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2015]

SERVICES GONE WILD: HAS WILDLIFE SERVICES' PREDATOR CONTROL PROGRAM GONE TOO FAR?

“When they do kill livestock or pets, predators aren’t trying to ruin your day, cut into your profit, or break your heart; they’re simply struggling to survive.”¹

I. INTRODUCTION

A federal agency named “Wildlife Services” would lead a reasonable person to believe that its goal is to serve and protect all wildlife.² And Wildlife Services (WS), a federal program under the United States Department of Agriculture, *does* protect certain animal species through disease monitoring, conservation of threatened and endangered animals, and resolving wildlife conflicts with humans.³ WS, however, also kills tens of thousands of animals annually through barbaric means funded by millions of taxpayer dollars.⁴ The primary justification for the slaughter is to protect livestock.⁵ While livestock protection is a legitimate interest, WS faces constant criticism for using unnecessary violent and inhumane means of killing, which is detrimental to various ecosystems.⁶

Predator control programs exist at both the state and federal level.⁷ State predator control programs differ from the federal pro-

1. Carol Ekarius, *Protect Your Livestock from Predators*, HOBBYFARMS.COM (Apr. 2004), <http://www.hobbyfarms.com/livestock-and-pets/protect-livestock-from-predators-14990.aspx> (explaining why predators kill livestock).

2. *See Wildlife Damage*, U.S. DEP’T OF AGRICULTURE, <http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/wildlifedamage> (last visited Nov. 4, 2014) (discussing mission of WS). The mission of USDA APHIS Wildlife Services (WS) “is to provide Federal leadership and expertise to resolve wildlife conflicts to allow people and wildlife to coexist.” *Id.*

3. *See id.* (outlining goal of WS programs); *see also* Roddy Scheer & Doug Moss, *The USDA’s “Predator Control” Program*, ENVTL. MAG. (Nov. 18, 2012), <http://www.emagazine.com/earth-talk/The-USDA’s-Predator-Control-Program> (noting non-harmful WS activities).

4. *The USDA’s War on Wildlife*, PREDATOR DEFENSE, <http://www.predatordefense.org/USDA.htm> (last visited Nov. 4, 2014) (condemning WS’ predator control program).

5. *Id.* (explaining purpose of killing predators). For further discussion of the primary reason for killing predators, see *infra* notes 28-30 and accompanying text.

6. *See* Scheer & Moss, *supra* note 3 (criticizing methods WS implements in killing predators).

7. For a further discussion of the differences between state and federal programs, see *infra* notes 32-33 and accompanying text.

gram in that they tend to target predators specific to their region.⁸ State programs receive pushback due to their contribution to ecological damage and violent killings, which mirrors the dissatisfaction federal programs face.⁹

The most evident problem with predator control programs is the methods utilized in killing the animals.¹⁰ A severe lack of regulation in this area compounds the issue and allows predators to be unnecessarily tormented prior to being killed.¹¹ Lack of oversight and regulation, however, does not comprise the full extent of all the issues these animals face.¹² For example, eliminating a particular species from a designated area for any reason can have a negative impact on that ecosystem's biodiversity.¹³ This negative impact could potentially result in livestock deaths, the occurrence of which is the main purpose for killing predators in the first place.¹⁴ In these instances, control programs would be counterintuitive, and cause more harm than good.¹⁵

Predator control programs also have the ability to remove particular animals from endangered and threatened species lists in order to decrease their population.¹⁶ This process is dangerous because it can become difficult to track the number of animals

8. For a further discussion of the differences between state and federal programs, see *infra* notes 32-33 and accompanying text.

9. For a further discussion of the backlash these programs have received, see *infra* notes 112-15, 118, 129-30, 197-203 and accompanying text.

10. See PREDATOR DEFENSE, *supra* note 4 (analyzing inhumane and environmentally unfriendly predator control methods). For a further discussion on problematic predation management methods, see *infra* notes 103-139 and accompanying text.

11. See *id.* (discussing methods involving predator abuse before killing them). For a further discussion of the lack of regulation surrounding methods of killing, see *infra* notes 109-10, 125-26 and accompanying text.

12. See Debra L. Donahue, *Trampling the Public Trust*, 37 B.C. ENVTL. AFF. L. REV. 257, 264 (2010) (discussing negative impacts on ecosystems when predators are removed). When predators are removed from their natural habitats, the entire ecosystem may dissolve due to botanical and vegetation changes. *Id.* at 265. Additionally, eliminating one type of predator from an ecosystem can cause a different type of predator species to increase drastically, throwing off the ecosystem's balance even further. *Id.*

13. See *id.* at 264-65 (discussing impact elimination may make on environment). For a further discussion of the negative impact predator control can have on ecosystems, see *supra* note 12 and accompanying text.

14. See Donahue, *supra* note 12, at 264-65 (discussing repercussions elimination may cause). For a further discussion of the negative impact predator control can have on ecosystems, see *supra* note 12 and accompanying text.

15. For a discussion of the negative impact predator control can have on ecosystems, see *supra* note 12 and accompanying text.

16. See e.g., *Wolves in Wyoming*, WYO. GAME & FISH DEP'T (2013), <http://wgfd.wyo.gov/web2011/wildlife-1000380.aspx>, (explaining US Fish and Wildlife Service gray wolf removal from Wyoming's threatened and endangered species list for

killed, which can lead to extinction of a particular species.¹⁷ Although protecting livestock may be important, the threats of ecosystem imbalance and species extinction need to be given more serious consideration.¹⁸ While predator control programs may be a necessary evil, problems with the programs currently outweigh the benefits.¹⁹ Thus, it is important to reexamine the various predator control programs and rectify the issues before they cause irreparable harm.²⁰

This Comment discusses the negative impacts of both federal and state predator control programs and possible solutions.²¹ Part II of this Comment explains how the federal and state predator control programs developed, the way they operate, and the problems associated with them.²² Part III of this Comment examines particular methods of predator control, problems associated with them, and potential solutions.²³ Part IV of this Comment discusses how predator control programs affect biodiversity.²⁴ Part V of this Comment analyzes the funding issues associated with predator control programs.²⁵ Finally, Part VI of this Comment will consider the future of predator control.²⁶

predator control). For a further discussion of the delisting of the gray wolf, see *infra* notes 61-70 and accompanying text.

17. See PREDATOR DEFENSE, *supra* note 4 (explaining number of killed predators not always recorded). Even though WS is required to look for certain predators after they have been hunted for control purposes, they are not always found. *Id.* This lack of recording has the potential to lead a species to extinction because there is no accurate recorded number of predators. *See id.*

18. See Donahue, *supra* note 12, at 265 (alluding to importance of ecosystem balance).

19. For a discussion of the problems associated with predator control programs, see *infra* notes 103-87 and accompanying text.

20. For a discussion of the problems associated with predator control programs, see *infra* notes 103-87 and accompanying text.

21. For a discussion, see *infra* notes 27-203 and accompanying text.

22. For a discussion of federal and state predator control programs, see *infra* notes 27-102 and accompanying text.

23. For a discussion of the various methods of predator control programs, see *infra* notes 103-39 and accompanying text.

24. For a discussion of the effect of predator control programs on biodiversity, see *infra* notes 140-74 and accompanying text.

25. For a discussion of funding issues, see *infra* notes 175-87 and accompanying text.

26. For a discussion of the future of predator control, see *infra* notes 188-203 and accompanying text.

II. EXCHANGING GRAZING FEES FOR LIVESTOCK PROTECTION:
EVERYBODY WINS, EXCEPT PREDATORS

The federal government first began researching predators and their effect on livestock in 1907.²⁷ The Bureau of Biological Survey (BBS) and the United States Department of Agriculture (USDA) studied predators, such as wolves and coyotes, and reported on methods for controlling their populations.²⁸ One driving force behind the movement towards predator control was a newly implemented grazing fee, which was imposed on ranchers who allowed their livestock to graze on federal land.²⁹ The government “‘felt that there was an obligation to offer some protection for livestock’” in exchange for the fee ranchers were charged.³⁰ Accordingly, in 1915, the United States government granted \$125,000 to the BBS, the first federal assistance issued for predator control.³¹

While the federal predator control program has, for the most part, subsumed state programs, a few western states have continued their separate species-specific programs.³² These programs allow state governments to target predators unique to their regions.³³ All predator control programs, however, rely on the cooperation and financial assistance of “local, state, and federal government and livestock producers.”³⁴ This combined effort grants necessary financial support along with non-monetary requirements of predator control, such as the delisting of an endangered species.³⁵ For example, sometimes a state program will need a federal agency to delist a species from the endangered species list in order to continue their program.³⁶

27. See Donahue, *supra* note 12, at 270-74 (explaining origin of predator control).

28. *Id.* at 270-71 (discussing research performed on predator management).

29. *Id.* (explaining grazing fee as catalyst for livestock protection and subsequent predator control).

30. See *id.* (citing reason behind protecting livestock). The government felt that farmers and ranchers were owed something in exchange for charging them a grazing fee. *Id.* The rationale was that if they were going to be forced to pay for their livestock, the livestock should at least be protected. See *id.*

31. *Id.* at 271 (discussing timeline of financial assistance for predator control).

32. See Donahue, *supra* note 12, at 272-73 (noting existence of separate federal and state programs).

33. See *id.* at 273 (giving example of Wyoming’s wolf-specific program).

34. *Id.* at 271 (explaining necessary financial cooperation from all government levels).

35. *Id.* (discussing outcomes of cooperation by all parties).

36. See *Wolves in Wyoming*, *supra* note 16 (explaining federal government delisting endangered species for Wyoming to support predator control program).

A. Wildlife Services' Federal Predator Control Program

WS, an agency of the USDA's Animal and Plant Health Inspection Service (APHIS), currently manages the federal predator control program.³⁷ The statutory authority for the program is vested in the Animal Damage Control Act of March 2, 1931, which states:

The Secretary of Agriculture may conduct a program of wildlife services with respect to injurious animal species and take any action the Secretary considers necessary in conducting the program. The Secretary shall administer the program in a manner consistent with all of the wildlife services authorities in effect on the day before October 28, 2000.³⁸

The program seeks to protect livestock from predators, which WS assigns as a large problem in the western states and an increasing one in the eastern states.³⁹ The blame for loss of livestock, however, cannot be placed solely on predators.⁴⁰ It is therefore necessary to identify the specific cause of loss prior to determining practical predation management.⁴¹ Unfortunately, WS does not use a precise system to distinguish between livestock loss due to predation and livestock loss due to other events.⁴² Instead, they use an unscientific assessment of the dead livestock and the surrounding area to determine the cause of loss.⁴³ Additionally, USDA statistics have shown that "most livestock losses result from weather, disease,

37. *WS Enabling Legislation*, U.S. DEP'T OF AGRICULTURE (Aug. 5, 2010), http://www.aphis.usda.gov/wildlife_damage/legislation.shtml (explaining who runs the federal predator control program).

38. *Id.* (citing statutes authorizing WS federal predator control program).

39. *See Livestock Losses to Predators*, U.S. DEP'T OF AGRICULTURE (Dec. 20, 2013), http://www.aphis.usda.gov/wps/portal/banner/help?1dmy&urile=wcm%3apath%3a%2Faphis_content_library%2Fsa_our_focus%2Fsa_wildlife_damage%2Fsa_operational_activities%2Fsa_livestock%2Fct_livestock_losses (noting expanding problem of livestock loss due to predation).

40. *See id.* (noting various reasons for livestock loss).

41. *See id.* (highlighting importance of identifying reason for livestock loss).

42. *See* Eric M. Gese, et. al., *LINES OF DEFENSE: Coping with Predators in the Rocky Mountain Region* 5-10 (Aug. 29, 2005), available at http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1091&context=icwdm_usdanwrc (discussing non-scientific ways of proving livestock loss via predation). Although the USDA's website notes that identifying reasons for livestock loss is important, it does not explain their method of doing so. *See Livestock Losses*, *supra* note 39. It simply links to a booklet that describes different ways to determine predation has occurred. *Id.* The methods described include looking at the dead livestock and surveying the area, amounting to a totality of the circumstances test. *See* Gese at 8-10.

43. For a discussion of how WS proves livestock loss due to predation, see *supra* note 42 and accompanying text.

illness and birthing problems – not predation.”⁴⁴ In 2005, for example, 104.5 million cattle were raised in the United States.⁴⁵ Of those 104.5 million, predators killed 0.18% while 3.69% died from other causes.⁴⁶

A problem arises when the percentage of predators killed in order to save livestock is disproportionate to the small percentage of livestock that are actually injured or killed by predators.⁴⁷ The threshold issue of identifying the reason for loss is crucial for making predation control productive.⁴⁸ When the loss is improperly identified, the system of control is bound to fail.⁴⁹

After WS ostensibly identifies livestock loss due to predation, it must then determine which method of control to implement to manage the predators.⁵⁰ The process begins when livestock producers contact WS about livestock losses due to predation.⁵¹ From there, WS will oftentimes visit the site to obtain information and gather evidence on the predators causing the problem.⁵² WS officials then analyze any methods of control already utilized and survey the surrounding land.⁵³ If both WS and the livestock producers agree that WS should implement predator control at the site, they negotiate and sign an “Agreement For Control of Animal Damage”.⁵⁴ The agreement outlines the activities WS will conduct to control predation in that area, and the funding for those meth-

44. See Scheer & Moss, *supra* note 3 (noting factors other than predation that cause majority of livestock loss).

45. Wendy Keefover-Ring, *War on Wildlife*, WILD EARTH GUARDIANS (Feb., 2009), http://www.wildearthguardians.org/support_docs/report-war-on-wildlife-june-09-lo.pdf (noting amount of cattle in United States in 2005).

46. See *id.* (noting number of cattle killed and reasons for killing).

47. See *id.* (explaining predator control will not help livestock loss problem if loss not due to predation).

48. See *id.* (reviewing necessary first step of identifying reason for livestock loss).

49. See *id.* (noting consequences of disregarding identifying reason for livestock loss).

50. See *Predation Management Options*, (Sept. 2, 2014), http://www.aphis.usda.gov/wps/portal/banner/help?1dmy&urile=wcm%3apath%3a%2Faphis_content_library%2Fsa_our_focus%2Fsa_wildlife_damage%2Fsa_operational_activities%2Fsa_livestock%2Fct_predation_management (discussing choice of method of control).

51. *How WS Works with Livestock Producers*, U.S. DEP’T OF AGRICULTURE, http://www.aphis.usda.gov/wildlife_damage/protecting_livestock/downloads/how_ws_works_with_livestock_producers_jun2010.pdf (last visited Nov. 4, 2014), (explaining initiation of predation control).

52. See *id.* (discussing site visits by WS officials).

53. See *id.* (explaining information WS needs prior to implementing predation control).

54. See *id.* (explaining agreement formed between WS and livestock producer allowing for implementation of predation control methods).

ods.⁵⁵ As a final step, WS implements the predation control program.⁵⁶

The National Environmental Policy Act (NEPA) compels WS to analyze the impacts each predator control program will have on the environment.⁵⁷ Further, NEPA requires this information be made available to the public prior to implementing the program.⁵⁸ The information given to the public, however, is determined by WS itself, which gives WS a considerable amount of control over what information to ultimately release.⁵⁹ Though WS provides some insight into its analysis, they still lack transparency regarding most predation control issues.⁶⁰

B. Wyoming and the Endangered Gray Wolf: “Kill-at-Will”

In response to an overabundant gray wolf population throughout the state, Wyoming officials implemented a predator-specific control program.⁶¹ The Wyoming Game and Fish Department (WGFD) has stated that a majority of the land in the state is unsuitable for the gray wolf due to livestock grazing.⁶² Prior to 2012, however, the gray wolf was on the federal list of threatened and endangered species, thus prohibiting state officials from implementing a predator control program aimed at their population.⁶³

The gray wolf was reintroduced to Wyoming’s Yellowstone National Park in 1995 to increase their small and diminishing population.⁶⁴ After the reintroduction, WGFD argued that the wolf

55. *See id.* (discussing what the agreement consists of).

56. *See How WS Works with Livestock Producers*, *supra* note 51 (noting when predator control method is finally implemented).

57. *National Environmental Policy Act*, U.S. DEP’T OF AGRICULTURE, (Sept. 2, 2014), http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/wildlifedamage?1dmy&urile=wcm%3apath%3a%2FAPHIS_Content_Library%2FSA_Our_Focus%2FSA_Wildlife_Damage%2FSA_Programs%2FSA_NEPA (stipulating NEPA regulations WS must follow).

58. *See id.* (explaining information WS must make public).

59. *See id.* (discussing WS’s evaluations of environmental impact and how they determine what information public receives).

60. *See id.* (noting WS’s ability to keep certain information hidden from public).

61. *See Wolves in Wyoming*, *supra* note 16 (outlining Wyoming’s gray wolf predator management program).

62. *See Donahue*, *supra* note 12, at 274 (explaining why Wyoming needs gray wolf control).

63. *See Wolves in Wyoming*, *supra* note 16 (explaining why there was no gray wolf control program prior to 2012).

64. *See id.* (discussing gray wolf population in Wyoming). The gray wolf population decreased to such a point that it was necessary to help increase their population by physically putting them into the ecosystem. *Id.*

population had begun expanding beyond the regulated boundaries, which negatively impacted livestock.⁶⁵ In response, on August 31, 2012, the U.S. Fish and Wildlife Service (FWS) delisted the gray wolf in Wyoming and placed state officials in charge of their management.⁶⁶ While numerous environmental groups opposed the delisting of the gray wolf, FWS was within the bounds of the law, and thus no legal action could be taken in response to the agency's decision.⁶⁷

The purpose of the Endangered Species Act of 1973 (Act) "is to protect and recover imperiled species and the ecosystems upon which they depend."⁶⁸ While the Act gives guidelines as to what can and cannot be done to listed species, it has "'provided no criteria for deciding when a species should be listed, delisted or 'down-listed' from endangered to threatened'. . . ."⁶⁹ The ensuing consequences for wolves in Wyoming have been significant.⁷⁰

As a result of Wyoming state officials taking control of wolf population management, wolves can be legally hunted, subject to the region of Wyoming they inhabit.⁷¹ Wyoming is divided into two areas: Trophy Game Management areas and Predatory Animal areas.⁷² The Trophy Game Management areas contain habitats suitable to maintain the current gray wolf populations.⁷³ Hunting, therefore, is highly regulated in these areas, and wolves can only be hunted during identified hunting seasons.⁷⁴ WGFD also sets mortality quotas for each hunting season, which ensure that the gray

65. *See id.* (explaining gray wolf population increased too much).

66. *See id.* (explaining federal government cooperation to delist gray wolves and give state government control).

67. *See* Lee Dye, *The Dilemma of Delisting Species*, ABC NEWS, <http://abcnews.go.com/Technology/story?id=120117> (last visited Feb. 18, 2015) (discussing how species can become delisted).

68. *Endangered Species Act: Overview*, U.S. FISH & WILDLIFE SERV. (last updated July 15, 2013), <http://www.fws.gov/endangered/laws-policies/> (quoting *Endangered Species Act*).

69. *See* Dye, *supra* note 67 (quoting researchers' analysis of *Endangered Species Act*).

70. For a discussion of the negative effects on gray wolves, see *infra* notes 76-85 and accompanying text.

71. *Wyoming Wolf FAQs*, WYO. GAME & FISH DEP'T (Feb. 4, 2013), <http://wgfd.wyo.gov/web2011/news-1001287.aspx> (explaining Wyoming's wolf hunting laws).

72. *Id.* (characterizing wolf hunting areas).

73. *Id.* (explaining habitat of Trophy Game Management areas).

74. *Id.* (discussing enhanced hunting regulations of Trophy Game Management areas because of their suitable populations of gray wolves).

wolf population will be stable enough to stay off the endangered species list.⁷⁵

The Predatory Animal areas, however, are unsuitable for wolves because they contain livestock that the wolves inevitably encounter and prey upon.⁷⁶ In these areas, gray-wolf hunting is virtually unregulated.⁷⁷ For example, gray wolves may be shot on sight by anyone, regardless of the season or whether the shooter has a hunting license.⁷⁸ The lack of regulation has led to these areas being described as “kill-at-will” areas.⁷⁹ Unfortunately, these “kill-at-will” Predatory Animal areas comprise more than eighty percent of Wyoming.⁸⁰

Wyoming’s “kill-at-will” policy has sparked outcry from both environmental groups and scientists.⁸¹ Both groups argue that the purpose of the Act is to ensure endangered species regain a healthy population.⁸² The gray wolf population, however, has not reached what is normally considered a healthy size when compared with other delisted species.⁸³ In fact, recent studies have determined that the delisting of the gray wolf was not “based on the ‘best available science,’” which consequently has put the wolves in danger of extinction.⁸⁴ Thus, these findings have reopened the debate regarding whether WS’s delisting of the gray wolf was appropriate and WS is currently in the process of reexamining the determination.⁸⁵

75. *Id.* (explaining how Wyoming requires a certain number of wolves remain in the state).

76. *Wyoming Wolf FAQs*, *supra* note 71 (contrasting Predatory Animal area with Trophy Game Management area).

77. *Id.* (explaining reason for lack of hunting regulations in Predatory area).

78. *Id.* (discussing areas of Wyoming where there are no wolf hunting regulations).

79. *Wyoming Wolf Delisting Challenged in Federal Court*, CENTER FOR BIOLOGICAL DIVERSITY (Dec. 17, 2013), http://www.biologicaldiversity.org/news/press_releases/2013/wolf-12-17-2013d.html (explaining name given to Predatory Animal areas in Wyoming).

80. *Id.* (discussing why large portion of Wyoming has unregulated wolf hunting).

81. Lance Richardson, *Wolves May Be Losing a Nasty Political Battle*, SLATE (last updated Feb. 25, 2014), http://www.slate.com/blogs/wild_things/2014/02/21/gray_wolf_endangered_species_act_conflict_should_fish_and_wildlife_service.html (explaining scientific support against delisting gray wolf).

82. *Id.* (explaining Endangered Species Act’s goals).

83. *Id.* (noting small gray wolf population). The gray wolf population is currently listed at 5,443, which is small when compared with other delisted species, such as the bald eagle. *Id.*

84. *See id.* (quoting Defenders of Wildlife official).

85. *Id.* (discussing WS’ current steps to solve gray wolf delisting debate).

C. Alaska and the Airborne Hunting Act: Finding a Loophole to Kill Grizzly Bears

Alaska is another state that conducts state-specific predatory control through its “intensive management” programs.⁸⁶ Similar to other predator control programs, Alaska’s primary reason for engaging predatory control is to protect the state’s livestock and other ungulates used as food sources.⁸⁷ Alaska is specifically interested in protecting moose, caribou, and deer populations from wolves and bears.⁸⁸ Hence, the Alaska Department of Fish and Game (ADFG) states that the goal of its predator management programs “is to allow humans to take more ungulates, while also maintaining sustainable populations of predators.”⁸⁹

In 1994, Alaska passed the Intensive Management Law.⁹⁰ The law “requires the Alaska Board of Game to identify moose, caribou, and deer populations that are especially important food sources for Alaskans, and to insure that these populations remain large enough to allow for adequate and sustained harvest.”⁹¹ The Alaska Board of Game (ABOG) must, however, opt for a predator control implementation plan prior to the commencement of any intensive management program.⁹² These implementation plans have been adopted in the Alaska Administrative Code, and allows the ADFG to regulate predation management.⁹³

Many of Alaska’s implementation plans involve aerial hunting as the specified method of killing predators.⁹⁴ Aerial hunting is highly controversial, however, and was even prohibited by the fed-

86. *Intensive Management in Alaska*, ALASKA, DEP’T. OF FISH AND GAME, <http://www.adfg.alaska.gov/index.cfm?adfg=intensivemanagement.programs> (last visited Nov. 4, 2014) (outlining Alaska’s predator control program).

87. *Id.* (comparing motivation for separate state predator control programs).

88. *See Intensive Management in Alaska*, *supra* note 86 (discussing predators targeted in Alaska based on what animals need protection).

89. *Id.* (noting balance of Alaska’s predator control program).

90. Caroline Kennedy & Theresa Fiorino, *Alaska’s Predator Control Programs: Managing for Abundance or Abundant Mismanagement*, DEFENDERS OF WILDLIFE (2011), http://www.defenders.org/sites/default/files/publications/alaska_predator_control_programs.pdf (noting statutory authority for Alaska’s predator control program).

91. *See Intensive Management in Alaska*, *supra* note 86 (quoting statutory authority).

92. *Id.* (explaining first step in process of conducting predator management in Alaska).

93. *Id.* (discussing implementation plans). The implementation plans “contain detailed information about each predation control area.” *Id.* Each plan is tailored to the particular predator and prey. *Id.*

94. *See Kennedy & Fiorino*, *supra* note 90 (noting use of aerial hunting in Alaska predation management programs).

eral Airborne Hunting Act of 1971 (AHA).⁹⁵ Congress passed the AHA to “prohibit[] shooting, attempting to shoot or harass any animal from an aircraft”⁹⁶ The AHA, however, allows for an exception to the aerial hunting ban when it is done to protect wildlife and livestock.⁹⁷ Thus, the AHA allows Alaska to issue permits for aerial hunting, which is considered “unsportsmanlike, unethical and nearly impossible to regulate.”⁹⁸

Alaska specifically targets grizzly bears as a targeted predator due to their prevalence and fondness for moose.⁹⁹ While there are only 1,500 grizzly bears in the contiguous United States, Alaska notably harbors 31,000.¹⁰⁰ The grizzly bear, therefore, is not endangered in Alaska, as it is elsewhere in the United States.¹⁰¹ Unlike in Wyoming, where the *type* of predator targeted causes concern, Alaska’s problem with its intensive management programs is the *method* of killing utilized.¹⁰²

III. METHODS OF PREDATOR CONTROL: PROBLEMS AND POTENTIAL SOLUTIONS

Due to their endangered or threatened status, the species targeted by predator control programs is often the main point of debate, as it is in Wyoming.¹⁰³ The way the programs control the predators, however, is a separate but equally important problem, as seen in Alaska.¹⁰⁴ Notably, the methods of predator control may

95. *Id.* (analyzing Alaska’s use of aerial hunting as means for predator control).

96. *Id.* (quoting Airborne Hunting Act).

97. *See id.* (noting Act’s loophole).

98. *Id.* (discussing Alaska’s propensity to act on exceptions within Act).

99. Tim Mowry, *89 bears killed in Alaska predator control program* NEWSMINER.COM (May 29, 2013), http://www.newsminer.com/news/local_news/bears-killed-in-alaska-predator-control-program/article_2b7cb580-c8cf-11e2-ad78-0019bb30f31a.html (explaining why grizzly bears are targeted in Alaska).

100. *Grizzly Bear*, NAT’L WILDLIFE FED’N, <http://www.nwf.org/wildlife/wildlife-library/mammals/grizzly-bear.aspx> (last visited Nov. 4, 2014) (analyzing grizzly bear population in North America).

101. *Environmental Conservation Online System*, U.S. FISH AND WILDLIFE SERVS., http://ecos.fws.gov/tess_public/pub/SpeciesReport.do?groups=A&listingType=L&mapstatus=1 (last visited Nov. 4, 2014) (stating locations where grizzly bear is listed as endangered species).

102. *See* Kennedy & Fiorino, *supra* note 90 (discussing aerial hunting as being highly controversial).

103. For a further discussion of delisting species for predator control, see *supra* notes 61-70 and accompanying text. For a further discussion of Wyoming’s predator control program, see *supra* notes 71-80.

104. *See* PREDATOR DEFENSE, *supra* note 4 (giving overview of methods of predator control). For a discussion of Alaska’s intensive management program, see *supra* notes 86-93.

utilize lethal means, and are not required to be necessary or humane.¹⁰⁵ For example, hunters often use poison, steel-jaw traps, and clubbing as unnecessary and torturous means of managing predators.¹⁰⁶ Not only do these methods of killing inflict “unnecessary pain and suffering” on the predators, but they also cause “broad ecological harm” by negatively affecting the habitats and livestock claimed to be protected in the first place.¹⁰⁷ Furthermore, using these barbaric methods does not protect livestock any more than non-lethal alternatives.¹⁰⁸

One problem in particular with WS’ federal predator control program is that WS does not document whether non-lethal or lethal methods of control are implemented.¹⁰⁹ This allows WS to avoid explaining why they used lethal methods of control when non-lethal means were potentially available and more appropriate.¹¹⁰ To progress and make positive changes to the way these predators are being controlled, it is important that WS begin tracking and recording its actions.¹¹¹ As a result of WS’ consistent refusal to take initiative and begin this process, the Defenders of Wildlife (Defenders), an environmentalist group, petitioned the USDA’s Office of the Inspector General (OIG) to audit WS and its predator control program.¹¹² If successful, the audit would delve into the different types of control and why federal and state programs use them.¹¹³ The audit would also eliminate the lack of transparency by forcing those in charge of the predator control programs to explain and support their actions.¹¹⁴ If the programs could not be explained, the inefficiency of the programs would be

105. See June C. Edverson, *Predator Control and Regulated Killing: A Biodiversity Analysis*, 13 UCLA J. ENVTL. L. & POL’Y 31, 40 (1994-95) (noting lack of regulation).

106. See *id.* at 41 (suggesting barbaric methods of predator control).

107. See *id.* at 41-42 (expanding upon negative ecological impacts of predator control).

108. See *id.* at 42 (noting livestock saved is same regardless of killing method used against predators).

109. See Charlotte Conley, *Auditing America’s Predator Control Program*, DEFENDERS OF WILDLIFE BLOG (Nov. 5, 2013), <http://www.defendersblog.org/2013/11/auditing-americas-predator-control-program/> (commenting on lack of reporting with regard to predator control).

110. See *id.* (analyzing WS’ lack of transparency).

111. See *id.* (noting negative impacts from WS’ lack of reporting).

112. See *id.* (reviewing petition in support of auditing WS to hold them liable).

113. See Charlotte Conley, *America’s Secret Wildlife Killers*, DEFENDERS OF WILDLIFE BLOG (Aug. 20, 2013), <http://www.defendersblog.org/2013/08/americas-secret-wildlife-killers/> (giving broad overview of what audit would accomplish).

114. See *id.* (noting audit would force issue of transparency).

come public knowledge, which would likely lead to necessary changes.¹¹⁵ Unfortunately, the initial audit, scheduled for 2013, was moved to 2014; further, budget constraints may limit the OIG and cause the audit to be dropped.¹¹⁶ Congressional Representatives Peter DeFazio (D-OR), John Campbell (R-CA), and Gary Peters (D-MI) recently “renewed their demand for an audit,” and were “supported by more than 157,000 Defenders and Natural Resources Defense Council members and online activists.”¹¹⁷

Supporters of a WS audit consistently condemn aerial hunting as a method of predator control.¹¹⁸ As previously explained, aerial hunting is so barbaric that federal law prohibits the practice.¹¹⁹ Aerial hunting involves “using a plane to harass an animal to exhaustion in winter where there is no cover and no opportunity for the animal to escape.”¹²⁰ Further, this type of killing “rarely results in a clean kill” because of the unsteady nature of hunting from a moving aircraft.¹²¹ The AHA has banned aerial hunting since 1971 because of the torture it puts animals through.¹²² By virtue of passing the AHA, Congress recognized that killing animals this way is unethical and cruel.¹²³ For thirty-five years, however, Alaska has circumvented the AHA, which may lead other states to follow suit.¹²⁴

In addition to circumventing the AHA, Alaska’s intensive management program does not require ABOG personnel to be the aerial hunters.¹²⁵ Instead, Alaska officials allow private citizens and pilots to hunt, providing no structure or regulation to aerial hunting.¹²⁶ Conversely, authorizing only ABOG personnel to hunt could move the program in a more humane direction because at

115. *See id.* (explaining consequences of audit).

116. *See Intensive Management in Alaska*, *supra* note 86 (stating reasons audit has not happened yet).

117. *See Conley*, *supra* note 109 (examining continued support of audit). *See also Conley*, *supra* note 113 (discussing reasons for supporting audit of WS).

118. *See Aerial Hunting FAQs*, DEFENDERS OF WILDLIFE, http://www.defenders.org/publications/aerial_hunting_q_and_a.pdf (last visited Nov. 4, 2014) (noting aerial hunting as controversial method of control). For a further discussion of aerial hunting in Alaska, see *supra* notes 94-98 and accompanying text.

119. *See id.* (reviewing aerial hunting as method of predator control).

120. *Id.* (explaining how aerial hunting works).

121. *See id.* (analyzing negative impact of hunting from planes).

122. *See id.* (discussing 1971 statutory authority prohibiting aerial hunting).

123. *See Aerial Hunting FAQs*, *supra* note 118 (proffering reasons for legislation).

124. *See id.* (explaining how Alaska has allowed residents to participate in banned aerial hunting). For a further discussion on aerial hunting, see *supra* notes 94-98 and accompanying text.

125. *Id.* (noting lack of regulation in who can utilize control methods).

126. *See id.* (discussing ability of anyone to aerial hunt if they wish).

the very least, ABOG personnel would have the proper training and experience.¹²⁷ Given its consequences, the current lack of guidelines for aerial hunting is truly astounding.¹²⁸

To eliminate the negative effects of aerial hunting, environmentalist groups are advocating for the enactment of the Protect America's Wildlife Act (PAW).¹²⁹ PAW would offer better protections to wildlife from aerial hunters and would close the loophole of AHA that has been exploited by Alaska's intensive management program.¹³⁰ PAW was introduced to Congress in 2009, but it has not yet been enacted.¹³¹ PAW strikes a suitable balance between acknowledging a state's right to manage wildlife how it sees fit and instituting guidelines that would make its choice of management more humane.¹³²

In addition to advocating for the use of non-lethal methods of predator control, some environmentalist groups are advocating for the reallocation of resources to make livestock less vulnerable to attack.¹³³ Implementing this type of livestock protection, rather than using those resources to kill predators, would be a much more productive measure.¹³⁴ One livestock protection measure is the use of guardian animals.¹³⁵ Guardian animals are trained to protect other animals, such as livestock, twenty-four hours a day "and are alert and protective during the hours of greatest danger."¹³⁶ It is uncommon for a guardian animal to kill a predator, given that its presence alone is typically enough to scare off any would-be attackers; however, if that is not the case, it will resort to chasing the predator away.¹³⁷ Another non-lethal method that focuses on decreasing livestock vulnerability includes constructing physical barriers.

127. *Id.* (explaining lack of regulation concerning who can aerial hunt).

128. *See Aerial Hunting FAQs*, *supra* note 118 (explaining issues with aerial hunting).

129. *See id.* (explaining how PAW would positively impact predator control programs).

130. Govtrack.us, S. 1535 (111th): Protect America's Wildlife Act of 2009, <https://www.govtrack.us/congress/bills/111/s1535> (last visited Feb. 14, 2014) (reviewing proposed bill). PAW would ban aerial hunting in its entirety; there would no longer be a loophole. *Id.*

131. *See id.* (discussing bill's current location).

132. *See Aerial Hunting FAQs*, *supra* note 118 (discussing impact of PAW).

133. *See Conley*, *supra* note 109 (examining alternative use of resources).

134. *See id.* (discussing solution of reallocation of resources).

135. *See Ekarius*, *supra* note 1 (explaining guardian animals as alternative to predator control programs).

136. *Id.* (describing guardian animals).

137. *Id.* (noting alternative is not lethal to predators).

ers.¹³⁸ Although this method can be costly, a possible cost-effective solution would be to transfer the funds that are used for killing the predators and apply them toward the construction of barriers.¹³⁹

IV. PREDATOR CONTROL AND THE DISRUPTION OF BIODIVERSITY

Predator control disrupts ecosystem biodiversity and can cause irreversible damage due to the natural complementary features among specific animals in those ecosystems.¹⁴⁰ Biodiversity is “the variety and variability among living organisms and the ecological complexes in which they occur.”¹⁴¹ Ecosystems, therefore, require biodiversity to survive and flourish.¹⁴² Predators are among those animals necessary to keep a balanced ecosystem.¹⁴³ While predation involves the killing of certain animals, it also “permits the evolution and accumulation of species and serves to regulate the growth of plant and animal populations.”¹⁴⁴ Predation, therefore, maintains biodiversity within ecosystems.¹⁴⁵

Problems arise when humans interrupt this naturally occurring phenomenon by killing off predators to increase the number of prey.¹⁴⁶ A lack of predators and subsequent increase in prey would lead to over-browsing.¹⁴⁷ Consequently, human interference with natural predation impedes plant and animal growth.¹⁴⁸ Predator control tends to focus strictly on one predator species at a time.¹⁴⁹ What predator control programs fail to do is recognize the harm inflicted on the broader ecosystem.¹⁵⁰ This is supported by “[s]tudies in national parks in *six different North American ecosystems* – Yellowstone, Yosemite, Wind Cave, Zion, and Olympic National

138. *See id.* (describing physical barriers as alternative to predation management programs).

139. *Id.* (explaining cost saving associated with alternative methods of livestock protection).

140. *See* Edvenson, *supra* note 105, at 32-34 (examining how predation control affects biodiversity in ecosystems).

141. *Id.* at 34 (defining “biodiversity”).

142. *See id.* (stating necessary balance of animals in ecosystems).

143. *Id.* at 35 (noting predators are necessary within certain ecosystems).

144. *Id.* (discussing predation as being positive for ecosystems).

145. *See* Edvenson, *supra* note 105, at 35 (noting predation as a necessary function within ecosystems).

146. *Id.* (explaining how human interruption of ecosystems negatively impacts environment).

147. *See id.* (linking decrease in predators to overabundance of prey).

148. *Id.* (noting consequence of predator control on ecosystem growth).

149. *See id.* (noting predation control does not take into account larger picture of all animals in ecosystem).

150. *See* Edvenson, *supra* note 105, at 35 (explaining failure of predation control programs).

Parks in the United States, and Jasper National Park in Canada – [which] have shown that ecosystems unravel when ‘keystone’ predators are removed.”¹⁵¹ Furthermore, species that are not targeted by predator control programs are affected indirectly.¹⁵² Interdependence of predators and prey is not taken into account with these programs, and that must change.¹⁵³

Predator control programs can also frustrate biodiversity as a result of the programs’ lack of selectivity.¹⁵⁴ Some programs utilize methods of control that might target specific predators, but fail to protect predators that do not prey on livestock.¹⁵⁵ For example, certain programs implement poisoning as a means of killing specific predators; because these tactics are not target-oriented, officials are unable to predict which predators ingest the poison.¹⁵⁶ Other programs utilizing aerial hunting often kill unintended predators due to the unsteady nature of shooting from a moving plane.¹⁵⁷

Aside from the programs that kill non-target predators, some programs refuse to acknowledge the rest of the ecosystem’s reliance on the predator-prey relationship, which is harmed by the program’s interference.¹⁵⁸ Dick Randall, a “predator control officer” explained, “Indiscriminate destruction may make frustrated ranchers feel better, but it only creates more problems. . . . The only time a lethal control method ever works is when it is directed at the animal actually doing the damage.”¹⁵⁹

Predator control programs may bring about both unexpected and counterproductive biological responses from predators, further highlighting the negative biodiversity impacts of predator con-

151. See Donahue, *supra* note 12, at 264 (identifying specific consequences of predator control programs on ecosystems).

152. See Edverson, *supra* note 105, at 47 (discussing second-hand affects on non-targeted animals).

153. See *id.* (noting predator control programs failure to take into account necessary ecosystem relationships).

154. *Id.* (explaining non-selectivity of predator control programs). Non-selective predator control programs are those that either kill predators relied upon by the rest of the ecosystem or kill non-problem predators. *Id.*

155. *Id.* (discussing type of non-selectivity affecting rest of ecosystem).

156. See *id.* (noting how non-problem animals can be affected by predation management).

157. See Edverson, *supra* note 105, at 47 (describing particular methods of control with high probability of killing non-problem animals).

158. *Id.* (noting another variation of non-selectivity and its consequences).

159. *Id.* at 47-48 (explaining how non-selective predator control programs negatively impact environment).

trol.¹⁶⁰ For example, in some situations predator control programs can cause predators to adapt to the circumstances and resist the control.¹⁶¹ Coyotes, for instance, were found to favor live sheep over their dead counterparts due to “decades of lacing dead sheep with poison” as a means of control.¹⁶² Further, some predator control methods can actually increase the population of predators.¹⁶³ Studies have revealed larger coyote litters in areas where coyotes are subject to trapping and shooting methods of control, as opposed to smaller litters in those areas they are not subject to the control.¹⁶⁴ In areas where coyote pups were just removed from the vicinity, as opposed to killed, however, adult coyote predation decreased substantially.¹⁶⁵

Another problem predator control inflicts upon biodiversity is the migration of predators to different ecosystems.¹⁶⁶ When a predator population is being controlled by lethal methods, it is not unlikely that the predators will simply move to another territory.¹⁶⁷ Not only does the introduction of a predator have consequences for the new ecosystem, but the removal of a predator upsets the biodiversity of the original ecosystem as well.¹⁶⁸

The absence of certain predators in a particular ecosystem can cause a rippling effect throughout the environment.¹⁶⁹ For example, the foraging behavior of prey might change due to the absence of predators.¹⁷⁰ Particularly, prey may begin to over-browse specific plants.¹⁷¹ In turn, this over-browsing can cause a decrease in that

160. *Id.* at 48-49 (discussing changes in predator species after being targeted by predator control programs).

161. *Id.* (addressing counterproductive effects predation management can cause).

162. *See* Edverson, *supra* note 105, at 48-49 (explaining adaptation of target species to predation management and its ensuing consequences).

163. *Id.* at 49 (explaining consequences of predation management sometimes become opposite of intended goal).

164. *Id.* (recording higher population of predator species in predation management areas).

165. *Id.* (observing predation decrease when non-lethal method of control employed).

166. *Id.* at 50 (explaining predation management not only affect ecosystem interrupted but others due to migration).

167. *See* Edverson, *supra* note 105, at 49-50 (suggesting predator management causing migration of predators).

168. *See id.* (discussing widespread impact of predator migration).

169. *See* Donahue, *supra* note 12, at 265 (explaining how ecosystems can unravel due to predation management).

170. *Id.* (analyzing how predation control negatively impacts prey).

171. *Id.* (outlining specific behavior changes in prey due to predator absence).

plant species, and in some instances, total extinction.¹⁷² The extinction or decrease of certain plants can then cause instability of streams and channels and their floodplain functions.¹⁷³ Researchers also determined that this negative cascade of effects could not be attributed to any other environmental factors.¹⁷⁴ Rather, the loss of predators was the most significant factor.¹⁷⁵

V. ECONOMIC AND FUNDING ISSUES WITH PREDATOR CONTROL PROGRAMS

Predator control programs, like other government programs, cost taxpayers money.¹⁷⁶ Funding for predator control programs comes from the federal government, state governments, counties, livestock associations, and individuals.¹⁷⁷ As of 2009, the federal government alone was spending ten million dollars annually on predator control and protecting livestock.¹⁷⁸ When predator related livestock losses are over-reported, funding for predator control programs is unwarrantedly increased.¹⁷⁹

In some instances, it has been shown that no predator control would cost less than active control.¹⁸⁰ A predator research expert stated, “[t]hey will limit their own numbers if you leave them alone.”¹⁸¹ This is particularly true in cases where more predators are killed than the livestock they purportedly take.¹⁸² Unfortunately, livestock loss reports are not highly regulated.¹⁸³ This cre-

172. *Id.* (discussing consequences of different prey foraging behaviors).

173. *Id.* (concluding explanation of domino effect predator absence has on ecosystems).

174. *See* Donahue, *supra* note 12, at 265 (concluding negative consequences on foraging behaviors due to absence of predators caused by predation management).

175. *Id.* (furthering conclusion that predator absence negatively impacts prey).

176. *See* Edverson, *supra* note 105, at 72 (explaining taxpayer cost of predator control programs).

177. *Id.* at 51 (explaining where funding for programs comes from).

178. *See* Julie S. Thrower, *Ranching With Wolves*, 29 J. LAND RESOURCES & ENVTL. L. 319, 336-37 (2009) (noting funds spent on predation management).

179. *See* Edverson, *supra* note 105, at 51 (explaining lack of reporting regulations causing unnecessary funding of predation management).

180. *Id.* at 50 (discussing high cost of predation management).

181. *Id.* (explaining biodiversity will limit predators naturally).

182. *See id.* at 50-51 (discussing consequence of human interruption of naturally occurring biodiversity).

183. For a further discussion of lack of predator control program regulations, see *supra* notes 109-124 and accompanying text.

ates skepticism about whether ranchers are accurately reporting losses due to predators.¹⁸⁴

While there has been plenty of pushback against this extreme spending, the livestock industry's support of the funding has impeded attempts at funding cutbacks.¹⁸⁵ For example, House Representatives in support of the livestock industry shut down a proposed amendment to the Department of Agriculture appropriations bill that would "cut all WS funds for lethal wildlife control."¹⁸⁶ Ranchers have a large interest in predator control because of the tight market surrounding the economics of livestock.¹⁸⁷ This argument, however, fails when the view shifts once again to the fact that much of the funding spent on predator control is not actually controlling targeted predators.¹⁸⁸

VI. THE FUTURE OF PREDATOR CONTROL

"USDA Wildlife Services is the only federal program that kills native predators at the request of ranchers and state wildlife management agencies."¹⁸⁹ This unique feature of predator control programs is a big reason why the programs need to be reexamined and more heavily regulated.¹⁹⁰ While predator control programs do not seem to be on a path to extinction, a considerable number of environmentalist groups are actively trying to, at a minimum, slow them down.¹⁹¹ For example, Defenders is rallying against the delisting of the gray wolf.¹⁹² Unfortunately, many of the efforts to make predator control programs more effective and less destructive are based on petitions, which do not necessarily instigate immediate action.¹⁹³

184. See Edverson, *supra* note 105, at 51 (discussing lack of transparency in predation management causing higher costs to implement programs).

185. See Thrower, *supra* note 177, at 337 (discussing deep support for predation management funding).

186. *Id.* (discussing bill that would cut funding was rejected due to massive support for funding).

187. *Id.* (noting "tight market" for livestock ranching).

188. *Id.* (explaining counterproductive nature of predator control programs).

189. See PREDATOR DEFENSE, *supra* note 4 (explaining uniqueness of predator control programs).

190. See *id.* (explaining process of killing predators has negative consequences that go unregulated and unnoticed).

191. See *Mission and Vision*, DEFENDERS OF WILDLIFE, <http://www.defenders.org/mission-and-vision> (last visited Nov. 4, 2014) (discussing plans for changing current predator control programs).

192. *Id.* (explaining particular support from environmental groups for Wyoming's gray wolves).

193. *Id.* (noting lack of formal change initiatives).

Defenders has taken the approach that the long-term view of making predator control programs more positive is the best way to make a change.¹⁹⁴ They are focusing their resources on changing what they can, but more importantly looking ahead to major overhauls of the control programs.¹⁹⁵ The numerous environmental groups, like Defenders, are bringing much needed attention to the issue of predation management and its negative impacts on the environment.¹⁹⁶ WS' current reexamination of the delisting of the gray wolf shows that steps are being taken to reform predation management and move it in a more positive direction.¹⁹⁷

The main goal of most predation management reform supporters is not necessarily eliminating such programs altogether.¹⁹⁸ Rather, reporters would like to see transparency within the programs.¹⁹⁹ As it stands now, both federal and state predator control programs are able to hide information about their services from the public.²⁰⁰ As Congressman DeFazio puts it: "Wildlife Services is one of the most opaque and least accountable agencies I know of. It is not capable of reforming itself. They need a mandate for reform . . . it's going to have to be imposed on them."²⁰¹ Currently, they are not required to explain themselves or their methods of control.²⁰² If this requirement were implemented, predation management officials would be required to explain their reasoning behind particular methods of control, and keep more accurate records of the killings they perform.²⁰³ This information will allow

194. *Id.* (explaining short-term actions are not available nor helpful to changing current programs of control).

195. *Id.* (discussing environmentalist group support with long-term efforts).

196. For a discussion of supporters of predation management reform, see *supra* notes 81-85 and accompanying text.

197. For a further discussion of WS' delisting and reexamination, see *supra* notes 81-85 and accompanying text.

198. See Conley, *supra* note 113 (discussing problems with current predation control).

199. See *id.* (noting lack of transparency as main problem with predator control programs).

200. See *id.* (explaining WS can keep important information about their services from public).

201. See *Breaking New Ground to Stop America's War on Wildlife*, PREDATOR DEFENSE, http://www.predatordefense.org/docs/newsletter_2013_YE.pdf (last visited Nov. 4, 2014) (quoting Congressman DeFazio).

202. For a further discussion on lack of transparency with regard to methods of control, see *supra* notes 103-132 and accompanying text.

203. See Conley, *supra* note 113 (discussing outcomes of requiring WS to be more transparent).

for better and more effective use of resources for livestock preservation.²⁰⁴

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204. For a discussion of reallocating resources to protect livestock, see *supra* notes 133-139 and accompanying text.

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