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Predator Control and Regulated Killing: A Biodiversity Analysis

*June C. Edvenson**

A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.¹

SEN. CRAIG: I think it is a historic fact that coyotes eat sheep and at times you need to try to stop that just a little bit to keep things in balance. So I'm pleased to see that you have some sensitivity to that issue.

GOV. BABBITT: Senator, that strikes me as a very balanced statement. (Laughter.)²

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1. ALDO LEOPOLD, "The Land Ethic," *A SAND COUNTY ALMANAC AND SKETCHES HERE AND THERE* 224-5 (Special Commemorative Oxford University Press ed., 1987).

2. *Hearing of the Energy and Natural Resources Committee, Subject: Nomination of Bruce Babbitt to be Secretary of the Interior*, Federal News Service, Jan. 21, 1993, available in LEXIS, Legislative Library, Allnews file.

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I.

INTRODUCTION & SUMMARY

Biodiversity has become an organizing concept for lawyers, environmentalists, and scientists alike, as we seek to balance human activity and the need to protect the complex diversity and regenerative capacity of the earth and its biotic life systems. Environmental law has sought to address these concerns. However, the degree of success with which the principles of biodiversity have been brought to bear on environmental decision-making varies widely. Biodiversity principles are strikingly absent from federal predator control programs such as Congress' 1931 legislation authorizing control of predators. Instead, predator control programs target species thought to threaten agriculture, forestry,

animal husbandry and hunting. For example, in the Southwest, predator control methods have sought to protect the interests of private ranchers grazing sheep and cattle on private and public lands. As a result, recognition of predators' ecological roles has been non-existent.

This article explores the ill fit between biodiversity goals and the federal program designed to regulate the killing of predator, non-game animals. This ill fit results in vast and incommensurable ecological harm. This article focuses on the coyote and the American Southwest, but discusses other animals affected by predator "takings" programs.

Programs that regulate the taking of predators are ecologically unsound and fail to protect grazing animals. The programs not only destabilize public land ecosystems, but also destroy critical ecological diversity. The programs also waste millions of public dollars for the questionable benefit of a few. Problems with the current federal program include the non-selectivity of killing; weak justifications for indiscriminate control techniques; the destructive impact on predators, like the coyote, as well as non-target species; unfavorable economics; and inadequate regulation and public oversight. These problems are interrelated and result in a perverse redistribution of natural resources.

The situation is compounded by (1) little Congressional and public control over program activities and expenditures, and (2) the judiciary's failure to redress resulting ecological injuries or to promote biodiversity principles in their substantive or procedural adjudication.

Law reform should reshape predator control to protect biodiversity. Solutions to the present dilemma are necessarily multifaceted, but stem from the historical legal framework which gives government ultimate control over wildlife resources. New law and public policy must incorporate knowledge of biodiversity into ecologically-sound decision-making. The law, and program appropriations, must also be made more responsive to Congressional and public interest. Hurdles in judicial and administrative procedure must also be re-evaluated. Program financing must be corralled and limited to public funds with federal oversight, and the political stranglehold of special interests inconsistent with the public interest must give way.

This article surveys reforms ranging from the complete overhaul of the present predator control program to more selective but still potentially effective revisions. Central to this discussion

is the revision or repeal of the present Animal Damage Control Act. The article also proposes the creation of new law to protect a broad array of wildlife, including predator species, such as the mountain lion, bear and coyote which federal law currently does not protect and frequently targets for eradication on ecologically-sensitive public lands. New law should focus predator control efforts narrowly, encourage predation prevention, target control activities on individual problem animals, prohibit certain control methods entirely, bolster enforcement against illegal control methods, promote a balanced ecosystem and foster private responsibility and the use of humane control techniques. Finally, new law must encourage judicial responsibility for wildlife on federal lands, including predators, to prevent the spiraling destruction of the public's federal land ecosystems.

II.

PREDATOR ANIMALS AND BIODIVERSITY

A. Biodiversity

"Biodiversity" can be defined as "the variety and variability among living organisms and the ecological complexes in which they occur."³ The term encompasses three different concepts: ecosystem diversity, genetic diversity, and species diversity.⁴ Ecosystem diversity focuses on the "range of different interacting systems present in a region, a nation, or the world," while genetic diversity refers to the range of "possible heritable characteristics (genes) found in a population or species."⁵ Species diversity is "the range of species present in a given area," that is, groups of "organisms capable of interbreeding and not able to breed freely with members of other species under normal conditions."⁶

This article focuses on species diversity of wildlife mammals, both predator and prey. However, species diversity in an area can strengthen genetic diversity, and both genetic and species diversity support a diversity of plants and microorganisms that constitutes a healthy ecosystem, a biodiverse whole. Therefore, while this article focuses on a particular species, actions affecting

3. Holly Doremus, *Patching The Ark: Improving Legal Protection Of Biological Diversity*, 18 *ECOLOGY L.Q.* 265 (1991) (citing OFFICE OF TECHNOLOGY ASSESSMENT, *TECHNOLOGIES TO MAINTAIN BIOLOGICAL DIVERSITY* 3 (1987)).

4. *Id.*

5. *Id.*

6. *Id.* at 466.

that species by definition impact biodiversity throughout the geographic area.

B. *The Nature of Predator Animals*

Vertebrate predators share characteristics of anatomy and behavior. These characteristics include sharp sensory acuity, stealth, aggressiveness, and special skill in the pursuit of prey.⁷ While some predators hunt a single type of prey, others, including wolves, coyotes and bears, are omnivorous, feeding not only on a wide variety of animal species, but also on fruits, nuts and berries. Some predators, like the bald and golden eagles, also feed on dead carrion, as scavengers.⁸ Finally, many predators have complex patterns for communicating territorial boundaries and social status.⁹ Predators thus hold a special place in the balance of nature. At the same time, predation has caused economic harm to humans since the advent of animal husbandry.

C. *Biodiversity At Work In The Predator Context*

Predation is an essential component of biodiversity. According to wildlife law expert Professor George Cameron Coggins, "[p]redation is a fundamental biological process: it permits the evolution and accumulation of species and serves to regulate the growth of plant and animal populations."¹⁰ Science author Irene Cohen states:

... as in all natural phenomena, things that appear to be opposite, like predators and prey, are actually just dual aspects of one thing. Each is a complementary manifestation of the other, forming a balanced exchange of energy that provides both with life. The distin-

7. IRENE COHEN, *THE PREDATORS* 110 (1978). Generally predation occurs when members of one species eat those of another species. CHARLES J. KREBS, *ECOLOGY: THE EXPERIMENTAL ANALYSIS OF DISTRIBUTION AND ABUNDANCE* 262 (1994). There are five types of predation. This article concerns predation by carnivores. Carnivore predation occurs when carnivores prey on other animals. *Id.* In contrast, herbivores prey on green plants, seeds and fruits. *Id.*

8. J.J. MCCOY, *WILD ENEMIES* 16 (1974).

9. Cohen, *supra* note 7. The American Indian found the coyote to be cunning, quick and intelligent, and Indian mythology is filled with stories of sly predators coexisting with man in a tenuous but balanced relationship. See generally J. FRANK DOBIE, *THE VOICE OF THE COYOTE* (1968); FRANCOIS LEYDET, *THE COYOTE: DEFIANT SONGDOG OF THE WEST* (1977); RICHARD ERDOES & ALFONSO ORTIZ, *AMERICAN INDIAN MYTHS AND LEGENDS* (1984).

10. George C. Coggins & Parthenia B. Evans, *Predator's Rights and American Wildlife Law*, 24 ARIZONA L. REV. 821, 822, n. 5 (1982).

guishing feature . . . is not an absolute difference in traits but a difference in emphasis and application of these traits.¹¹

This view of predation existing in a larger ecosystem of naturally balanced species has been undermined by human efforts to raise and graze the animals predators rely on as their prey. From colonial times to the present, predation has become the preying of predators on grazing animals, wresting it from its neutral place in the broader scheme of species diversity. Emphasis was on the degree to which a particular predator hurt "human pocket-books."¹² This view of predation must change. Modern solutions to economic harms caused by predators, for example harms to cattle and sheep grazing, must consider the interdependence of predators and prey outside of the grazing economy scenario.

For example, predator management schemes must account for the ways predators adapt to habitat decline, which has the greatest impact on predator populations in the U.S. Where coyotes feed primarily on larger prey, they live in packs; where coyotes feed on smaller prey, they live in more natural smaller groups. Wolves generally travel in close-knit packs, but tend to disperse where they feed mostly on garbage and smaller animals.¹³

The interrelationship of predators and prey is also sensitive to the broader relationship between species and plants in the ecosystem.¹⁴ For instance, coyotes feed primarily on rodents, but also eat lizards, snakes, berries and fruits. Coyotes also scavenge on the carcasses of sheep, horse, cattle and swine that they have not killed. In addition, historically, it has been thought that the domestication of species such as sheep, goats and cattle has caused physical and mental evolutionary changes in these species that reduced their ability to escape from natural predators.¹⁵

11. Cohen, *supra* note 7.

12. Coggins & Evans, *supra* note 10, at 824.

13. L. David Mech, *Meet The Wolf*, DEFENDERS, Nov.-Dec. 1991, at 31.

14. McCoy, *supra* note 8, at 20

15. *Id.* at 19. Michael Milstein, *Coyote Slaughter: A Federal Killing Machine Rolls On*, HIGH COUNTRY NEWS, Jan. 28, 1991, at 12. Naturalist Adolph Murie conducted a special study at Yellowstone National Park that resulted in his characterizing coyotes as "a desirable member of the assembly of animals." NATIONAL PARK SERVICE, U.S. DEPT OF INTERIOR, ECOLOGY OF THE COYOTE IN THE YELLOWSTONE, FAUNA SERIES No. 4 148 (1940). Biologist Victor Calhane has noted that coyotes and other predators pressed the evolution of deer, antelope and other hoofed mammals into swift, graceful and efficient animals. VICTOR H. CALHANE, MAMMALS OF NORTH AMERICA (1947).

III.

HISTORY OF PREDATOR CONTROL IN THE
UNITED STATESA. *Early History*

Early European settlers hunted predators for subsistence.¹⁶ The taking of predators for direct human needs was supplemented by the development of the first bounty system for predator control. In 1630, the Massachusetts Bay Company offered one penny for each wolf killed.¹⁷ Several colonies, and later, states and municipalities, instituted bounty programs for wolves, bears, eagles, mountain lions and coyotes. These programs showed little concern for determining whether species actually preyed on humans or livestock, nor to whether individual livestock killers were killed.¹⁸

Legal game and trade hunting also proliferated, decimating species on which predators relied, including beaver, duck, bison, heron, wild turkey, crane, moose, elk, deer and antelope.¹⁹ As stated by law commentator Keith Saxe, "[t]his pattern of unrestrained economic exploitation evinced a traditional belief that wildlife is an inexhaustible resource valued only for its economic utility to the individual who succeeds in reducing it to possession."²⁰

16. Keith Saxe, *Regulated Taking of Threatened Species Under The Endangered Species Act*, 39 HASTINGS L.J. 399, 401 (1988).

17. Coggins & Evans, *supra* note 10, at 827.

18. Widespread fraud was also common, as bounty hunters sought and frequently obtained payment for animals only certified as killed. *Id.* at 827-29. The rise and ultimate demise of bounty programs can be traced to their administrative evolution, and the potential most bounty programs exhibited for fraudulent bounty payments. Initially, bounty hunters could receive the bounty by certifying in writing that the predator had been killed. False certifications resulted in the implementation of statutory requirements that the ears or head of the animal be produced. The fraudulent recycling of predators' body parts to obtain multiple bounty payments led to new requirements that the animals be destroyed or fresh-killed in order to collect the payment. Coggins comments are interesting:

Bounty systems were curious anomalies. In form they were economic incentives: the taxpayers at large agreed to reward those who rid the community of a menace. In practice they subsidized those on the fringes of civilization and thus had an additional virtue in keeping the rougher human elements out in the forests where they belonged. Bounties were a simple answer to what people long thought was simple, single problem, but the problem was not so simple and the solution did not work.

Id.

19. *Id.* at 827.

20. Saxe, *supra* note 16, at 402.

Indeed, the frontier culture's decimation of species was consistent with a system of common law that commodified wild animals. English law established the principle that wild animals on private property belonged to the landowner generally, but that such animals, when not reduced to possession, were, like the air, the property of no one.²¹ Restrictions on hunting that followed the Saxon invasion of England in 450 A.D. were designed to protect a landowner's rights to the animals as part and parcel of his property right in the land.²² This "right" was later modified by the "Rule of Capture," which stated that possession required both an intent to possess the animal and some degree of physical control over the animal.²³ Pursuit was insufficient to obtain a possessory right over the animal as against the person who killed the animal and kept it for himself.²⁴ This was true even if the animal was killed by a trap, although the development of English law also focused on who would be permitted to manage and control wildlife resources.²⁵ Thus, wildlife regulation historically has been concerned not only with the "contours of the possessory right," but also the principles that help us decide "*which* individuals have ownership rights over *what* things."²⁶

21. MICHAEL J. BEAN, *THE EVOLUTION OF NATIONAL WILDLIFE LAW* 8 (1977).

22. *Id.* at 9-10.

23. RALPH E. BOYER ET AL., *THE LAW OF PROPERTY: AN INTRODUCTORY SURVEY* 3 (1991).

24. American law followed the same principle. *Pierson v. Post*, 3 Cai. R. 175 (N.Y. Sup. Ct. 1805).

25. *Young v. Hichens*, 6 Q.B. 606 (Eng. 1844). English royalty acquired land through the development of royal Forests, by which the King obtained control of an increasingly large wildlife resource. One of England's earliest goals in establishing regulations for the killing of wildlife was "to secure unequal distribution of the right to utilize wildlife." THOMAS A. LUND, *AMERICAN WILDLIFE LAW* 8 (1980). In an irony all too pertinent to today's struggle for management and control of America's wildlife resources, "class discriminations were openly embraced" that permitted only prominent citizens to "take certain game," and "possess certain weapons," laws that were not abolished until 1831, long after American law had begun its own evolution. *Id.* at 13.

Public resistance to these laws, called "qualification statutes," led English landowners to appoint so-called "gamekeepers" — farmers, tenants and other occupiers of the owner's lands — whose practices led English lawmakers in 1716 to proclaim their existence "a very great abuse of the powers intended," and "very much to the destruction of the game." *Id.*

English legislators also recognized that protecting the "gamekeepers" and the landowners' rights dispossessed the public of both public concern for and a legal interest in wildlife needed to support the protection of wild species from over-killing and mis-management. *Id.*

26. Richard A. Epstein, *Possession As The Root of Title*, 13 GA. L. REV 1221 (1979).

B. *The States' Wildlife Management Role*

States' rights to manage wildlife derived from English property law and feudalism. Legal title to land in England from the thirteenth through the fifteenth centuries was held by the king, who, in turn, gave possession to lords and barons. These lords and barons gave parcels in tenure to their subjects. This system of tenure existed in many of the thirteen American colonies.²⁷ In the seminal case, *Martin v. Waddell*,²⁸ concerning the rights of a landowner to oysters in a river, United States Supreme Court Chief Justice Taney wrote,

[W]hen the people of New Jersey took possession of the reins of government, and took into their own hands the powers of sovereignty, the prerogatives and regalities which before belonged either to the crown or the parliament, became immediately and rightfully vested in the state.²⁹

Martin laid "the groundwork"³⁰ for state ownership of wildlife subject to "rights since surrendered by the Constitution to the general government."³¹

States began to establish game management programs in the late nineteenth century, in part, to address widespread reductions in wildlife caused by unrestricted hunting and the displacement of species due to habitat destruction and development.³² These programs created hunting licenses, license requirements, kill limits, hunting seasons and administrative enforcement mechanisms, but were directed primarily at preserving certain game species populations for sport hunters.³³

However, the game management bias worked against the protection of game species. Unregulated killing of predators continued unabated, creating an imbalance in the ratio of predator and prey, and reducing overall species diversity and genetic strength. The result of game-focused wildlife management was most clearly seen in the case of the protected mule deer living on the Kaibab Plateau in Arizona. After the 4,000 existing mule deer became protected in 1908, and after hunters killed more than

27. CORNELIUS J. MOYNIHAN, INTRODUCTION TO THE LAW OF REAL PROPERTY 25 (1962).

28. 41 U.S. (16 Pet.) 367 (1842)

29. *Id.* at 416.

30. Bean, *supra* note 21, at 14.

31. *Martin*, 41 U.S. at 410.

32. See generally *Young v. Hichens*, 6 Q.B. 606 (Eng. 1844).

33. Saxe, *supra* note 16, at 402-04.

6,000 predators over several years, the mule deer population exploded to 100,000, exhausted its natural food supply, and, in 1924, 60,000 mule deer died of starvation. By 1940, the herd had declined to 10,000.³⁴

Today, game management remains at the core of most state programs regulating wildlife. Most states do not protect predator species, although many state statutes evince general wildlife conservation goals. Predator control by bounty program continued unabated into the 20th century both outside of and in tandem with state game management programs. In 1907 alone, over 1,800 wolves and 18,000 coyote were reported killed pursuant to state bounty programs.³⁵ Today, bounty-type laws and predator control laws still abound in state statutes,³⁶ and "coyote shoots" continue in several states.³⁷

C. *The Slow Road to Federal Involvement*

Federal regulation of wildlife management developed recently.³⁸ Until 1909, the federal government only advised the states on their control efforts through the Biological Survey.³⁹ In 1909, Congress began appropriating funds for projects designed to kill "noxious animals," and in 1915 Congress authorized the Biological Survey's new Branch of Predator and Rodent Control to destroy injurious animals, specifically those injuring private property.⁴⁰ The U.S. Supreme Court qualified state ownership of wildlife resources in 1920,⁴¹ but the federal government continued to defer to the states in wildlife management. Congress did not regulate in the area significantly beyond authorizing predator killing and the protection of the bald and golden eagle until the 1960's.⁴² Federal legislation prior to the 1960s encouraged the

34. *Id.* at 403-404.

35. Coggins & Evans, *supra* note 10, at 834.

36. See Appendix A, *Table, Selected State Statutes Concerning Predators* (1994).

37. In 1994, announced coyote killing events included the "Coyote Derby" in Ringling, Montana, a "coyote shoot" in Gillette, Wyoming, a "coyote shoot" in Worland, Wyoming, and a "First Annual Coyote Hunt" in Mesquite, Nevada. Don Duer et al., *Coyote Contests Draw Fire*, WILDLIFE DAMAGE REVIEW, Spring, 1994, at 5.

38. GEORGE C. COGGINS ET AL., *FEDERAL PUBLIC LAND AND RESOURCE LAW* (1993).

39. Coggins & Evans, *supra* note 10, at 529.

40. Law of Mar. 4, 1909, ch. 301, 35 Stat. 1051 (1909); see also COGGINS ET AL., *supra* note 38 at 835; Coggins & Evans, *supra* note 10.

41. *Missouri v. Holland*, 252 U.S. 416 (1920). The Court held that Congress had the power to enact the 1918 Migratory Bird Treaty Act despite the argument of the state of Missouri that the Act interfered with its sole power.

42. COGGINS ET AL., *supra* note 38, at 783.

conservation of wildlife, and required the "consideration" of the wildlife resource when planning federal water projects.⁴³

D. *Methods Used to Kill Predators*

Historically, unlimited and unregulated killing of predator species centered on traditional hunting and trapping. Methods now used to capture and kill unwanted predators are limited only by man's inventiveness, and not by any incapacity to inflict unnecessary pain and suffering or broad ecological harm.

The steel-jaw leghold trap, invented over 300 years ago, still holds its victims in a snap-style grip, sometimes for days before death occurs.⁴⁴ The snare trap's wire loop catches an animal's body, usually at the neck or torso, tightening as the animal struggles, forcing the animal to be quiet as it dies slowly. The conigear trap acts much as the steel trap, causing slow death by snapping closed on various body parts.⁴⁵

In addition to trapping, current predation control practices include poisoning by bait and spray, aerial chasing combined with land-based killing, aerial chasing with aerial killing, and denning — the practice of smoking, burning or vacuuming young animals out of dens, and then burning, shooting or clubbing them to death.⁴⁶

By the mid-twentieth century, poisoning had become an especially popular predator control technique. Predator poisons take various forms. In 1944, federal predator control efforts began using sodium monofluoracetate (SMF), commonly known as Compound 1080, in baits and in spraying.⁴⁷ Compound 1080 is odorless, tasteless, water soluble and decomposes very slowly in

43. *Id.*

44. In 1977, 44,982 animals were killed with steel traps, but only 25,026 were the coyotes the traps were set to capture. Some of the other animals killed by the predator control program, under the direction of the U.S. Fish and Wildlife Service, in 1977 were: 2,698 opossums, 1,367 porcupines, 3,345 raccoons, 6,348 skunks, 11 armadillo, 682 beaver, 20 deer, 273 dogs, 73 cats, 49 goats, 4 groundhogs, 100 kit foxes, 52 muskrat, 154 nutria, 98 rabbits and 14 swift foxes. Coggins & Evans, *supra* note 10, at 834, n.115. See also Dick Randall, *Predator Control: Decades of Useless Slaughter*, HSUS NEWS, Spring, 1991 at 17, 20 (photo "A coyote in a steel-jaw leghold trap awaits its fate.").

45. Informational Brochure, *The Fur-Bearer Defenders* (March 1993) at 1.

46. See Milstein, *supra* note 15, at 12 (photo "A wire with three hooks attached is used to extricate coyote pups from their den in a process called 'denning.'").

47. Coggins & Evans, *supra* note 10, at 839-40.

soil.⁴⁸ From 1944 to 1972, as many as 15,000 SMF baits were set in Western mountains and rangelands each year;⁴⁹ despite temporary bans, use of what has been called "the most inhumane poison conceived by man," which causes slow and agonizing death, continues.⁵⁰

For years, the Environmental Protection Agency has permitted the Animal Damage Control Program ("ADC" program)⁵¹ to poison wildlife on public lands with sodium cyanide devices called "M-44's, which are spring-loaded, tube-style baits, driven into the ground with a small warning to ward off humans. These baits, which cause almost instant death, have killed thousands of domestic and non-target wild animals,⁵² and have produced tragic human exposures as well.⁵³ Only since 1993 has use of the dangerous M-44, also called the "Coyote-Getter,"⁵⁴ been re-evaluated at the federal level. That year, the Bureau of Land Management announced it would no longer allow the devices on federal lands to kill coyotes that attack livestock.⁵⁵

Methods used to kill predators in the United States have brought public outcry and controversy. A 1963 evaluation of the ADC program, then under the Interior Department's U.S. Fish & Wildlife Service, indicated that killing was indiscriminate and excessive.⁵⁶ After a 1971 congressional report came to the same

48. Joe Bernhard, *Poison or Perish: ADC vs. The California Condor*, 138 CONG. REC. S702 (daily ed. Jan. 30, 1992). Mr. Bernhard also notes that Compound 1080 is only destroyed quickly at temperatures above 200 degrees centigrade. *Id.*

49. *Id.*

50. *Id.* at S704 The Compound 1080 poison, SMF, was developed by Belgian experimenters for use in World War II. It attacks the central nervous system. Death takes from several hours to days to occur. There is no known antidote. *Id.* at S702.

51. The Animal Damage Control program, conducted generally under the Animal Damage Control Act of 1931, is discussed below. *See infra* notes 65-68 and accompanying text. The U.S. Environmental Protection Agency permits use of poisons on federal lands pursuant to Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA"), 7 U.S.C. § 135 et seq. (1993), and the Federal Environmental Pesticide Control Act of 1972 ("FEPCA"), 7 U.S.C. § 136 et seq. (1993).

52. Randall, *supra* note 44, at 18.

53. *See* *Worley v. United States*, 199 F. Supp. 719 (1952); *Fritz v. United States*, 216 F. Supp. 156 (1963). In both cases, the poison spring-loaded bait was set in violation of state statutes prohibiting the use of poison ejection devices.

54. Randall, *supra* note 44, at 18.

55. *Coyotes: BLM Bans Use of Poison for Predator Control*, GREENWIRE, Jan. 13, 1993, available in LEXIS, News Library, Current News File.

56. A. Starker Leopold, *Predator and Rodent Control in the United States*, report submitted to Stewart Udall, Secretary of the Interior (Mar. 9, 1964), reprinted in *Predatory Mammals and Endangered Species: Hearings on H.R. 689 and Related Bills Before the Subcomm. on Fisheries and Wildlife Conservation of the House*

conclusion,⁵⁷ President Richard Nixon banned all poisons on public lands.⁵⁸ A third committee concluded in 1978 that the program was unjustified on economic grounds because program expenditures were not linked to benefits to the grazed animal economy.⁵⁹ Based on a 1978 internal Interior Department report on the ADC program, an environmental impact statement (EIS) on ADC program activities appeared in 1979.⁶⁰ The 1979 draft and final EIS have been the subject of substantial analytical criticism.⁶¹

In 1982, President Reagan reintroduced poisons on public lands by executive order,⁶² and Interior Secretary James Watt reinstated denning.⁶³

In 1992, the ADC reported the following distribution of killings, by method used: 1.8 million animals poisoned (not including poisonings by private citizens); aerial gunning of 32,767 coyotes, 100 bobcats, 388 red foxes, 557 feral hogs; 246,181 animal deaths by steel jaw trap; and 19,436 animal deaths by snare trap.⁶⁴ While hardware and chemical technology has enhanced predator control, federal law has never changed to recognize the environmental consequences, and never tied appropriations to justifiable agribusiness predation losses.

Comm. on Merchant Marine and Fisheries, 92d Cong., 2d Sess. 495-506 (1972) [hereinafter *Leopold Report*].

57. Dr. Stanley Cain et al., *Predator Control - 1971; Report to the Council on Environmental Quality and the Department of the Interior By the Advisory Comm. On Predator Control* (1971) [hereinafter *Cain Committee Report*; see also Dr. Stanley Cain, *Predator Control and Pest Control*, in *WILDLIFE AND AMERICA* 379 (H. Brokaw ed. 1978).

58. Exec. Order No. 11,643, 33 C.F.R. 664 (1972).

59. FISH AND WILDLIFE SERVICE, *PREDATOR DAMAGE IN THE WEST: A STUDY OF COYOTE MANAGEMENT ALTERNATIVES* (1978). The report was the result of nearly year long study by the Policy Study Advisory Committee established by the Secretary of the Interior. For a detailed discussion of the report, see Coggins & Evans, *supra* note 10, at 856-60.

60. Coggins & Evans, *supra* note 10, at 859.

61. *See id.* at 859-61.

62. Exec. Order No. 12,342, 47 Fed. Reg. 4223 (1982).

63. Coggins & Evans, *supra* note 10, at 859-61.

64. *Waste, Fraud and Abuse in the U.S. Animal Damage Control Program, A Special Report by Wildlife Damage Review*, *WILDLIFE DAMAGE REVIEW* (1993) at 9-10 [hereinafter *Waste, Fraud and Abuse*].

IV.

REGULATED KILLING UNDER THE ANIMAL DAMAGE
CONTROL ACT OF 1931

Congress passed the Animal Damage Control Act⁶⁵ in 1931 to clarify statutory authority for existing federal predator control efforts.⁶⁶ The Act essentially consists of two paragraphs authorizing investigations and experiments to "determine, demonstrate and promulgate" the "best methods" for the "eradication, suppression, or bringing under control" of various species of wild animals on State, federal, public and private lands. Specified animals include mountain lions, wolves, coyotes, bobcats and prairie dogs, among others. The Act also refers to "other animals injurious to" particular activities, including agriculture, horticulture, forestry and animal husbandry.⁶⁷ Land uses and land management objectives triggering control activities include protecting game animals, fur animals and birds. Protection of "stock and other domestic animals" appears only in relation to suppressing the spread of disease from "predatory or other wild animals" to stock animals. However, the statute's key and most controversial clause authorizes "campaigns for the destruction or control" of "these animals."⁶⁸

65. 7 U.S.C. §§ 426-426b (1988). Animal Damage Control Act, Pub. L. No. 71-776, 46 Stat. 1468 (1931).

66. Coggins & Evans, *supra* note 10, at 835.

67. 7 U.S.C. §§ 426-426(b) (1988).

68. *Id.* The text of the law authorizing predator control follows, as it now appears, excluding § 426(c), a separate provision concerning control of "nuisance mammals and birds" and "those mammal and bird species that are reservoirs of zoonotic diseases":

§ 426. PREDATORY AND OTHER WILD ANIMALS; ERADICATION AND CONTROL; INVESTIGATIONS, EXPERIMENTS, AND TESTS BY SECRETARY OF AGRICULTURE; COOPERATION WITH OTHER AGENCIES. The Secretary of Agriculture is authorized and directed to conduct such investigations, experiments, and tests as he may deem necessary in order to determine, demonstrate, and promulgate the best methods of eradication, suppression, or bringing under control on national forests and other areas of the public domain as well as on State, Territory, or privately owned lands of mountain lions, wolves, coyotes, bobcats, prairie dogs, gophers, ground squirrels, jack rabbits, brown tree snakes, and other animals injurious to agriculture, horticulture, forestry, animal husbandry, wild game animals, fur-bearing animals, and birds, and for the protection of stock and other domestic animals through the suppression of rabies and tularemia in predatory or other wild animals; and to conduct campaigns for the destruction or control of such animals: *Provided*, That in carrying out the provisions of this section the Secretary of Agriculture may cooperate with States, individuals, and public and private agencies, organizations, and institutions.

§ 426b. AUTHORIZATION OF EXPENDITURES FOR ERADICATION AND CONTROL OF PREDATORY AND OTHER WILD ANIMALS. The Secretary of Agriculture is author-

According to Professor Coggins, "[t]he ADC Act of 1931 apparently was a hasty afterthought that has endured only because of its obscurity. . . . The Act spells out no central aim or purpose; its implicit premise is that all "injurious" species should be destroyed."⁶⁹ As a result, each year millions of wild animals, including coyotes, raccoons and mountain lions, are killed under the ADC program, primarily to limit damage to livestock, in particular sheep, in the western states.⁷⁰ As noted by the United States Humane Society,

Congress decreed which species of wildlife were unwanted and should be controlled - or exterminated. Although a more enlightened public and most members of Congress now realize that such myopic legislation is counterproductive, Congress has failed to change the 1931 law (largely because domination of relevant congressional committees by Western interests made change impossible.)⁷¹

Trapping and killing under the ADC program has been indiscriminate and vast, and has been steadily increasing. In 1957, ADC reported killing 55,402 coyotes, 22,790 wolves, 20,000 bobcats, 1,039 bears and 267 mountain lions, among many other animals.⁷² In 1962, ADC reported killing 200,000 predators, ninety percent west of the Mississippi River, and forty-five percent coyotes.⁷³ That same year, ADC distributed 1.34 million pounds of poisons and 356,000 gas cartridges to kill rodents in the west, whose proliferation could be directly attributed to the "control" of predator species that otherwise feed on rodents, thereby reducing rodent overpopulation.⁷⁴

The administration of the ADC Act has further contributed to program growth out of sync with program need. Responsibility for administering the Act, originally given to the Department of Agriculture, was transferred to the Department of Interior in

ized to make such expenditures for equipment, supplies, and materials, including the employment of persons and means in the District of Columbia and elsewhere, and to employ such means as may be necessary to execute the functions imposed upon him by section 426 of this title. 7 U.S.C. §§ 426-426b.

The brown tree snake was added by Public Law 102-190, § 348, due to inadvertent introduction of the snakes from Guam to Hawaii by aircraft and vessels of the U.S. Department of Defense. 1991 U.S.C.C.A.N. 1348.

69. Coggins & Evans, *supra* note 10, at 836.

70. Randall, *supra* note 44, at 17.

71. *Id.* at 17-18.

72. *Id.* at 18.

73. *Id.*

74. *Id.*

1939. This transfer dramatically increased predator killing funds and activities, as Interior also administered the 1934 Taylor Grazing Act.⁷⁵ The Grazing Act established grazing districts on public lands, regulated rancher-beneficiaries' uses, and ultimately engaged Grazing Act ranchers in the ADC Act's administration.⁷⁶ The Department of Interior assumed the ADC function in a new "Branch of Predator and Rodent Control," and by 1965 administered the program under the Division of Wildlife Services of the U.S. Fish and Wildlife Service.⁷⁷

In 1986, Senator Larry Craig (R-Idaho) "quietly slipped language into legislation" that transferred the federal ADC program from the Interior Department back to the Agriculture Department.⁷⁸ This transfer shifted control of the program away from the single agency whose mission includes ecological research and assessment to an agency whose primary mission is to serve the interests of agribusiness.⁷⁹ The budget for ADC activities rose steadily from \$19 million in 1986 to \$29.4 million in 1990.⁸⁰ "As a result, there has been a huge jump in official executions of animals such as mountain lions and coyotes - a 10-fold increase each year in Arizona alone."⁸¹

Of the nearly \$30 million dollars spent on wildlife control nationwide in 1990 alone, 87 percent went to Western states, and 90

75. 43 U.S.C. § 315 (1988).

76. Coggins & Evans, *supra* note 10, at 839.

77. Ben D. Deeble & Felice Stadler, *Animal Damage Control: How Your Tax Dollars Subsidize Agribusiness By Killing And Harassing America's Wildlife*, Environmental Clinic Program, The University of Montana, Missoula (December, 1993) at 6 [hereinafter *Predator Project Report*].

78. *Environmental Action Announced the Congressional Dirty Dozen of 1990*, U.S. Newswire, Sept. 6, 1990, available in LEXIS, News Library, Wire File [hereinafter *Dirty Dozen*]. See also Bernhard, *supra* note 48, at S703 (stating "ADC never was happy in the Interior Department. ADC's purpose is to subsidize agriculture whether it needs it or not. So rancher-owned legislators sneaked a proviso into a bill, passed during the confusion of a Congress hell-bent on getting home for Christmas in 1989, transferring the agency back to Agriculture and into the friendly hands of its Animal and Plant Health Inspection Service . . .").

79. The program known as the Animal Damage Control program has since been re-titled "Wildlife Services." For purposes of consistency and conceptual focus, this article will continue to refer to it by its popular title — the Animal Damage Control (ADC) program.

80. Milstein, *supra* note 15, at 12.

81. *Dirty Dozen*, *supra* note 78. In 1990, Environmental Action stated that Senator Larry Craig had an environmental assessment rating of "0 percent," in part because of his role as "a relentless supporter of user interests" that exploit taxpayers and the public, and in part for his role in weakening the Endangered Species Act. *Id.*

percent of Western funds were spent on killing predators.⁸² As New Mexico's ADC Director stated in 1991, "[o]ur mission was to kill every last Grizzly bear and wolf in the state, and we did it."⁸³

V.

WEAKNESSES IN THE ANIMAL DAMAGE CONTROL PROGRAM

The ADC's main target is the coyote, and its related objective is to reduce predation on grazed sheep.⁸⁴ Yet the coyote killing program has failed in significant ways.

A. *Non-Selectivity*

Most predator control methods are non-selective. Non-selectivity results in the killing of wildlife that pose no risk to human livestock while destabilizing critical species diversity. Non-selectivity appears in two ways: (1) the mass killing of varied species upon which the remaining ecosystem still relies for predator-prey balance, species diversity and overall biodiversity, and (2) the selective killing of non-problem predator animals.

As to the first type of non-selectivity, every year poisons and traps intended for coyotes kill thousands of animals from hundreds of species.⁸⁵ This includes species such as the black bear and mountain lion, species in decline in part due to indiscriminate government-sponsored killing.⁸⁶

The second type of non-selectivity occurs when predator control methods kill animals that do not harm human activities. As an example, in the winter of 1990-91, Congress authorized funds to increase the use of low-flying fixed-wing airplanes and helicopters on Western rangelands and national forests to shoot coyotes.⁸⁷ While winter air attacks can "raise the body count" faster than at other times of the year, such assaults have "nearly no relation to stopping livestock from being lost to predators" when the seasons change.⁸⁸ As noted by longtime predator con-

82. Randall, *supra* note 44, at 18.

83. Waste, *Fraud And Abuse*, *supra* note 64, at 4.

84. *Id.* at 20.

85. See Coggins & Evans, *supra* note 10; Bernhard, *supra* note 48. See also Randall, *supra* note 44, at 19 (photo "Dozens of fox and bobcat pelts lie stacked and tagged.").

86. Milstein, *supra* note 15, at 12.

87. Randall, *supra* note 44, at 20.

88. *Id.*

trol officer, Dick Randall, “[i]ndiscriminate 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.”⁸⁹

B. *The “Historic Predation” Argument*

Apologists for massive killing claim that “preventive control” is being conducted in areas of “historic predation.”⁹⁰ The historic predation argument attempts to excuse non-selective predator control and highlights the degree to which predator control fails to address biodiversity concerns.

Under the historic predation standard, once a rancher reports a loss of sheep to coyotes, the territory is considered a site of “historic predation” regardless of whether or not the killing could be verified.⁹¹ A General Accounting Office (GAO) report revealed that despite the fact that in 1988 no sheep were reported killed by coyotes on sixty percent of the U.S. Forest Service’s grazing allotments in Utah, aerial flying-and-shooting assaults were conducted to kill coyotes over the non-predation territory from January through March of 1989.⁹² According to Dick Randall, “[a]reas of historic predation are an ADC loophole through which wildlife can be destroyed on public land, using taxpayers’ dollars, to benefit a small group of ranchers.”⁹³

C. *Biological Responses of the Target Species*

A complete lack of attention to the biological responses of coyotes to historical predator control efforts has produced glaring examples of the program’s ineffectiveness and a direct condemnation of biodiversity principles in the context of wildlife. Some biologists studying coyote behavior suggest that current

89. *Id.* Dick Randall recalls a notable instance: “[l]ast spring [Spring of 1990] a friend of mine was filming a coyote returning to her den with a jackrabbit dangling from her jaws (her pups would have been pleased) when an ADC aircraft swooped down and killed her. That incident took place on a cattle range, miles from the nearest sheep ranch.” *Id.*

90. *Id.*

91. GENERAL ACCOUNTING OFFICE, EFFECTS OF ANIMAL DAMAGE CONTROL PROGRAM ON PREDATORS; REPORT TO ALAN CRANSTON 17 (Aug. 1990), Comments from the Department of Agriculture [hereinafter GAO: EFFECTS OF ADC]. The General Accounting Office is the investigative agency of Congress, auditing and investigating the management and operations of the federal government’s executive branch agencies and departments. See also Randall, *supra* note 44, at 20.

92. GAO: EFFECTS OF ADC, *supra* note 91, at 17.

93. Randall, *supra* note 44, at 20.

predator control techniques backfire, increasing coyote population resistance to control. Biologists claim that indiscriminate predator control has made the coyote more wary. For instance, following decades of lacing dead sheep with poison, coyotes that do eat sheep now must favor live sheep. Many coyotes also reportedly avoid open ground during fly-overs, and have learned to avoid traps.⁹⁴

Various biological changes may result from misdirected predator control. Trapping and shooting control methods tend to increase coyote pup birthrates. Two studies of coyotes conducted on "unexploited" coyote populations indicate the impact of predator control: coyote populations in unexploited areas produced litters averaging 3 pups, of which 1.6 survived; in contrast, in areas subject to predator control, coyotes commonly produced litters of 8 to 10 pups. Additionally, coyote pups in unexploited areas begin breeding when they are 2 to 4 years old, and stop reproducing after about 3 litters, while coyote pups in areas subject to predator control begin breeding at less than one year old and continue for several years.⁹⁵

In another case, where coyote pups were removed from dens, adult coyote predation on local sheep dropped by 90 percent due to the lack of need to feed den-bound pups.⁹⁶ Additionally, current non-selective coyote control methods displace older coyotes who kill few if any livestock because they do not have pups to feed. This leaves territories open to younger coyotes who may need to feed on livestock to support den-bound pups in the spring.⁹⁷

Eastern Montana College biology professor Jay F. Kirkpatrick put it bluntly, "[i]t's a proven fact: the faster you reduce coyote populations, the better and faster they reproduce. You want to control the offending animal, not wipe out every one. But these people [presumably, ranchers] would use nuclear weapons to kill coyotes if there were allowed to."⁹⁸ On the other hand, Michael

94. Milstein, *supra* note 15, at 13.

95. *Id.* The research was conducted by wildlife biologist Crabtree in two separate studies, one on the protected Hanford Nuclear Reservation in the state of Washington, and another in Yellowstone National Park. According to Michael Milstein, "Crabtree is one of the few people to study unexploited coyote populations." *Id.* at 13.

96. *Id.* The research was conducted by the U.S. Fish and Wildlife Service in southern Wyoming in 1980 and 1981.

97. *Id.* Remarks by an ADC trapper.

98. *Id.*

Fall, an ADC biologist, claims that there is not enough information comparing unexploited coyote communities to predator control areas to determine whether predation and other habits differ.⁹⁹

In addition to increasing birthrates, current predator control practices simply force coyotes into new territories. GAO found that in Texas and New Mexico, the ADC conducts "campaigns of destruction" to clear entire areas of any coyotes, only to have new coyotes move in by the following spring.¹⁰⁰

D. *Insupportable Economics*

If rampant ecological imbalance and program ineffectiveness were not enough to prompt reconsideration of existing control programs, bad economics would counsel another solution. For example, ADC's own estimates have shown that the current control program in Colorado has been more costly than no activity at all.¹⁰¹ As predator research expert Maurice Hornocker stated, "[i]t's all been a waste of money and animals. In many cases, the best control is no control at all. They will limit their own numbers if you leave them alone."¹⁰²

Additionally, Federal government accounts show that ADC programs already kill more coyotes than the number of sheep and other livestock killed by all predators.

In Montana, for instance, the 1989 ADC budget was \$1.25 million, about enough to buy every household in Bozeman a new color tel-

99. *Id.* (Remarks of Michael Fall, ADC biologist and Chief of ADC's Wildlife Research Center in Denver, Colorado). As noted by Fall, if the actual resulting rate of predation on livestock does not differ between unexploited areas and predator-control areas, "the rationale for the whole ADC program would collapse." *Id.*

100. GAO: EFFECTS OF ADC, *supra* note 91, at 22; Milstein, *supra* note 15, at 12. In addition, although ADC claimed to favor non-lethal methods of predator control, little evidence existed that ADC personnel were employing non-lethal methods. GAO: EFFECTS OF ADC, *supra* note 91, at 16-17, 30; Milstein, *supra* note 15, at 12. Going further, biologist John Grandy has stated, "If you set out to make coyotes resistant to control, this is how you'd do it." Milstein, *supra* note 15, at 13. Mr. Grandy was vice-president of the Humane Society of the United States and a member of the National ADC Advisory Committee in 1991.

101. Randall O'Toole, *Audit of the USDA Animal Damage Control Program 31* (1994) [hereinafter *Audit*]. This was a research paper prepared for WILDLIFE DAMAGE REVIEW in Tucson, Arizona and the Predator Project in Bozeman Montana. The paper cites Appendix N of an internal draft of an ADC final Environmental Impact statement. Mr. O'Toole is with Cascade Holistic Economic Consultants in Oak Grove, Oregon.

102: Milstein, *supra* note 15, at 12. Mr. Hornocker served on a 1971 investigative committee regarding predator control programs. *Id.*

evision. That is more than five times the \$235,567 value of 3,066 lambs, calves and other lost livestock. . . reported to ADC agents. Records show the Montana program spent an average of \$215.20 each to kill 5,830 animals - coyotes, foxes, bears and others - shot, trapped or poisoned by its agents.¹⁰³

Agriculture officials claim that ranchers underreport livestock losses.¹⁰⁴ Yet, in a study of livestock loss reporting, government officials found over-reporting of predator losses to perhaps "more than double their true amount."¹⁰⁵

The bad economics of predator control results partly from the way in which Congress funds the ADC program. In 1963,¹⁰⁶ 40 percent of program funding came from the federal government, while states, counties, livestock associations, and individuals contributed the remaining 60 percent.¹⁰⁷ In Fiscal Year 1991, expenditures to protect livestock in the ADC's Western region came from the federal budget, state funds, county funds, individuals, contract "cooperators' " funds, and fur sales of ADC-killed animals.¹⁰⁸ According to predator control authorities, "[t]o perpetuate the program, [program] agents propagandized against predators to solicit funds," resulting in a "system, which amounted to a protective subsidy for livestock interests . . ."¹⁰⁹ The Cain Committee Report, released in 1972, recommended that program funding be limited to federal and state contributions - a twenty-year old recommendation that has not been adopted.¹¹⁰ Thus,

ADC spends its federal \$30,000,000, plus another state \$15,000,000 annually while working with and generally controlling the efforts of poisoners, trappers, snarers, injectors and shooters employed by

103. *Id.* at 12.

104. *Id.*

105. *Id.* Overreporting can result from ranchers' including livestock animals who died of starvation, exposure, or were lost due to poor herding. The study referred to was headed by biologist James R. Tigner and was conducted by the U.S. Fish & Wildlife Service from 1973 to 1975 on sheep losses at five Wyoming ranches. The resulting disparity in statistics is summarized by Mr. Milstein in his article.

106. The time of the Leopold Committee inquiry. See *supra* note 56.

107. *Leopold Report*, *supra* note 56, at 30; see also Coggins & Evans, *supra* note 10, at 848-50.

108. Deeble & Stadler, *supra* note 77, at 23-27. The "cooperator" category involves funds received by ADC in cost-sharing agreements between ADC and other federal and state agencies, counties and private groups. These agreements split costs, such as 40% federal payment, 60% cooperator payment, or 50-50. *Audit*, *supra* note 101, at 23-29.

109. Coggins & Evans, *supra* note 10, at 849.

110. *Cain Committee Report*, *supra* note 57, at 6.

the U.S. Fish and Wildlife Service, APHIS [Department of Agriculture Animal and Plant Health Inspection Service], state and county departments of agriculture and health, fish and game agencies, land grant universities and colleges, ranchers, wool growers and trap and poison manufacturers¹¹¹

Adding to the ADC's several-source budget are the proceeds from the sale of furs from animals killed by ADC activities. ADC funding thus arguably results not only in conflicts of interest, but also in disincentives for the government to scrutinize the economics of the ADC program. This allows a sacrifice of the public interest in ecosystem preservation for private interests in both the livestock and fur trade.

Information available from the sheep industry does little to resolve questions of the economic appropriateness in present predator control methods. While sheep and goat owners recently claimed \$60 million in losses due to predator damage in a recent year, GAO placed the damage figure closer to \$18 million.¹¹² In contrast, when state and local funds are added to federal funds, estimates indicate ADC spends over \$45 million to kill coyotes allegedly causing the predation.¹¹³ Furthermore, Interior Department research in 1978 indicated that the sheep industry had been in decline from 1960 to 1972, and had stabilized from 1974 to 1977, with increasing industry profitability.¹¹⁴ Exploring the Interior Department findings, Coggins and Evans noted that, "[s]ignificantly . . . the Committee did not even hint that predation contributed substantially to the decline In effect, its

111. Bernhard, *supra* note 48, at S703.

112. GAO: EFFECTS OF ADC, *supra* note 91, at 3, 15. Recent research also indicates that 40 percent of ADC's federal funds is spent to protect the livestock interests of 27,000 ranchers who graze livestock on public lands. *Audit, supra* note 101, at 1.

113. *Id.* at 1, 15. O'Toole also notes that ADC records reflect questionable predation statistics:

Some of the reports recorded by ADC seem rather fantastic. Many farmers question whether a coyote can kill a healthy calf, much less adult cattle. Yet, between 1990 and 1992, ADC records report coyotes killing nearly 24,000 calves and 1,000 adult cattle, not to mention 36,500 sheep, over 80 horses, and 500 full-grown pigs." Among other questionable reports during the same period: eagles and vultures killing dozens of adult cattle, ravens killing 140 calves and several adult cattle, starlings killing 50 calves and 20 adult cattle, Arizona blackbirds killing 2,400 full-grown cattle, and New Mexico magpies killing 120 lambs.

Id.

114. Coggins & Evans, *supra* note 10, at 857.

findings refute the common claim that predators are driving sheep ranchers out of business."¹¹⁵

In conclusion, the evidence to date casts doubts on claims that predator control program expenditures can be linked to either sheep industry harm or improvement.¹¹⁶

E. *Lack of Program Accountability*

Were the ADC Program accountable in any way for the damage it causes to the environment, its effects could be better analyzed. However, administrative secrecy envelopes program operations. "The ADC, backed by a powerful agricultural lobby and shrouded from public view, operates virtually unchecked."¹¹⁷ ADC personnel press uncoordinated objectives inconsistent with sound public policy and biodiversity preservation. For example, a biologist for the Bureau of Land Management (BLM) in Wyoming recommended discontinuing the M-44 'Coyote-Getter' in 1988, a recommendation BLM superiors approved. However, the state ignored the recommendation after intercession by ADC agents.¹¹⁸ In another ADC district, ADC agents refused to reveal the locations of M-44's to BLM officials until BLM threatened to ban all ADC control activities in their area.¹¹⁹

Control activities on public lands do require an Environmental Assessment (EA). Recently, BLM and the Forest Service have agreed to defer to ADC's research on predator control program need in their EA's, prompting the rhetorical question, which is more ecologically unsound: administrative agency coordination or lack thereof?¹²⁰ In either case, public-paid fiefdoms ill-serve the interests of either the public or the ecosystem and effectively foreclose consideration of what should be the primary concern of the program: regulated, highly specific, and narrowly limited predator control activities consistent with biodiversity goals.

Yet, oversight and regulation of the ADC Program is non-existent. No federal regulations have ever governed the program,

115. *Id.*

116. *Id.*

117. Milstein, *supra* note 15, at 13.

118. *Id.*

119. *Id.*

120. Telephone Interview with Tom Skeeel, Predator Project, Bozeman, Mont. (July 18, 1994); Internal report of ADC and Forest Service staff, "APHIS-FS Animal Damage Control Functional Assistance Team Report," Jan. 26, 1990 (on file with U.S. Department of Agriculture, Forest Service).

and none now exist.¹²¹ Thus, the manner in which program activities are carried out, the priority of control techniques and the extent of killing — in essence, the entire administration of the program — is not subject to the rigor of public review and comment normally associated with the promulgation of federal regulations under the Administrative Procedure Act.¹²²

Even were such regulations promulgated, the lack of public policy on predator control evidenced in the Act itself would inhibit any contextual policy analysis of rules. Annual appropriations by Congress continue to authorize “equipment, supplies, and materials, including the employment of persons and means . . . to execute the functions” of the Act, which has no self-limiting re-authorization provision.¹²³ Rational oversight should require a comprehensive reevaluation of the program and its goals.

VI.

“ADC” VERSUS BIODIVERSITY: RECENT CASUALTIES

A California condor with a nine-foot wingspan fell from the sky at Pinehurst, Fresno County, California on May 23, 1965, prompting the first attempts to understand the condor’s decline.¹²⁴ The California state autopsy did not check for Compound 1080, or SMF, but the federal autopsy did, finding enough to have caused the bird’s death.¹²⁵ The official cause of death was listed as “collision,” a term the California Department of Agriculture and the U.S. Fish and Wildlife Service use “to cover up the destruction perpetrated by the Animal Damage Control Agency, where many a colleague, many a buddy works.”¹²⁶ At the time of the Pinehurst condor’s death, ADC was spreading

121. None of the federal regulations governing the Animal and Plant Health Inspection Service, Department of Agriculture, concern the operations of the ADC program. 7 C.F.R. §§ 300-380 (1994); 9 C.F.R. §§ 1-167 (1994).

122. 5 U.S.C. §§ 701-06 (1988).

123. 7 U.S.C. § 426b (1988 & Supp. V 1993).

124. Bernhard, *supra* note 48, at S701.

125. *Id.* The U.S. Fish and Wildlife Service autopsy of the Pinehurst “thunderbird” found 7 1/2 parts per million of SMF in the bird’s stomach lining and heart tissues. No effective method for uncovering additional SMF in other parts of the bird existed at that time or now. Early research on the killing strength of SMF indicated that five of seven buzzards were killed by feeding them less than 20 parts per million of Compound 1080.

126. *Id.* at S701-02. As recounted by Joe Bernhard, founder of Sierra Association For Environment, in the Congressional Record. As Bernard recalls, an ADC employee stated in informal conversation, “[t]he balance of nature doesn’t feed my kids. 1080 does.” *Id.* at S703.

610,000 pounds of Compound 1080 annually, one-sixth of it in condor territory. In 1960, there were an estimated 60 thunderbird condors. After massive poison baiting in condor territory, the condor population declined sharply, a decline that continued after the banning of DDT.¹²⁷

At the time of the Pinehurst incident, Compound 1080 was being scattered annually to kill California ground squirrels thought responsible for the destruction of 38 percent of the livestock feed on rangeland; yet, the 38 percent destruction figure included types of forage on which cattle did not feed.¹²⁸ Economic analysis of livestock costs and biodiversity concerns was not undertaken. But the ground squirrel is "the bread of the rangeland to over a dozen species" including officially endangered species like the Golden and Bald Eagles, as well as the Cooper's Hawk.¹²⁹ The squirrel also comprises 50 percent of the diet of the Red-tailed Hawk and Coyote, and 80 percent of the diet of the Gopher Snake.¹³⁰ Thus, by killing ground squirrels, the ADC program directly impacted all of these species without concern for the consequences.

As the Pinehurst Condor incident reveals, open poison baiting is nothing less than the indiscriminate killing of species without concern for interdependence and balance. In 1977, research designed to determine whether baiting killed non-target animals revealed that when the baiting target was ground squirrels, non-target animal deaths directly attributable to baiting included 5 of 6 radio-collared coyotes, 3 of 10 bobcats, and 12 cottontail rabbits. These animals became bait-traps filled with long-lived poison awaiting carrion-eating species such as the condor, on which effects could not be measured, as the larger birds flew in and out of the study zone.¹³¹

127. *Id.* at S704.

128. *Id.* at S702. The 38 percent figure was used by ADC for purposes of encouraging broadcast-poison programs and was considered ADC's own estimate but was based on research conducted by Dr. Henry S. Fitch at the San Joaquin Experiment Rangeland between 1938 and 1946 in a controlled experiment with several notable research flaws. *Id.*

129. *Id.*

130. *Id.* Although open baiting with Compound 1080 on federal lands has since been banned in the United States, it continues to be exported to other countries by its one manufacturer. *Id.* at S704. According to Joe Bernhard, Compound 1080 is manufactured only by Tull Chemical Company in Oxford, Alabama.

131. *Id.* at S703. In addition, several acorn woodpeckers and white-breasted nuthatches were found dead as a result of the controlled research discussed here. *Id.* at S703.

VII.

A BROADER INDICTMENT

Laws impacting predator animals in the United States, in addition to the ADC Act, include: the Bald and Golden Eagle Protection Act,¹³² the National Environmental Policy Act (NEPA),¹³³ the Wild, Free-Roaming Horses and Burros Act of 1971,¹³⁴ the Endangered Species Act of 1973 (ESA),¹³⁵ the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA),¹³⁶ the National Forest Management Act,¹³⁷ and the Administrative Procedures Act (APA).¹³⁸ Of primary importance are the explicit protections afforded to listed, threatened or endangered species under the Endangered Species Act, and the protection afforded by the Bald and Golden Eagle Protection Act. Additionally, although NEPA does not mention wildlife specifically, its comprehensive reach in requiring federal agencies to assess the environmental consequences of their actions through environmental impact statements (EIS's) would seem to assure some protection of predator species.

Yet, under the law's present structure, inattention to biodiversity as a context for evaluating predator control continues at an absurd level. Three recent cases are illustrative.

In *National Cattlemen's Association v. E.P.A.*,¹³⁹ the Association sought judicial review of the Environmental Protection Agency's (EPA) decision to ban Compound 1080 in certain circumstances. The EPA canceled Compound 1080's registration as an allowable predicide for killing coyotes and other predators in 1972 after it measured substantial deaths among non-target species. The Tenth Circuit found the reintroduction of Compound 1080 in large bait stations unacceptable, but it did permit the reintroduction of the banned poison in "single lethal dose" baiting and in toxic collars that could be worn by sheep or goats.¹⁴⁰

The court's decision to permit reintroduction of the poison was based on judicial review of "new evidence" that the EPA had also reviewed in partially lifting the 1080 ban by administrative

132. 16 U.S.C. § 668 (1988).

133. 42 U.S.C. § 4321 - 61 (1988).

134. 16 U.S.C. § 1331 - 40 (1988).

135. 16 U.S.C. § 1531 - 43 (1988).

136. 7 U.S.C. § 136 (1988).

137. 16 U.S.C. § 1604(i) (1988).

138. 5 U.S.C. § 706(2)(A) (1988).

139. 773 F.2d 268 (10th Cir. 1985).

140. *Id.* at 271.

order.¹⁴¹ The court reasoned that the EPA's administrative order lifting the total ban, but limiting the uses of Compound 1080

must be sustained "if it is supported by substantial new evidence when considered on the record as a whole . . ." Substantial evidence is "more than a scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion."¹⁴²

The court found it was not unreasonable for the agency to assume that damage caused to the environment would be slight, based on this "new evidence." The new evidence simply amounted to a new proposal for delivery of the poison, either by the "single lethal dose" — SMF in small pieces of meat, or by the toxic collar "delivery system" — SMF inserted in a collar. This "new evidence" was merely new methods, an artificial distinction from the previously used "large bait station" — a large piece of meat with substantial amounts of SMF.¹⁴³ The court apparently did not consider whether an animal killed by the toxic collar delivery system would immediately become bait able to indiscriminately kill other animals in the ecosystem, nor did the court consider whether a "single lethal dose" of SMF holds any less chance of killing non-target species. As this case illustrates, judicial deference to administrative decision-making not only has no relationship to fostering biodiversity objectives, but it fails to provide incentives for agency administrators to pursue ecologically sound and methodologically acceptable predator control.

Judicial protection of species is better served when federal statutes like the Endangered Species Act clearly protect the species at issue. For example, in 1989, wildlife and environmental groups challenging the continued registration of strychnine as a permissible poison bait won a significant victory against the EPA. In *Defenders of Wildlife v. EPA*,¹⁴⁴ the Eighth Circuit found that the EPA had effected a "taking" of endangered species by continuing the registration of strychnine as a permissible pesticide and rodenticide for above ground uses.¹⁴⁵ Under the ESA, a "taking" is defined broadly to include activity that has "some prohibited impact on an endangered species."¹⁴⁶ The court

141. *Id.*

142. *Id.* (citations omitted).

143. *Id.*

144. 882 F.2d 1294 (8th Cir. 1989), *aff'g in part, rev'g in part* 638 F. Supp. 1334 (D. Minn. 1988).

145. *Id.* at 1301.

146. *Id.*

found the necessary nexus, that "endangered species have eaten the strychnine bait," and that, since strychnine can only be distributed if registered by the EPA, the "relationship between the registration decision and the deaths of endangered species is clear."¹⁴⁷ The court upheld an injunction against the continued registration of strychnine for these purposes, with the qualification that the injunction might be lifted if the EPA was able to obtain permission for the strychnine registration under the Endangered Species Act's special exception for "incidental takings."¹⁴⁸

Though the decision in *Defenders* is laudable, it does not address the protection of species not listed as threatened or endangered, demonstrating the obvious weakness of the ESA in terms of biodiversity analysis. Presently, most animals critical to biodiversity are not protected by the narrow listings of the Endangered Species Act.¹⁴⁹ Thus, the failure to regulate predator control for the protection of "endangered" species as well as other species is a significant failure.

Those opposed to poison-baiting and trapping may consider aerial hunting/killing a better alternative since it directly targets the species believed to be in need of management for population control. The aerial killing method is used by ADC, as well as by states and individuals. Yet, the interdependence of species is ignored when one species is targeted by man without sufficient analysis of the inter-dependence of diverse species in the region affected and the economic cost and benefit, as well as the overall biodiversity needs of the area. The ongoing dispute concerning the aerial killing of Alaskan wolves under an Alaska state program illustrates the inability of present federal law to force intervention and biodiversity analysis.

In *Alaska v. Andrus*,¹⁵⁰ the Ninth Circuit considered whether the Secretary of Interior was required to stop the Alaska state

147. *Id.*

148. *Id.* For an excellent analysis of the legal ways in which species can be killed under the Endangered Species Act, see Saxe, *supra* note 16.

149. Mammals presently listed under the Endangered Species Act as either endangered or threatened, with U.S. range, include certain bats, certain deer, the black-footed ferret, certain foxes, the jaguar, the manatee, the margay, certain mouse species, the Florida panther, the Utah prairie dog, the Sonoran Pronghorn, certain rats, the sea lion, certain seals, certain voles, the gray wolf and the red wolf. Birds listed include the California condor and bald eagle, among others. 50 C.F.R. § 17.11 (1994).

150. 591 F.2d 537 (1979), *aff'g* 429 F. Supp. 958 (D. Alaska 1977).

wolf-killing program, in which "State-licensed gunmen were killing from the air numbers of wolves that roam federal lands within the State's borders. . . to relieve pressure upon the caribou herd," the caribou being of interest to game hunters in the state.¹⁵¹ The Secretary of Interior had refused to intervene to stop the wolf-killing program after requests from Defenders of Wildlife and other animal-welfare groups.

The court refused to address federal intervention, instead providing a simplistic analysis of the NEPA requirement for environmental impact statements. The court held that "the nonexercise of power does not trigger the NEPA requirement that an environmental impact statement be prepared."¹⁵² The means for requiring a broad-based environmental analysis of government action thus became a 'dead horse' when federal authorities refused to act. Yet, by their inaction, they provided the special-interest result sought by state gaming authorities. Unfortunately, the best avenue available for fighting the state's aerial wolf-killing program in the courts, and the focus of the legal analysis in the Ninth Circuit, was whether "impact statements must accompany inaction, or actions that are only marginally federal."¹⁵³ This approach reduced the circumstances of the case to less than the sum of their biodiverse parts, and missed an opportunity to improve the law in this critical area.

In 1993, Alaska suspended the wolf-killing program after public outrage threatened to affect the state's tourism industry.¹⁵⁴ Alaska has since taken steps to reintroduce a permit-driven aerial shooting program,¹⁵⁵ and opponents have again filed suit.¹⁵⁶ Federal law that prevents the use of aircraft to shoot, capture, kill or "harass any bird, fish, or other animal" does not apply to State

151. *Id.* at 539.

152. *Id.* at 538, 542. See also Annotation, *Necessity And Sufficiency of Environmental Impact Statements Under § 102(2)(C) of National Environmental Policy Act of 1969 (42 USCS § 4332(2)(C)) In Cases Involving Hunting, Fishing And Related Projects*, 74 A.L.R. FED. 852 (1992).

153. *Alaska v. Andrus*, 591 F.2d at 541.

154. John Balzar, 'Outsiders' Howl, *Alaskans Split on Wolf Kill*, CHI. SUN-TIMES, Mar. 21, 1993, at 28. Additionally, land-and-shoot killing has not been allowed since 1991 in Alaska. Harlin Savage, *Land-And-Shoot: Alaska May Revive Aerial Wolf Hunts*, DEFENDERS - THE CONSERVATION MAGAZINE OF DEFENDERS OF WILDLIFE, Winter, 1992-93, 37.

155. Savage, *supra* note 154.

156. *Defenders Take Legal Action To Protect Alaska Wolves*, WILDLIFE ADVOCATE, Winter, 1994 at 1, 8.

agents, licensees or permittees.¹⁵⁷ A federal bill was drafted to prevent the use of aircraft for killing wolves except in emergency situations,¹⁵⁸ but was not passed.

Although the *Alaska v. Andrus* court found that the non-exercise of power by the federal government to stop the state program did not trigger NEPA's EIS requirement, the court also expressly reserved the "intriguing" question of whether the federal government's power to manage wildlife superseded that of the state.¹⁵⁹ This question has yet to be decided by the courts. In sum, fifteen years after *Alaska v. Andrus*, the state-federal power question has still not been resolved. Messy and personal, the state and national parties to the dispute, who should be forced to recognize the interest-convergence of a biodiversity approach, stand off like cowboys in a western shoot-out.¹⁶⁰

VIII.

UNENLIGHTENED JUDICIAL RESPONSE CONTINUES

Judicial responses to criticism of state and federal predator control practices have prejudiced the interests of legitimately concerned environmentalists, placing burdens of proof on plaintiffs when they should rest with the government. The quasi-judicial administrative review process attendant to NEPA compliance, including the development of EA's and EIS's, assists the interested public in examining the bases for administrative decision-making in the area of predator control. However, when agencies such as the Forest Service and BLM rely on the Department of Agriculture's APHIS-ADC unit for their assessments of the need for predator control on Forest Service and BLM land, no internal controls check administrative decision-making. This

157. Airborne Hunting Act, 16 U.S.C. §§ 742j-1 (1988); 50 C.F.R. §§ 19.1-19.32 (1994). The Act has been used recently to discuss the federal government's enforcement power to obtain forfeiture of the aircraft used to violate the Act. *United States v. One Bell Jet Ranger II Helicopter*, 943 F.2d 1121 (9th Cir. 1991). The government brought a forfeiture action for the helicopter in *One Bell Jet*, which the trial court denied. The Court of Appeals discussed the trial court's discretion to grant or deny forfeiture of the aircraft for harassment of bighorn sheep, a violation of the Act. *Id.* at 1126-1127.

158. *Savage*, *supra* note 154.

159. *Alaska v. Andrus*, 591 F.2d at 538.

160. Alaska Governor Walter J. Hickel stated, "[w]e have the right to care for this land according to our knowledge of the north. That right must not be trampled, or there will be trouble." David R. Cline, regional vice-president for the National Audubon Society, states, "[t]he national interests here have to be protected by the American people. . . ." Balzer, *supra* note 154.

vacuum affects citizens' rights to challenge administrative decisions, evidenced in recent EA reviews. Until recently, interested citizens could address their inquiries for review of administrative decisions in this area to the Forest Service and BLM via an administrative appeal. These appeals have now been redirected to the Department of Agriculture, which has no administrative appeal procedures in place and which cannot guarantee an objective administrative-law process, because the Forest Service and BLM now defer to ADC for their needs assessments and killing plans.¹⁶¹

Bringing suit in federal district court remains an option for those with standing, time and money. Federal laws recently used in reviewing the legitimacy of predator control practices on federal lands include the APA¹⁶², NEPA¹⁶³ and the National Forest Management Act.¹⁶⁴ Six years have passed since *Defenders* found an impermissible connection between poison baits and endangered species deaths, and well over \$100 million taxpayer dollars have been expended in that time to kill hundreds of thousands of wild animals on federal land.

In *Southern Utah Wilderness Alliance v. Thompson*,¹⁶⁵ the plaintiffs sought to enjoin the implementation of a Forest Service plan permitting lethal predator control methods, including aerial shooting of coyotes on national forest lands used by private ranchers to graze sheep.¹⁶⁶ The Forest Service in the Dixie and Fishlake National Forests established programs for predator control through ADC, and Utah state law provided protection for only two predators, the cougar and the black bear.¹⁶⁷ State law permitted killing of coyotes by ranchers suffering predation by coyotes.¹⁶⁸ The Forest Service ADC program included advice to ranchers on non-lethal methods of predator control and authorization for a number of lethal control methods, including the use of traps, snares, hunting, denning and aerial gunning.¹⁶⁹

The plaintiffs' sought an injunction under the APA and NEPA. After establishing standing for the plaintiffs, the court turned to

161. Telephone Interview with Tom Skeele, *supra* note 120.

162. 5 U.S.C. § 706(2)(A) (1988).

163. 42 U.S.C. §§ 4321-4347 (1988).

164. 16 U.S.C. § 1604(i) (1988).

165. 811 F. Supp. 635 (D. Utah 1993).

166. *Id.* at 639.

167. *Id.* at 638.

168. *Id.*

169. *Id.* at 639.

the criteria for granting the injunction: whether plaintiffs faced a threat of irreparable injury absent an injunction; whether the plaintiffs' potential injury outweighed any damage to the defendants; and "whether the injunction will be adverse to the public interest".¹⁷⁰ The court also evaluated the plaintiffs' likelihood of success on the merits: their showings that the ADC plans violated either the APA or NEPA. The standard incorporated the balance of harms from granting or not granting an injunction: if the harms "tip decidedly" in favor of the plaintiffs, the plaintiffs would need only to show "a fair ground for litigation," but if the harms tipped toward "the permittees and the public," the plaintiffs would have to show "a substantial likelihood of success on the merits" in order to obtain the injunctive relief sought.¹⁷¹ In this case, the court found that the permittee and public interests outweighed the plaintiffs' interests, triggering the tougher merits standard and resulting in denial of the injunction.¹⁷²

As traditionally formulated, the balancing-of-interests component of the injunction test does not adequately consider whether the species or environment faces a threat of serious injury absent an injunction; whether "injury to the public" should take precedence over the economic interests of private ranchers on public land; whether "injury to the public" is, in fact, a different interest than the interests of private ranchers; and whether the injunction would benefit a broader public interest represented by the plaintiff. Regarding the final issue, absent protective federal legislation, the citizen plaintiff carries the burden of proving not only that a wrong is about to be committed but also that the one who wishes to stop that wrong has a strong likelihood of success on the merits.

The plaintiffs sought to introduce evidence absent from the administrative record concerning the Forest Service's plans for lethal and aerial killing of coyotes. The court held that evidence outside of the administrative record may not be introduced unless it either explains the agency's decision, shows that the agency did not consider relevant evidence or shows that the agency acted in bad faith by failing to include information in the record.¹⁷³ The court reviewed the agency's administrative action, approval

170. *Id.* at 640-641.

171. *Id.* at 641 (quoting *Seneca-Cayuga Tribe v. Olka*, 874 F.2d 709, 716 (10th Cir. 1989)).

172. *Id.* at 646.

173. *Id.* at 642-643.

of Forest Service coyote control plans (based on Environmental Assessments put together primarily by ADC), by the APA arbitrary and capricious standard and limited its review to the administrative record.¹⁷⁴

To the plaintiffs' claim that the Forest Service had not established the need for the ADC program, the court stated that there was evidence of actual predation.¹⁷⁵ To the plaintiffs' claim that the ADC program was not effective, the court stated that they would not second-guess the agency's evidence on effectiveness,¹⁷⁶ and that the coyote's rapid reproductive capacity illustrated no danger of permanent harm to the coyote population as a result of the ADC program.¹⁷⁷ The court found that the balance of harms did not tip decidedly in favor of the plaintiffs, in part, due to "increased predation loss, the predominant reason why ranchers leave the sheep business," and "the economic viability of the permittees" despite the court's recognition that "[v]arious factors. . . make it impossible to assess the actual loss [of livestock animals.]"¹⁷⁸

Several problems appear in the court's analysis when viewed from the larger biodiversity framework. First, the traditional formulation of the injunction test ill-suits the protection of species. Second, the inability of the plaintiffs to introduce, and thus force examination of, evidence on species diversity and the impact of

174. *Id.*

175. *Id.* at 643.

176. On program effectiveness, the court stated that, by law, "the agency has discretion to rely on the reasonable opinion of its own qualified expert." *Id.* at 643. Earlier in the opinion, the court recites the Forest Service's relationship to ADC, as set forth in a Memorandum of Understanding that divides their duties thus: the Forest Service is "responsible for managing the land. . . and for insuring compliance with environmental statutes," while "ADC is responsible for documenting predation loss and conducting the actual predation control. . ." *Id.* at 638. ADC is thus the only one both assessing need and conducting control, resulting in no internal control mechanism for assuring objective assessment of program need or program effectiveness.

177. *Id.* at 643-44. The statistics on the impact on the coyote population are difficult to assess in the context of the court's opinion. The court cites two coyote research findings offered by the agency: (1) that to jeopardize the viability of the coyote population, 75 percent of the population would have to be eradicated yearly for fifty years, and (2) that the "worst case scenario" for the ADC program's implementation was a "forty percent" loss of the coyote population, but does not cite any research findings that were supported by the plaintiffs. The court states, in footnote 4, "Plaintiffs seek to introduce extraneous evidence," i.e.: "extraneous" to the agency's "administrative record" but not necessarily "not relevant", and less prejudicially described as "additional" evidence. *Id.* at 642.

178. *Id.* at 641.

the ADC program on biodiversity is not a failure of the plaintiffs but of the legal system to address relevant evidence sought to be introduced at the time of the suit. Third, the arbitrary and capricious standard forces environmentally-sensitive agency actions to withstand too high a level of potential environmental devastation in order to merit judicial notice and judicial review. Fourth, the impact of the program on the coyote population alone is insufficient evidence, because it does not include evidence of the impact of the program on the environment as a whole, including but not limited to the impact on non-target species, and other public uses of the national forests. Fifth, the fact that actual predation was occurring has little to do with proving that the ADC aerial gunning and other lethal controls at issue were necessary. Sixth, if the court need not second-guess the agency's evidence of program effectiveness, the court should not have made a point to mention that the coyote has a rapid reproductive capacity, an ironic inclusion on the court's part, since the rapidity of coyote reproduction has been shown to be directly impacted by traditional predator control activities, which artificially accelerate coyote reproductive behavior patterns.¹⁷⁹

The plaintiffs also claimed that the EA's conducted by the Forest Service in relation to the ADC program plan were inadequate, a violation of NEPA.¹⁸⁰ To the plaintiffs' claim that the EA did not consider the cumulative impact of the ADC plan on the coyote, the court responded that "the supervisors did not ignore any relevant data in the record."¹⁸¹ To the plaintiffs' claim that the supervisors were required to consider a full range of reasonable alternatives, including reimbursement for animals killed by predation, the court responded that the agency is not required to analyze alternatives that it has in good faith rejected as "too remote, speculative, . . . impractical or ineffective," and that if the agency has considered the alternative, even if they have rejected it, they have fulfilled their obligation under NEPA.¹⁸²

The NEPA analysis here is filled with gamey, tired jurisprudence. To find, as the court does, that the supervisors' review of the materials in the administrative record absolves them of looking at evidence that they did not seriously consider, is to make of

179. See *supra* notes 95-99 and accompanying text.

180. *SUWA v. Thompson*, 811 F. Supp. at 644.

181. *Id.* at 644-645.

182. *Id.* at 645 (quoting *City of Aurora v. Hunt*, 749 F.2d 1457, 1467 (10th Cir. 1984)). This is another example of what can properly be called lip service law.

the law a house of cards. The administrative record limitation, particularly since it is here anchored within the broader goals of NEPA, gives the status quo a victory too cheap. In the court's analysis of whether the Forest Service examined a full range of reasonable alternatives, the court's answer to whether a full range of reasonable alternatives was examined too easily becomes a foregone conclusion by defining the alternatives examined as a full range of reasonable alternatives. In addition, none of the referenced case law descriptions of these alternatives adequately address the question of whether alternatives with a biodiversity analysis have been considered at all. Per the court, "[t]he forest supervisors' consideration of an unrealistic alternative, such as reimbursement, need not be heroic, so long as this alternative is given limited analysis."¹⁸³ The court's by-the-book analysis, without determining whether the reimbursement alternative is appropriate, but framing consideration of the alternative as being or not being "heroic" is startlingly prejudicial posturing, and a facile reduction of the biodiversity challenge to a non sequitur - acceptance of the status quo.

Most disturbing is the degree to which *Southern Utah Wilderness Alliance v. Thompson* follows the principles of stare decisis in examining and abiding by existing case law, yet miserably failing to address the need for biodiversity analysis of predator control program activities.

IX. SOLUTIONS

Solutions to the inadequacies of the ADC program must be both legal and administrative, as well as both technical and policy-based. What is also desperately needed is a change in the law and public policy to more fully recognize the goal of a biodiverse and healthful environment, and to balance that goal only against justifiable agribusiness economics.

A. *Context: The "Commons"*

Predator control in the West is a classic example of the "tragedy of the commons," in which no natural incentive exists to enforce ecologically balanced land use or to preserve land resources held in common ownership when users can legally exploit them. One sees all of the characteristics of the commons:

183. *Id.* at 646.

(1) a common property, (2) a wide number of interested users, (3) a need for balance in the use of the property, (4) the need to maintain a recoverable level of use, such that cumulative degradation does not occur, and (5) the related need to reduce individual self-satisfactions to obtain a broader good.¹⁸⁴ As a result, "[c]ommon property status for wildlife puts almost the entire burden for preserving wildlife on the public sector. This does nothing to motivate individuals to preserve habitat nor does it create private incentives to husband wildlife."¹⁸⁵

Federal law governing public lands is our response to our common property status. Yet, the idea of federal law restricting the uses of public land and predator control is met with opposition by those who believe that private property rights exist on public lands. In their view, "increased environmentally oriented regulation of public lands constitutes a Fifth Amendment taking when economic activities of public land users are adversely affected."¹⁸⁶ This argument fails to recognize that grazing permits do not grant any rights in the property itself, and are properly considered a privilege, "subject to cancellation or modification without compensation at any time."¹⁸⁷

Many see the issue as turning on who controls public lands, a matter of environmental policy as much as law. The law in this area, however, is quite clear. As noted in *Defenders of Wildlife v. Andrus*, "[d]espite its ability to take control into its own hands, Congress has traditionally allotted the authority to manage wildlife to the states."¹⁸⁸ The court stated, "[i]t is unquestioned that 'the States have broad trustee and police powers over wild animals within their jurisdictions,' " yet "Congress may, if it wishes, preempt state management of wildlife on federal lands."¹⁸⁹

184. William H. Rodgers, Jr., *Building Theories of Judicial Review In Natural Resources Law*, 53 U. COLO. L. REV. 213, 218-20 (1982).

185. Jon H. Goldstein, *The Prospects For Using Market Incentives To Conserve Biological Diversity*, 21 ENVTL. L. 985, 987 (1991). Goldstein remarks further, "[m]any observers are resigned to the belief that the best that can be expected from the current preservationist strategy is a postponement of the inevitable depletion of species, habitat and ecosystems." *Id.* at 986.

186. Anita P. Miller, *America's Public Lands: Legal Issues in the New War for the West*, 24 URB. LAW. 895, 897-898 (1992).

187. *Id.* at 901, 903; *see also* 16 U.S.C. § 530.1 (1988); *United States v. Fuller*, 409 U.S. 488 (1973); *Omarachevarria v. Idaho*, 246 U.S. 343 (1918); *Swim v. Bergland*, 696 F.2d 712 (9th Cir. 1983); *United States v. Jaramillo*, 190 F.2d 300 (10th Cir. 1951); *Osborne v. United States*, 145 F.2d 892 (7th Cir. 1944).

188. *Defenders of Wildlife v. Andrus*, 627 F.2d 1238, 1248 (D.C. Cir. 1980).

189. *Id.* at 1248 (quoting *Kleppe v. New Mexico*, 426 U.S. 529, 545 (1976)).

The idea of "multiple use" of public lands was one response to the need to balance the use of the "commons" property. Prior notions delegated the lands primarily to mineral extraction; multiple use would include grazing, timber harvesting, wildlife conservation and recreational appreciation.¹⁹⁰ Competing uses, however, have set up a competition ethic, an ethic fostering the segregation of individual user-groups vying for limited natural resources and influence. Competition is the tragedy of the commons. Conservation of biodiversity must, instead, be the focus.

Jon Goldstein's economic proposals call for "substituting property rights structures for uncontrolled commons," which, he states, will require "varying degrees of government support, management, and regulation to be successful."¹⁹¹ Property rights structures, however, will not work unless they prioritize wildlife and ecological preservation. Contributing to our cultural indifference to such priorities, and our historical sense that humans are not to blame for the condition of the wildlife on land, is our core concept of what a property interest is all about. University of Illinois law professor Eric T. Freyfogle writes

property law's sole interest is with the relative interests of humans. . . . Because the law's concern lies with identifiable humans, the law counts as injury to property only those things that harm humans today. . . . If the land is injured in a way that the market does not value, the injury is irrelevant. By this decidedly anthropocentric gauge, most plants and animals are valueless and hence immaterial, and the law's message is that we can rightly ignore them.¹⁹²

Professor Freyfogle suggests that we discard talk of "rights" in the sense of the rights of one person that affect or diminish another's resulting rights in the same property when creating solutions to environmental problems, and instead focus on whether a land user's actions are right in a broader ethical sense.¹⁹³ This

190. Miller, *supra* note 186, at 895, 897.

191. Goldstein, *supra* note 185, at 1013. Goldstein's comments, although focused on case studies of international trade in wildlife, are consistent with the needs for legal reform in U.S. predator control policy. See also James L. Huffman, *Review: Civilization In The Balance: Comments On Senator Al Gore's Earth In The Balance*, 23 ENVTL. L. 233, 267 (1993) (stating that Gore "fails to recognize the role of property rights in avoiding the tragedy of the commons, which explains many of the environmental problems which concern him.").

192. Eric T. Freyfogle, *Ownership And Ecology*, 43 CASE W. RES. L. REV. 1269, 1276-77 (1993).

193. *Id.* at 1287-88. Freyfogle calls for a "path to a land-sensitive legal culture." *Id.* at 1292.

ethical sense can be defined as including concern for sustained biodiversity.

The idea "that strict limits must be placed on the use of natural resources to prevent their destruction from overuse" is not bad, per se, and does not evidence a "problem" with "the objectives of environmentalism," according to environmental law professor and author A. Dan Tarlock; "[e]cosystem protection is increasingly accepted as *the* moral imperative of the 21st century."¹⁹⁴

Yet, laws that evince imperatives and strict limits are prohibitive, and prohibitive policies have both their advantages and their drawbacks. Although easy to implement, they reduce balanced consideration of competing interests and increase agency power and authority. Although requiring fewer personnel to administer, they may require significantly increased enforcement efforts due to unpopularity or resulting non-compliance. Prohibitive policies, however, are politically strong, a symbolic expression of majoritarian public policy, and help courts to create strong law.¹⁹⁵

Prohibitive public policy and law is appropriate for predator control on public lands. As Professor Tarlock notes,

[t]he West was settled before the federal government could assert effective control over its resources and before a scientific and political consensus developed to support the notion that resources should be publicly managed rather than exploited in response to market demand. The history of natural resources law as exemplified by the doctrine of prior appropriation, the Mining Law of 1872, and the issuance of Taylor Act grazing permits is of the legislative and judicial legalization of the grab.¹⁹⁶

According to Harvard professor of government, Steven Lewis Yaffee,

[l]aws that define and protect social ethics are an appropriate use of prohibitive policy. Indeed, if you believe that society must make a moral statement, prohibitive statements may be necessary. Ethics are by definition prescriptions of right and wrong behavior. It would not be appropriate, therefore, to set out policy that on the surface encourages negotiation between these positions. Some eth-

194. A. Dan Tarlock, *Environmental Protection: The Potential Misfit Between Equity And Efficiency*, 63 U. COLO. L. REV. 871, 875 (1992).

195. STEVEN L. YAFFEE, PROHIBITIVE POLICY: IMPLEMENTING THE FEDERAL ENDANGERED SPECIES ACT 149-51 (1982).

196. Tarlock, *supra* note 194, at 878. Tarlock recognizes that there is "no simple answer to the right balance between human intervention and the maintenance of natural systems." *Id.* at 879.

ical relationships are well defined and generally accepted in a culture, and enacting prohibitive laws to protect these relationships is not controversial.¹⁹⁷

Prohibitive policies already play a critical part in fostering resource preservation. As Professor Yaffee notes,

[p]rior to the inclusion of the prohibitive mandate in the ESA, development agencies had no incentive to protect endangered species, since they could only be made worse off (that is, they would have to expend resources to protect something that did not buy them anything with their supporters). By adding the potential costs of extended controversy, the ESA put the development agencies in a position where negotiating (seeking ways to include the preservation objective in their planning) would result in their being better off.¹⁹⁸

B. *Reform In The Law*

The first needed reform is for Congress to express a policy for the protection of wildlife that includes predators — a Predator Protection Act. Such an express policy would require prohibitive regulations to enforce restructured public law. An express policy would, at the very least, help avoid the existing APA-NEPA “Catch-22” that permits the judiciary to rubber-stamp ill-considered agency actions. A policy in the form of a Predator Protection Act would properly shift the policy focus from “damage control” to animal and ecosystem protection and preservation. A Predator Protection Act could also facilitate the development of clearer federal and state roles in predator control activities,¹⁹⁹ consistent with increased attention to animal rights.²⁰⁰

197. Yaffee, *supra* note 195, at 158. Yaffee notes that the strongest considerations in the passage of the Endangered Species Act (ESA) were ethical and moral, and that economics and biology have a limited ability to help us make preservation and conservation decisions. *Id.* at 162.

198. *Id.* at 155. Professor Yaffee also indicates in his analysis of the Endangered Species Act that we need policies that alter the resources agencies have to implement law by affecting the funding distribution used by the agencies involved. *Id.* at 161.

199. The least of these concerns is problems with enforcement that are continually ongoing in the present ADC program. For instance, we need to prevent the use of federal equipment and personnel to conduct unauthorized state sweeps on public lands that are the subject of formal dispute actions related to environmental analysis under NEPA and the Endangered Species Act. See Scott Williams, *Blatant Violations in Utah, BLM and ADC Massacre Not Only Predators, But Law And Public Policy As Well*, WILDLIFE DAMAGE REVIEW, Spring, 1994, at 13.

200. Animal rights advocates are presently seeking increased recognition for animal rights, work that should not be taken lightly, given the increasing disappear-

Second, the current predator control program, unchanged since 1931, must come to an end, and regulatory control and accountability must be established over program funding and activities. This can be accomplished wholesale or in parts. As it now stands, many believe that the ADC program will continue to needlessly ravage the environment for the questionable benefit of ranchers and industrial investors until the ADC Act is either repealed, or its equivalent in substantive revision takes place.²⁰¹ Congress needs to require that the program's benefits be more accurately verified, be grounded in ecologically sound scientific research and rest on the economic merit of providing what is arguably public assistance to agribusiness investors. In short, the law should place the program's overall costs and benefits on the scales of public scrutiny. Such proposals raise a number of interesting law and policy debates that could, despite the natural cynicism that accompanies the development of new law, assure us of improved predator control activities, and hold the promise of saving our public land ecosystems.

Third, regulation of existing predator control activities should be undertaken. Regulations help to govern the lawfulness of government actions. The absence of regulations governing ADC program activities is used by the program's administrators and rancher beneficiaries to continue the use of unjustifiable predator control techniques, and to justify the legality of program activities that harm the environment. This absence also places courts in a position in which no environmental risk analysis is attendant to judicial review. The absence of regulations fosters both overzealous program administrators and a lack of true congressional oversight.²⁰² Predator control program changes should be aired and argued in a debate over (1) the true causes and needs for change, and (2) any true and justifiable need for human-based environmental interventions.

ance of wildlife species. See Lisa Mighetto, *WILD ANIMALS AND AMERICAN ENVIRONMENTAL ETHICS* 119-121 (1991).

201. It has been suggested that ending the ADC program as it now exists is not in the public interest. Natural resource economists state, "misincentives cannot be fixed by tinkering with ADC's budget. They will end only when the ADC program itself is ended . . . [v]irtually all of the people who benefit from ADC could do ADC's work themselves. If they had to do so, many would probably use alternate methods, such as spending more efforts protecting their livestock and less indiscriminately killing predators." *Audit, supra* note 101, at 36.

202. George Cameron Coggins, *The Law Of Public Rangeland Management III: A Survey Of Creeping Regulation At The Periphery, 1934-1982*, 13 *ENVTL. L.* 295, 381 (1983).

C. *The Funding Debate*

Proposals for change in the ADC program includes several funding-related recommendations, among them: de-authorize ADC activities by removing the ADC Act's authorization appropriations clause;²⁰³ establish a periodic reauthorization schedule under which the Act will be opened for amendments, since the 1931 Act's automatic authorization language is not consistent with current environmental legislative reauthorization practices;²⁰⁴ fund the predator control program entirely with federal and state money; decrease appropriation levels and increase Congressional directives on how ADC funding can be spent, significantly reducing program discretion;²⁰⁵ "[e]stablish private rancher-funded insurance programs to cover legitimate, confirmed livestock losses"²⁰⁶; fund the program entirely by "direct-fee payment" by individuals requesting specific control needs; and include in the new program a local citizen oversight function.²⁰⁷

Reliance on federal funds for ADC programs encourages states with major ADC programs to overreport livestock losses, while providing ADC managers the related incentive to obtain increased damage reports in those areas. One proposal responding to the funding incentive suggests limiting program funds to private contractors, with limited funding assistance from state and local governments.²⁰⁸

D. *The Grazing Reform Debate*

Grazing permit reform is needed. First, grazing reforms should place responsibility for utilizing appropriate prevention methods on those who now too easily rely on the environmentally more radical ADC control program. Second, grazing reform can reward ranchers who exercise good stewardship; reward-based reform has been implemented on New Mexico state-owned lands, and Secretary of Interior Babbitt has stated that he is interested in such reforms for federal lands.²⁰⁹

203. Telephone Interview with Ken Rait, Issues Director, Southern Utah Wilderness Alliance, Salt Lake City, UT (Aug. 12, 1994).

204. Predator Project Report, *supra* note 77, at 40.

205. *Id.* at 38-39.

206. *Waste, Fraud and Abuse*, *supra* note 64, at 31.

207. Predator Project Report, *supra* note 77, at 38.

208. *Audit*, *supra* note 101, at 36.

209. Harlin Savage, *Grazing the Desert: Livestock Damage Habitat; Threatened Wildlife*, WILDLIFE ADVOCATE 4, Summer, 1993, [hereinafter *Grazing the Desert*].

Prohibitive policy is also appropriate for predator control in the grazing reform debate. According to most observers, many simple and effective predator control methods are available that are not being used.²¹⁰ The lack of attention to preventive measures stems directly from the manner in which the ADC program is implemented. Thus, making the use of non-lethal predator control methods a condition of the receipt and renewal of grazing permits could increase the use of these methods.²¹¹

E. *The Economic Debate*

Program economics should be fully reviewed by independent economic analysts to ascertain actual program need.

Fully 40 percent of ADC's budget is directed toward protecting livestock from predators on public lands. Only about 27,000 ranchers have permits to graze livestock on public land. This means that each of those ranchers effectively receive a subsidy from ADC of over \$550 per year.²¹²

The GAO found that the benefits of public grazing permits "accrue mainly to some 1,000 individuals and companies that hold permits."²¹³ As noted by 1994 program evaluators, "ADC costs taxpayers nearly \$36 million per year. While this is not the most expensive boondoggle on the federal government's books, it is one that has significant environmental effects and one that clearly benefits just a few special interests."²¹⁴

Jim Baca, while Public Lands Commissioner of New Mexico, implemented state grazing reforms with a program that rewarded ranchers' good stewardship practices on state-owned rangeland. Bruce Babbitt has talked about using a similar incentive approach to improve federal lands. *Id.*

210. Suggested methods include bedding down sheep at night, lighting bedding areas, using herd dogs and increased monitoring of animals. GAO: EFFECTS OF ADC, *supra* note 91, at 16, 25.

211. Telephone Interview with Tom Skeele, Predator Project, *supra* note 130; telephone interview with Ken Rait, Issues Director, Southern Utah Wilderness Alliance, *supra* note 203. Tom Skeele notes that the Predator Project has been involved in approximately four dozen Environmental Assessments concerning BLM-approved grazing permits, only two of which "went on record as having any sort of requirement that the ranchers use some sort of prevention or non-lethal predator control method before they could go to ADC."

A related recommendation is made by Wildlife Damage Review, to remove subsidies for public land livestock grazing and allow livestock only on those public lands that are ecologically suitable for such activity. In case of conflict, they recommend giving "native species priority over livestock and other exotic species." *Waste, Fraud and Abuse*, *supra* note 64, at 31.

212. *Audit*, *supra* note 101, at 36.

213. *Grazing the Desert*, *supra* note 209.

214. *Audit*, *supra* note 101, at 36.

F. *The Debate on Killing Methods*

It is also time to regulate killing and trapping methods at both the state and federal level. State propositions to ban steel-jawed traps on public lands have been introduced. For example, the recent "HALT"²¹⁵ initiative proposed in Arizona would outlaw "kill traps, leg-hold traps, snares and poisons" on public lands.²¹⁶ New state regulations should refuse to exempt ADC from state regulations on trapping, trap-checks and aerial hunting regulations, as is currently the case in many western states.²¹⁷

Federal law, ultimately, should control the specific killing and trapping methods that can be applied on federal land. Federal regulations should strictly limit and prioritize the predator control methods that can be used. From a biodiversity standpoint, recommended prohibitions would include most current lethal control methods, including steel jaw traps, snares, denning, aerial gunning and poisoning.²¹⁸ Alternatively, federal regulation should require that certain hunting methods be "used selectively and only as a last resort"²¹⁹ and regulations be promulgated to enforce the conditions permitting lethal control.

G. *The Need for Additional Research*

More independent scientific research and analysis on predators and prey is needed. The analysis of predator and prey distribution on federal lands lacks independent objective statisti-

215. Help Abolish Leg Traps, P.O. Box 32714, Phoenix, AZ 85064 (602) 266-5655.

216. *Initiative News: Help Abolish Leg-hold Traps*, WILDLIFE DAMAGE REVIEW, *supra* note 45, at 11. Arizona voters were also asked to vote on banning such traps in an initiative called "Proposition 200." HIGH COUNTRY NEWS, October 5, 1992.

217. Comments on ADC exemptions from state trapping regulations are described at *Waste, Fraud and Abuse*, *supra* note 64, at 11-12.

218. The absolute prohibition of these methods on federal lands is recommended by the Wildlife Damage Review. *Waste, Fraud and Abuse*, *supra* note 64, at 30.

219. *Federal Report: ADC Petitions Flood Congress*, HSUS NEWS 33 (Spring, 1991). The Humane Society of the United States (HSUS) states, "[w]e believe that such [lethal] methods, which include leghold trapping, poisoning, denning, neck snaring, and aerial hunting, are cruel and barbaric." HSUS participated in a call to Congress accompanied by thousands of letters calling for changes in the ADC program. HSUS has also asked that ADC's Environmental Impact Statement be withdrawn and redrafted to include requirements that nonlethal methods of predator control be made a priority, and that lethal methods be used selectively and "only as a last resort." HSUS also supports additional funds for "researching and applying nonlethal methods." *Id.*

cal analysis. Complex models are called for, and federal funds should be devoted to truly-independent research activities.²²⁰

An escape from the extremes is also necessary. These extremes are the "'shallow" ecology which reveals the relationships between living things only for the benefit of humans," and those "humanitarian arguments for animal rights" that have resulted in "a pecking order" in the "moral barnyard."²²¹ Anthropomorphism divorced from the principles of biodiversity can be as deadly to the debate as raw economic analysis; the Bambi syndrome as unhelpful as broadcast poison.²²² Increased investigation of predator control poisons and their impact not only on humans but on non-target species and the environment illustrate just one aspect of the critical need for additional scientific research.

H. *The Administrative Practices Debate*

Changes in specific administrative practices and procedures are also necessary. Loopholes to program accountability need to be closed. Consistent application of the law is the foundation of respect for the law. This is particularly true in a "commons" context. Thus, it would seem appropriate to remove the Interior Secretary's authority to bypass legitimate appeals against BLM's ADC plans by permitting new ADC plans to be put into "full force and effect."²²³ Similarly, BLM should not be allowed to withdraw ADC plans that have been placed on hold in the ad-

220. "Truly independent" research would seem to require divorcing the ADC's current research facility from Colorado State University. A new ADC research facility is being built on state land at CSU, and "[t]he facility will be granted full faculty status including use of CSU health care, child care, computer services, video and TV satellite facilities, conference management facilities and housing, safety and police protection services and animal disposal incinerators." Carol Buchanan, *ADC Gets Admitted To Colorado State University*, WILDLIFE DAMAGE REVIEW, Spring 1994, at 11.

For an introduction to scientific research on predator-prey populations, see CHARLES J. KREBS, *ECOLOGY: THE EXPERIMENTAL ANALYSIS OF DISTRIBUTION AND ABUNDANCE* 262-278, (4th ed. 1994). See also T.F.H. ALLEN & THOMAS W. HOEKSTRA, *TOWARD A UNIFIED ECOLOGY* (1992).

221. Mighetto, *supra* note 200, at 111.

222. The Bambi syndrome refers to those who, when responding to animals as cute and in need of protection, wrest them from their place in the natural order of predator-prey species. See also Mighetto, *supra* note 200, at 115 (quoting Edward Abbey's response to a discussion about the coyote-sheep debate: "Acknowledging that coyotes do eat lambs, he asked, 'but do they eat enough? I mean, enough lambs to keep the coyotes sleek, healthy and well-fed. That is my concern.'").

223. See Michael Milstein, *Babbitt Backs Plan To Kill Predators*, HIGH COUNTRY NEWS, Apr. 18, 1994, at 5.

ministrative review process by the Interior's Board of Land Appeals. Withdrawal of the ADC plan, has, on at least one occasion, resulted in mooting a petitioner's challenge before the agency.²²⁴

Most importantly, the NEPA review process for predator control activities requires additional regulatory strength and definition. First, the NEPA process should remain with non-ADC agencies, the U.S. Forest Service and Bureau of Land Management. Allowing these agencies to defer to ADC as the "lead agency" for planning predator control activities demonstrates a lack of independence in assessing the need for control actions. In addition, since ADC has no administrative review process, the only way for the public to object to an ADC-based NEPA decision is to go directly to court, an expensive proposition for most concerned citizens.²²⁵ A related problem is the Forest Service's reliance on ADC research for their own Animal Damage Management (ADM) plans.²²⁶ NEPA-activated regulatory criteria governing permissible predator control actions could assist non-ADC federal authorities in reviewing predator control need through both the Environmental Assessment and Environmental Impact Statement processes.

I. *Debate on the Judicial Role*

Judicial reform will not only be a consequence of an express policy for the protection of wildlife, but may also flow from new directions in case analysis in reviewing agency decisions. Two authors note,

The judiciary, assigned responsibility by Congress for reviewing agency decisions, has not prevented these prototypical agency failures. The courts have developed no principled basis for judging the substantive reasonableness of an agency's regulatory product. Instead, they have focused substantive review on the agency's explanation for each discrete step in its decision-making process, ap-

224. *Id.*

225. Telephone Interview with Tom Skeeel, Predator Project, *supra* note 129. See also Nancy Zierenberg, *USFS Violates Own Policies, WILDLIFE DAMAGE REVIEW*, Spring, 1994, at 4.

226. The U.S. Forest Service currently relies on ADC to do all of its ADM planning. The Forest Service also limits its ADM planning considerations to Forest Service lands. Internal Memorandum, U.S. Dept. of Agriculture, to Regional Foresters 1 (Aug. 10, 1992) (on file with author). Yet, NEPA does not allow the Forest Service to limit analysis and documentation of a federal action Environmental Assessment to its effects on national forest land.

parently assuming that if the process is rational, then so must be the end result. In practice, the result is hopelessly unpredictable and inconsistent.²²⁷

Warren and Marchant suggest that the judiciary employ the standard "more good than harm" in what is now the judicial review of agency decisions under the APA standard of whether those decisions are "arbitrary and capricious,"²²⁸ an idea less fanciful than one might expect, having seen present APA review criteria in action in *Southern Utah Wilderness Association v. Thompson*.²²⁹

Some other hope is held that re-evaluation of predicide poisons can be fruitfully accomplished through the courts. As such, the most important issue in the law governing the use of predicides is whether they pose a danger to human health.²³⁰ Since a poison cannot be used legally until it is registered, registration cancellation or limitations constitute an important area for controlling ecosystem degradation on public lands. Certainly, the re-evaluation of the use of rangeland poisons is mandatory. As George Cameron Coggins noted, when questions on the safety of poisons are raised, courts order agencies to take corrective action; "traditional judicial deference to managerial discretion does not operate in this area of range management."²³¹

227. Edward W. Warren & Gary E. Marchant, "More Good Than Harm": A First Principle For Environmental Agencies and Reviewing Courts, 20 *ECOLOGY L.Q.* 379, 381 (1993).

228. *Id.* at 381-82.

229. Warren and Marchant refer to "the twin problems of unreasonable agency action and unfocused, ineffectual judicial review." *Id.* at 384. Absent a clear expression of Congressional intent, the "more good than harm" approach to APA reviews holds some promise. The authors' premise is supported by an explication of the failures of environmental regulation and judicial responses posed under the Administrative Procedures Act.

One commentator mixing wit with wisdom claims, "[A]ssumptions about how agencies decide (for example, by muddling through) are an important factor in the courts' perception of their review responsibilities. Muddling through is sharply scrutinized, and muddling A's expectation into B's pocket is intensely observed. Thus emerges the hard look doctrine, by now a well recognized phenomenon in contemporary administrative law." Rodgers, *supra* note 184, at 221-22.

230. The law has not considered the effects of predicides on wildlife and the environment as important as their effects on humans and human-based activities. Their use depends on registration through EPA, under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). 7 U.S.C. §§ 136-136y (1988).

231. Coggins, *supra* note 202, at 316.

J. *Enforcement Issues*

Enforcement ultimately relies on strong laws and the active proscription of violations. Help is needed in both areas. At present, the government can bring a forfeiture action against violators of the federal Airborne Hunting Act to obtain the aircraft used in the violation. A violation includes harassment of wildlife, as well as illegal shooting, capture or killing of wildlife.²³² The government can also increase the targeting and prosecution of black-market predator-control poison distributors and users of illegal predator control practices.²³³ Additionally, the government itself violates federal law by not curbing ADC activities in the territorial habitats of listed threatened and endangered species.²³⁴

K. *The State Policy Debate*

Unless new law proscribes state management of wildlife on federal lands entirely, state decision-making will impact the landscape for change. Examples of alternative policy options in practice are seen in two states, Kansas and Utah. "Kansas has not participated in ADC's livestock program for at least 28 years."²³⁵ Kansas has one extension agent at Kansas State University who spends about 60% of his time on animal damage control activities. These activities include training farmers how to trap and kill predators, but does not include actually killing predators.²³⁶ Instead, the agent focuses on distributing information on how to reduce predation losses by preventative measures, such as penning. Preliminary statistical evaluations of the Kansas program are extremely favorable, indicating much better expenditure-to-

232. 16 U.S.C. § 742j.1 (1994). *United States v. One Bell Jet Ranger II Helicopter*, 943 F.2d 1121 (9th Cir. 1991).

233. However, there is news of problems in the environmental and natural resources division of the U.S. Attorney General's office, and severe complaints concerning a new requirement that "virtually all prosecutions, no matter how small, must be approved in Washington, undermining speedy and cost-effective enforcement of environmental laws." Diana R. Gordon, *Can Reno Be the People's Lawyer?*, THE NATION, Mar. 21, 1994, at 371.

234. Press Release from Sierra Club Legal Defense Fund, *Wildlife Conservation Groups Sue Federal Government's Animal Damage Control Program For Violations Of Endangered Species Act*. (May 1, 1992). The Sierra Club Legal Defense Fund sought an injunction to stop ADC operations in these areas.

235. *Audit*, *supra* note 101, at 34.

236. *Id.* at 34-35.

loss ratios and lower losses than in neighboring ADC-dependent states spending significantly more on ADC programs.²³⁷

In a model approach, Utah has undertaken state-level habitat recovery and restriction planning with a long-range planning focus that "combines concern for reduced revenues from private use of public lands with a realistic long-term planning strategy."²³⁸

L. *The Role of Education and Citizen Involvement*

Citizen education and involvement in the legislative process should help change business-as-usual, and should, in the democratic tradition, be considered an important resource in creating appropriate changes in federal law and local practice. Suggestions in this area come from grass-roots groups hoping to influence the changes that will take place,²³⁹ and include the following:

1. "Insist the Senate Subcommittee, like the House, take public testimony (rather than only written comment) annually."²⁴⁰

237. *Id.* State comparisons include Kansas-Nebraska, and Kansas-Oklahoma. (1) Kansas-Nebraska: Kansas has 37% more sheep than Nebraska, but only 86% of Nebraska's sheep loss to predators, and only 87% of Nebraska's sheep loss to coyotes. Kansas has 16% more lambs than Nebraska, but only 34% of Nebraska's lamb loss to predators, and only 31% of Nebraska's lamb loss to coyotes. Based on Table 20, "Comparison of Kansas And Nebraska Livestock Statistics." For a total state cost of less than \$60,000 in Kansas, *id.* at 34, and a total Nebraska ADC budget of \$242,532. Table 9, "ADC 1992 Livestock Protection Budgets" *Id.* at 20. (2) Kansas-Oklahoma: Oklahoma's herds "are even closer in size to Kansas' than those of Nebraska." *Id.* at 35. Oklahoma spends over twice as much as Nebraska and five times that of Kansas, and reports five times as much predation as Kansas. *Id.* [Note, besides being a question of program efficiency, this data is also affected by the lack of an internal control mechanism to prevent overreporting in ADC-dependent program areas.]

238. Miller, *supra* note 186, at 901, 905. Miller states that this approach "may set an example for a balancing of the interest of the users of public land and the environment." *Id.* at 905.

239. Predator Project and Wildlife Damage Review are making efforts to change the law of predator control, both organizations producing newsletters with specific ADC program news and policy change initiatives and guidance. The Wildlife Damage Review's most recent issue includes photos of 11 decapitated mountain lion heads stacked against a tree, a coyote crucified on a fence post, a coyote pup "denne'd with a treble hook," statistics on 1993 ADC animals "taken" including over 37,000 coyotes by aerial gunning, an economic analysis of the program, information on making requests under the Freedom of Information Act, and citizen involvement suggestions. WILDLIFE DAMAGE REVIEW, *Special Edition - An Urgent Call To The American People: Your Tax Dollars Are Paying for This*, Summer, 1994.

240. Predator Project Report, *supra* note 77, at 40.

2. Attempt to obtain additional influence on the National Animal Damage Control Advisory Committee; obtain expanded representation of wildlife interests on the committee, and recommend appropriation reforms through the committee.²⁴¹
3. Attend ADC "National and Regional Symposia, which are held yearly." Demand reforms and communicate concerns to the opposition.²⁴²
4. Attend state ADC appropriations committee hearings and write and communicate with state legislators. Research state supporters of ADC, lobby against ADC operations and testify at appropriations hearings.²⁴³

Public education is an important part of creating priority for the predator control issue, despite the fact that it should sit squarely in the middle of the ecological debate on public land use. The objective here must be "[t]o counter the ignorance that underlies the persecution of predators in our culture," and "develop public education programs that increase understanding of predators and their biological importance."²⁴⁴

M. *The Role of Ethics*

It is time for the law to take an ethical position on predator control consistent with the principles of biodiversity. First, actions that attempt to resolve disputes in a "commons" area, such as Western public lands, may be more attractively resolved by posing solutions as evidencing an ethics of conservation, and not of competition. Second, "ethical perspectives can suggest approaches to uncertainty issues that benefit-cost analysis ignores. The major one is to constrain conventional benefit-cost analysis by the principle of sustainability."²⁴⁵

In a speech by Bruce Babbitt before his nomination and appointment as Secretary of the Interior, he identified what he considered the largest environmental issues confronting the United States, among them the biodiversity issue.

The biodiversity issue is very simple. The problem is the mass extinction of species But there is a much larger issue contained within the biodiversity question. It has to do with the concept of spiritual dominion. It questions whether something is badly wrong

241. *Id.*

242. *Id.*

243. *Id.* at 41.

244. *Waste, Fraud and Abuse, supra* note 64, at 31.

245. A. Dan Tarlock, *Now, Think Again About Adaptation*, 9 ARIZ. J. INTL. & COMP. L. 169, 173 (1992).

in our own philosophy and perception of the world when we recklessly shred the biological fabric of the planet without any regard for the consequences.²⁴⁶

The role of normative values in creating and evaluating the law must be recognized. New developments in the law affecting the environment have come about as we recognize changes in our relationship with natural resources. As Professor Tarlock states,

[e]nvironmental ethics are a reflection of a profound re-examination of the duality between man and nature, triggered by Aldo Leopold's *A SAND COUNTY ALMANAC*. The common theme in the welter of writings in the past two decades is that we should collapse the Greco-Christian dualism between man and nature and replace it with principles that place natural systems on par with humans. It is an ambitious and problematic effort, but the central lesson is that we need to approach nature with greater humility than we have in the past, adopting stewardship as the basic resource use norm.²⁴⁷

X.

CONCLUSION

This article calls for a re-evaluation of the law impacting American wildlife predators and reasonable modifications to that law. The lack of public policy infrastructure is now unforgivable.

The first need is a context for protecting wildlife predators, a stated social policy making biodiversity a first priority and recognizing that predator protection is a key element in maintaining ecological balance, a Predator Protection Act.

The states and federal agencies must develop a program that is responsive to public policy and public oversight. The federal government already has authority over our wildlife resources; it is past time to exercise that power. The current ADC program is a "tragedy of the commons" in which our environmental resources are exploited beyond their ability to recover. This predicament calls for a federal response, and efforts to divert the "tragedy of the commons" must of necessity be specific and must include both regulatory prohibitions and incentives.

246. Bruce Babbitt, *Lecture: The Future Environmental Agenda For The United States*, 64 U. COLO. L. REV. 513, 516-517 (1993). Babbitt concluded his remarks with what he called a "political observation: these issues can not be left to politicians because they are really deep and intensely personal matters that affect all of us. . . . In the flux of American politics, the big changes never come from inside. They come from the barbarians in the hills, laying siege to the citadel of power." *Id.* at 521-22.

247. Tarlock, *supra* note 243, at 172.

Programs designed to control predators through killing should be narrowly focused to target specific individual problem animals. Courts should strictly construe proof of need for specific killing of species to balance life systems with measurable and economically justifiable predation loss in the grazed-animal economy. Existing predator control methods must be reined in and new predator control law must respect protections given to species under other wildlife protection laws, including the Endangered Species Act.

The standard for judicial review has to change. An express public policy would give courts a basis from which to proceed. The environmental utility of the Administrative Procedure Act is insufficient, and courts should no longer permit agency decisions to ignore environmental damages. Standards for review need to be sensitive to the concerns of biodiversity: the balancing of the harms should balance the right harms and the burden of proof should foster environmental preservation and incorporate environmental risk assessment.

Private responsibility for predator control should also be enhanced. Private incentives should encourage the use of preventative and humane control techniques and reduce unnecessary pain and loss of wildlife species. Program parameters should foster ecological recovery and result in an end to unnatural biological species responses.

The sustainability of natural ecosystems and the healthy biodiversity of Western lands are at stake. Action is necessary, and the time is right. As Barry Lopez observed, in discussing his study of wolves,

I think, as the twentieth century comes to a close, that we are coming to an understanding of animals different from the one that has guided us for the past three hundred years. We have begun to see . . . that animals are neither imperfect imitations of men nor machines that can be described entirely in terms of endocrine secretions and neural impulses. Like us they are genetically variable, and both the species and the individual are capable of unprecedented behavior. . . . To paraphrase Henry Beston, they move in another universe, as complete as we are, both of us caught at a moment in mid-evolution. . . . The appreciation of the separate realities enjoyed by other organisms is not only no threat to our own reality, but the root of a fundamental joy.²⁴⁸

248. BARRY H. LOPEZ, *OF WOLVES AND MEN* 283-85 (1978).

APPENDIX

SELECTED STATE STATUTES CONCERNING PREDATORS

ALASKA STAT. § 16.35.200 (1994) - Prohibiting the use of poisons to kill predators without written board consent.

ARIZ. REV. STAT. ANN. § 28-1745 (1993) - Authorizing government employees to kill coyotes by shooting from aircraft for wildlife and livestock management purposes.

ARK. CODE ANN. § 15-43-231(a)-(c) (1994) - Excluding coyotes and other wild animals from hunting season restrictions on fur-bearing animals; creating an open season.

CAL. FISH & GAME CODE § 4004 (1993) - Regulating the use of leghold steel-jawed traps, and prohibiting some traps.

CAL. FOOD & AGRIC. CODE § 11242-11243 (1993) - Authorizing the use of the "coyote gun" to kill coyotes.

CAL. FOOD & AGRIC. CODE §§ 11284, 11305 (1993) - Banning the use of Compound 1080 on public lands, and in state parks and ecological reserves.

COLO. REV. STAT. § 33-3-103(1)(a) (1993) - Authorizing the state to "use whatever proper means are available to effectively minimize depredation to livestock by coyotes and bobcats."

COLO. REV. STAT. § 33-3-106(4) (1993) - Allowing the killing of bears, mountain lions, coyotes, bobcats and red foxes without permits, but requiring that bear and lions killed be reported to the state within 5 days.

COLO. REV. STAT. § 33-6-107(9) (1993) - Expressly authorizing one to kill wildlife, including coyotes, bobcats and red foxes, without license or permit on "lands owned or leased by him" "when such wildlife is causing damage."

COLO. REV. STAT. § 33-14-117(2) (1993) - Recognizes the state's right to issue permits to control coyotes, bobcats, foxes "and the like" from snowmobiles.

COLO. REV. STAT. §§ 35-40-107, 35-40-108 (1993) - Establishes a bounty for coyotes and wolves; \$1 per coyote, \$2 per wolf. Requires the production of the scalps "including the entire ears" and the swearing of an oath.

GA. CODE ANN. § 27-1-28 (Michie 1993) - Permits the unrestricted taking of coyotes and other named small wildlife.

IDAHO CODE § 25-2601 (1993) - Authorizes counties to take coyotes by any means.

ILLINOIS 520 ILCS 5/2.30 (1994) - Creates restrictions on trapping of coyotes by time of year, but permitting "hunting methods at any time."

IND. CODE § 14-2-4-8 (1994) - Permits unrestricted taking of coyotes at any time on land in one's possession.

IOWA CODE § 109.87, § 109.40 (1994) - Authorizing a less restricted "open season" on red fox, gray fox, weasel, groundhog, wolf, coyote and other animals.

IOWA CODE § 331.401(3) (1994) - Authorizing bounty payments for coyotes, but prohibiting bounties for wolves, foxes, crows and rattlesnakes.

IOWA CODE § 481A.24 (1994) - Authorizing the use of mobile radio transmitters to hunt coyotes during deer off-season.

KAN. STAT. ANN. § 21-3727(b) (1989) - Authorizing the use of poisons on private lands "for the purpose of destroying wolves, coyotes or other predatory animals."

KAN. STAT. ANN. § 32-701(i)-(l) (1989) - Excluding the coyote from hunting license requirements.

KAN. STAT. ANN. § 32-913 (1989) - Requiring six hours of instruction in humane takings to obtain state fur-bearer license.

KAN. STAT. ANN. § 32-1002(6) (1989) - Banning the use of coyotes to train dogs [still permitted in several states. -ed.].

KAN. STAT. ANN. § 32-1006 (1989) - Authorizing the taking of coyotes "at any time" if one has a hunting or fur-harvesting license.

KY. REV. STAT. ANN. §§ 258.275 - 258.295 (1992) - Establishing a damage claim procedure for dog and coyote damage.

LA. REV. STAT. ANN. § 56:256-257 (1994) - Placing a severance tax on fur-bearing animal takings, including coyotes; a penny per "skin" on coyotes.

ME. REV. STAT. ANN. tit. 12, § 7108 (1994) - Creating a coyote night hunting permit for \$2 plus the completion of a questionnaire from the previous year, and creating an open season.

MINN. STAT. §§ 97A.221 - 97A.225 (1987) - Making the possession of certain wild animals an offense; establishing state investigative powers and penalties including forfeiture of boats and vehicles used in the commission of illegal acts against wildlife.

MISS. CODE ANN. § 49-7-31(h) (1994) - Authorizing open season on predatory animals, and the trapping of beaver and coyote at any time.

MISS. CODE ANN. § 49-7-33 (1994) - Permitting the hunting of coyote during daylight hours only, with an exception for agricultural interests.

MONT. CODE ANN. §§ 81-7-111 - 81-7-114, 81-7-202 (1993) - Establishing bounty program procedures, establishing skin and lower jaw requirements and setting statutory payment amounts: \$100 for a wolf or mountain lion, \$20 for a wolf pup or mountain lion pup, \$5 for a coyote, \$2.50 for a coyote pup.

NEB. REV. STAT. § 23-361 (1991) - Authorizing county boards to levy a head tax on sheep and cattle for animal damage control of coyotes and other predators.

NEB. REV. STAT. §§ 37-233 - 37-234 (1988) - Restricting airborne hunting to permittees and requiring private landowner authorization; permits issued based on proof (1) of population "so large" as to present "substantial threat" to livestock and domesticated animals, and (2) that property owners will not be detrimentally affected; permittees to report numbers taken.

NEB. REV. STAT. § 37-524 (1988) - Authorizing the use of spring-loaded guns, M-44's, with location and notice restrictions.

NEV. REV. STAT. § 202.255(2) (1993) - Permitting the use of spring-loaded guns, M-44's, and restricting their location and usage.

NEV. REV. STAT. § 503.005(2) (1993) - Authorizing the issuance of permits for aerial hunting and killing of coyotes, bobcats and ravens.

N.H. REV. STAT. ANN. § 207:3-d(I) (1993) - Restricting the dates during which poison baiting for coyotes and other animals can occur.

N.H. REV. STAT. ANN. § 210:8(I) (1993) - Outlawing trade and possession of fur-bearing animals' skin and fur without a state tag or seal. [Specific mention of the coyote's inclusion dropped effective Jan. 1, 1994.]

N.H. REV. STAT. ANN. §§ 210:17, 214.9(IV) & (V) (1993) - Restricting the use of snare traps and other traps on coyotes and other fur-bearing animals.

N.M. STAT. ANN. § 17-5-5(F) (1994) - Excluding any resident seeking to protect livestock from all hunting, trapping and license requirements.

N.D. CENT. CODE §§ 20.1-01-05, 20.1-07-03.1 (1993) - Permitting the unrestricted use of snare traps to kill coyotes; establishing a season for snaring coyotes.

N.D. CENT. CODE § 20.1-01-08 (1993) - Restricting the night hunting of predators, except the hunting of coyote, fox and other animals to protect livestock.

N.D. CENT. CODE §§ 20.1-02-05(15) & (26) (1993) - Expressly authorizing aerial hunting for livestock protection; and establishing a "coyote depredation prevention" program.

OKLA. STAT. 29, §§ 5-301 (1993) - Restricting the use of spring-gun poisons by location, signage and permit requirements.

OR. REV. STAT. § 166.320 (1990) - Banning the use of spring-guns (poison baiters) except by the government for the control of coyotes and rodents.

OR. REV. STAT. § 497.146 (1990) - Including the coyote and other predators among "mammals with commercial fur value," requiring a certificate of "trapper education" before killing; creating an exception for persons killing commercial fur animals on their own land or land leased by them.

OR. REV. STAT. § 610.050(2) (1990) - Preventing the (1) taking and the (2) molestation of any animal caught in a government-set trap, spring-gun or poison bait device [ie: prohibiting interference with the use of such, including dying-but-not-dead animals.]

S.C. CODE ANN. § 50-11-1080 (Law. Co-op. 1993) - Authorizing a majority of a county's legislators by written request to "declare an open season on coyotes, with the use of firearms."

S.C. CODE ANN. § 50-11-2410 (Law. Co-op. 1993) - Restricting the use of leghold traps by location, size and purpose; regulating and permitting the use of "body gripping traps," "Conibear type."

S.D. CODIFIED LAWS ANN. § 40-36-15(1)-(2) (1994) - Providing for a bounty for each coyote, payable from ADC funds to residents with hunting licenses who kill them within the state, including at "parks and monuments;" \$5 for each coyote, \$5 for each coyote pup.

S.D. CODIFIED LAWS ANN. § 40-36-34 (1994) - Authorizing a head tax on sheep for control of coyotes and foxes.

S.D. CODIFIED LAWS ANN. § 40-36-37 (1994) - Authorizing a county bounty on coyotes of \$4 per coyote.

S.D. CODIFIED LAWS ANN. § 41-8-2 (1994) - Creating hunters' year-round open season on coyote, with the same provision for fox west of the Missouri River.

S.D. CODIFIED LAWS ANN. § 41-8-22 (1994) - Permitting non-resident licensees to shoot coyotes, foxes, and skunks without restriction.

S.D. CODIFIED LAWS ANN. § 41-8-37 (1994) - Expressly permitting the shooting of coyotes, foxes, and other specified animals from moving cars.

S.D. CODIFIED LAWS ANN. §§ 41-8-39.1 - 41-8-39.2 (1994) - Expressly permitting the shooting of coyotes and foxes from aircraft by land owners and lessees, and authorizing government contracts to aerial hunters.

S.D. CODIFIED LAWS ANN. § 1-6-8 (1994) - Designating the coyote as the state animal.

TEX. HEALTH & SAFETY CODE ANN. §§ 825.021, 825.031, 825.033 (1994) - Authorizing counties to purchase poisons to kill coyotes and provide poisons to citizens for free; and authorizing a county bounty of \$5 per coyote, wolf, panther or bobcat, and bounties for other specified and expressly unspecified animals.

UTAH CODE ANN. § 23-13-17 (1994) - Permitting the night spotlighting of coyotes, red fox and other animals for killing, except not by vehicle headlights; exception for livestock protectors and ADC.

WASH. REV. CODE § 9.41.185 (1994) - Authorizing government use of "coyote getters" on range land and forest areas to "control" and "eliminate" coyotes harmful to livestock and game interests.

WIS. STAT. §§ 29.65-29.99 (1993) - Establishing wildlife resource violations, and authorizing the state to prosecute the illegal killing of listed animals, with statutory civil fines; for coyotes, \$43.75 fine.

WIS. STAT. § 29.997 (1993) - Authorizing the courts to levy a "natural resource assessment" equivalent to 75% of the fine or forfeiture for violation of the state wildlife resource law.

WIS. STAT. § 66.37 (1993) - Authorizing county bounty programs, payable for coyotes and other predators.