adverse effects on the quality of the human environment because of possible wolf-related changes in ecosystems.”³³ This statement ignores the fact that wolves play a fundamentally important role in maintaining healthy ecosystems in their native range. Lethal control is inconsistent with wolf recovery objectives and would have substantial adverse impacts on the region’s ecosystems.

Wolves, as keystone predators, play an essential role in their native ecosystems—a fact which the EA substantially overlooks. The return of wolves to Oregon will have far-reaching benefits for the state’s wildlife and plant communities. The presence of wolves encourages ungulates such as elk and deer to spend shorter periods of time grazing in a single location, thereby preventing overgrazing and allowing native vegetation to recover.³⁴ The restored plant life, in turn, provides myriad ecosystem services, reducing erosion, protecting water quality, and providing habitat and forage for a variety of species.³⁵

Scavenger species such as eagles and bears also benefit from the presence of wolves, and rely on wolf kills for nourishment. This relationship has been observed in Yellowstone National Park, where twelve scavenger species are known to visit wolf kills.³⁶ This food source is increasingly important to

³¹ EA at 53.

³² See DEFENDERS, *supra* n. 26, at 3 (“The greatest obstacle to the use of nonlethal deterrents to prevent wolf-related livestock losses is their lack of use by the majority of livestock producers....[M]ore needs to be done to help inform producers of their availability and correct application”).

³³ EA at 39.

³⁴ See, e.g., William J. Ripple & Robert L. Beschta, *Wolf Reintroduction, Predation Risk, and Cottonwood Recovery in Yellowstone National Park*, 184 FOREST ECOLOGY & MGMT. 299 (2003); William J. Ripple & Eric J. Larsen, *Historic Aspen Recruitment, Elk, and Wolves in Northern Yellowstone National Park, USA*, 95 BIOLOGICAL CONSERVATION 361 (2000).

³⁵ See Robert L. Beschta & William J. Ripple, *Large Predators and Trophic Cascades in Terrestrial Ecosystems of the Western United States*, 142 BIOLOGICAL CONSERVATION 2401 (2009).

³⁶ Christopher C. Wilmers et al., *Resource Dispersion and Consumer Dominance: Scavenging at Wolf- and Hunter-Killed Carcasses in Greater Yellowstone, USA*, 6 ECOLOGY LETTERS 996 (2003).

scavengers' survival in the face of climate change.³⁷ As winters grow shorter and snow thaws begin earlier, fewer animals die from starvation and harsh conditions, leaving fewer carcasses for scavengers to consume.³⁸ Wolf kills help to compensate for this decline, enabling scavenger populations to survive as global temperatures rise and other food sources grow scarcer.

Wolves also control coyote population numbers through competition.³⁹ When wolves were reintroduced to Yellowstone National Park, coyote populations declined by 50 percent or more.⁴⁰ By limiting coyote populations, the return of wolves enables populations of species preyed upon by coyotes to recover and grow. In addition, the relationship between wolves and coyotes may reduce the incidence of livestock depredation by coyotes. Although the EA suggests that wolves are a significant threat to livestock, they account for a small minority—just 3.7 percent—of livestock depredations in the United States, representing fewer kills than are attributed to coyotes.⁴¹ Accordingly, killing wolves to protect livestock could lead to just the opposite of the desired result.

The EA fails to account for the keystone role that wolves play in ecosystems; killing wolves and interfering with wolf population recovery will significantly impact the region's ecosystems at every trophic level, and therefore warrants thorough analysis in a complete EIS. We urge WS to complete an EIS if it proceeds with its plan to become involved in Oregon's wolf management program, and emphasize that additional review should take into account the shortcomings described in these comments.

IV. Conclusion

Legal protections and active recovery efforts have enabled the gray wolf to gradually reestablish populations in the western United States. As wolves return to Oregon, they will resume their role as keystone predators in the region's ecosystems, providing far-reaching ecological benefits. WS should not interfere with the species' recovery in Oregon by implementing lethal control measures, and should abandon any plans to use inhumane, nonselective traps and snares under the guise of nonlethal predator control.

If WS plans to proceed with its proposed course of action, it must first draft a complete environmental impact statement and undertake a far more rigorous analysis of the direct, indirect, and cumulative consequences of lethal control, and must give due consideration to an alternative under which it would limit its role to supporting the implementation of nonlethal methods that minimize the pain and suffering inflicted on wildlife to prevent conflicts between wolves and livestock.

³⁷ Christopher C. Wilmers & Wayne M. Getz, *Gray Wolves as Climate Change Buffers in Yellowstone*, 3 PLOS BIOLOGY 571 (2005).

³⁸ *Id.*

³⁹ See J.A. Merkle et al., *Interference Competition Between Gray Wolves and Coyotes in Yellowstone National Park*, 87 CANADIAN J. ZOOLOGY 56 (2009).

⁴⁰ See Robert L. Crabtree & Jennifer W. Sheldon, *Coyotes and Canid Coexistence in Yellowstone*, in CARNIVORES IN ECOSYSTEMS: THE YELLOWSTONE EXPERIENCE 127 (T.W. Clark et al. eds., 1999); see also Kim Murray Berger & Eric M. Gese, *Does Interference Competition with Wolves Limit the Distribution and Abundance of Coyotes?*, 76 J. ANIMAL ECOLOGY 1075 (2007).

⁴¹ USDA NATIONAL AGRICULTURAL STATISTICS SERVICE, CATTLE DEATH LOSS (2011).

We appreciate the opportunity comment on this EA, and we hope that WS will carefully consider the foregoing discussion as it proceeds.

Sincerely,

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