RESTORING ENDANGERED SPECIES:
THE IMPORTANCE OF BEING WILD

Holly Doremus*

I. INTRODUCTION

The California condor once again spreads its ten-foot wings over the Grand Canyon. The howl of the gray wolf echoes through Yellowstone National Park and the Idaho wilderness. Peregrine falcons hunt in the urban canyons of New York, Boston, and Baltimore. The Department of Interior ("Interior"), chief architect of these dramatic scenes, richly deserves the pride it takes in them. Beyond the drama, the return of these species to their native habitats is an important step toward removing them from the endangered and threatened species lists.¹

These returns have not come without controversy. At least two of four wolves released to the Upper Peninsula of Michigan in an early project were deliberately killed shortly after their release.² A relocated sea otter was rubbed out in the style of a mob hit, wrapped in chains and shot through the head.³ The carnage continues. Early in 1997, for example, the bullet-riddled body of a reintroduced wolf was dumped in a stream outside Yellowstone National Park.⁴ In April 1998, just a month

* Acting Professor of Law, University of California at Davis. J.D., University of California at Berkeley, 1991; Ph.D., Cornell University, 1986; B.Sc., Trinity College, 1981. The ideas in this Article grew out of an invitation to speak at the second annual symposium of the Wallace Stegner Center for Land, Resources and the Environment at the University of Utah College of Law. Some very preliminary thoughts on wildlife restoration, delivered at that symposium, were published in RECLAIMING THE NATIVE HOME OF HOPE: COMMUNITY, ECOLOGY AND THE AMERICAN WEST (Robert B. Keiter ed., 1998). Professors Diane Amann, Joel Dobris, David Driesen, Harrison Dunning, Thomas Joo, Robert Keiter, and Stephen Polasky provided helpful comments on earlier drafts. Brennan Cain, Nathan Goedde, John Doorlay, and Keith Wagner contributed invaluable research assistance. Thanks also to Tanya Bartucz for editorial suggestions.

¹ Thanks in large measure to the success of reintroduction efforts, Interior has proposed to remove the peregrine falcon from the endangered species list. See Endangered and Threatened Wildlife and Plants; Proposed Rule to Remove Peregrine Falcon in North America from the List of Endangered and Threatened Wildlife, 63 Fed. Reg. 45,446 (to be codified at 50 C.F.R. pt. 17.11 (h)) (proposed Aug. 26, 1998).

² There is some confusion about how many of these wolves were deliberately killed. Some writers report that all four were shot. See THOMAS R. DUNLAP, SAVING AMERICA'S WILDLIFE 169 (1988); Richard P. Reading et al., TOWARDS AN ENDANGERED SPECIES REINTRODUCTION PARADIGM, 8 ENDANGERED SPECIES UPDATE, Sept. 1991, at 3. Another commentator, however, claims that two met accidental deaths, one killed by a trapper who mistook it for a coyote and the other hit by an automobile. See JAMES B. TREFETHEN, AN AMERICAN CRUSADE FOR WILDLIFE 295 (1975).


⁴ See Wolf Death in Yellowstone Prompts Posting of Reward, PORTLAND OREGONIAN, Feb. 9, 1997, at A19. About 10 wolves have been illegally killed in the northern
after its release, a Mexican wolf was killed by a camper in Arizona. In August 1998, a California condor died following a gunshot wound. Nonetheless, it seems inevitable that federal wildlife restoration efforts will continue. The quest to assure the long-term survival of species listed under the Endangered Species Act ("ESA"), in particular, will likely force further efforts.

Interior has avoided formulating any general reintroduction policy, preferring instead to proceed on an ad hoc, project-by-project, basis. To minimize controversy and political opposition, the agency has focused its efforts on charismatic species that enjoy strong popular support, and on species that can survive on federal lands remote from most economic activity. Although it is not possible to shield private property interests entirely from the effects of reintroduced species, Interior has also adopted a variety of measures designed to control reintroduced animals, thereby limiting damage to private property.

These control measures threaten the effectiveness of restoration efforts in at least three ways. First, they can reduce the probability that projects will produce viable populations. Agency biologists are sufficiently sensitive to the needs of restored species, and sufficiently anxious to succeed in their restoration efforts, that they are unlikely deliberately to design a project doomed to biological failure. Nonetheless, by confining

---


7. The literature on biological restoration features an exuberant array of terminology. See, e.g., Donald A. Falk and Peggy Olwell, Scientific and Policy Considerations in Restoration and Reintroduction of Endangered Species, 94 RHODORA 287, 296 (1992). This Article uses the terms "wildlife restoration" and "wildlife reintroduction" interchangeably to refer to the deliberate relocation of animals by human beings for the specific purpose of bolstering existing free-ranging populations or creating new free-ranging populations within the species' historic range. Wildlife restoration therefore includes: the relocation of animals from one wild population to augment or restock another existing population; the relocation of wild animals to an area outside the existing geographic range of the species but within its historic range; and the deliberate release of captive-bred animals within or beyond the species' current range.

8. See, e.g., DEFENDERS OF WILDLIFE, FRAYED SAFETY NETS: CONSERVATION PLANNING UNDER THE ENDANGERED SPECIES ACT 31-33 (1998) (describing habitat conservation plans that rely on moving species from one site to another). Passions run high in favor of reintroduction as well as against it. A fringe environmental group reportedly claimed responsibility for arson at a ski resort in October 1998. The reason given was that the resort planned to expand into territory the group believed should be protected to facilitate future reintroduction of the lynx to Colorado. See Michael Lovell, Group Opposed to Resort Expansion Claims Responsibility for Vail Fires, WASH. POST, Oct. 22, 1998, at A26.


10. See infra notes 203–227 and accompanying text.

11. Failures certainly do occur, but they are far more likely to result from lack of information about the species than from attempts to accommodate property interests. See
restored species to a discrete area, control measures inevitably limit the extent of the restored population.

Second, control measures can increase the costs of restoration. Agency commitments to monitor, recapture, or relocate species undoubtedly drive up administrative costs. Interior often assumes that these additional costs will be offset by decreased enforcement costs because control measures will reduce landowner resistance. It is not obvious a priori, however, which control measures, if any, will produce a net administrative saving.

Third, perhaps the most important and certainly the least recognized effect of Interior's control measures is to diminish the extent to which reintroduced animals live as wild, natural creatures. Interior seems to worry only about the ability of its reintroduced wards to reproduce, but that is not all that matters. Measures that subject introduced populations to human control and manipulation move those populations toward domestication, changing them from wild animals to human creations designed to serve human needs.

Domestication deprives wild creatures of their aura, their magic, the essence for which we should be protecting them. For that reason it is inconsistent with the ESA, the overriding purpose of which is the protection of wild species. Interior’s implicit choices directly and indirectly reduce the likelihood of wild recovery. For example, although its regulations acknowledge the importance of protecting species in the wild, Interior has consistently refused to afford reintroduced animals the full protection of the ESA, even when those animals represent the only unconfined members of the species.

Interior should not blindly adopt control measures that may threaten the ability of expensive, time-consuming restoration projects to satisfy the ESA’s goal of preserving wild nature. Instead, the agency should carefully, and publicly, evaluate the extent to which various control measures decrease the likelihood of achieving the long-term goal of restoring well-distributed wild populations. Control measures should not be adopted unless the agency concludes, after a public airing of the issues, that they are consistent with recovery of the species in a form as wild as possible. In order to reach this conclusion, Interior must come to grips, at least in a preliminary way, with questions it has so far avoided. The agency must ask, and begin to answer, how much wild nature society needs, and how much society can accept.

Part II sets the stage for this discussion with a brief overview of the evolution of wildlife restoration in the United States, from utilitarian ori-
II. BACKGROUND: A BRIEF HISTORY OF WILDLIFE RESTORATION

For thousands of years, people have transported animals and plants to new locations, both consciously and unwittingly. Deliberate efforts to restore once-common species to their former haunts are more recent, but still date back to the last century. Until recently, these efforts concentrated on conserving resources for future human exploitation.

As European settlement marched westward across North America wildlife suffered. By the late nineteenth century, a great many species had been driven to the edge of extinction. Beaver, birds, and bison were slaughtered wholesale in the name of fashion, profit, and dominance of the continent. Wolves and other animals deemed inimical to farming or ranching were massacred to promote economic development. More spe-
cies disappeared in the wake of that development, as forests and prairies were converted to lumber, towns, and farms.18

By the dawn of the twentieth century, wildlife populations in the United States had hit a historic low.19 Even the most abundant species were nearly gone. The ubiquitous white-tailed deer had been reduced to a mere one or two percent of its pre-Columbian population.20 The seemingly infinite, prairie-blackening bison herds of the Great Plains had virtually disappeared; by 1889 the continental bison population had fallen from more than 60 million to under a thousand animals.21 This astonishingly rapid and widely publicized decline aroused public sentiment in favor of wildlife protection.22 Governments began to respond, enforcing existing hunting regulations more stringently and imposing new ones.23 For the first time, native animals were systematically transplanted from their remaining strongholds to reinforce dwindling populations elsewhere. Bison were brought from Texas and Montana to supplement the depleted herd in Yellowstone National Park.24 Yellowstone’s reservoir of elk, in turn, was used to restock areas of Montana and Colorado.25

Although the new public concern for wildlife flowed in part from aesthetic appreciation of nature,26 early restoration actions were heavily skewed toward game animals such as elk.27 These early projects treated wildlife as a resource to be carefully husbanded for future human use. While useful animals were restored, those with the temerity to challenge, or even complicate, human domination of nature were simply swept out of the way. Competitors of sport species, for example, were deliberately

---


18. See, e.g., Raybourne, supra note 17, at 111; L. Jack Lyon & Jack Ward Thomas, Elk: Rocky Mountain Majesty, in RESTORING AMERICA’S WILDLIFE, supra note 17, at 145, 152.


22. See DUNLAP, supra note 2, at 6–7, 12.


25. See Lyon & Thomas, supra note 18, at 146. Restoration efforts were not limited to the West. Eastern projects included, for example, the restoration of beaver to upstate New York. See Edward P. Hill, Beaver Restoration, in RESTORING AMERICA’S WILDLIFE, supra note 17, at 281, 282.

26. See, e.g., DUNLAP, supra note 2, at 6; TREFETHEN, supra note 2, at 129–38 (discussing the reaction to the plume trade and the background of the Lacey Act).

27. See infra note 38.
eliminated. The federal government and many states enthusiastically undertook to destroy animals deemed incompatible with hunting or agriculture. In 1905, the U.S. Forest Service began hiring professional trappers to rid the national forests of wolves. Shortly thereafter, Congress appropriated funds specifically for research into the destruction of "noxious animals." The Bureau of Biological Survey, which eventually was to become the Fish and Wildlife Service, devoted much of its energy to predator control. These efforts proved quite successful, extirpating the wolf and other "pest" species from much of the country.

The states sponsored most of the early restoration projects. Although the federal government had initiated and funded the return of bison to Yellowstone National Park, their wholesale entry into the restoration arena did not come until the Dust Bowl years of the 1930s had devastated both the human and animal inhabitants of the Great Plains. The 1937 Federal Aid in Wildlife Restoration Act, also known as the Pittman-Robertson Act, earmarked the revenue from a new tax on firearms and ammunition for wildlife enhancement projects developed and conducted by the states. As a condition of eligibility for these funds, the Pittman-Robertson Act required that states dedicate revenue from hunting license fees to the support of their fish and game agencies, providing another source of money. Not surprisingly given the revenue

28. See, e.g., ALLEN, supra note 16, at 173 (noting that when lakes in Michigan were stocked with trout other fish were removed).
29. See DUNLAP, supra note 2, at 38.
30. MICHAEL J. BEAN, THE EVOLUTION OF NATIONAL WILDLIFE LAW 235 (rev. and expanded ed. 1983). In 1931, Congress provided explicit statutory authority for the Department's ongoing campaign to destroy "mountain lions, wolves, coyotes, bobcats, prairie dogs, gophers, ground squirrels, jack rabbits" and other injurious animals. Id.
31. See DUNLAP, supra note 2, at 38–40; Coggins & Evans, supra note 17, at 833–40.
32. "By 1942, government hunters had dispatched 24,132 wolves," Robert B. Keiter & Patrick T. Holscher, Wolf Recovery Under the ESA: A Study in Contemporary Federalism, 11 PUB. LAND L. REV. 19, 22 (1990). The gray wolf soon remained only in remnant populations in northern Minnesota, Wisconsin, Michigan, and the Rocky Mountains, while the red wolf was confined to a few southeastern swamps. TREFETHEN, supra note 2, at 280. Predator control also had unintended victims. The black-footed ferret, for example, was virtually wiped out as a result of efforts to eradicate its prey, the prairie dog. See Tim W. Clark, Restoration of the Endangered Black-Footed Ferret: A 20-year Overview, in RESTORATION OF ENDANGERED SPECIES: CONCEPTUAL ISSUES, PLANNING AND IMPLEMENTATION 272, 273 (Marlin L. Bowles & Christopher J. Whelan eds., 1994) (hereinafter RESTORATION OF ENDANGERED SPECIES). Coggins & Evans, supra note 17, at 841–42, give other examples of "nontarget" victims of predator control programs.
33. See TREFETHEN, supra note 2, at 138.
34. See id. at 218.
36. "Wildlife" was limited by regulation to wild birds and mammals, 50 C.F.R. § 80.5(a)(1) (1997), the groups most likely to have game value.
source, Pittman-Robertson money and state license fees flowed primarily to projects benefitting sport animals.\textsuperscript{38}

A handful of early restoration projects, notably the import of bison to Yellowstone National Park, were not specifically directed toward hunting or human exploitation.\textsuperscript{39} But even these projects reflected the prevailing view of nature as a resource to be molded to human ends. Bison were deemed worthy of protection as an important aspect of the nation’s heritage,\textsuperscript{40} but not out of any respect for their wild nature. Park managers fought that nature for years, controlling and managing the Yellowstone bison herd as they would domestic cattle, despite the incongruity of that practice with the history they purported to be protecting.\textsuperscript{41}

In sum, early wildlife restoration efforts focused on the conservation of natural resources primarily to ensure opportunities for future exploitation. Success or failure was measured strictly in terms of population numbers. The extent to which the restored animals lived their lives by nature’s rhythms, outside human control, was simply not relevant.

III. MODERN RESTORATION PROJECTS: REGENERATING THE WILD

Today governments, nonprofit organizations, and individuals carry out many hundred deliberate wildlife translocations each year in North

\textsuperscript{38} Until 1982, funding under the Pittman-Robertson Act was limited by regulation to projects that provided substantial benefits to hunters. Financial support provided under the analogous Federal Aid in Fish Restoration, or Dingell-Johnson Act, 16 U.S.C. §§ 777-777k (1994 & Supp. 1996), was expressly limited to projects aiding fish with sport or recreational value. See 16 U.S.C. § 777a (1994). It appears that neither limitation was strictly applied. See Bean, supra note 30, at 218-19, 226-27. These funds helped the states develop and implement a wide range of restoration programs, restocking and reintroducing such game animals as wild turkey, white-tailed deer, and pronghorn antelope. See John B. Lewis, Success Story: Wild Turkey, in Restoring America’s Wildlife, supra note 17, at 31 (turkeys); Downing, supra note 20 (white-tailed deer); Charles L. Cadieux, Pronghorn Antelope: Great Plains Rebound, in Restoring America’s Wildlife, supra note 17, at 133 (pronghorn antelope); Hill, supra note 25 (beaver). See generally Trefethen, supra note 2, at 243-55.

\textsuperscript{39} The Yellowstone National Park Protection Act, currently codified as amended at 16 U.S.C. §§ 26-31 (1994), had closed the park to hunting before bison reintroduction was contemplated. See Trefethen, supra note 2, at 89. Outside Yellowstone, of course, bison were still regarded as game animals. Around the turn of the century, they were introduced to several eastern “game parks” and restored to the Wichita and Wind Cave National Game Reserves. See id. at 139-41.

\textsuperscript{40} See Dunlap, supra note 2, at 48.

\textsuperscript{41} See Meagher, supra note 24, at 26-31; Trefethen, supra note 2, at 141; Paul Schullery, Searching for Yellowstone: Ecology and Wonder in the Last Wilderness 143, 154 (1997); Richard West Sellars, Preserving Nature in the National Parks 25, 75 (1997). Even today, Yellowstone’s bison, and those in other national parks, are managed in various ways to keep them within the park and to keep their population within acceptable limits. See, e.g., Mark Matthews, Don’t Fence Me In, High Country News, June 8, 1998, at 1, 8.
Although the majority of these projects are still geared towards replenishment of game species for future exploitation, others have a new mission. An increasing number are intended to recreate wild nature for its own sake, rather than to permit future exploitation. Proponents of these new restoration projects seek to regenerate nature in a form free of human dominance.

This new focus reflects a growing consciousness of the value of wild nature unsubdued by humankind. Expanding ranks of urban and suburban Americans are increasingly aware of the disappearance of the last remnants of wild nature around their own homes and in their own lives. Those who mourn this decline view wildlife restoration, with the emphasis on "wild," as a crucial step toward reversing it. They advocate the broad return of wild creatures to their historic ranges, and especially favor restoration of those species that seem least subject to human control and most representative of the pre-human world. Wolves and grizzly bears are the poster creatures of this movement. The strong public pressure to restore these species in particular, among the hundreds listed as endangered or threatened, demonstrates that the yearning for wildness is an important element of public support for wildlife restoration.

The Park Service, governed by a mandate to conserve its lands and their resources for the enjoyment of future generations, was the first federal agency to take up the cause of protecting wild nature for its own sake. In the early 1930s, the Service's newly created Wildlife Division recommended preservation of all species in the national parks as "a living embodiment of the past." At about the same time, the Service banned predator poisoning, declaring that all species would enjoy pro-
Restoring Endangered Species

tection within park boundaries. In 1963 a blue-ribbon advisory commission recommended that the Service go beyond preservation to restoration of the native complement of plant and animal species in the parks as they existed prior to European settlement. Today, Park Service policy encourages the reintroduction of native species to parks if suitable habitat is available.

Over the last quarter-century other federal agencies, states, and nongovernmental organizations have joined the movement to restore the wild. States, with the acquiescence of the federal government, have begun to use Pittman-Robertson funds for projects other than game enhancement. These new projects include restoration of bald eagles and peregrine falcons to New York, re-establishment of prairie dog colonies in North Dakota, and reintroduction of bobcats in New Jersey. The Fish and Wildlife Conservation Act of 1980 has added a new, albeit limited, source of federal funds for projects specifically benefitting non-game wildlife. Private charities have taken a leading role as well. The Nature Conservancy, for example, is recreating a prairie, complete with bison, in Oklahoma. Even individuals have joined the crusade.

A. The Endangered Species Act and the Goals of Modern Wildlife Restoration

The move toward restoration of wild nature is closely identified with the Federal Endangered Species Act. The ESA directs the Department of Interior to list as endangered or threatened those species that are in dan-

---

48. “By the middle thirties predator control had been largely abandoned in the national parks, and in 1939 a policy statement of the Park Service and the Fish and Game Service was announced: ‘No native predator shall be destroyed, on account of its normal utilization of any other park animal, excepting if that animal is in immediate danger of extermination, and then only if the predator is not itself a vanishing form . . . .’” JOHN ISE, OUR NATIONAL PARK POLICY: A CRITICAL HISTORY 594 (1961).


50. Two provisos qualify this general policy. Only species that disappeared from the area due to human impacts and do not pose a threat to visitors or other park resources are to be restored. Nat’l Park Serv., General Management Policies, Biological Resource Management (visited Nov. 19, 1998) <http://www.nps.gov/htd/docs2/planning/mngmntplc/hrmbrn.html>.


54. Cable television magnate Ted Turner is probably the most familiar example. His Montana ranch supports a free-ranging bison herd more than 3000 strong. See Richard Manning, The Buffalo is Coming Back, DEFENDERS, Winter 1995-96, at 6, 9.
ger of extinction or likely to become so in the foreseeable future. It further commands all federal agencies to use their authority to further the "conservation" of listed species. The statute defines conservation to mean more than simply preventing extinction; it means taking all necessary steps, including "propagation, live trapping, and transplantation," to return listed species to conditions under which they no longer require legal protection. Interior prepares recovery plans detailing the steps needed to reach this goal, often including re-introduction.

I. The Overriding Goal of the ESA Is Recovery of Wild Species

Beyond indicating generally that species should be brought to the point where they can be removed from the protected list, the ESA does not define recovery. Nonetheless, examination of the Act's text and purposes make it clear that species must be protected as wild creatures, rather than merely as biological entities.

The text of the ESA demonstrates, albeit somewhat obliquely, the primacy of wild recovery. The Act defines an endangered species as one that is in danger of extinction "throughout all or a significant portion of its range." That definition shows that the Act's objective is the protection of free-ranging, widely distributed populations as opposed to captive populations, which have no "range." The 1982 amendments to the ESA, which authorized Interior to permit the "take" of listed species incidental to other lawful activities, made the goal of preservation in the wild plain, although it did so outside the definition of recovery or the listing standards. The agency may issue an incidental take permit only if the take it allows "will not appreciably reduce the likelihood of the survival and recovery of the species in the wild."

But beyond these limited textual references, the stated purposes of the ESA cannot be achieved unless species are protected in nature, under conditions that allow them an existence more responsive to nature's pres-

56. Id. § 1536(a)(1).
57. Id. § 1532(3).
58. The ESA requires production of a recovery plan unless Interior decides that such a plan will not promote conservation of the species. See id. § 1533(f). For a detailed description of the possibilities and shortcomings of the recovery program, see Federico Cheever, The Road to Recovery: A New Way of Thinking About the Endangered Species Act, 23 Ecology L.Q. 1 (1996).
59. See infra note 96.
61. Section 9 of the ESA generally prohibits the "take" of endangered species, and allows Interior to prohibit the take of threatened species. Id. §§ 1538(a), 1533(d). For purposes of the Act, to "take" is "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Id. § 1532(19).
62. Id. § 1539(a)(2)(B)(iv) (emphasis added). This language came from an Interior regulation defining jeopardy. See infra note 85.
sures than to humankind’s. The first declared purpose of the Act is “to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved.”63 This declaration, in a statute otherwise focused exclusively on individual species, is telling. It suggests that the Legislature was conscious of the intricate interplay of species and environment in ecosystems and considered that interplay itself worthy of protection.64 Nonetheless, the statute provides no explicit provisions for protecting ecosystems as such. Any protection of ecosystems must come through the protection of species. Preservation of species in captivity can never fulfill the purpose of conserving their ecosystems. Protection of species in their native habitats can at least provide that possibility.

The Act’s second stated purpose is “to provide a program for the conservation of [listed] species.”65 Read as a simple endorsement of the preservation of species in an ecological version of “stamp-collecting,”66 this goal appears compatible with captive preservation. But while stamp albums can preserve stamps in mint condition at low cost for long periods, zoos cannot do the same for species. Some species do not reproduce successfully in captivity.67 Others can be maintained in zoos, but only at

64. Congress recognized the importance of species as components of ecosystems, rather than simply as isolated entities, in enacting the ESA:

The events of the past few years have shown the critical nature of the interrelationships of plants and animals between themselves and with their environment. Another word for the study of these interrelationships is “ecology.” The hearings proved (if proof is still necessary) that the ecologists’ shorthand phrase “everything is connected to everything else” is nothing more than cold, hard fact.


The Conference Report on the 1982 Amendments to the ESA confirmed the importance of ecosystems and the interactions between species and their environment:

In enacting the Endangered Species Act, Congress recognized that individual species should not be viewed in isolation, but must be viewed in terms of their relationship to the ecosystem of which they form a constituent element. Although the regulatory mechanisms of the Act focus on species that are formally listed as endangered or threatened, the purposes and policies of the Act are far broader than simply providing for the conservation of individual species or individual members of listed species.

65. 16 U.S.C. § 1531(b) (1994). A third stated purpose is to “achieve the purposes of” a series of enumerated treaties and conventions. Id.
67. See, e.g., Clark, supra note 32, at 272, 285–87 (describing difficulties of inducing captive ferrets to breed).
considerable expense. More fundamentally, species in captivity rapidly diverge from their wild forebears. Captive animals experience different selection pressures than wild ones. As a result, their progeny exhibit characteristics different from those of animals born and reared in the wild. Captivity tends to select for traits that would be disfavored in nature, producing animals that are docile, stupid, and lethargic by comparison to their wild relatives. Even if the goal is merely to collect species for posterity, then the only way to keep them as they have evolved in the wild is to keep them in the wild.

But of course species preservation under the ESA is intended as far more than an exercise in static collecting. Congress explicitly found that endangered species “are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people.” Conspicuously absent from this list is financial or economic value. The ESA seeks to preserve species for the hearts and minds, rather than the wallets, of present and future generations. It reflects “biophilia,” the yearning and perhaps need human beings have for an intimate relationship with the natural world. That yearning cannot be satisfied by captive, controlled species. Captive species may produce food or skins as valuable as those that can be obtained from the wild. But animals held in captivity cannot capture our hearts or engage our minds as fully as their wild cousins.

Indeed, none of the congressionally listed values of species can be fully protected in captivity. The esthetic benefits of wild and captive animals, for example, are quite different. Wild creatures, unconfined and uncontrolled by any human volition, inspire awe and wonder that captive animals cannot match. A bald eagle soaring above a river choked with spawning salmon offers a far richer esthetic experience than a caged eagle feasting on canned fish. A butterfly pinned to a display card, although beautiful and easy to view at leisure, cannot approach the beauty of one glimpsed passing on the wing, or perched on a native flower.

68. See Brown, supra note 66, at 372; R. C. Lacy, Managing Genetic Diversity in Captive Populations of Animals, in RESTORATION OF ENDANGERED SPECIES, supra note 32, at 63, 64–68. The problems of captive breeding are well known in the fishery context. Hatchery-raised fish behave quite differently than those raised in the wild. See, e.g., Tom Kenworthy, Fish Hatcheries Caught Between the Wisdom and Politics of Stocking, WASH. POST, Dec. 1, 1996, at A3.


70. By contrast, other conservation statutes specifically acknowledge the economic importance of fish and wildlife. The Fish and Wildlife Conservation Act, for example, declares that “[f]ish and wildlife are of ecological, educational, esthetic, cultural, recreational, economic, and scientific value to the Nation.” Id. § 2901(a)(1).

71. See generally EDWARD O. WILSON, BIOPHILIA (1984); STEPHEN R. KELLERT & EDWARD O. WILSON, EDS., THE BIOPHILIA HYPOTHESIS (1993); KELLERT, supra note 44.

72. On the esthetic benefits of nature generally, see KELLERT, supra note 44, at 33–49.

73. The authenticity of a species in its surroundings can be an important aspect of the esthetic experience. For example, although North American beavers that have been
similarly diminishes the recreational value of species. The joy of wildlife-based recreation derives in large part from the quarry’s lack of domestication. The thrill of the chase, the skill and knowledge it demands, are more important than the photograph or trophy it produces. Captive species, divorced from any natural ecosystem, have no ecological value. They provide only pale echoes of the educational and scientific value of species in their natural habitats. Even historic value is reduced by captivity. The bison that today roam free in Yellowstone National Park offer a far closer link to the continent’s history than their semi-domesticated predecessors.

In crafting the ESA’s findings, then, Congress made it fairly clear that the Act is aimed at preserving wild, natural creatures. But beyond the explicit words and purposes of the ESA, there are even more compelling reasons for concentrating on preserving wild species. Wildness, understood as unpredictability or freedom from human control, imparts an aura that cannot be duplicated by captive species. That aura attracts and inspires us. It makes us care about wild places and wild creatures, and leads us to believe they merit special protection. Without wildness, the level of human concern for other species would be reduced. The strong public support that made the ESA possible might well be lost if the Act were reduced to the protection of zoo specimens.

In addition, the implicit ethical underpinnings of the ESA point toward the protection of wild creatures. Although the text of the ESA does not mention ethical obligations, many legislators appealed to the ethical value of species during debates on the ESA, and indeed the law’s blanket protections would make little sense in the absence of a moral obligation to protect species. The exact nature of the ethical duty embodied in the translocated to Europe may fill the same ecological niche as native European beavers, the knowledge that they did not evolve in that location detracts from their appeal. See Brown, supra note 66, at 364.

See Kellert, supra note 44, at 95 (“the chance for intimate contact with nature” is an important motivation for hunters, fishers, and other outdoor recreationists); id. at 99 (viewing species in a zoo could “produce a distorted picture of the creature and its environment, compromising the potential for these animals to instruct and inspire”).


That is why the public readily rallies around such palpably wild creatures as wolves. See supra note 45. Cf. Jack Turner, The Maze and the Aura, in The Abstract Wild 3, 15–16 (1996) (describing the importance of wildness in encouraging humans to see nature as more than a resource or amusement).

Act, however, has proved difficult to pin down. It may be grounded in a duty to preserve for future generations the opportunity to enjoy and use natural resources; in the intrinsic moral worth of species, ecosystems, or nature itself; or in the notion that human power over nature carries a corresponding obligation of stewardship or caretaking. Whatever its source, an ethical obligation to species would seem to require that they be allowed to flourish in the wild. Only wild species will appeal to the hearts and minds of future generations as they do to the current generation. If nature has intrinsic moral worth, wildness as an aspect of nature, and as an essential element of nature's processes, would seem to deserve protection. Analysis on the basis of a religious obligation of stewardship leads to a similar conclusion; allowing nature to flourish as intended by its Creator requires allowing it to remain wild, as it was designed.

Surprisingly, not even conservationists have always recognized the fundamental importance of protecting species in nature, rather than simply as genetic entities. One biologist, for example, has seriously suggested that genes deemed worthy of protection could be "stored as part of a composite living organism, an animal with multiple features from many species or a vast polyploid plant bearing a hundred different flowers and fruits from its branches." The absurdity of the suggestion speaks for itself; plainly such a grotesque creature, even if it could be produced, would not satisfy the desires that led to the ESA. If the ESA is to


81. See Doremus, supra note 79, at 282 (arguing that preservation of life processes should be viewed as the highest ethical obligation).

82. See id. at 275.


84. Professor Houck makes this point dramatically, noting that while we could save species in zoos or sperm banks, or perhaps "encapsulate them in test tubes and bring them out on order like in-flight meals," those methods would not fulfill either the ESA's or society's desires to protect species. Oliver A. Houck, Why Do We Protect Endangered Species, and What Does That Say About Whether Restrictions on Private Property to Protect Them Constitute "Takings"?, 80 IOWA L. REV. 297, 298–99 (1995).
achieve its purposes and retain its popular support, species must not be treated merely as gene reservoirs. They must be protected in the wild, as natural wild creatures.

The Interior Department, which is charged with implementing the ESA and therefore has an important role in interpreting it, has acknowledged the importance of recovery in the wild both formally and informally. The Act prohibits federal actions that may "jeopardize the continued existence" of any listed species. Interior has by regulation defined the quoted phrase as to "reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild." Interior has never formally defined "recovery," but in a 1992 report to Congress the Fish and Wildlife Service explained that recovery is "the process by which the decline of a threatened or endangered species is arrested or reversed, and threats to its survival are neutralized, so that its long-term survival in nature can be ensured."

2. Understanding and Evaluating Wildness

It is not clear, however, precisely what recovery in the wild or in nature entails. The terms are not self-defining. One logical place to seek answers is the relatively new discipline of restoration ecology, whose practitioners describe their goal as the recreation of "natural reality." Another is in the literature of nature, since the wildness we are seeking is the magic or soul of nature. Both restoration ecologists and nature writers tend to equate wildness with freedom from human influence. Literal freedom from all human impacts, however, is not necessarily their mission. Human beings are, after all, both a part and a product of nature. "Natural reality," or wildness, must somehow include humans, together

85. 50 C.F.R. § 402.02 (1997) (emphasis added).
87. Frederick Turner, The Self-Effacing Art: Restoration as Imitation of Nature, in Restoration Ecology, supra note 75, at 47, 48; see also Stanley Price, supra note 75, at 2 (reintroduction is "a conservation tool with great potential for restoring communities and ecosystems to approximately their pristine states"). Another context that has led to considerable discussion of the meaning of "natural" is management of the National Parks. Professor Keiter succinctly describes the debate over the Park Service's natural regulation approach to management, concluding that naturalness is a matter of degree that need not preclude all human intervention. See Robert B. Keiter, Preserving Nature in the Natural Parks: Law, Policy, and Science in a Dynamic Environment, 74 Deny. U. L. Rev. 649, 668-72 (1997).
89. See Diamond, supra note 75, at 331-33.
with their characteristic tendency to modify nature. Furthermore, on a pragmatic level, nature simply cannot be completely divorced from human influences. Those influences are now so pervasive that no natural system can completely escape them. Because natural processes have been so thoroughly disrupted in so many locations, even the preservation of species and ecosystems now typically requires some degree of active human management. Reintroduction itself is a human intervention, but that does not automatically mean it should be condemned.

In today's human-dominated world, naturalness or wildness must be viewed as a matter of degree, not as an absolute. While human impacts cannot be avoided, the degree to which a species or ecosystem is free, over the long term, both of dependence on human handouts for its basic needs and of deliberate human control is an appropriate marker for wildness. Protecting wild species and ecosystems means preserving them in a condition that permits them to function, to the greatest extent possible, without human intervention. It also means leaving the future of those species or ecosystems to the ordinary processes of evolution, rather than steering them deliberately toward some human vision of usefulness or beauty. Animals are wild if they enjoy natural autonomy, that is if their natural instincts determine such basic choices as where they sleep, what they eat, and how they select a mate. Human interference in those choices leads to domestication, a state in which creatures exist to serve human needs or satisfy human whims. Human control of species inevitably, even if subtly, turns their evolutionary path in ways responsive to human interests. It thereby represents a form of human domination, inconsistent with truly wild nature.

Plainly, animals kept captive in a traditional zoo are not wild. They entirely lack natural autonomy, depending completely on human beings for their food, shelter, and opportunities to breed. Their lives are subject to human control in every way, at every moment. The same is true of domesticated animals, pets, and livestock that have been bred over genera-

90. See Falk & Olwell, supra note 7, at 303 (“The ‘managed natural area’ is no longer considered an oxymoron, but rather the dominant mode of preserving land and ecological values.”); Diamond, supra note 75, at 331–33 (remaining natural patches will always need active management).

91. See Carol M. Rose, Given-ness and Gift: Property and the Quest for Environmental Ethics, 24 ENVTL. L. 1, 29–31 (1994) (noting the blurring of wild nature and controlled or tame property); Norton, supra note 78, at 156 (“Naturalness (wildness too) must admit of degrees.”).

92. See, e.g., Norton, supra note 78, at 157 (explaining that wildness refers to the autonomy and integrity of environmental systems, that is their ability to function independently of human control); Snyder, supra note 88, at 10 (concluding that “wild,” when used of animals, means they are “free agents, each with its own endowments, living within natural systems”).

93. See, e.g., Eric Katz, The Ethical Significance of Human Intervention in Nature, 9 Restoration & Mgmt. Notes 90 (1991) (arguing that “restored” nature is inevitably an artifact created to serve human interests, while true nature exists, as far as possible, outside human control).
tions for lives as companions or servants to human masters. But animals outside a traditional zoo may also be far from wild. At the National Elk Refuge in Wyoming, for example, refuge managers provide alfalfa to sustain the elk herd through the winter. Feeding encourages these elk to become dependent on human assistance. It also artificially boosts winter survival, potentially skewing the species' evolutionary path. Although they are not actually captive, the Refuge elk fall well on the domesticated side of the scale.

At the other extreme, a grizzly bear living in back-country Alaska is clearly wild. It must find its own food, shelter, and mate without human assistance, and largely without human interference. It chooses for itself where to forage and when to hibernate, thriving or failing according to how well it makes those choices. Human activity undoubtedly affects its life in a variety of ways. A new road might cut off a favorite feeding ground, for example. But the animal itself decides how to respond to that development. Over time, the bear and its descendants will develop strategies for avoiding or coping with limited human encroachment into their world. That autonomous self-reliance is the essence of wildness. It is the appropriate aim of endangered species reintroduction and, more generally, the proper benchmark for the recovery of listed species.

Nonetheless, the level of wildness possessed by that Alaskan grizzly bear may not be either achievable or appropriate for every species in every location. A high degree of natural autonomy and freedom from human control may be a more important aspect of the esthetic, ecological, and recreational values of some species than of others. Those who believe that human beings have a moral obligation to protect nature may disagree about the level of wildness that duty requires them to seek. Moreover, the impacts on human interests of allowing species to be wild vary with the species and the place. Very few Americans would support efforts to recreate a pre-human or pre-European wilderness, virtually free of human control, across the continent. There is, however, some minimal degree of wildness we should strive to allow all creatures, in order to preserve the values recognized by Congress in the ESA and, more importantly, in order to remind ourselves that the world is not entirely under our control.

Because the appropriate or achievable degree of wildness will vary from species to species, and perhaps even from place to place, no generic policy can solve the wildness problem in advance. Interior need not commit itself to renouncing all control of reintroduced animals. But it should make wildness an express consideration in its process for design-

94. See, e.g., Lynne Bama, Jackson Hole Tries "Unnatural" Elk Management, HIGH COUNTRY NEWS, Sept. 15, 1997, at 12 ("Wildlife managers and environmentalists say feeding the elk keeps their numbers dangerously high, and that the animals, a symbol of wildness, are becoming domesticated.")
ing reintroduction projects. The extent to which a species will determine its own path in the world must be consciously and explicitly weighed, both in setting recovery goals and in planning reintroduction efforts to meet those goals. The agency must structure its recovery plans and reintroduction projects to provide for at least the minimal level of wildness without which the ESA would seem a pointless charade.

B. Reintroduction of Endangered and Threatened Species

Early agency efforts under the ESA concentrated on listing species. The recovery program was slower to take off, but as recovery plans were drafted, reintroduction and relocation programs inevitably appeared as elements of those plans. Species typically do not reach the protected list until their numbers are severely reduced. By that point, restocking and reintroduction are often necessary to afford the species a reasonable chance of recovery.

Recovery plans prepared under the Act must include, to the maximum extent practicable, a description of management actions necessary for the conservation of the species. The duty to further the conservation of listed species, that is to take the steps necessary to move them towards delisting, could be interpreted to require that the Fish and Wildlife Service fully implement all recovery plans, including the restoration projects those plans propose. However, recovery plans are typically drafted equivocally, allowing the Service and reviewing courts to read them as merely recommending, rather than requiring, specific restoration efforts. Moreover, courts have been reluctant to treat recovery plans as binding documents. Nonetheless, these recovery plans, together with

98. See supra notes 56–57 and accompanying text.
99. See, e.g., FISH AND WILDLIFE SERVICE, DRAFT RECOVERY PLAN FOR UPLAND SPECIES OF THE SAN JOAQUIN VALLEY, CALIFORNIA VI (1997) (Recovery plan “[o]bjectives will be attained and any necessary funds made available subject to budgetary and other constraints affecting the parties involved, as well as the need to address other priorities.”). Courts have acknowledged that the ESA leaves the Service a great deal of discretion with respect to identification of conservation measures and the level of detail required. See, e.g., Fund For Animals v. Babbitt, 903 F. Supp. 96, 105–09 (D.D.C. 1995).
100. See Cheever, supra note 58, at 59–64; Fund for Animals v. Rice, 85 F.3d 535, 547 (11th Cir. 1996) (The ESA “makes it plain that recovery plans are for guidance purposes only.”); Endangered and Threatened Wildlife and Plants: Establishment of a Nones-
prodding from restoration advocates, push the Service toward restoration projects.

When Interior first began to discuss wildlife restoration as a strategy for recovery, it quickly encountered hostile reactions from states, other federal agencies, and affected landowners.\textsuperscript{101} To smooth the way for reintroduction the Interior Department sought, and in 1982 Congress enacted, an amendment to the ESA. This amendment added a new provision, section 10(j), confirming Interior’s authority to transplant listed species to areas beyond their current geographic range.\textsuperscript{102} In order to lessen the impacts of restoration, section 10(j) also created a new regulatory category, “experimental,” for introduced populations that remain geographically separate from other populations of the species.\textsuperscript{103} Experimental designation carries important consequences, increasing management flexibility by decreasing the rigid protection of the Act’s two prohibitory provisions, section 9\textsuperscript{104} and section 7.\textsuperscript{105}

Section 9 flatly forbids the “take,” broadly defined, of endangered animals, imposing civil and criminal liability on anyone who kills, harms, or harasses an endangered animal, even if the harm is indirect and unintended.\textsuperscript{106} By contrast, the Act confers a great deal of discretion on the

\textsuperscript{101} See, e.g., ENDANGERED SPECIES ACT AMENDMENTS OF 1982, S. REP. NO. 97-418, at 3 (1982) (“Other federal agencies, State officials and private individuals, however, are reluctant to allow experimental or new populations of endangered species to be established on their land for fear that the section 7 jeopardy standard, critical habitat designation, and the section 9 taking prohibitions will be applied to limit their land management options’’); \textit{id.} at 32 (Interior comments regarding opposition to its proposals to restore squawfish to the Colorado River and red wolves to the southeast).


\textsuperscript{103} “For purposes of this subsection, the term ‘experimental population’ means any population . . . authorized by the Secretary for release . . . , but only when, and at such times as, the population is wholly separate geographically from nonexperimental populations of the same species.” \textit{id.} § 1539(j)(1) (1994). Interior apparently believes it retains the discretion to determine whether or not introduced populations will be treated as experimental. \textit{See Proposed Establishment of a Nonessential Experimental Population of Grizzly Bears in the Bitterroot Area of Idaho and Montana, 62 Fed. Reg. 35,762, 35,763 (1997) [hereinafter Proposed Grizzly Bear Rule]. The language quoted above from the statute does not support this contention. Neither does the legislative history. \textit{See S. Rep. No. 97-418, at 7 (1982) (specimens introduced into an area overlapping with an existing natural population would not be treated as experimental, but those introduced into an area separate from any natural population would).}

\textsuperscript{104} \textit{id.} § 1538 (1994).

\textsuperscript{105} \textit{id.} § 1536 (1994).

\textsuperscript{106} \textit{See id.} §§ 1538(a)(1) (prohibiting the take of endangered animals), 1532(19) (broad definition of “take”), 1540(a), (b) (civil and criminal penalties for violation). The Supreme Court upheld Interior’s definition of “take” to include habitat destruction that harms the species in \textit{Babbitt v. Sweet Home Chapter of Communities for a Great Oregon, 515 U.S. 687 (1995). Interior may permit some take of endangered animals under section
Interior Department with respect to the treatment of threatened species. It directs the Secretary of Interior to issue "such regulations as he deems necessary and advisable to provide for the conservation of such species." Under section 10(j), this regulatory flexibility also applies to experimental populations, which are treated as threatened even if the species is listed as endangered. Congress expected Interior to use this flexibility to reduce the protection of experimental populations. Both committee reports indicated that Interior should sometimes allow the inadvertent or even deliberate taking of introduced wildlife.

Experimental populations also receive reduced protection under section 7, the other major prohibitory provision of the ESA. Section 7 commands federal agencies to ensure that their actions are "not likely to jeopardize the continued existence" of any listed species or to destroy habitat the Fish and Wildlife Service has identified as critical for a listed species. In order to fulfill this duty, the action agency first asks the Service whether listed species, species proposed for listing, or critical habitat occur in the project area. If so, the action agency prepares a biological assessment evaluating the potential effects of the proposed action on the species and critical habitat. If the biological assessment reveals possible adverse effects, the action agency must enter into a process of formal consultation with the Fish and Wildlife Service. The consultation process culminates in the Service’s issuance of a written biological opinion as to whether the proposed action is likely to jeopardize a listed species or destroy its critical habitat. Although the action agency need not unquestioningly accept that opinion, the tendency of courts to respect the Service’s expertise makes a jeopardy opinion a powerful barrier to carrying out the proposed action.

Section 7 provides very limited protection to species that have been formally proposed for listing, but not yet listed. If a biological assessment suggests adverse impacts on species proposed for listing, the action agency must informally confer with the Service about those impacts.

107. Id. § 1533(d).
108. See id. § 1539(j)(2)(C).
109. See S. REP. No. 97-418, at 8 (1982) (“There will be instances where the regulations will allow for the incidental taking of experimental populations, such as the inadvertent taking of experimental fish species by those fishing for other species on the same body of water. Where appropriate, the regulations may allow for the direct taking of experimental populations. For example, regulations pertaining to the release of experimental populations of predators, such as red wolves, will probably allow for the taking of these animals if depredations occur or if the release of these populations will continue to be frustrated by public opposition.”); H.R. REP. No. 97-567, at 34 (1982), reprinted in 1982 U.S.C.C.A.N. 2807, 2834 (similar).
112. See id. § 402.14.
113. See id. § 402.10.
However, the action agency is not required to avoid jeopardizing species proposed for listing.¹¹⁴

Some experimental populations receive the full protection of section 7, but others do not. Before introducing an experimental population, Interior must determine whether that population is "essential to the continued existence" of the species.¹¹⁵ By regulation, experimental populations are considered essential if their loss "would be likely to appreciably reduce the likelihood of the survival of the species in the wild."¹¹⁶ Section 7 applies with full force to essential experimental populations. That is not the case, however, for nonessential experimental populations, which receive full protection only within national parks and national wildlife refuges.¹¹⁷ In other locations, nonessential experimental populations are treated as if they were merely proposed for listing.¹¹⁸ Action agencies must informally confer regarding the effect of their actions on nonessential populations, but they have no duty to modify or forego those actions, no matter how severe their effects.¹¹⁹ Interior has never introduced an experimental population under an "essential" designation.¹²⁰

Section 10(j) was enacted specifically to deal with objections to reintroducing listed species to areas outside their current range. It does not apply to the transplantation of listed animals between existing populations, or release of captive animals to restock existing populations. Congress limited the special treatment of section 10(j) to experimental populations, that is, populations newly established by introduction and wholly separate from remnant wild populations.¹²¹ Restocked animals therefore enjoy the full protection of the ESA.¹²²

¹¹⁵ Id. § 1539(j)(2)(B).
¹¹⁶ 50 C.F.R. § 17.80(b) (1997). This language comes directly from the conference report on the 1982 amendments to the ESA. See H.R. Conf. Rep. No. 97-835, at 33-34 (1982), reprinted in 1982 U.S.C.C.A.N. 2860, 2874-75 ("The Secretary must also determine by regulation whether the population is essential to the continued existence of an endangered or threatened species. In making the determination, the Secretary shall consider whether the loss of the experimental population would be likely to appreciably reduce the likelihood of survival of that species in the wild. If the Secretary determines that it would, the population will be considered essential to the continued existence of the species.").
¹¹⁸ Id.
¹²⁰ See infra Part V.A.1.
¹²¹ The Legislature "carefully considered how to treat introduced populations that overlap, in whole or in part, with natural populations of the same species," and determined that such populations would not be treated as experimental. H.R. Rep. No. 97-567, at 33 (1982), reprinted in 1982 U.S.C.C.A.N. 2807, 2833.
¹²² Inexplicably, a district court recently ordered reintroduced gray wolves removed from Yellowstone and central Idaho on the theory that some naturally dispersing wolves were present in the area. See Wyoming Farm Bureau Fed'n v. Babbitt, 987 F. Supp. 1349 (D. Wyo. 1997). The court sua sponte stayed its order pending appeal to the Tenth Circuit. See id. at 1376. The Ninth Circuit has already made it clear that it disagrees with
The plain language of section 10(j) seems to require experimental designation of any population introduced outside the species' current range. Nonetheless, Interior conducts and funds reintroduction projects that do not seem controversial without such designation. The California condor, for example, was returned as a nonexperimental population to the Los Padres National Forest in southern California. Similarly, peregrine falcons have been re-established at several locations without any reference to section 10(j). It has also been reported that "plant reintroductions are occurring regularly without formal listing as experimental populations;" and small mammals have been reintroduced without any formal consideration of their 10(j) status. Still, the majority of federal projects to restore endangered species are conducted under the aegis of section 10(j). Species reintroduced as experimental populations under this sec-

the decision. See United States v. McKittrick, 142 F.3d 1170, 1175 (9th Cir. 1998). The Wyoming Farm Bureau decision correctly holds that the ESA does not allow introduction of "experimental" wolves to an area already containing a population of non-introduced wolves, although the District Court may not have given adequate weight to the Fish and Wildlife Service's views about what constitutes a "population." See McKittrick at 1175. But the presence of non-introduced wolves would not bar restocking with imported wolves. It would simply prevent "experimental" designation. The appropriate remedy would be removal of the "experimental" tag, not of the wolves. See id.

123. "For purposes of this subsection, the term 'experimental population' means any population . . . authorized by the Secretary for release . . . but only when, and at such times as, the population is wholly separate geographically from nonexperimental populations of the same species." 16 U.S.C. § 1539(j)(1) (1994).

124. Interior maintains that experimental designation is not mandatory. "[T]he Service believes that adequate authority, apart from section 10(j), exists to authorize translocation efforts for listed species and could be exercised in those instances where the administrative flexibility of section 10(j) is not required. Section 10(j) was added by Congress to expand, not to limit, the Service's existing authority and range of options on the issue of transplantation." Endangered and Threatened Wildlife and Plants: Experimental Populations, 49 Fed. Reg. 33,885, 33,888-89 (1984) [hereinafter Experimental Populations Rule].

125. Because the entire population had been deliberately removed from the wild a few years earlier following litigation, the California condor is a special case. See National Audubon Soc'y v. Hester, 801 F.2d 405 (D.C. Cir. 1986). Interior may have been seeking to avoid any charge that the wild condors were captured and subsequently released in order to convert the population from a natural one entitled to full ESA protection to a less protected "experimental" one.

126. See Falk & Olwell, supra note 7, at 291. Plant reintroductions tend to be much less controversial than animal reintroductions, not only because plants stay where they are introduced but also because the ESA does not forbid the taking of listed plants on private property. See 16 U.S.C. § 1538(a)(2) (1994); Donald A. Falk et al., RESTORING DIVERSITY: STRATEGIES FOR REINTRODUCTION OF ENDANGERED PLANTS 465 (1996).

127. See N.R. Holler et al., Reestablishment of the Perdido Key Beach Mouse on Gulf Islands National Seashore, 5 CONSERVATION BIOLOGY 397 (1989); Mimi S. Wolok, Experimenting with Experimental Populations, 26 ENVTL. L. REP. 10,018, 10,032-33 (1996) ("Translocations [of the Delmarva fox squirrel] under full endangered species status have occurred at several other sites in Virginia, Maryland, and Delaware, with mixed success."). Apparently at least one insect has also been reintroduced without recourse to section 10(j). The Fish and Wildlife Service web page reports that a pilot reintroduction project for the American burying beetle has been completed in Massachusetts. U.S. Fish & Wildlife Serv., ENDANGERED SPECIES RECOVERY ACTIONS (visited Nov. 19, 1998) <http://www.fws.gov/r9endspp/esaction.html>.
tion include fish, birds, and mammals, ranging from the whooping crane to the gray wolf. 128

C. The Intent and Limits of Section 10(j)

Neither the words of section 10(j) nor its legislative history provide a precise picture of its intended role. Interior has adopted a reading that provides maximum protection to affected landowners. The agency seems to interpret section 10(j) to authorize, if not require, the adoption of any and all control measures needed to gain the support of those potentially affected by a reintroduction. 129 This interpretation is both wrong and counterproductive. It encourages affected property owners to object to restoration projects, since objection increases the likelihood and extent of concessions. 130 While Congress sought, through section 10(j), to reduce political opposition to wildlife reintroduction, it does not follow that all possible accommodations must be adopted. In light of the language of section 10(j), the purposes and overall structure of the ESA, and the limited legislative history, the most sensible reading is that section 10(j) allows flexible treatment of introduced populations where such treatment will encourage conservation actions not otherwise required under the ESA.

128. For a comprehensive account of all section 10(j) reintroductions through the end of 1995, see Wolok, supra note 127, at 10,023–28. The most recent reintroduction is that of the Mexican wolf, released to eastern Arizona in March 1998. See Frank Clifford, Eleven Wolves Freed in Arizona Stay Close to Pens, L.A. TIMES, Apr. 2, 1998, at A3. A proposal to reintroduce the grizzly bear to the northern Rockies is pending. See Proposed Grizzly Bear Rule, supra note 103. Although the proposal has the support of many local residents, opponents successfully inserted a rider into the 1998 Interior appropriations bill prohibiting any expenditures for grizzly reintroduction. See H.R. 2107, 105th Cong. § 342 (1997).

129. See infra Part V.A.

130. Interior effectively invites objections. For example, the preamble to the final rule for reintroduction of the Delmarva fox squirrel stated that the state of Delaware would have opposed reintroduction without designation as an experimental population and relaxed ESA protection. But the reintroduction was to a state wildlife area, and the state concerned submitted only positive comments, including requesting that the rule “clearly express that take of the Delmarva fox squirrel is in violation of state law.” Endangered and Threatened Wildlife and Plants; Determination of Experimental Population Status for an Introduced Population of Delmarva Fox Squirrel, 49 Fed. Reg. 35,951, 35,954 (1984). There seems to have been little reason for the state to object, and no mention of any state objection was made in the proposed rule. See Endangered and Threatened Wildlife and Plants; Proposed Determination of Experimental Population Status for an Introduced Population of Delmarva Fox Squirrel, 49 Fed. Reg. 13,556 (1984). In another case, Interior refused to designate an experimental population as essential despite an affirmative request for essential treatment by the state in which the reintroduction was to occur. See Endangered and Threatened Wildlife and Plants; Determination of Experimental Population Status for Certain Introduced Populations of Colorado Squawfish and Woundfin, 50 Fed. Reg. 30,188, 30,189–90 (1985) [hereinafter Squawfish Rule].
1. Section 10(j) Seeks to Reward Those who Exceed Their ESA Obligations

Section 10(j) must be read against the background of the Act it modified. The ESA, although it provides strong defensive protection for dwindling species, does much less affirmatively to improve their condition. In particular, the Act does not require that non-federal actors take affirmative steps to conserve listed species. Section 9 provides a brake on actions that harm existing populations of listed species; but both Interior and the courts have refused to read that section as imposing any affirmative duty to enhance the suitability of habitat, restore species to their former range, or otherwise promote recovery. As the law is currently interpreted, states and private landowners have no obligation to open their lands for direct releases of reintroduced wildlife, or to provide financial support for reintroduction projects. Any such efforts are entirely voluntary.

Section 10(j) sprang primarily from the desire to encourage such voluntary efforts. Interior was especially anxious to gain the cooperation of states, because federal funding for restoration activities was quite limited. Given its budget constraints, Interior viewed access to state resources, including land, personnel, and funds, as essential to implementing effective restoration programs. Prior to enactment of section 10(j), though, fears that vigorous application of section 9 to introduced populations would interfere with established hunting and fishing uses, or otherwise restrict land management options, made states reluctant to conduct or cooperate with reintroduction projects. The problems of private land-
owners received less attention in the legislative hearings on section 10(j), but a few large landowners did testify. Like state officials, they focused their testimony primarily on the negative consequences that voluntary restoration efforts could bring under the ESA. They expressed particular concern that reintroduction might lead to restrictions on subsequent development activities.

To gain the benefit of state and private restoration efforts, Congress was willing to loosen the otherwise rigid strictures of the ESA. As the House Committee Report on the 1982 amendments explained:

Another shortcoming of the Act is its tendency to discourage voluntary introduction of species in areas of their historic range. State fish and wildlife agencies had probed the feasibility of introducing such experimental populations, but they feared political opposition to reintroducing species unless some assurances were simultaneously extended to prevent the creation of Endangered Species Act problems. In order to mitigate fears expressed by industry that such experimental populations would halt development projects, the Committee defined what an experimental population is and how it shall be treated under the Act. Clarification of legal responsibilities

48 (1982) [hereinafter Senate Hearings] (testimony of G. Ray Arnett, Ass't Sec. for Fish, Wildlife and Parks, Dep't of Interior) (noting that State land managers have been reluctant to cooperate in reintroduction projects because they fear disruption of their fish and wildlife management programs); id. at 87 (testimony of William S. Huey, Sec., New Mexico Natural Resources Dep't) ("States are now reluctant to participate in the introduction of experimental populations if recreational opportunities or management options are going to be foreclosed ... "); House Hearings, supra note 133, at 19–20 (statement of Lonnie Williamson, Wildlife Managemt Inst.) (stating that "recent experience has revealed that critical habitat designations can discourage State wildlife agencies from introducing or reintroducing endangered species into new areas" because such introductions may interfere with normal management of other species).

135. See Senate Hearings, supra note 134, at 204–05 (testimony of W. Samuel Tucker, Jr., Florida Power & Light Co.) ("Those aspects of the [Endangered Species] act which discourage private interests from supporting the introduction of experimental populations should be modified. If these disincentives did not exist, private parties could support such experiments without concern about restrictions on their own activities ... Unless these problems are addressed, S. 2309 is not likely to stimulate enthusiastic private sector support of experiments to promote species recovery. It would be a shame to leave untapped the vast resources of the private sector which could be utilized to promote species recovery.").

136. See, e.g., House Hearings, supra note 133, at 650 (prepared statement of Edison Electric Inst.) ("Private interests are reluctant to encourage the introduction of experimental populations in areas where those private interests operate facilities because of the possibility that the new population may eventually restrict pre-existing or planned future activities."); Senate Hearings, supra note 134, at 190 (testimony of James Tate, W. Reg'l Council) (expressing concerns "that when an endangered species is introduced at the site of a proposed development that section 7 consultation might be invoked. We consider this concern may inhibit project developers from management / experimentation."). The Western Regional Council represented financial, utility, manufacturing, mining, and other industries in the intermountain West. See id. at 223.
incumbent with these populations will, it is hoped, encourage pri-

The Report makes it clear that section 10(j) focused on encouraging vol-

In particular, section 10(j) does not justify special measures to gain


138. See Senate Hearings, supra note 134, at 48 (testimony of G. Ray Arnett, Ass’t Sec. for Fish, Wildlife & Parks, Dep’t of Interior) (federal agencies have expressed concerns about management flexibility similar to those expressed by states); House Hearings, supra note 133, at 547 (Fish & Wildlife Serv. issue paper) (“Federal agencies are reluctant to give approval for reintroduction because they fear delay, alterations, or postponements of ongoing or proposed actions.”).

139. See supra notes 56–57 and accompanying text. As Professor Ruhl has noted, the potential of this provision remains largely untapped; courts have been reluctant to use section 7(a)(1) to force federal agencies to undertake specific actions for the benefit of species. See generally J.B. Ruhl, Section 7(a)(1) of the “New” Endangered Species Act: Rediscovering and Redefining the Untapped Power of Federal Agencies’ Duty to Conserve Species, 25 Envtl. L. 1107 (1995). It is clear, however, that section 7(a)(1) does impose an affirmative duty on federal agencies. See, e.g., Pyramid Lake Paiute Tribe of Indians v. United States Dep’t of the Navy, 898 F.2d 1410, 1416 (9th Cir. 1990). A handful of recent decisions holding that federal agencies had a duty to give greater weight to the interest of endangered species under section 7(a)(1) may signal a trend toward increased judicial willingness to enforce this section. See Sierra Club v. Glickman, 156 F.3d 606 (5th Cir. 1998); House v. United States Forest Serv., 974 F. Supp. 1022 (E.D. Ky. 1997); Bensman v. United States Forest Serv., 984 F. Supp. 1242 (W.D. Mo. 1997).

140. See 16 U.S.C. § 1539(j)(2)(C) (1994) (for purposes of section 7 “other than subsection (a)(1) thereof” nonessential experimental populations are treated as proposed for listing unless found on National Park or National Wildlife Refuge lands).
2. Section 10(j) Allows Regulatory Flexibility Within Broad Limits

Under section 10(j), experimental populations are treated as threatened species even if the species as a whole has been listed as endangered.\(^{141}\) Threatened species do not automatically receive the full protection of section 9. Instead, under section 4(d), the Secretary of Interior may issue "such regulations as he deems necessary and advisable to provide for the conservation of such species."\(^{142}\) Interior crafts a special rule for each experimental population,\(^{143}\) which allows it to examine the needs of the population and the species as a whole in the context of each reintroduction proposal.

When it created the ESA's threatened category, Congress sought to increase regulatory flexibility. It encouraged Interior to tailor protective regulations so as to provide for the needs of threatened species without unnecessarily impeding other activities.\(^{144}\) Nonetheless, there are limits to Interior's discretion to limit the protection of threatened species under section 4(d), and correspondingly that of introduced populations under section 10(j). At a minimum, protective regulations must always "provide for the conservation of the species."\(^{145}\) In other words, the regulations must provide enough protection to ensure progress toward removal from the protected list.\(^{146}\)

Section 4(d) regulations may not allow sport or commercial hunting of threatened species, except in extremely unusual circumstances. This conclusion follows from the requirement that regulations protecting threatened species provide for the conservation of the species, in concert with the Act's definition of conservation. Conservation can include "regulated taking," but only "in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved."\(^{147}\) Although Congress was aware of the economic and recreational value of hunting, it was also aware that hunting was a major cause of many species' decline.\(^{148}\) In the ESA, Congress rejected the suggestion that mem-

\(^{141}\) See supra note 108.
\(^{145}\) 16 U.S.C. § 1533(d) (1994); see also Sierra Club v. Clark, 755 F.2d 608, 612 (8th Cir. 1985).
\(^{146}\) See supra note 57 and accompanying text.
\(^{148}\) See, e.g., S. Rep. No. 93-307, at 2 (1973) ("The two major causes of extinction are hunting and destruction of natural habitat.").
bers of a listed species might be available for harvest for sport or profit. Hunting cannot be allowed unless the species has either recovered sufficiently to be delisted or reached a population level above the ecosystem’s carrying capacity, so that rapid population reduction is essential to ensure its survival. Courts have rejected Interior’s attempts to use section 4(d) to authorize sport hunting of threatened species in the absence of such extreme population pressures.

Nonetheless, Interior believes it can allow the deliberate take of threatened species in certain situations. It has promulgated regulations authorizing the intentional killing of gray wolves and grizzly bears for the purpose of preventing livestock depredations. The adoption of predator control regulations in some form has not been directly challenged, perhaps because no one has been willing to assert in court that listed predators must be free to prey on livestock without interference. An environmental group did, however, challenge the details of the predator control regulations issued for gray wolves in Minnesota. While it remanded the specific regulations for further consideration, the Eighth Circuit seemed untroubled by the general concept of allowing deliberate taking of depredating individuals of a threatened species.

Despite the lack of court challenges, the restrictive statutory definition of conservation, which endorses “regulated taking” only in response to severe population pressures, seems to stand as a barrier to the authorization of any lethal predator control measures. If such regulations ever were directly challenged, though, the barrier might not prove insurmountable. The ESA draws an important distinction between killing

149. See Clark, 755 F.2d at 616–17 (noting that Conference Committee on the ESA of 1973 had rejected the provision of the Senate bill that would have allowed sport hunting of threatened animals).

150. See id. 608 (striking down rule permitting sport hunting of gray wolf population in Minnesota); Fund for Animals, Inc. v. Turner, Civ. A. No. 91-2201(MB), 1991 WL 206232 (D.D.C. 1991) (same for grizzly bear in Montana). Limited sport hunting of the American alligator is authorized by regulations that have not been judicially reviewed. See 50 C.FR. § 17.42 (1997). The alligator, though, is a special case. In many parts of its range it is protected solely on the basis of its resemblance to other species that are in danger of extinction. See 16 U.S.C. § 1533(e) (1994); 50 C.FR. § 17.50(a) (1997) (allowing treatment of species as endangered or threatened if they so closely resemble listed species that it is difficult for enforcement personnel to differentiate). A carefully supervised or geographically limited hunt can ensure that those similar species are not taken. Allowing hunting of American alligators, therefore, is not inconsistent with the argument made here that the deliberate taking of truly threatened species may not be permitted.


152. See Clark, 755 F.2d at 618–19 (“While [ESA § 4(d)] does not authorize establishment of a public sport season, it does give the Secretary discretion to permit, for example, the removal of depredating animals . . . .”); Fund for Animals, 1991 WL 206232, at *2 (regulations allowing taking of grizzly bears to remove “non-immediate threats to human safety or to prevent significant depredations of livestock” not challenged).

153. See supra note 147.

154. Any deliberate take regulations must also allow the species to move toward recovery. See supra note 145 and accompanying text. At least for the gray wolf in northern
species for the sheer pleasure of doing so or for the economic value of
the trophy, and killing or harming them in the course of other legitimate
activities. That distinction shows up not only in the definition of conserva-
tion, but also in the Act’s incidental take provision. Under section
10(a), Interior can issue a permit allowing the taking of a listed species if
that taking is “incidental to, and not the purpose of, the carrying out of an
otherwise lawful activity,” and it will not appreciably reduce the likeli-
hood of survival and recovery in the wild.155 Since taking is the purpose
of hunting, Interior cannot use this provision to authorize the hunting of a
listed species. But it can issue permits that allow activities like housing
construction, timber harvest, or farming, even if some taking of a listed
species will inevitably result.

A similar interpretation could be applied to the prohibition on
“regulated taking.” Sport hunting, which is taking for taking’s sake, must
be considered “regulated taking,” and cannot be authorized in the ab-
sence of extreme population pressures. But the phrase “regulated taking”
need not be read to encompass removal of problem animals to facilitate
other lawful activities, such as livestock production.156 That kind of tak-
ing is not far removed from incidental taking, such as the killing of rats
in the course of plowing a farm field. But Interior should not allow the
taking of threatened predators unless a convincing showing is made that
the taking is as essential to the viability of local livestock operations as
plowing is to the viability of farming operations. Furthermore, blanket
rules issued under section 4(d) require special caution because they by-
pass the individual review provided by evaluation of applications for in-
cidental take permits. Before it authorizes either a deliberate or inciden-
tal take without individual permit review, Interior must be confident that
the collective taking thereby authorized will not jeopardize the survival
and recovery of the species.157

Both the House and Senate made it clear in enacting section 10(j)
that Interior could permit incidental, and even deliberate, taking of ex-

Montana, control of depredating animals appears consistent with this requirement. The
evidence suggests that relatively few wolves commit livestock attacks. See Reassessment
of Montana Wolf Control Plan, Memorandum from Ed Bangs to Ass’t Reg’l Supervisor,
Fish and Wildlife Serv., 7 (Feb. 27, 1998) [hereinafter Bangs Memorandum] (on file with
author); STEVEN H. FRITTS, WOLF DEPREDATION ON LIVESTOCK IN MINNESOTA 10 (1982).


156. But see United States v. McKittrick, 142 F.3d 1170, 1177–78 (9th Cir. 1998)
(rejecting application of “incidental take exception” to any deliberate action, but doing so
in the context of a criminal defendant’s appeal to regulations governing the take of gray
wolves in Yellowstone, which do not authorize any intentional taking short of defense of
human life).

157. Incidental take permits cannot be issued under section 10(a) unless the appli-
cant submits a plan showing that the proposed take will not jeopardize the species. See
supra note 155 and accompanying text. Before it may forego that individual review, Inte-
rior must determine that individual review is not necessary to ensure against jeopardy.
experimental populations in appropriate circumstances.\textsuperscript{158} Indeed, legislators apparently expected Interior to authorize some predator control measures under section 10(j). The Senate Report, for example, stated that:

Where appropriate, the regulations may allow for the direct taking of experimental populations. For example, regulations pertaining to the release of experimental populations of predators, such as red wolves, will probably allow for the taking of these animals if depredations occur or if the release of these populations will continue to be frustrated by public opposition.\textsuperscript{159}

Nonetheless, Congress chose not to add language to section 10(j) authorizing take that would otherwise be forbidden. In light of that omission, the Senate Report cannot be read to expand the agency's authority to permit deliberate taking beyond that already granted by section 4(d). Just as with other threatened species, then, Interior cannot allow sport hunting of introduced populations absent extreme local overpopulation. But it can allow deliberate take that is both incidental to an otherwise lawful activity and consistent with progress toward recovery.

This authority fits nicely with the purpose of section 10(j) to encourage state and private landowners to open their land to reintroduction projects. Giving landowners permission knowingly or deliberately to take introduced animals in the course of agricultural or other activities on the property will encourage them to host reintroductions. Provided the introduced population can absorb the authorized take, such regulations would further the conservation of the species.

Interior can also use its authority to allow unintentional take of experimental populations to encourage state cooperation with reintroduction projects by reducing the potential for restoration to conflict with established or proposed uses of state lands. One driving force behind the enactment of section 10(j) was the fear of state wildlife management agencies that reintroduction of listed species would force them to restrict hunting and fishing.\textsuperscript{160} Hunters might mistake a reintroduced animal for a game species, and anglers might catch a reintroduced fish while pursuing a more abundant one. States feared that such accidental taking might violate section 9. But if mistakes are not likely to occur frequently enough to threaten the recovery of the species, Interior can issue a rule under section 10(j) protecting both the state and its recreationists from ESA liability. That kind of concession can secure state cooperation without compromising the benefit to the species.\textsuperscript{161}

\textsuperscript{158} See supra note 109 and accompanying text.
\textsuperscript{160} See supra note 134 and accompanying text.
\textsuperscript{161} Introduced whooping cranes, for example, have survived for more than 20
IV. THE ROOTS OF OPPOSITION TO WILDLIFE RESTORATION

Government efforts to restore endangered species frequently arouse fierce opposition. The focus on property rights is hardly surprising. Restoration can impose financial costs on property owners, as described below. But the non-economic impacts are also significant. The social and legal institution of private property embodies the urge to assert human dominion over nature. While early restoration projects did not threaten that vision of private property, modern projects with the explicit aim of recreating wild nature unsubdued by humans directly challenge it.

A. Opposition to Game Animal Restoration

Landowners threatened with economic harm opposed the very earliest restoration projects. New York’s turn-of-the-century program for reintroducing beaver to the Adirondacks, for example, was unsuccessfully challenged by landowners who lost trees to the beaver. Reintroduction of game animals continues to stir controversy in certain circumstances. Nonetheless, opposition to these traditional efforts has generally been limited, and for good reason. The animals they restore are economically valuable commodities for trade, consumption, or sport. Landowners hope to capture some of that value. Beaver restoration, for example, gained strong public support during the Depression because beaver hides

years in an area open to hunting of sandhill cranes and snow geese without a single reported incident of a hunter shooting the wrong species. See Endangered and Threatened Wildlife and Plants; Final Rule to Designate the Whooping Cranes of the Rocky Mountains as Experimental Nonessential and to Remove Whooping Crane Critical Habitat Designations from Four Locations, 62 Fed. Reg. 38,932, 38,938 (1997).

162. See supra notes 2–5 and accompanying text.

163. See, e.g., U.S. DEP’T OF INTERIOR, FISH & WILDLIFE SERV., FINAL ENVIRONMENTAL IMPACT STATEMENT, REINTRODUCTION OF THE MEXICAN WOLF WITHIN ITS HISTORIC RANGE IN THE SOUTHWESTERN UNITED STATES 5–111 (1996) (listing among summarized public comments that wolf reintroduction will infringe on private property rights); Endangered and Threatened Wildlife and Plants: Establishment of a Nonessential Experimental Population of California Condors in Northern Arizona, 61 Fed. Reg. 54,044, 54,056 (1996) [hereinafter Condor Rule] (noting comment that the Fish and Wildlife Service “should provide a 100 percent guarantee that the release of California condors will not in any way restrict the use of private property”).


166. Proposals to reintroduce elk to a number of eastern states, for example, have drawn criticism from farmers who fear crop damage. See, e.g., Max Moss, Farmers Fear Appetite of Free-Roaming Elk, NASHVILLE BANNER, July 18, 1997, at A1.

HeinOnline -- 23 Harv. Envtl. L. Rev. 31 1999
carried a good price.\textsuperscript{167} Similarly, many recent proposals to restore elk have won local praise based on expectations that the animals will bring tourism and hunting dollars in their wake.\textsuperscript{168} The fact that game restoration programs generally are not associated with land use restrictions also makes public support easier to gain, and moderates potential financial costs.

\textbf{B. Opposition to the New Wave}

Although its direct economic impacts appear no different,\textsuperscript{169} the new wave of modern endangered species restoration projects has proven much more controversial than the restoration of game animals.\textsuperscript{170} In part, the greater resistance to endangered species restoration may arise from fear of the ESA’s potential to restrict land use. Another possible explanation is that the goals of the new projects account for the increased resistance. Restoration of game animals serves utilitarian human goals. Endangered species restoration, by contrast, explicitly seeks to temper human dominance of nature. That purpose challenges the very foundations on which many rural ranching and agricultural communities were founded.

\textit{1. Economic Damage to Private Property}

Federal wildlife restoration projects have generally been carried out on government lands; only with the consent of affected landowners have species been restored directly to private land. But the effects of reintroduced wildlife cannot easily be confined to public lands or the lands of sympathetic private parties. Many animals are highly mobile and difficult to control, making it virtually impossible to guarantee that they will remain at a reintroduction site.\textsuperscript{171}

Reintroduced animals, just like their wild-born counterparts, can cause a variety of economic harms. Large predators sometimes kill livestock. Gray wolves in Minnesota, one of their last strongholds in the continental United States, occasionally kill cattle and sheep.\textsuperscript{172} Grizzly

\textsuperscript{167} See Hill, supra note 25, at 281, 282.
\textsuperscript{169} See infra notes 171–181 and accompanying text.
\textsuperscript{170} See supra notes 2–5 and accompanying text.
\textsuperscript{171} Woodland caribou, for example, have been known to travel more than 80 kilometers from a release site. See Peter J.P. Gogan, \textit{Considerations in the Reintroduction of Native Mammalian Species to Restore Natural Ecosystems}, 10 Nat. Areas J. 210, 211 (1990).
\textsuperscript{172} Real livestock losses are, however, proportionately quite small. Interior estimates that in Minnesota only about 0.02% of farms suffered verified livestock losses to
bears have been known to attack and kill sheep in the northern Rockies.\textsuperscript{173} Both the gray wolves reintroduced to the northern Rockies and the red wolves restored to the Southeast have killed some livestock.\textsuperscript{174} Reintroduced wolves have also been known to kill dogs.\textsuperscript{175}

Although they do not attack livestock, wild herbivores can also cause economic problems. They can compete with livestock for forage and water,\textsuperscript{176} trample crops, and destroy fences.\textsuperscript{177} Furthermore, livestock producers fear that some wild animals may transmit diseases to their herds. Although the probability of transmission is hotly debated, both bison and elk can host brucella, the causative agent of the cattle disease brucellosis.\textsuperscript{178} A brucellosis outbreak can bring government regulations

 wolves between 1979 and 1981, a period during which the wolf population was estimated at about 1000–1200. The losses averaged about 5 cows, 15 calves, and 56 sheep per year. \textit{See} John Andrew Zuccotti, Note, \textit{A Native Returns: The Endangered Species Act and Wolf Reintroduction to the Northern Rocky Mountains}, 20 COLUM. J. ENVTL. L. 329, 352 n.166 (1995).


\textsuperscript{176} \textit{See} Fellini v. United States, 56 F.3d 1378 (Fed. Cir. 1995) (ranchers contend that consumption of water by wild horses represents a taking of their property); Mountain States Legal Found. v. Hodel, 799 F.2d 1423 (10th Cir. 1986) (ranchers object to forage consumption by wild horses).

\textsuperscript{177} \textit{See}, e.g., Moerman v. State, 21 Cal. Rptr. 2d 329 (Cal. Ct. App. 1993); Gogan, \textit{supra} note 171, at 214 (“tule elk males moved from Grizzly Island Wildlife Management Area to adjacent private lands, breaking through fences and disrupting livestock operations”); State v. Rathbone, 100 P.2d 86, 89 (Mont. 1940) (elk consumed pasture and forage intended for livestock; injured the turf, interfering with grass production; and destroyed or became entangled in fences).

\textsuperscript{178} Roughly 20% of female bison in the Yellowstone herd have asymptomatic brucella infections. \textit{See} Yvonne Baskin, \textit{Study Shows One-Fifth of Female Bison Infected}, 276 Sci. 1786 (1997). A National Research Council study commissioned to examine the danger of transmission of brucellosis from elk and bison to cattle found that the risk is small, but
restricting the export of beef from an entire affected region.\textsuperscript{179}

Even the cute and cuddly sea otter poses an economic threat; it enjoys dining on abalone and other commercially valuable shellfish. Prior to the ill-starred attempt to restore otters to the southern California coast, the California Fish and Game Department forecast annual harvest losses in the range of $100,000 to $260,000; local shell fishers feared much higher losses.\textsuperscript{180} For economically pinched fishermen, even the lower estimate could provide a motive for otter killing.\textsuperscript{181}

The most feared economic impact, though, is indirect. Landowners worry that reintroduced endangered or threatened species will bring with them the ESA's coercive power to curtail conflicting land uses. Thus, reintroduction of even the most seemingly benign creatures, including the carrion-eating California condor and the tiny Bay Checkerspot butterfly, becomes controversial.\textsuperscript{182} Those fears, while often exaggerated, are not wholly without foundation. Although Interior has shown no willingness to do so, the ESA would authorize it to prohibit habitat modification that harmed introduced animals.\textsuperscript{183}

It is worth noting, however, that reintroduction can also bring positive economic impacts. Like restoration of game animals, reintroduction of endangered species can increase tourism. The return of wolves to Yellowstone, for example, has brought increased visitation, pumping millions of dollars into the local economy through increased purchases of food, lodging, and souvenirs.\textsuperscript{184}


\textsuperscript{180} See supra note 3, at 158.

\textsuperscript{181} See supra note 3 and accompanying text.


\textsuperscript{184} Prior to reintroduction of Yellowstone wolves, the economic benefits from increased tourism were estimated at roughly $25 million annually. By contrast, livestock losses were expected to be on the order of $5,000 to $50,000 per year. See Bangs \\& Fritts, supra note 174, at 407. Since the reintroduction, the number of visitors to the Park's
benefit of wolf reintroduction to the region at $20 million, compared to $18,000 in annual costs due to livestock damage.\footnote{185}

2. Non-economic Harm

The vociferous opposition to reintroduction often seems far out of proportion to the financial costs reintroduced wildlife are likely to impose. However, even seemingly small losses can threaten the financial viability of already marginal farming or ranching operations.\footnote{186} Furthermore, there is more to the opposition than financial fears. The one person so far convicted of illegally killing an introduced wolf in the northern Rockies did not own any land or livestock in the vicinity.\footnote{187} Nor is it easy to find a financial motive for the lawsuit challenging the return of condors to Arizona and Utah. As is so often the case with respect to environmental protection measures, even the opposition of property owners cannot be attributed entirely to economic motives.\footnote{188} Ranchers see a threat not only to their income but to their way of life.\footnote{189} Furthermore, reintroduction projects are often superimposed on bitter conflicts over the activities that threaten the species’ survival,\footnote{190} and over the extent to which the federal government will control the destiny of the local community.\footnote{191}

Cooke City entrance, site of the wolf release, has risen 22%, and the sale of kitschy wolf goods is booming. \textit{See McNamee, supra} note 44, at 300.\footnote{185} \textit{See} Keith Bagwell, \textit{Wolves Get Stronger Monitoring}, \textit{Ariz. Daily Star}, May 10, 1998, at B1 (quoting gray wolf recovery coordinator Ed Bangs).\footnote{186} \textit{See}, \textit{e.g.}, McNamee, \textit{supra} note 44, at 28 (recounting that one Wyoming rancher broke down on the witness stand in a court hearing on the challenge to release of wolves in Yellowstone, saying that even small losses to wolves could cause him to lose his way of life); U.S. \textit{Dep’t of the Interior, Fish & Wildlife Service, Final Environmental Impact Statement: Reintroduction of the Mexican Wolf Within Its Historic Range in the Southwestern United States} 5-64 (1996) (containing comments of Greenlee Co., Arizona, expressing concern that wolf reintroduction, combined with other pressures, may kill the local ranching industry); \textit{id.} at 5-70 (containing similar comments from Catron Co., New Mexico).\footnote{187} \textit{See McNamee, supra} note 44, at 240 (describing the killing of a reintroduced wolf by Chad McKittrick). A reintroduced Mexican wolf was killed by a recreational camper, also clearly for non-economic reasons. \textit{See} Mike Taugh, \textit{Gray Wolf Run-Ins Centered on Pets}, \textit{Albuquerque J.}, May 1, 1998, at A1. Non-economic factors also contribute to opposition to some traditional regulations protecting game animals. \textit{See State Fish & Game Comm’n v. Sackman}, 438 P.2d 663 (Mont. 1968) (noting that rancher who sought permission to kill elk on his property showed no evidence of material damage to the property).\footnote{188} \textit{See}, \textit{e.g.}, \textit{Eric Freyfogle, Bounded People, Boundless Land} 115 (1998) ("Property disputes involve money, to be sure, but they include symbolic overtones that are just as important."); Oliver A. Houck, \textit{On the Law of Biodiversity and Ecosystem Management}, 81 \textit{Minn. L. Rev.} 869, 881–82 (1997) (pointing out that conservation regulations arouse controversy because they suggest “that the way we have lived ... [is] wrong-headed, harmful, and in need of change").\footnote{189} \textit{See supra} note 186.\footnote{188} \textit{See Falk & Olwell, supra} note 7, at 299.\footnote{190} \textit{The Montana House of Representatives, for example, vented its ire against the
Particularly in the rural West, government efforts to restore wildlife endorse one side in an on-going conflict over the proper relationship between nature and human beings. On one side stands the "Old West" of ranchers, farmers, and loggers, still clinging tightly to its mythic tradition of rugged individualism. Not long ago, the forebears of today's rural westerners struggled to "carve homes from an untamed wilderness." Conquering nature through arduous physical labor represented to them the ultimate human accomplishment. Many modern inhabitants of the erstwhile frontier still cherish their self-image as tough, rugged individuals wrestling a living from a harsh country.

On the other side stands the New West, followers of Aldo Leopold who see nature as an awesome, beautiful presence they are duty-bound to respect. Professor Keiter has described the battles over the restoration of wolves to the northern Rockies as "symbolic of the transition" in the West from resource extraction to a new order of environmental values. Keiter & Holscher, supra note 32, at 33. These struggles for symbolic approval of particular interactions with nature are not new to the West. The struggles over wolf restoration echo the early fights over predator poisoning. See Dunlap, supra note 2, at 156 (describing woolgrowers battling for the continued right to kill predators as seeking public approval). Professor Sunstein has noted generally the importance of the expressive or symbolic dimension of law. See Cass R. Sunstein, On the Expressive Function of Law, 144 U. Pa. L. Rev. 2021 (1996).

Of course this is an oversimplified picture. There are far more than two points of view, and the politics of Old against New West encompasses much more than wildlife politics. A series of articles that appeared in the Christian Science Monitor gives some sense of the more complete picture. See Daniel Sneider, Stampede of Newcomers Alters How West is Won, CHRISTIAN SCI. MONITOR, Oct. 28, 1996, at 1; Daniel Sneider, Politics Shift as City Folk Fill the West, CHRISTIAN SCI. MONITOR, Oct. 29, 1996, at 4; Daniel Sneider, 'Sagebrush Rebels' Learn the Fine Art of Compromise, CHRISTIAN SCI. MONITOR, Oct. 31, 1996, at 4; Daniel Sneider, In a Utah Town, It's Goodbye Miners, Hello Mountain Bikers, CHRISTIAN SCI. MONITOR, Nov. 1, 1996, at 4. Nonetheless, the simplified caricature presented here accurately reflects the intense feelings of combatants on both sides.

This traditional western view descends from the early colonial view of America as a wilderness the colonists had a moral duty to control. See Freyfogle, supra note 188, at 96–99.

See, e.g., State Fish & Game Comm'n v. Sackman, 438 P.2d 663, 665 (Mont. 1968) (rancher who seeks permission to kill elk describes himself as "the lone man of the soil trying to scratch a living from the uncompromisingly harsh country"). As Professor Freyfogle explains, on the frontier, the failure to convert one's acres from raw nature to useful products "suggests sloth and moral weakness." Eric T. Freyfogle, The Owning and Taking of Sensitive Lands, 43 UCLA L. Rev. 77, 96 (1995).

Leopold first articulated the land ethic: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends
protect. Many have chosen the West specifically for its relatively unspoiled landscapes. Their goals include living with nature, respecting and protecting it in its wild state, rather than molding it to their will. They believe that nature cannot, and more importantly should not, be subjected entirely to human control.\footnote{198}{ALDO LEOPOLD, A SAND COUNTY ALMANAC, WITH ESSAYS ON CONSERVATION FROM ROUND RIVER 262 (1966). Professor Freyfogle has written extensively on the application of Leopold's land ethic to the law, to legal scholarship, and to life. See Eric T. Freyfogle, The Land Ethic and Pilgrim Leopold, 61 U. COLO. L. REV. 217 (1990).}

Government programs to restore endangered wildlife endorse the latter view. They amount to a public confession that the historic conversion of the wilderness to farms and ranches free of predators and other undesirable wildlife—the life work of early Westerners—was an unfortunate mistake. They cannot help but offend descendants of the Old West who take pride in their heritage image as rugged individualists wholly in control of their own lives and their own land. This sort of government intrusion is bound to bring a sharp reaction even if it carries no financial price.\footnote{199}{See, e.g., MCNAMEE, supra note 44, at 18–19 (Ranchers “see the return of the wolf to Yellowstone—carried out by their government, at very considerable expense and at their expense, particularly—as the symbolic end of the cattle culture’s hundred years of hegemony .... The fear ranchers feel—not of wolves, but of losing their own august place atop the world of the West—is dark, deep, and real. Making a living, modest as it tends to be, is not often a cowman’s sole preoccupation. Myth and style and glory and honor permeate the ranching life.”).}

Restoration efforts also bring other non-economic impacts. Rural residents are often proud of their communities' freedom from many of the fears that plague urban areas; they boast of leaving their homes unlocked and allowing their children to play without close supervision. Reintroduction of wild predators can threaten that sense of security. Wolves, for example, may attack and kill pets.\footnote{200}{See MCNAMEE, supra note 44, at 51, 311; Taughen, supra note 187.} Local residents may genuinely fear for their own safety and that of their children, although those fears are typically mistaken. Experts believe that wolves in North America pose no threat to human safety.\footnote{201}{No credible reports exist of attacks on humans by wild wolves on this continent. See MCNAMEE, supra note 44, at 173 (quoting wolf biologist Dave Mech as stating decisively that there is no basis for the belief that healthy wild wolves pose any danger to humans).} Of the animals so far reintroduced or proposed for reintroduction, only the grizzly bear represents a credible threat.\footnote{202}{Although the number of fatal encounters is low even in places where fairly large numbers of people enter grizzly range, grizzlies have been known to attack people, occasionally without provocation. See Tom Kenworthy, Politics Imperils Uncommon Alliance's Plan to Find Grizzlies a Home, WASH. POST, Oct. 12, 1997, at A3.} But justified or not, fear of attack helps to explain the...
extreme rhetoric that peppers the battles over restoration, especially restoration of predators.

V. TAKING THE WILD OUT OF WILDLIFE: THE USE AND MISUSE OF MEASURES TO CONTROL INTRODUCED POPULATIONS

A. Control Measures and Their Effects on Wild Recovery

Interior seeks, quite appropriately, to achieve the recovery of listed species "while minimizing social and economic impacts." In its effort to minimize those impacts, the agency employs a variety of strategies to exert control, directly and indirectly, over reintroduced animals. These control measures are adopted with the noble goal of increasing political support for, and decreasing conflict over, implementation of the ESA. Unfortunately, many of them have the effect of undermining the primary goal of the ESA, the long-term recovery of species in a wild state.

1. "Nonessential" Designation

Interior's regulations implementing section 10(j) define an "essential" experimental population as one "whose loss would be likely to appreciably reduce the likelihood of the survival of the species in the wild." In the 1984 preamble to those regulations, the agency stated that it would recognize populations as essential where "the biological facts" warranted that classification. But it added that it would reconsider both the classification and the release itself if affected parties objected to reintroduction of an essential population.

Since the adoption of section 10(j), Interior has never introduced an experimental population under an "essential" designation. It characterizes as nonessential even populations containing the only free ranging members of the species. Black-footed ferrets, for example, had been reduced to captive breeding populations. The red wolf existed only in.

204. See supra note 116.
205. See Experimental Populations Rule, supra note 124, at 33,888 ("Where the biological facts support an essential designation, the Service intends to make this determination. In a situation where an affected agency, organization, or individual refuses to cooperate on a reintroduction because of an essentiality designation, the Service will reevaluate the designation and, if the status remains unchanged, may withdraw the proposal.").
206. Whooping cranes that had been reintroduced to the Rocky Mountains in 1978, before the enactment of section 10(j), were afforded the full protection of the ESA until 1997, when they were redesignated as an experimental nonessential population. See Experimental Populations: Whooping Crane (Grus americana), 50 C.F.R. § 17.84 (h) (1998).
207. The disappearance of the last known wild colony of black-footed ferrets is re-
captive breeding facilities and on three islands known to be too small to harbor a wild population for any length of time. Yet each of these species was reintroduced as nonessential.

Interior's broad use of the nonessential classification rests on a curious interpretation. Instead of comparing the likelihood of survival in the wild with the experimental population to that without it, Interior takes as the baseline for comparison the chances of survival in the wild prior to the reintroduction. Interior does not consider a population “essential” unless its loss would reduce the probability of survival in the wild below what it was before the population was released. Furthermore, the agency assumes that releasing a small number of animals from a successfully breeding captive population will not reduce that population’s ability to support a future reintroduction. Therefore, the loss of a reintroduced population leaves the species no worse off than it was before the reintroduction was attempted. That chain of reasoning leads to the surprising conclusion that even the only non-captive population of a species is not critical to survival of the species in the wild.

This interpretation defies both biology and logic. Biologically, as Interior is well aware, captive breeding leads to the gradual accumulation of traits inconsistent with survival in the wild.

.counted in Miller et al., supra note 133, at 92–97.


209. See id. at 41,790; Experimental Populations: Black-Footed Ferret (Mustela nigripes), 50 C.F.R. § 17.84 (g) (1) (1998) [hereinafter Black-Footed Ferret Rule]. Interior shows no signs of reconsidering its position. The Mexican wolves released in 1998 carried a nonessential designation, despite the fact that no wild population of this species remained. See Experimental Populations: Mexican Gray Wolf (Canis lupus baileyi) 50 C.F.R. § 17.84 (k) (1) (1998) [hereinafter Mexican Wolf Rule].

210. The Fish and Wildlife Service has explained that not all experimental populations need be considered essential because “there can be situations where the status of the extant population is such that individuals can be removed to provide a donor source for reintroduction without creating adverse impacts upon the parent population. This is especially true if captive propagation efforts are providing individuals for release into the wild.” Experimental Populations Rule, supra note 124, at 33,888.

211. See, e.g., Mexican Wolf Rule, supra note 209, at 1,754 (population deemed nonessential because even if entire experimental population lost, captive population could produce more surplus wolves, allowing future reintroductions).

212. Interior has even suggested that the potential effect of the population’s loss on survival of the species as a whole, not just in the wild, is the relevant measure of essential status. See Endangered and Threatened Wildlife and Plants: Establishment of an Experimental Nonessential Population of Whooping Cranes in Florida, 58 Fed. Reg. 5,647, 5,655 (1993) [hereinafter Florida Whooping Crane Rule]. The agency’s own regulations, however, refute that contention. See supra note 116.

213. See supra note 68 and accompanying text; Miller et al., supra note 133, at 112. The agency has acknowledged this biological reality in a number of its section 10(j) special rules. See, e.g., Mexican Wolf Rule, supra note 209, at 1,755; Black-Footed Ferret Rule, supra note 209, at 41,476; Endangered and Threatened Wildlife and Plants: Deter-
generation, extended captivity can lead to behavioral changes that reduce fitness for life in the wild. Successful recovery in the wild inevitably becomes less likely with each failed reintroduction attempt. Even if the captive population is large enough to withstand the loss of the reintroduced animals the loss of the introduced population is never without cost for the species.

In addition to being biologically naive, Interior’s interpretation is logically absurd. It virtually precludes any essential designation. Congress apparently did expect Interior to designate most experimental populations as nonessential. But Interior’s interpretation is so extreme that it renders the carefully crafted legislative distinction between essential and nonessential populations superfluous. Under the agency’s definition, it is impossible to imagine a circumstance in which an essential population could be introduced consistent with the ESA. So long as an adequately protected captive population remains, the experimental population is not, according to Interior, essential. Only if the reintroduction would itself increase the risk of extinction by reducing the captive population below a safe level would the experimental population be essential. Given the uncertainties inherent in reintroduction, though, risking the last few members of a species in such a reintroduction attempt would probably violate Interior’s section 7(a)(1) duty to conserve the species.

Interior’s interpretation does leave the possibility of a change after reintroduction from nonessential to essential status. Captive or remnant wild populations that were healthy when an experimental population was established might suffer a subsequent catastrophe. That could leave the experimental population as the species’ only hope for survival, making it essential under any interpretation. But that scenario alone cannot account for the language of section 10(j). Congress specifically directed Interior to make a determination of essential or nonessential status “before authorizing the release.” The Legislature must have thought that a population could be essential at the time of essential or nonessential re-

214. In some cases these changes can be reversed through pre-release training or conditioning. See, e.g., Robert C. Lacy, Managing Genetic Diversity in Captive Populations of Animals, in RESTORATION OF ENDANGERED SPECIES, supra note 32, at 63, 64; STANLEY PRICE, supra note 75, at 12; Kleiman, supra note 21, at 155-56.


216. See supra notes 56–57 and accompanying text.

217. Interior is anxious to downplay the possibility of even this potential use of the essential designation. In one early section 10(j) rule, for example, Interior promised that it would not redesignate the introduced population as essential without close consultation with all affected parties, even if the existing wild population entirely disappeared. See Squawfish Rule, supra note 130, at 30,190.

Restoring Endangered Species

Interior is so convinced of the importance of nonessential designation that recent special rules call for removal of entire populations if their status is ever changed to essential. This commitment is patently inconsistent with the long-term goal of reestablishing truly wild populations. It is difficult to make sense of a promise to remove a population from the wild as soon as it is proven to be necessary to the continued survival of the species in the wild. Since section 10(j) rules must provide for the conservation of the species, such a commitment is permissible only if it somehow produces a net benefit for the species. That could conceivably be the case if it persuaded a landowner to open her property to a restoration project, going beyond the requirements of the ESA. But no such benefits underlie, for example, the recent Interior commitment to remove condors restored to federal land in Arizona should they ever be deemed essential.

The reintroduction of black-footed ferrets is one instance in which the commitment to remove animals designated as essential may be justified. Ferrets have been reintroduced directly to private land, with the consent of landowners, under a special rule providing for their removal at the landowners' request if the population is ever deemed essential. That promise may be an important factor in persuading private landowners to open their land to ferrets, which in turn may be crucial to achieving the recovery plan goal of ten or more largely separate self-sustaining ferret populations. Even in this context, however, Interior is playing a dangerous game. It may come to rely on these populations, which are not necessarily permanent, to assure the future of the species. That reliance could lull the agency into allowing destruction of ferrets or their habitat in other locations. If the reintroduced ferrets are then deemed essential and a landowner demands their removal, the species may ultimately be harmed, rather than helped, by the reintroduction process.

220. See supra note 145 and accompanying text.
221. See supra note 163.
222. See 50 C.F.R. § 17.84(g)(12) (1997).
223. See Clark, supra note 32, at 272, 283. Ferrets require several discrete populations to have a high likelihood of persisting over a long time because individual colonies can fall victim to disease outbreaks. See Miller et al., supra note 133, at 92-94, 143.
224. The risks are similar to those that attend Interior's Safe Harbors program, which encourages habitat restoration and management by assuring landowners that they will not be required to provide for more than the pre-improvement baseline population. See Safe Harbor Rule, supra note 132, at 32,190. Some environmentalists have expressed concern that animals may migrate from currently protected habitat to Safe Harbor habitat, allowing the destruction of the habitat from which they have emigrated. Subsequent destruction of the Safe Harbor area, as permitted in a Safe Harbor agreement, could cost the species dearly. See Defenders of Wildlife, supra note 8, at 8.
Interior makes no secret of the reason it prefers to treat introduced populations as nonessential, even when they are introduced to federal land. Nonessential designation reduces federal agencies' obligations under section 7, allowing Interior to assure restoration opponents that reintroduced populations will not interfere with federal permits or management actions. Interior takes the view that nonessential designation allows it to gain this political advantage without giving up anything of importance. In explaining one nonessential designation, for example, Interior noted that it did not expect the species to be affected by any foreseeable federal activities. Since it does not anticipate any federal actions that might jeopardize the species, Interior sees no harm in giving up the full protection of the duty to avoid jeopardy.

But there is a price to pay, both biologically and symbolically, for depriving introduced populations of essential status. Because, the available biological information about endangered species is often imperfect, consequently, Interior's confident prediction that an experimental population will prove compatible with established and foreseeable uses of the land could easily turn out to be wrong. Since times change, Interior could also be mistaken about the likely future uses of the land. However, federal agencies need not formally consult the Fish and Wildlife Service regarding the effect of proposed actions on nonessential populations; instead, they need only informally confer. Without formal consultation, these mistakes might never be caught. Even if a threat is identified, the action agency would have no legal obligation to modify its action. Furthermore, because the informal conference procedure can occur out of public view, it is less likely to lead to political pressure on behalf of the species.

Interior's refusal to recognize experimental populations as essential to the species also carries symbolic costs. It communicates the message that recovery in the wild has no special value. By devaluing the importance of wild species, Interior encourages both nearby landowners and the general public to forget that the long-term goal of the ESA is protection of species in a state as close to that of nature as can be achieved. After all, if the federal agency charged with protecting endangered species does not care if they are wild, wildness must not be an important concern.

225. See supra notes 115–120 and accompanying text.

226. Interior trumpets the benefits of this enhanced regulatory flexibility. See, e.g., Squawfish Rule, supra note 130, at 30,190 ("The entire concept of the nonessential experimental designation is to assure private and governmental entities that Federal regulatory controls will be relieved on reintroduced populations.").

227. See Florida Whooping Crane Rule, supra note 212, at 5,655; see also 1991 Red Wolf Rule, supra note 174, at 56,329.

228. See supra text accompanying note 119.
In addition, routine designation of experimental populations as nonessential eliminates a potentially useful educational opportunity. Interior is acutely aware of the importance of public education to the long-term success of its efforts to protect endangered species. It frequently undertakes educational campaigns in connection with reintroduction projects, seeking to increase public support and discourage the illegal taking of restored animals. Reintroduction of essential populations would give Interior the opportunity to explain, and over time to demonstrate, the ESA’s inherent flexibility. The duty to avoid jeopardy rarely halts development, and the prohibition on taking is sufficiently flexible to allow most economic activities to be harmonized with the needs of listed species. But the agency’s anxiety to avoid the short-term political difficulties of essential designation adds fuel to the popular image of the ESA as an inflexible law incompatible with any economic activity.

While underestimating the disadvantages of routine use of the nonessential classification, Interior seems to have overestimated its advantages. Nonessential treatment has not freed reintroductions from political controversy, nor has it shielded Interior from lawsuits. The requirement that federal agencies formally consult with Interior about the impacts of their actions on essential populations means those populations do impose somewhat greater administrative burdens on federal agencies considering actions within their range. Those added burdens, however, are likely to be slight. Reintroduction projects are still rare; the country is hardly blanketed with reintroduced populations of listed species. Accordingly, few federal projects will pose a potential threat to such populations, triggering the consultation requirement. Even when consultation is required, it usually will not impose much additional burden. Agencies already must confer informally regarding nonessential populations. Moreover, virtually any federal action that might affect an introduced population will require environmental review under the National Environmental Policy Act. Consultation can be combined with that review, which will

229. See, e.g., Idaho Gray Wolf Rule, supra note 219, at 60,279 ("An extensive informational and educational program will discourage the taking of gray wolves by the public."); Proposed Grizzly Bear Rule, supra note 103, at 35,769–72 (similar).

230. See, e.g., Oliver A. Houck, The Endangered Species Act and Its Implementation by the U. S. Departments of Interior and Commerce, 64 U. Colo. L. Rev. 277, 317 (1993) (citing studies that show “the number of projects actually arrested” through the consultation process “is nearly nonexistent”). For the duty to avoid jeopardy, see 16 U.S.C. § 1536.

231. See, e.g., Wyoming Farm Bureau Fed’n v. Babbitt, 987 F. Supp. 1349 (D. Wyo. 1997) (holding that reintroduction of wolves into Yellowstone was unlawful); Carla McClain, Wolves: Freed Wolves Adjust, But Not N.M. Ranchers, TUCSON CITIZEN, Apr. 13, 1998, at 1A (New Mexico ranchers have filed suit challenging reintroduction of Mexican wolves).

232. See supra notes 111–112 and accompanying text.

233. Only 12 species have been reintroduced to date under section 10(j). See supra note 128.

have to address many of the same issues.\textsuperscript{235} The benefits of consultation will generally outweigh these minor added burdens. Formal consultation will facilitate public oversight, thereby increasing public confidence that federal agencies are fulfilling their duty to conserve listed species. It will also help avoid unpleasant surprises should Interior's rosy predictions that introduced populations will be completely compatible with future federal activities prove incorrect.\textsuperscript{236}

Experience shows that reintroduction can be compatible with full application of the consultation and no jeopardy requirements of section 7. Since 1991, a number of California condors have been released into the Los Padres National Forest with the full protection of sections 7 and 9. No significant management problems seem to have followed.\textsuperscript{237} Furthermore, if the well-being of an essential experimental population did prove truly incompatible with essential federal activities, two options would be available. The affected agency, or the applicant for a federal license or permit, could seek an exemption through the Endangered Species Committee process.\textsuperscript{238} If that process proved too cumbersome, legislative relief could be sought, either before or after the reintroduction. Legislative relief is not a vain hope; Congress has already granted one special exemption, freeing the military from consultation requirements with respect to sea otters translocated to Southern California.\textsuperscript{239}

2. \textit{Allowing Incidental and Deliberate Take}

Many of the special rules for experimental populations authorize the taking of introduced animals incidental to otherwise lawful activities. These rules typically require prompt reporting of the take to federal officials,\textsuperscript{240} and often allow only take that is neither intentional nor negligent.\textsuperscript{241} A handful of special rules dealing with predators allow deliberate taking. Because the Act's definition of "take" is so broad, special rules are needed to authorize non-lethal steps, such as throwing of rocks, to

\begin{itemize}
  \item \textsuperscript{235} See 50 C.F.R. § 402.06(a) (1998).
  \item \textsuperscript{236} See supra note 227 and accompanying text.
  \item \textsuperscript{237} Designation of critical habitat for these condors, which occurred prior to their removal from the wild, has sparked controversy. One nearby rancher who owns land within the designated critical habitat has filed suit challenging the condor release. The complaint reportedly asserts that the government could not lawfully release condors without issuing a section 10(j) regulation spelling out any applicable restrictions on surrounding property. \textit{See Giant Ranch Sues to Forestall Condor-Habitat Limitations, SACRAMENTO BEE, Jan. 1, 1998, at A3.}
  \item \textsuperscript{238} See 16 U.S.C. § 1536(e)–(h) (1994).
  \item \textsuperscript{239} See Pub. L. No. 99-625 (1986).
  \item \textsuperscript{240} See, e.g., 50 C.F.R. § 17.84(g)(6) (1997) (black-footed ferret rule).
  \item \textsuperscript{241} See, e.g., id. § 17.84(a)(2)(ii) (allowing take of Delmarva Peninsula fox squirrel incidental to recreational activity); id. § 17.84(c)(4)(ii) (allowing take of red wolves on public lands provided such take is "incidental to lawful activities, is unavoidable, unintentional, and not exhibiting a lack of reasonable due care").
\end{itemize}
drive predators away from livestock or property. In some cases, the special rules go so far as to allow intentional killing of introduced animals caught in the act of attacking livestock or pets.

Provisions authorizing intentional take through the use of potentially lethal measures must be treated with special caution, despite the legislative history indicating that Congress expected Interior to employ them in appropriate cases. Authorizing such measures can complicate existing enforcement problems. Property owners hostile to reintroduction may be tempted to exploit the rules as excuses to kill the animals. To combat this temptation, Interior appropriately requires prompt reporting of any deliberate take. Property owners cannot claim the benefit of the intentional take authorization without providing federal agents a chance to investigate the circumstances of the killing shortly after it occurs. The special rules also address this problem in another way, requiring that some physical evidence support claims that a reintroduced animal has attacked livestock. Assuming that such evidence would be difficult to feign, this requirement should ensure that property owners do not get away with unjustified killings.

In addition to complicating Interior's enforcement task, special rules authorizing the incidental or intentional killing of introduced animals pose at least a potential threat to the biological success of restoration projects. They may prevent an introduced population from achieving viable, self-sustaining status if the animals have a tendency to stray onto private lands. That threat can only enhance the agency's tendency to avoid political controversy by limiting its restoration efforts to large federal landholdings.

242. The ESA's definition of "take" includes harassing and pursuing. See 16 U.S.C. § 1532(19) (1994). The special regulations typically provide that landowners will not risk ESA liability by chasing introduced predators from their property. See, e.g., 50 C.F.R. § 17.84(c)(4)(iv) (1997) ("Any private landowner . . . may harass red wolves found on his or her property . . . . Provided that all such harassment is by methods that are not lethal or physically injurious to the red wolf . . . . "). According to the Fish and Wildlife Service, red wolves are easily driven away by humans making loud noises and throwing "noninjurious projectiles." 1991 Red Wolf Rule, supra note 174, at 56,329.

243. The ESA generally allows deliberate killing of endangered species only in defense of human life. See 16 U.S.C. § 1540(a)(3), (b)(3) (1994). Intentional killing of threatened species has been allowed, albeit with little direct statutory support, in the case of a few predators. See supra notes 158–159 and accompanying text. The section 10(j) rules governing treatment of both red and gray wolves allow deliberate killing in certain limited circumstances. See 50 C.F.R. § 17.84(c)(4)(iii), (v) (1997) (regulations regarding red wolves); see also id. § 17.8 A(c)(4)(i)–(iv) (1997) (regulations regarding gray wolves).

244. See supra note 109.

245. See 50 C.F.R. § 17.84(c)(4) (1997).

246. See id. § 17.84(c)(4)(iii) (depredating red wolves may not be taken unless "freshly wounded or killed livestock or pets are evident").

247. On the other hand, placing this added burden of proof of an attack on the property owner reduces the political appeal of the special rules, since it may not always be possible to prove an attack even if one did in fact occur. See infra notes 361–363.

248. See infra notes 314–318 and accompanying text.
In at least some situations, though, provisions allowing for incidental or even deliberate take of individual animals that damage private property are likely to be biologically acceptable. Interior must always consider the various ways in which introduced animals may be lost; some losses to human taking, whether lawful or not, must be factored into the agency’s expectations. If the species breeds successfully and has relatively little contact with private property, authorizing take in limited circumstances may be fully compatible with establishing a viable population. For example, the gray wolves reintroduced to the Yellowstone area have access to large areas of habitat on public land. Most of the wolves roam onto private land relatively rarely, and attack livestock even less frequently. Allowing the intentional taking of the few who develop a taste for livestock seems unlikely to prevent the establishment of a viable Yellowstone wolf population.

The impact of allowing deliberate taking on the wild nature of the Yellowstone wolves or other reintroduced species is difficult to evaluate. On one hand, in contrast to government recapture or removal efforts, rules allowing property owners to chase off or even kill marauding animals do not directly limit the wildness of experimental populations. Indeed, such rules may increase the likelihood of successful long term coexistence of humans and wild animals. The killing of wolves that develop a taste for livestock may nudge the species’ evolutionary path toward greater wariness of humans and their livestock. Forcing wolves to subsist on wild prey rather than domestic livestock actually brings them closer to the wild lives they led prior to European settlement of the continent. That may be the sort of “natural” human impact wolves must tolerate. It carries no taint of dependence, and little of control. The wolves’ own nature and the evolutionary process will control their destiny.

At the same time, allowing landowners to respond to the incursions of restored wildlife helps to reduce the non-economic harms caused by restoration. It leaves landowners in control of their own property. It respects their expectation of being free to defend that property against the impacts of nature. Instead of insisting that nature enjoy a place above human interests, it acknowledges that humans, too, are a part of nature, whose interests need not always give way. It does not encourage landowners to rely on the government to control nature on their behalf. In-

249. Livestock losses to wolves in the Yellowstone area have been well below the levels predicted prior to reintroduction. See supra note 174. In Montana, it appears that a small number of wolves are responsible for most of the observed livestock depredation. See supra note 154.

250. See infra Part VI.A. Killing problem wolves, rather than relocating them, also reduces control costs, and may not have much more impact on the population. Relocated wolves often continue to depredate livestock, or do not survive the relocation. See Bangs Memorandum, supra note 154, at 6, 13.

251. See supra Part IV.B.2.
stead, it allows them to pursue the classic Old West vision,252 overcoming the challenges of nature through their own courage and skill.

On the other hand, it doesn’t take much courage or skill to shoot a wolf with a modern rifle. The mythic vision of the lone man struggling against the overwhelming power of nature certainly is not a fair representation of today’s world. The overwhelming technological power humans can bring to bear ensures victory in any serious confrontation. That reality makes the special rules allowing landowners to kill depredating predators a real, albeit less than absolute, limit on the wild nature of the introduced predators. Although the message is less direct, less expensive, and less strong than that delivered by federal agents chasing straying wildlife, it remains the same: introduced species are less important than human activity that conflicts with their needs.

It must be recognized, then, that adoption of special rules permitting incidental and deliberate take of introduced populations is a choice to restrict the wildness of those populations. Such a choice should not be lightly made. The ESA itself by permitting the taking of any listed animal in defense of human life,253 has already made the choice to prefer human safety to wild nature. The special rules at issue here go further, allowing the killing of listed species to protect livestock or pets. It is not immediately obvious that livestock or pet protection should always take preference over the needs of wild nature. Neither livestock nor pets are essential to the survival of any human being. Although meat and wool are consumer items for which there is a real demand, it seems quite likely that both would continue to be available, without even much change in the market price, if producers on the fringes of wolf country were forced to accept whatever losses reintroduced wolves might inflict on their herds.254 The astonishing outpouring of public support for wolf reintroduction255 suggests that social welfare is probably better served by wild wolves than by livestock production, at least in the remote regions to which wolves have been reintroduced.

Interior must keep in mind these deeper consequences when issuing special rules for reintroduced populations. Those rules must always take as their benchmark moving the species toward wild recovery. When striking a balance between surrounding property owners and the wild species, Interior must consider wildness as well as biological viability.

252. See supra notes 193–196 and accompanying text.
254. Economic losses to reintroduced predators so far appear quite low. See supra note 174 and accompanying text. Non-endangered predators and weather represent a much greater threat to livestock operations. See, e.g., 1986 Red Wolf Rule, supra note 208, at 41,794 (noting that wild dogs are a much greater threat within the reintroduction area than red wolves will be); William Patric, Don’t Blame Wolves, HIGH COUNTRY NEWS, Feb. 2, 1998, at 7 (stating that according to Department of Agriculture statistics more than 80,000 head of livestock were lost to winter weather in Montana in 1996).
255. See supra note 45.
The presumption should be against authorizing take of introduced animals except in circumstances where analogous rules might be promulgated for a remnant, non-introduced population. Under the ESA as it currently stands, for example, farmers in kangaroo rat country may continue their farming activities even if those activities will kill some rats, provided they obtain an incidental take permit. Interior must grant the permit if the taking is incidental to farming, the extent and impacts of the taking will be minimized and mitigated, and the taking will not appreciably reduce the likelihood of survival and recovery of the listed species in the wild. Although it may use its authority under section 10(j) to dispense with the requirement for an individual permit, Interior should apply the same standards in determining whether and to what extent to permit incidental take of an experimental population. In particular, Interior should require that any taking be minimized to the maximum extent practicable. Livestock producers should not be allowed to kill depredating wolves unless all feasible non-lethal steps have failed to prevent depredation.

3. Citizen Management

The special rule under which Interior proposes to reintroduce the grizzly bear to Idaho includes a novel provision developed by an unusual coalition of environmental, timber industry, and labor interests. The rule would delegate responsibility for the initial development of regulations dealing with human-bear conflicts to a Citizen Management Committee composed largely of residents of local communities. Interior would retain the ultimate regulatory authority and responsibility for ensuring grizzly recovery.

Like the special rules allowing take by affected landowners, the Citizen Management Committee idea holds both promise and peril. The Committee mechanism promises to respect local autonomy interests.

256. See supra note 155 and accompanying text.
258. The same standard should be applied to special rules authorizing the deliberate take of threatened species under section 4(d). Wool growers should not be permitted to kill depredating wolves from the remnant population in Minnesota unless they have taken all feasible steps to protect their flock, such as adopting proper husbandry practices, which can reduce or eliminate depredations. See STEVEN H. FRITTS ET AL., TRENDS AND MANAGEMENT OF WOLF-LIVESTOCK CONFLICTS IN MINNESOTA 14–16 (1992). In addition, Interior should limit killing to wolves positively identified as marauders.
261. See id. at 35,771.
262. It should be noted that this plan has not yet won Congressional support. See supra note 127. The State of Idaho also remains implacably opposed to grizzly reintroduction. Its Fish and Game Director has threatened to block any federal attempt to release grizzlies in the state. See Steve Bard, F&G Chief: No Grizzlies for Idaho, IDAHO STATES-
Providing local residents with a voice in the process may well be essential to achieving the long term goal of human coexistence with wild nature. The local interest is already protected to some extent by regulations requiring that Interior consult with potentially affected property owners before undertaking a section 10(j) reintroduction, but the Citizen Management Committee would provide a deliberative forum for local input, as well as a continuing local presence following reintroduction. The Committee may identify the limits of local tolerance. It may be a source of creative ideas for buffering nearby settlements from some of the potential impacts of wild grizzlies. It may offer an avenue to educate the local community about the true extent of any risks wild grizzlies may pose and options for responding to those risks. Furthermore, the Committee structure offers a potential forum for deliberation on the issue of the degree of wildness appropriate for grizzlies in the long term.

The perils of the Citizen Management Committee spring from the same source as its promise: its heavy tilt toward local residents. Twelve of the fifteen members would be appointed on the basis of recommendations by the governors of Idaho and Montana. The full Committee is to “be selected from communities within and adjacent to the Recovery and Experimental areas.” This extreme tilt toward local membership carries the risk of giving excessive weight to local interests on an issue of national dimensions. The proposed rule requires that the committee include a balance of viewpoints, but such a balance will be difficult to ensure. The Committee may prove overly sensitive to the economic interests of local ranchers. Local residents may also respond too strongly to visceral fears of these awesome creatures. Unless the Committee membership is carefully selected, it may not adequately represent the interest of those who desire the opportunity to face the challenge of a camping trip through grizzly country, or gain satisfaction from the knowledge that this country can still harbor a creature as untamed as the grizzly. A Committee packed with the politically powerful could also exacerbate the potential for unfair distribution of the burdens among similarly situated landowners, especially if Committee proceedings are closed to the public.

263. See 50 C.F.R. § 17.81(d) (1997).
265. Id.
266. See id.
267. Even experienced campers are often nervous about the possibility of an encounter with a grizzly, but “express considerable satisfaction and pride in having successfully navigated grizzly country.” KELLERT, supra note 44, at 123. See generally JOSEPH L. SAX, MOUNTAINS WITHOUT HANDRAILS (1980).
268. Although it is not entirely clear from the proposed rule, it appears that Interior views the Citizen Management Committee as outside the reach of the Federal Advisory Committee Act, 5 U.S.C.A. App. II §§ 1–15 (West 1996 & Supp. 1998). The Committee would essentially play the role of a recovery team, advising the Secretary of Interior on
On balance, the potential benefits of this approach make it worth trying in this particular case, subject to careful oversight. Of all the species that might be reintroduced in the United States, the grizzly poses the most credible threat to human safety. While the public lands should have room for wild grizzlies, society may not be willing to allow grizzlies to roam uncontrolled over other lands. At a minimum, surrounding residents desire reassurance that their safety in their homes and communities will not be unduly compromised. Providing a continuing local political forum for these residents to voice their concerns seems appropriate. However, Interior must exercise effective control over any regulations proposed by the Committee, and must be attentive to outside concerns raised during the notice and comment process.

B. Learning from Tort Law

Restored wildlife can cause property damage and perhaps even personal injury. Some restoration opponents, such as Representative Helen Chenoweth of Idaho, contend that the government should be liable for those damages. Two major legal barriers currently stand in the way of recovering damages from the federal government for the acts of reintroduced wildlife. First, the doctrine of sovereign immunity protects the government from liability in tort for the policy decision to restore endangered species. Second, tort law generally does not impose liability for acts committed by wild animals within their historic range. Each of these barriers could be legislatively removed. But each suggests that the government should not lightly assume liability for restored wildlife. The doctrine of discretionary function immunity teaches that government must enjoy the discretion to make policy choices without fear of tort liability. The remedy for objections to these political decisions, provided they do not infringe on constitutionally protected interests, is the political process itself. The doctrine of non-liability for harm caused by indigenous wildlife teaches a second lesson, that government has no obligation to reduce wild nature to human control in order to protect human interests. Not only should courts be reluctant to force such control measures on the government, the executive branch should be reluctant to adopt them without a clear legislative mandate.


269. See supra Part IV. B. 1.
271. See infra Parts VI. C. 1. and VI. C. 2. for a discussion of the constitutional implications of wildlife restoration.
1. Discretionary Function Immunity

The United States enjoys sovereign immunity from tort claims in the absence of a legislative waiver. The Federal Tort Claims Act (FTCA)\(^\text{272}\) waives that immunity in certain circumstances, subjecting the United States to liability for the torts of its employees to the extent that a private actor would be liable under the same circumstances.\(^\text{273}\) But the FTCA makes an important exception to this waiver, retaining sovereign immunity for all claims arising from the exercise of a “discretionary function or duty.”\(^\text{274}\)

A two-part test determines whether conduct falls within the scope of this discretionary function exception to liability. First, the conduct must involve an element of judgment or discretion.\(^\text{275}\) Second, the type of judgment exercised must be of the sort Congress intended to protect. The exception shields only legislative and administrative choices “grounded in social, economic, and political policy.”\(^\text{276}\) The FTCA does not protect the government from liability for acts that violate a specific statute, regulation, or government policy.\(^\text{277}\) But acts “that can be said to be grounded in the policy of the regulatory regime”\(^\text{278}\) cannot give rise to liability.

The FTCA does not waive liability with respect to the adoption of legislation, which plainly involves the exercise of discretion.\(^\text{279}\) The congressional decision to provide legal protection for endangered and threatened species, therefore, cannot give rise to tort liability.

Interior’s restoration efforts, which encompass a great deal of discretion grounded in the policies of the ESA, probably are also shielded from liability by the FTCA. Those efforts are governed by a vague statutory prescription under which the agency “may” reintroduce a listed species outside its current range if it determines that reintroduction “will further the conservation of such species.”\(^\text{280}\) The development of special rules to govern reintroductions is also highly discretionary. Experimental populations are treated as threatened for purposes of section 9, allowing

---

\(^{273}\) See id. § 2672.
\(^{274}\) See id. § 2680(a).
\(^{277}\) See id. at 544–47.
\(^{278}\) Gaubert, 499 U.S. at 325.
\(^{279}\) Moreover, legislation is not adopted by government “employees.” See Sickman v. United States, 184 F.2d 616, 619 (7th Cir. 1950) (noting that “[a]n analysis of the complaints reveals that plaintiffs are in reality charging negligence of the United States acting through Congress [in enacting the Migratory Bird Treaty Act], rather than any lack of due care by an employee of the United States.”).
the agency to "issue such regulations as [it] deems necessary and advisable to provide for the conservation of such species."\textsuperscript{281}

These provisions deliberately leave to the agency the delicate balancing of environmental, economic, and political interests at stake. The same considerations that require immunity for legislative decisions require protection of the agency's policy choices implementing the ESA against tort liability.\textsuperscript{282} Government policy choices inevitably produce winners and losers; the political process, not the courts, is the appropriate place to challenge these choices. Those aggrieved by a decision to reintroduce an endangered or threatened species can seek amendment of, or an exemption from, the ESA. They can also seek judicial review to determine whether Interior has exceeded its authority or abused the discretion Congress has given it. They cannot, however, use tort claims to gain political leverage.

Discretionary function immunity has protected the government from tort claims in a variety of contexts that required the government to strike a balance between wild nature and human needs.\textsuperscript{283} Not all courts have been receptive to claims of discretionary function immunity in the wildlife context, however. Two federal district court decisions, George v. United States\textsuperscript{284} and Parker Land & Cattle Co., Inc. v. United States,\textsuperscript{285} have rejected federal assertions of immunity for wildlife-based claims.\textsuperscript{286} Both opinions seem to rest on the kind of policy disagreement with the government's choices against which the discretionary function exception is intended to protect. Even taken at face value, however, they establish

\textsuperscript{281} Id. § 1533(d).
\textsuperscript{282} See, e.g., Zumwalt v. United States, 928 F.2d 951, 955 (10th Cir. 1991) (noting that a decision that is a component of an overall policy decision protected by the discretionary function exception also is protected by this exception).
\textsuperscript{283} See, e.g., Tippett v. United States, 108 F.3d 1194 (10th Cir. 1997) (rejecting claim of snowmobiler injured by charging moose in Yellowstone National Park); see also McDaniel v. United States, 899 F. Supp. 305 (E.D. Tex. 1995) (dismissing claim that Forest Service should have prevented spread of insect pest from national forest wilderness area to private property).
\textsuperscript{284} 735 F. Supp. 1524 (M.D. Ala. 1990) (Plaintiff had lost an arm in an alligator attack at a National Forest recreation area. The Forest Service had neither posted signs nor made any attempt to remove the alligators, a protected species, from the area.).
\textsuperscript{285} 796 F. Supp. 477 (D. Wyo. 1992). Plaintiff alleged that his cattle had contracted brucellosis either from bison imported to Yellowstone National Park or from elk lured to the area by government feeding stations. The court ultimately ruled on the merits that the plaintiff had failed to trace the outbreak to the relocated animals, but it rejected the government's claim of discretionary function immunity. The decision has been described as "a fundamental misapplication of FTCA precedent," in the form of "an unabashed judicial use of the FTCA to devise federal wildlife . . . policy." Keiter & Froelicher, supra note 179, at 38.
\textsuperscript{286} A third case imposed liability on the federal government for wildlife-related injuries, but it is not relevant here. In Claypool v. United States, 98 F. Supp. 702 (S.D. Cal. 1951), the government was held liable for a bear attack suffered by plaintiff in Yellowstone National Park. Because the government did not claim the shelter of the discretionary function exception, the Claypool decision has no bearing on the scope of that exception.
nothing more than a duty to warn those who may be injured by restored wildlife. 287

A duty to warn would not present a serious barrier to reintroduction under section 10(j). Reintroductions follow notice and comment rule-making, often over a prolonged period of time, and are generally attended by considerable publicity. In addition, Interior must specifically consult with affected property owners in developing and implementing its special rules for experimental populations. 288 These procedures ensure that reintroductions will not take the affected parties by surprise. They should be sufficient to satisfy any duty the government may have to notify property owners of the potential for wildlife damage.


Even if it were denied the protection of discretionary function immunity, the government typically should not be liable in tort for injuries resulting from the restocking or reintroduction of species to their historic range. Under the FTCA, the government is liable only to the extent that a private actor would be liable under the same circumstances. Tort law provides a remedy for the wrongful acts of persons rather than for the effects of nature. Insurance, not tort liability, is the appropriate protection against natural disasters, including acts of indigenous wildlife. Consequently, one who returns a species to its native range typically is not liable for any resulting harm.

For example, in Sickman v. United States, 289 the owners of farms adjoining a game reserve sought to recover for damage done to their crops by migratory waterfowl that enjoyed the protection of federal law. Because the birds were not captive, the court held that no private person would bear legal responsibility for their trespasses, and therefore that the United States could not be liable. 290 Other courts have relied upon the same logic to absolve defendants of liability for an alligator attack, 291 a shark attack, 292 and damage by wild deer. 293

The refusal to impose liability for the acts of wild animals recognizes both the impracticality and the undesirability of creating a duty to control nature. Wild animals behave according to the dictates of nature and instinct, which sometimes impel them to consume crops or livestock, or otherwise damage persons or property. The only way to avoid that

287. See George, 735 F. Supp. at 1533; Parker Land & Cattle, 796 F. Supp. at 487.
289. 184 F.2d 616 (7th Cir. 1950).
290. See id. at 618.
292. See Wamser v. City of St. Petersburg, 339 So. 2d 244, 246 (Fla. App. 1976).
damage is to prevent the animals from following their natural urges. If tort law imposed a duty to control wild animals, landowners or the government "would have to impound or confine some birds and animals," which "would cease to be wild creatures."294

Like the Sickman decision, the Restatement (Second) of Torts recognizes that no one is liable for the acts of wildlife in a state of nature. It draws a distinction between indigenous and non-indigenous wildlife, declaring that one who brings non-indigenous wildlife to an area is strictly liable for any resulting harm, but protecting from liability one who releases to the wild animals indigenous to the locality.295 The difference is one of evolutionary origin and adaptation. "Indigenous" species are those that evolved in the location as a natural component of an ecosystem; by contrast, non-indigenous or "exotic" species were first introduced to a location by human action.296

The Restatement's differing treatment of indigenous and non-indigenous wildlife rests on the difference between background natural dangers, for which no person is accountable, and human-created dangers. According to the drafters of the Restatement, one who brings indigenous wildlife to an area "does not materially increase the previously existing danger,"297 whereas one who imports non-indigenous wildlife "has created a danger not normal to the area."298 The intended distinction must be a qualitative rather than a quantitative one. The addition of twenty wolves to an area that already contains twenty substantially increases the likelihood that wolves will attack nearby livestock. But this danger, while quantitatively increased, is not qualitatively new. Nature had already placed ranches within the wolves' range at risk of predation losses. Ranchers can be expected to anticipate that risk, and to take steps to protect or insure themselves against it.299 Furthermore, as a practical matter, it would

294. Id. at 394.
296. See, e.g., HENDERSON'S DICTIONARY OF BIOLOGICAL TERMS 281, 371 (11th ed. 1995) (defining "indigenous" as "belonging to the locality; not imported; native;" and "native species" as "indigenous species that is normally found as a part of a particular ecosystem."). This distinction corresponds to that drawn by the National Park Service between "native" and "exotic" animals. Park Service policies for biological resource management define "native animal life" as "all animal species that as a result of natural processes occur or occurred on lands now designated as a park." National Park Service, NPS Management Policies (visited Nov. 19, 1998) <http://www.nps.gov/planning/mngmntplc/>.

The Aquatic Nuisance Prevention Act, which authorizes control of nonindigenous species relies upon a similar line. See 16 U.S.C. § 4702(11) (1994) (defining "nonindigenous species" as one "that enters an ecosystem beyond its historic range").
297. RESTATEMENT (SECOND) OF TORTS § 508 cmt. b.
298. Id. § 507 cmt. e.
299. See State v. Rathbone, 100 P.2d 86, 92–93 (Mont. 1940) ("Wild game existed here long before the coming of man. One who acquires property in Montana does so with notice and knowledge of the presence of wild game and presumably is cognizant of its natural habits. Wild game does not possess the power to distinguish between fructus naturales and fructus industriales; and cannot like domestic animals be controlled through an owner. Accordingly a property owner in this state must recognize the fact that there may be
be difficult to distinguish depredations by newly imported wolves from those by wolves already in the area. This difficulty would be compounded by the passage of time. As imported wolves bred with the native-born ones, it would become impossible to distinguish harm by the foreigners from harm by the natives.

Similar reasoning applies even following local extirpation of a species. The loss of a species from a region might seem to remove it from the background of natural hazards in the region, making its reintroduction equivalent to the import of an exotic species. But nature is not static. Any species not extinct in the wild could return without human intervention. Even a long absence does not mean that nature will not bring back the species. Wolves, for example, returned on their own to northern Montana after an absence of fifty years.300 Like restocking, reintroduction therefore does not qualitatively change the natural dangers to which property is exposed. Moreover, the same practical problem of distinguishing natural from introduced wildlife damage applies. It is often difficult to determine whether a species has truly been extirpated from a region,301 or whether it has returned on its own before or after a deliberate human reintroduction.302 Distinguishing harm caused by remnant or naturally dispersing animals from that caused by those imported by human efforts may be virtually impossible.

The reintroduction of species that have actually become extinct in the wild presents the most difficult case for tort law. Both the species and the expectations of human residents change with the passage of time after removal of a species from the wild. The species gradually loses its evolutionary adaptation to life in its native habitat. At the same time, people who now occupy the species' former range gradually come to rely on the expectation that the species is no longer part of the natural background with which they must contend.


301. The status of grizzly bears in the North Cascades ecosystem of Washington State, for example, is uncertain. Grizzly tracks were documented in the area in 1989 and 1990, but despite intense recent efforts there have been no verified grizzly bear sightings. See U. S. FISH & WILDLIFE SERV., GRIZZLY BEAR RECOVERY PLAN 12–13 (1993); R. Edward Grumbine, Ghost Bears: Exploring the Biodiversity Crisis 68 (1992); John J. Craighead et al., The Grizzly Bears of Yellowstone: Their Ecology in the Yellowstone Ecosystem, 1959–1992, at 465 (1995).

Nonetheless, even in this situation, two factors counsel caution before leaping to the conclusion that liability is appropriate. First, in most cases loss of the last wild members of the species precedes reintroduction by only a few years. Long lapses are unlikely because maintenance in captivity is so difficult. \(^\text{303}\) Furthermore, the final extirpation of a species in the wild often comes through deliberate human choice. For example, the last remaining wild members of a species may be removed to captivity to stave off impending extinction, with the intent to increase the population by captive breeding until it can be reintroduced. \(^\text{304}\) In such a case, residents of the area are on notice from the time the species is removed of the intention to bring it back. They cannot reasonably rely on its absence from the wild being permanent.

Second, the practical concerns attending imposition of liability for restoration of a locally extirpated species also apply to species believed to be completely gone from the wild. Extinction in the wild, like local extirpation, is often difficult to gauge. \(^\text{305}\) Regulators may reasonably, but wrongly, believe a species has been extirpated from the wild. Furthermore, it is difficult to decide how long liability should apply. Is the government responsible for harm inflicted by reintroduced animals and their progeny forever? \(^\text{306}\) Or do the animals eventually become part of the natural background again, freeing the government from liability? Refusing to assume liability in the first place solves these practical problems.

3. Understanding the Lessons

The principal lesson of tort law is that whether or not the government is liable in damages for the harm that flows from its actions is a political question. Through the FTCA, Congress chose to impose liability for the negligent implementation of policy choices, but not for those choices themselves. As the law currently stands, it probably shields the government from liability for decisions to reintroduce endangered or threatened species, as well as for decisions about where and under what special regulations to conduct that reintroduction. The government may

---

\(^{303}\) See supra notes 67–68 and accompanying text.

\(^{304}\) The last wild California condors were taken into captivity in 1987 “for safe keeping and genetic security.” Condor Rule, supra note 163, at 54,046. See also Nat’l Audubon Soc’y v. Hester, 801 F.2d 405, 406 (D.C. Cir. 1986). The last known wild black-footed ferrets were also captured in 1987, to save them from an epidemic of canine distemper. See Miller et al., supra note 133, at 97.

\(^{305}\) See Doremus, supra note 144, at 1121–22, 1128. The black-footed ferret, for example, was not seen in the wild between 1974 and 1981, despite intensive searches. See Miller, supra note 133, at 25, 84.

\(^{306}\) Plaintiffs in Mountain States Legal Found. v. Hodel, 799 F.2d 1423 (1986), for example, complained of property damage by wild horses descended from animals introduced to North America by the early Spanish explorers. Surely those animals must, at some point, become part of the natural background shaping property owners’ expectations, but there is no obvious demarcation point for that change in status.
risk liability if it fails to warn those who may be affected of an impending reintroduction, but consultation as required by Interior's regulations will provide adequate warning. In fact, the greatest risk of liability under current law may come from Interior's unofficial but quite apparent practice of adopting stringent control measures to limit the probability that reintroduced animals will damage private property. A reviewing court could seize on this practice as a policy from which Interior has no discretion to depart, on pain of tort liability. 307

A second important lesson of tort law is that decisions about government liability are properly made by the legislature. Only a clear statement by the legislature can waive sovereign immunity. 308 That background should make Interior reluctant to accept responsibility for controlling wildlife or compensating injured property owners, actions that substitute for tort liability, without a clear legislative mandate. Choices about how much wild nature the government should protect or re-create are political choices, and the ESA declares them to be choices for the national polity. Through the ESA, in fact, Congress has made a political choice to halt and reverse past wrongs against nature. Interior, which is required to consult with locals before a reintroduction, may be inclined to give too much deference to local interests. Buffeted by pressure from restoration opponents, the agency is more likely than Congress to misread the national political will. 309 In the absence of a clear legislative statement, Interior should not lightly assume that Congress intended to require stringent control measures or financial compensation when restored nature interferes with human interests.

If Congress does consider waiving sovereign immunity for wildlife restoration, it should distinguish between personal injury and property damage. A limited waiver for personal injury could address the strongest objections to restoration with little financial drain on government resources. Wildlife attacks on humans inspire far greater fear and outrage than property damage; a clear legislative statement that the government

---

307. Violation of an unwritten or informal agency policy can support FTCA liability. See Harold J. Krent, Reviewing Agency Actions for Inconsistency with Prior Rules and Regulations, 72 Chi.-Kent L. Rev. 1187, 1205 (1997). Although it may seem a stretch to construe Interior's practice of imposing control measures as a policy from which the agency has no discretion to depart, the George and Parker Land & Cattle decisions demonstrate that reviewing courts unsympathetic to government policy choices may seize on slim excuses to impose liability. See supra notes 284–287 and accompanying text.

308. See John Copeland Nagle, Waiving Sovereign Immunity in an Age of Clear Statement Rules, 1995 Wis. L. Rev. 771 (1995) (describing the Supreme Court's increasingly demanding clear statement test for sovereign immunity waiver); see also United States v. Horn, 29 F.3d 754, 762 (1st Cir. 1994) ("executive officers lack the power to waive the federal government's sovereign immunity").

309. Cf. Zygmunt J.B. Plater, The Embattled Social Utilities of the Endangered Species Act- A Noah Presumption and Caution Against Putting Gasmasks on the Canaries in the Coalmine, 27 Env'tl. L. 845, 872 (1997) ("There is a real danger that in Washington's hothouse climate the congressional, executive and citizen defenders of the societal goals of the ESA will make unnecessary preemptive erosions in the existing statutory framework.").
will bear responsibility for such attacks could help silence political opposition to wildlife reintroduction. Moreover, the ESA already acknowledges that human safety must come before the needs of other species; it allows the taking of any listed species in defense of human life.310 Finally, an immunity waiver for personal injury will hardly ever lead to government liability. Among the animals that have been reintroduced or are being considered for reintroduction, only the grizzly bear poses a credible threat to human safety.311

Any legislative waiver of immunity should also distinguish between those who voluntarily enter the zone of wildlife danger and those who do not. Hikers and backpackers who choose to brave grizzly country can be adequately protected by warning signs. Such signs are already common at wilderness and National Park trailheads, warning of dangers ranging from poisonous snakes to wildlife carrying bubonic plague. Those who take the trail beyond such signs choose to assume the risks associated with wild nature, including wildlife. Residents of areas around a grizzly reintroduction site, however, do not voluntarily assume the risk of encountering a bear outside the wilderness. Accordingly, they may deserve additional protection, of the sort that can be provided by the proposed citizen management committee.312

Finally, both Congress, should it choose to address sovereign immunity, and Interior, in implementing section 10(j), should recognize the distinction between introductions within and beyond a species’ historic range. As the Restatement recognizes, the latter raise considerably stronger fairness issues; residents cannot be expected to anticipate the unnatural spread of wildlife beyond the habitats in which it evolved. While Interior prefers, for obvious reasons, to conduct its section 10(j) reintroductions within the species’ current range, it has at least once gone beyond that range.313 When a reintroduction occurs outside the historic range of the species, additional concessions to protect surrounding property against damage are justified.

VI. EXCLUSIONARY ZONING: LIMITING INTRODUCED POPULATIONS TO FEDERAL LANDS

Interior concentrates its reintroduction efforts on federal land. In addition, the agency employs special control measures to confine introduced populations to the immediate introduction area. Although it has good reason to focus on federal lands, Interior has gone too far in that

311. See supra note 202 and accompanying text.
312. See supra Part V. A. 3.
313. The Guam rail was released outside its historic range because no suitable habitat remained within that range. See Wolok, supra note 127, at 10,021 n.45.
direction. By virtually assuring surrounding property owners that their lands will remain free of introduced species, the agency has drastically limited the potential of its reintroduction program to serve the biological needs of listed species. At the same time, it has limited the extent to which introduced species are allowed to live as wild creatures.

Almost all section 10(j) releases to date have occurred on federal land. This emphasis on federal land is supported by two strong arguments. First, the ESA draws an important distinction between federal and non-federal actors, imposing a higher duty on the former than on the latter. By imposing a duty to conserve species only on federal agencies, Congress has made it clear that the federal government bears greater responsibility than others for protecting and restoring dwindling species. Second, as a practical matter, Interior does not have the authority to release animals directly onto private land without the landowner's permission. Attempting to do so would potentially subject the agency to legal liability. It would also undoubtedly spark ugly, potentially violent confrontations.

But limiting restoration efforts to public lands also has heavy costs. Some seventy per cent of the species listed as endangered or threatened depend upon non-federal land for the majority of their habitat. Confining restored animals to federal lands, therefore, severely limits the effectiveness of restoration efforts. Moreover, the steps Interior takes to keep reintroduced wildlife on federal land necessarily limit the extent to which those animals are allowed to live as wild natural creatures. In light of these costs, Interior should not automatically limit restored populations to federal property.

A. Commitments to Recapture Introduced Animals

Interior's focus on federal land does not end with the release of the animals. The agency frequently promises to capture and remove animals that stray from a restoration site. The preamble to the first regulations issued under section 10(j) announced that Interior would in some cases

314. Exceptions include the Delmarva fox squirrel, released to a state wildlife area; the black-footed ferret, released to areas with a high degree of private ownership; and the whooping crane, released to state and private lands. See id. at 10,023, 10,026, 10,027.

315. See supra notes 36–57 and accompanying text.


317. See NATURAL HERITAGE DATA CENTER NETWORK, PERSPECTIVES ON SPECIES IMPERILMENT (1993). More than 90% of the listed species in the United States under the jurisdiction of the Fish and Wildlife Service have at least some of their habitat outside federal lands. See GEN. ACCOUNTING OFFICE, ENDANGERED SPECIES ACT: INFORMATION ON SPECIES PROTECTION ON NONFEDERAL LANDS 3 (1994).
“authorize special activities designed to contain the population within the original boundaries set out in the regulation.” Since then, the agency has done everything short of fencing restoration zones to achieve that containment. It routinely installs monitoring devices such as radio-equipped collars on reintroduced animals, monitoring the population to ensure that it stays within a designated area. The most extreme example comes from the red wolf reintroduction in North Carolina. In order to fulfill its promise to capture and control strays in terrain that made live trapping impractical, Interior agreed to fit the wolves with “capture collars” designed to deliver a sedative dose in response to a radio signal. Other slightly less extreme examples abound. Many of the Yellowstone wolves have been captured and relocated at least once, and some many times, since their reintroduction. The unsuccessful sea otter relocation program included, at congressional direction, a commitment to contain otters within the translocation area, maintaining an “otter free” zone between that area and the natural population that supplied the translocated otters.

Intensive monitoring and even limited relocation efforts can play an important role in a reintroduction project. Monitoring provides needed information, helping project managers to build a database of knowledge about the population’s status and individual animal’s behavior. Recapture and translocation may be necessary if the animals stray into areas where they cannot survive. For example, two female Mexican wolves were returned to captivity shortly after their release because they had strayed from the reintroduction site. State and federal officials justified the relocation in part on the grounds that the wolves had wandered too far to find mates. For a reintroduction project to succeed biologically, it may be necessary to keep the introduced animals within a certain range.

But Interior incorrectly assumes that its containment efforts will also provide administrative benefits. The agency asserts that containing introduced populations “will avoid law enforcement problems” by preventing overlap of experimental populations with fully protected remnant populations. This justification is illusory. No law enforcement problem exists, because there is no need to distinguish introduced from non-introduced animals. Once it is determined that an introduced population

318. Experimental Populations Rule, supra note 124, at 33,886.
320. See McNAMEE, supra note 44 (describing many of these moves).
322. See Roaming Wolf Recaptured, ALBUQUERQUE J., May 20, 1998, at D3 (noting the capture of the two strays); U.S. Fish & Wildlife Service Press Release, Released Mexican Wolves May Have Given Birth; Two Other Wolves Dispersing From Packs, May 14, 1998 (on file with author) (noting that the two female wolves “will not find mates this year and are not in areas that are appropriate for wolves”).
323. Experimental Populations Rule, supra note 124, at 33,886.
Restoring Endangered Species

overlaps with a non-introduced one, all the animals in the area get the same level of protection. Moreover, many reintroduced species do not exist anywhere in the wild outside the experimental population. The possibility of confusion with non-experimental animals obviously cannot justify containment of these populations.

Its nearly ubiquitous containment efforts also bring costs. Interior does not appear to have considered, or even to have recognized. Both attachment of monitoring devices and repeated translocation can have biological effects, altering the animals' behavior in subtle, perhaps unrecognized respects. Although Interior's biologists should be sensitive to the possibility of such effects, the agency does not discuss them in the preambles to its special rules. The lay public is left to guess at whether these effects have been considered. Constant government monitoring and relocation of reintroduced animals also has important symbolic and aesthetic consequences. These direct control measures erect a virtual cage around the animals, converting them from wild creatures into semi-domesticated ones, visibly under the control of wildlife agents. Collared wolves simply do not fulfill the same role as truly wild ones.

Furthermore, these containment efforts amount to a system of wildlife zoning that should not be adopted without careful reflection. Efforts to contain introduced animals within a designated reintroduction zone create a surrounding zone swept free of the species, potentially blocking the natural expansion of remnant wild populations into the area. For species that require a large range, limits on the restoration zone amount to limits on the size of the restored population. If those limits are too severe, the population will not reach self-sustaining status. Containment

324. See supra note 103.
325. See, e.g., Bonnie M. Blanchard et al., Biological Consequences of Relocating Grizzly Bears in the Yellowstone Ecosystem, 59 J. WILDLIFE MGMT. 560 (1995) (transporting grizzly bears away from conflicts with humans affected their survival); Innes Cuthill, Field Experiments in Animal Behaviour: Methods and Ethics, 42 ANIMAL BEHAVIOUR 1007 (1991) (noting that attachment of radio-tracking equipment and repeated handling can have impacts, especially on small animals). But cf. M. Karen Laurenson & T. M. Caro, Monitoring the Effects of Non-Trivial Handling in Free-Living Cheetahs, 47 ANIMAL BEHAVIOUR 547 (1994) (finding that lightweight radio collars have no effect on survival or reproduction of cheetahs). Wolves relocated in northern Montana often do not survive for long. See Bangs Memorandum, supra note 154, at 6, 13.
326. The Fish and Wildlife Service has acknowledged, for example, that the red wolf reintroduction area “probably cannot support 30 red wolves for an extended period of time.” U.S. Fish & Wildlife Serv., Red Wolf Re-establishment Program (visited Oct. 19, 1998) <http://bluegoose.arw.r9.fws.gov/NWRSFiles/WildlifeMgmt/SpeciesAccounts/Mammals/RedWolves/RedWolfSummaryData.html>. Creating a population that is viable over the long term will require either adding territory to the reintroduction area or allowing dispersal onto surrounding land. Indeed, in October 1998 the Service announced the termination of its program for reintroduction of red wolves to Great Smoky Mountains National Park. See Notice of Termination of Red Wolf Reintroduction Project in the Great Smoky Mountains National Park, 63 Fed. Reg. 54, 151 (1998). The project failed because of poor pup survival and the inability of the wolves to establish home ranges in the park. See id. at 54, 152. The Service speculated that the lower elevation farmlands surrounding the park would
can also provide an excuse to permit the continuation of practices incompatible with the species outside the designated zone, effectively precluding natural expansion or return. For example, the Fish and Wildlife Service increased support among ranchers for ferret reintroduction by relaxing prohibitions on the poisoning of prairie dogs, the ferret's prey and themselves a dwindling species, outside the reintroduction areas.\textsuperscript{327} In the highly charged political world of reintroduction projects, containment zones can turn restoration projects from tools for expanding the species' range into limitations on that range. That is exactly what has happened with the sea otter. The northern California population has expanded on its own to the Santa Barbara coast, within the legislated buffer zone. Despite a worrisome general decline in the population, Interior is now faced with demands from the fishing community that it remove otters from the exclusion zone.\textsuperscript{328}

\section*{B. A Temptation Resisted: Calls for Public Compensation}

Opponents of wildlife restoration sometimes demand absolute guarantees that the government will compensate them for any financial harm reintroduced animals cause.\textsuperscript{329} So far, Interior has refused to accede to these demands.\textsuperscript{330} Some states, however, have chosen to offer compensation for some wildlife depredations. Minnesota, for example, provides compensation for livestock lost to wolves.\textsuperscript{331} Other states pay for crops destroyed or consumed by game animals.\textsuperscript{332} Evaluation of the arguments

have been more suitable habitat for the wolves. \textit{See id.}

\textsuperscript{327} \textit{See Miller et al., supra note 133, at 160–61.}

\textsuperscript{328} \textit{See John Woolfolk, Fishermen Fed Up with Sea Otters, PORTLAND OREGONIAN, July 26, 1998, at A23.}

\textsuperscript{329} \textit{See, e.g., Condor Rule, supra note 163, at 54,056 (relaying a public comment demanding “a 100 percent guarantee that the release of California condors will not in any way restrict the use of private property”).

\textsuperscript{330} Although it has never acknowledged any obligation to provide compensation for livestock damage, Interior has apparently paid some private landowners to allow use of their land by red wolves. \textit{See e-mail communication from Gary Henry, Red Wolf Coordinator, Fish & Wildlife Serv., to Author (June 10, 1998) (on file with author) (“We currently have 26 agreements with private landowners to allow red wolves on their property . . . . Although some do involve compensation, it is very minimal.”). Like compensation for livestock damage, payments for allowing occupation by reintroduced animals are more appropriately made by private entities. \textit{See infra} notes 364–366 and accompanying text.}


\textsuperscript{332} \textit{See, e.g., Parker Land & Cattle Co. v. Wyoming Game & Fish Comm'n, 845 P.2d 1040, 1077 (Wyo. 1993) (describing Wyoming compensation statutes); Minn. Stat. Ann. § 3.7371 (West 1997) (“a person who owns an agricultural crop shall be compensated by the commissioner of agriculture for an agricultural crop that is damaged or destroyed by elk”)}.
The argument for compensation is often cast in economic terms. A government that is not forced to compensate for the costs its actions impose on property owners, the argument runs, will ignore those costs when making decisions. As a consequence, the decisions it makes will not maximize societal welfare. For example, if the government need not pay for sheep lost to reintroduced wolves, it will not realize the full social costs of wolf reintroduction. Wolves will be introduced even in places where society would be better off with sheep. Compensation should correct this "fiscal illusion" by forcing the government to internalize all the costs of its actions. If the government must account financially for the harm wolves do to sheep, it will introduce only the appropriate number of wolves, and it will introduce them only to places where wolves provide more benefits than the sheep they may kill.

For a variety of reasons, this economic efficiency argument is not persuasive in the context of wildlife restoration. First, accepting for the moment that efficiency is the appropriate goal, compensation will not necessarily achieve that goal any better than the alternative. Although it can correct fiscal illusion, compensation introduces other inefficiencies. For one thing, it creates a problem of "moral hazard," encouraging property owners to take socially wasteful actions that will increase the probability or magnitude of government compensation. As an example, if the government agreed to compensate ranchers in the vicinity of a wolf reintroduction project for any sheep the wolves killed, ranchers in the area might increase their herds rather than altering their husbandry practices to reduce the likelihood of wolf attacks. In addition, government fund-raising itself introduces inefficiencies through distortionary taxes that create dead-weight economic losses. Thus, payments made with government funds are themselves more socially costly than other payments.

---

333. See, e.g., Lawrence Blume & Daniel L. Rubinfeld, Compensation for Takings: An Economic Analysis, 72 CAL. L. REV. 569, 620–21 (1984). Justice Holmes alluded to precisely this concern in Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 415 (1922), when he wrote that, if the police power were permitted to make inroads on the compensation requirement, "the natural tendency of human nature" would be to extend these inroads "until at last private property disappears."

334. See, e.g., Blume and Rubinfeld, supra note 333, at 593; Thompson, supra note 183, at 348. Professor Sax points out that denying compensation will have the opposite effect; it will "encourage adaptive behavior by rewarding individuals who most adroitly adapt in the face of change." Joseph L. Sax, Property Rights and the Economy of Nature: Understanding Lucas v. South Carolina Coastal Council, 45 STAN. L. REV. 1433, 1449 (1993). Since compensation is itself inefficient, it is economically preferable that investors take the possibility of a change in policy into account before making their investment decisions. See Louis Kaplow, An Economic Analysis of Legal Transitions, 99 HARV. L. REV. 509, 572 (1986).

335. See Thompson, supra note 183, at 354–55.
Other complications may also reduce the efficiency of decisions made under a compensation regime. Government funding decisions are made on a longer time scale than decisions about wildlife reintroductions. Since funds generally cannot be raised quickly, short-term budgetary constraints may preclude actions that would be socially beneficial. In the endangered species context, delays while funds are raised could mean extinction. Furthermore, where the social benefits of a government policy are difficult to measure and diffusely enjoyed, regulators may underestimate them. That is quite likely to happen in the context of wildlife restoration. It is virtually impossible to quantify the societal benefits of protecting or restoring wild species. The “hard” quantifiable costs of compensation could easily overwhelm the “soft,” qualitative estimate of benefits in the agency’s decision-making process. If regulators are already underestimating benefits, forcing them to see costs in full measure through a compensation requirement would tend to skew their decisions against reintroduction.

Moreover, the assumption that government decisionmakers respond only, or even primarily, to financial incentives is naive. Political pressure, even without direct financial costs, can quite effectively command the attention of regulators. It is unlikely that the government is ever unaware of the impact of its decisions on politically vocal groups. Property owners have been highly vocal about the impacts of endangered species protection, and their complaints have not gone unnoticed. Indeed, as Professor Eric Freyfogle has pointed out, “Given the political clout of the property-owning class in the United States, it is far from clear why property rights need constitutional protection.” Recent events support the claim that property owners are perfectly capable of protecting their interests in the political arena. The Clinton administration, for example, has bent over backwards to offer compensation in situations where it does not appear to have been legally required, in order to defuse political opposition. The concerns of property owners affected by wildlife reintroduction will reach the ears of government agencies whether or not compensation is mandated.

Finally, even taken on its own terms, the quest for efficiency cannot answer the question of whether compensation is appropriate. Requiring ranchers to pay the government if they wish to prevent wolf reintroduction will promote the efficient balance of sheep and wolves just as effec-

336. See Kaplow, supra note 334, at 568–69 (arguing that government may undervalue widely dispersed benefits and overvalue the concentrated costs of compensation).
337. See Polasky & Doremus, supra note 316, at 30.
338. Freyfogle, supra note 196, at 114.
tively as requiring the government to pay ranchers for any damage the wolves cause. Instead of a morally neutral quest for efficiency, the call for compensation represents an assumption that ranchers hold a social entitlement to conduct their activity where they do without the interference of wolves.

This observation leads into the second major criticism of the claim that economic efficiency requires compensation: rejection of the premise that efficiency is the appropriate measure of good government. Efficiency, in economic terms, refers to the sum of satisfaction of individual preferences, which are taken as given. But the assumption that blind preference satisfaction is the highest societal goal is neither non-controversial nor morally neutral. Professor Mark Sagoff, a leading critic of the cult of preference satisfaction, argues that private consumer preferences do not adequately reflect civic values and beliefs. For public policy purposes, he contends, preferences must be evaluated normatively, based on the strength of the arguments that support them rather than on the intensity with which persons hold them. This contention has particular force with respect to the rules governing property ownership. Those rules, as Professor Freyfogle notes, are inescapably normative, not only reflecting "our communal understandings of value and of right and wrong," but shaping those understandings for the future.

Choices about wildlife restoration policy certainly have a strong normative dimension. A commitment to compensate property owners for damage done by introduced wildlife amounts to recognition of a moral right to freedom from predator attacks, and a denial that predators have any moral claim to wild lives. That very public statement will shape the views of future generations about the relative place of wolves and sheep in the world, in a way inconsistent with the national commitment to protecting wild nature embodied in the ESA.

Paying property owners for wildlife damage is practically as well as symbolically inconsistent with establishing truly wild populations. One free market advocate's call for compensation for damage done by Yellowstone National Park bison to surrounding property vividly illustrates

---


345. Freyfogle, supra note 196 at 109.
the conflict. Making the Park liable for damage done by its roaming bison, he claims, would give Park managers the proper incentives “to control and protect bison.” Government compensation for wildlife depletions concedes that government bears a duty to prevent such depletions. It seems inevitable that actual control measures would follow, as federal agencies faced with inadequate budgets and financial responsibility for wildlife damage attempt to reduce that damage. To control restored species, however, is to deprive them of the opportunity to live wild lives, and correspondingly to deprive people of the values that only wild creatures can provide.

Furthermore, government compensation communicates the message that a property owner who refrains from killing an introduced animal has done society a favor. But the ESA, in making the killing of listed animals unlawful, makes the contrary statement that everyone owes society a duty to refrain from such anti-social acts. In order to avoid undermining that declaration, the government should offer compensation only for acts that go beyond the minimum duties prescribed by the ESA. Section 10(j) already permits Interior to soften the ESA’s prohibitions on the taking of listed animals. If enforcement of the minimal remaining duties seems politically unpalatable, the appropriate response is to reconsider those duties in a political forum, rather than to reach reflexively for the public checkbook.

Proponents of compensation schemes contend that compensation is the normatively appropriate choice because it more fairly distributes the burdens of government choices. Professor Barton Thompson concisely presents a series of arguments in support of the claim that the economic impacts of endangered species protection are currently unfairly distributed, and compensation can reduce that unfairness. He argues that the ESA may unfairly prevent development on one parcel of land because that parcel harbors a listed creature, while permitting it on a nearby parcel that does not. Furthermore, habitat loss is a cumulative problem that becomes progressively more serious as parcels in an area develop. Owners who develop early cause species decline but escape the costs of stemming that decline. To make matters worse, politically powerful property owners are able to escape regulation, imposing the bulk of the costs on their smaller, less well-off counterparts. Finally, fairness requires compensation because “[r]egulated property owners constitute

347. Financial compensation could be used, like control measures under section 10(j), to encourage such voluntary contributions to the welfare of reintroduced animals.
348. See supra notes 142–161 and accompanying text.
349. See Thompson, supra note 183, at 360–61. Professor Thompson is careful to note that the effects of compensation choices are difficult to predict, and that partial compensation may sometimes be preferable to full compensation. See id. at 375–76.
only a small fraction of the population that enjoys” the benefits of en-
dangered species protection.  

These arguments carry some force, but in the context of wildlife
restoration they are far from overwhelming. Equitable treatment of neigh-
boring landowners is not generally a problem in this context. Restoration
projects typically subject all nearby property to a similar probability of
wildlife damage. Nature, not the government, determines which of those
properties actually suffer damage.

Furthermore, the Takings Clause provides adequate protection
against the potential imposition on small groups of the costs of a societal
choice to restore endangered species to their historic range. The Supreme
Court’s takings jurisprudence has long rested explicitly on fairness con-
cerns; it takes into account many of the factors to which compensation
proponents appeal. There undoubtedly are barriers to takings litiga-
tion. But those barriers do not justify moving to a rule of blanket com-
ensation. For one thing, takings litigation carries high costs, political as
well as economic, for government defendants as well as for plaintiffs.
The threat of litigation seems at least as effective in deterring govern-
ment action that comes close to the constitutional line as the costs of litigation
are in deterring plaintiffs from bringing claims. For another, as ex-
plained in Part VI(C) below, the effects of reintroduced wildlife are gen-
erally not so unfair that they rise to the level of a constitutional taking.
If, as this Article argues, few plaintiffs have meritorious claims, barriers
to litigation will not prevent the vindication of plaintiffs’ rights. Finally,
fairness is unavoidably an ad hoc, fact-specific notion. If a compensation
scheme is to achieve fairness, it will have to provide a means of taking
into account the nearly infinite variety of potentially relevant circum-
stances. There is little reason to suppose that any system that could ade-
quately account for those circumstances would be less cumbersome than
current takings litigation.

The fairness argument for compensation does, however, raise one
important concern. Interior wields a great deal of discretion in making

350. Id. at 361.
351. U.S. CONST. amend. V.
352. See infra text accompanying notes 436–485.
353. See Thompson, supra note 183, at 326–27. Notwithstanding these barriers,
some plaintiffs with very small economic claims have managed to litigate takings claims to
completion. One dispute reached the United States Supreme Court despite the fact that the
plaintiff’s damages were eventually pegged at $1. See Loretto v. Teleprompter Manhattan
1983).
354. See supra note 339 and accompanying text.
355. See infra notes 436–485.
ECOLOGY L.Q. 509, 515 (1996) (advocates of legislative takings proposals “face the same
problems of definition with which the Supreme Court has struggled, and they are caught up
in the same inability to come up with a simple one-dimensional answer”).
reintroduction decisions. That discretion could potentially be used to favor politically powerful landowners at the expense of others. In order to prevent such abuses, courts must be prepared to carefully examine the asserted justification for the agency’s choice of reintroduction sites.\(^{357}\)

There is also a pragmatic argument for compensating property owners in the endangered species context. Because enforcement of protective regulations is so difficult, compensation is often presented as a necessary element of endangered species protection. Property owners who think they can escape detection may be able to “shoot, shovel, and shut up,” killing protected animals in blatant violation of the ESA.\(^{358}\) Compensation, which removes the economic incentive for illegal killing,\(^{359}\) may be cheaper than the alternative of increased enforcement efforts.

This pragmatic necessity argument provides the most compelling case for compensation in the context of wildlife restoration. Federal agents cannot escort introduced animals everywhere they go. Finding and prosecuting the perpetrators of illegal killings may be difficult.\(^{360}\) But while the problem of illegal killing is real, experience suggests that compensation will not solve it. Compensation will not completely repair the economic damage predators may do to livestock owners, because not all predator losses will be verifiable.\(^{361}\) In addition, compensation will not assuage many of the non-economic harms attributable to restored wildlife.\(^{362}\) Perhaps for these reasons, Minnesota’s practice of compensating for livestock lost to wolves has not ended either the strident demands for wolf control measures or the illegal killing of wolves.\(^{363}\) There is no rea-

---

357. Although that might seem intrusive, courts should be able to distinguish political bases from biological ones. See infra note 489 and accompanying text.

358. The phrase “shoot, shovel, and shut up” is frequently used by advocates of economic incentives for the protection of endangered species to describe the illegal and undetected killing of listed animals. See, e.g., Richard L. Stroup, The Economics of Compensating Property Owners, XV(4) CONTEMPO. ECON. POL’Y 55, 57 (1997). Anecdotal stories of such killings abound. See, e.g., Thompson, supra note 183, at 351 and sources cited therein.

359. See, e.g., Stroup, supra note 358, at 57–58.

360. Indeed, a number of introduced animals have already fallen victim to such killings. See supra notes 2–5 and accompanying text.

361. See Fritts, supra note 154, at 4–6 (detailing problems of verification of depredation); Margaret Kriz, Wild About Wolves, Nat’l. J., Jan. 31, 1998, at 238–41 (reporting that ranchers in Yellowstone area view private compensation scheme as inadequate because missing animals may be found too late to determine the cause of death).

362. See supra Part IV.B.2.

son to suppose that a federal compensation program would silence the controversy over reintroduction.

Although Interior has never agreed to provide compensation for damage done by introduced wildlife, it has endorsed the development of privately funded compensation programs. The best known of these programs is the Defenders of Wildlife Wolf Compensation Trust, which provides payment for livestock injured or killed by wolves.\textsuperscript{364} Defenders of Wildlife also offers a $5,000 reward to any landowner who allows wolves to den and raise pups on their land.\textsuperscript{365} Unlike government compensation, voluntary compensation by private organizations is entirely appropriate in this context. Payments made by private groups do not increase the pressure on Interior to adopt stringent control measures. Nor do they communicate to neighboring landowners and the public at large that the government bears responsibility for the actions of restored wildlife. They represent a charitable gift rather than an entitlement; accordingly, they carry very different expectations and symbolic overtones.\textsuperscript{366} The gift does not undermine the ESA's message that nature must sometimes prevail over human interests. Without questioning the social obligation of property owners to bear the burdens of introduced wildlife, private compensation programs allow those members of the public who most desire species restoration voluntarily and compassionately to share those burdens.

\textbf{C. Learning from Takings Law}

In recent years, defenders of property rights have grown increasingly vocal on the subject of environmental regulation in general, and the Endangered Species Act in particular.\textsuperscript{367} Although the ESA's habitat protection regulations have borne the heaviest onslaught, wildlife reintroduction programs have also been attacked.\textsuperscript{368} Property rights advocates assert that property owners have a right to be free from the effects of restored wildlife. Their constitutional claim has not yet been successful, and (as explained infra) is not likely to be absent extreme circumstances. But their argument, whether presented as a veiled threat of litigation or as a

\textsuperscript{365} See id.
\textsuperscript{366} See Rose, supra note 91, at 11–12 (describing the spiritual quality of gifts).
\textsuperscript{367} See Joseph L. Sax, Using Property Rights to Attack Environmental Protection, 14 PACE ENVTL. L. REV. 1, 3–4 (1996) (noting that the ESA has been a special target of recent legislative proposals to compensate property owners).
\textsuperscript{368} For example, in hearings on the Yellowstone wolf proposal, "[s]peaker after speaker fulminated that the wolf reintroduction plan was really a gigantic conspiracy to deprive Westerners of their property rights." McNAMEE, supra note 44, at 42. Cases challenging wildlife reintroduction range from one coast to the other, and from the early part of this century to the present. See, e.g., Barrett v. State, 116 N.E. 99 (N.Y. 1917); Moerman v. State, 21 Cal. Rptr. 2d 329 (Cal. Ct. App. 1993).
straight political claim that property owners should not be expected to bear the burdens of reintroduced wildlife, has pushed Interior toward measures to confine introduced animals to federal land, or at least helped justify those measures.\footnote{369}

Ultimately, the extent to which private property should contribute to the preservation and restoration of wild nature, like the question of liability for wildlife damage, is one properly submitted to a political forum. Nonetheless, examination of constitutional takings doctrine provides two useful lessons. First, takings law teaches that all property owners must accept their fair share of the burdens of achieving societal goals. Second, on careful examination, the burdens imposed by wildlife restoration are not obviously unfair by comparison to other burdens property owners have been required to accept. Interior, therefore, need not reflexively accept the proposition that restored wildlife must be kept off of private lands.

1. The Basics of Takings Doctrine

The Takings Clause of the Federal Constitution\footnote{370} is so infamous for vexing courts and commentators that pointing out its incoherence has become a cliche.\footnote{371} But while their theoretical foundations are murky and their application can be difficult, the basic principles of takings jurisprudence can be simply stated. The government must provide just compensation in three circumstances: when its actions amount to a permanent physical occupation of private land; when it regulates away all economically viable use of private land, unless the regulation simply implements a pre-existing background principle of law; and when it unfairly imposes public burdens on a limited group.

2. Wildlife Restoration Is Not a Physical Taking

a. Understanding Loretto

The categorical rule that “a permanent physical occupation authorized by government is a taking,” without regard to the strength of the public interest served or the insignificance of the intrusion on the property owner, was established in \textit{Loretto v. Teleprompter Manhattan CATV}
Plaintiff Loretto challenged a New York statute requiring residential landlords to permit the installation of cable television equipment on their buildings. The statute's effect on Loretto could hardly have been more trivial. Roughly thirty feet of half-inch-thick cable had been attached to her building, together with other equipment occupying a total volume of no more than one and one-half cubic feet. Nonetheless, the Supreme Court held that the State had physically taken Loretto's property, and must compensate her.

Prior to Loretto, physical invasions were subjected to the same factsensitive, ad hoc balancing test applied to regulatory restrictions. Beyond the observation that it had never denied compensation for a permanent physical occupation, the Court offered little discussion of the basis for its new rule. Writing for the majority, Justice Marshall did point out that physical occupation, like the exercise of eminent domain, "chops through the bundle [of property rights], taking a slice of every strand." Moreover, Marshall wrote, "an owner suffers a special kind of injury when a stranger directly invades and occupies the owner's property." An owner who loses her own rights to the property suffers injury, but one who must see those rights turned over to another suffers insult as well.

Loretto's holding was deliberately, and quite explicitly, narrow. Not every physical invasion is automatically a taking; only permanent and exclusive physical occupations always require compensation. Permanence does not require certainty that the intrusion will last forever. It does not even require that the duration of the intrusion be outside the property owner's control. A physical invasion of uncertain duration that can only be avoided or remedied through actions the government could not otherwise require is "permanent." Exclusivity does not mean the

---

373. See id. at 438 n.16. Justice Blackmun described the intrusion as even less significant. On his reading of the record, the equipment occupied less than one-eighth of a cubic foot of space. See id. at 443 (Blackmun, J., dissenting).
374. See infra notes 418-419 and accompanying text.
375. See Loretto, 458 U.S. at 430 n.7. The dissenters objected that identifying cases falling under the new categorical rule would be difficult, see id. at 448-51 (Blackmun, J., dissenting), but the majority insisted that the rule would avoid line-drawing problems while "presenting few problems of proof." Id. at 437.
376. Id. at 435.
377. Id. at 436 (emphasis in original).
378. "[P]roperty law," the Court said, "has long protected an owner's expectation that he will be relatively undisturbed at least in the possession of his property. To require, as well, that the owner permit another to exercise complete dominion literally adds insult to injury." Id. at 436. The dissenters rejected the assertion that this type of injury was qualitatively more severe than others, and noted that the line between physical intrusions and other regulations did not always correlate with the extent of the economic impact. See id. at 447.
379. See id. at 419.
380. See id. at 435 n.12. Lesser physical invasions are subject to the general ad hoc balancing test described infra, text accompanying notes 436-485.
381. Loretto herself could have freed her building from the television cable simply
property owner must be physically kept out of the space at all times. *Loretto* treated *United States v. Causby*,382 a case in which military airplane overflights were held to require compensation, as a physical taking case. The overflights did not constantly occupy the air space above Causby’s land,383 but they did make that air space useless for any other purpose. The same logic explains why the Court has held that a public easement for access via water to a privately owned marina is not a physical taking,384 but an easement permitting passage over land is.385 The latter forces the owner to leave the land unencumbered, effectively preventing any competing use. The former also requires that the waterway not be blocked, but that requirement is far less likely to interfere with the owner’s plans.

b. Applying *Loretto* to Wildlife Restoration

Although superficially it might seem that wildlife damage to livestock or crops would be a physical taking,386 every court faced with that claim to date has rejected it. The courts have not offered the most articulate explanations, but their conclusion is correct. Wildlife damage, whether by remnant populations that enjoy government protection or by reintroduced populations, is not a physical taking under *Loretto*.

The two leading federal decisions in this area are *Mountain States Legal Foundation v. Hodel*387 and *Christy v. Hodel*.388 *Mountain States Legal Foundation* by removing the building from the residential rental market. The Court, however, was not willing to see her put to that choice. See *Loretto*, 458 U.S. at 439 n.17. This element of *Loretto* is open to question. If, as seems likely, the City could have refused to permit *Loretto* to offer her property for rent, the cable requirement should have been analyzed not as a compelled physical invasion but rather as a development exaction under the standard announced in *Dolan v. City of Tigard*, 512 U.S. 374 (1994). The Court itself has correctly, albeit without much explanation, retreated from *Loretto*’s per se rule in later cases with closely analogous facts. See *FCC v. Florida Power Corp.*, 480 U.S. 245 (1987) (right to rent space on utility poles can be conditioned on forfeiting any right to compensation for the imposition of rent control); *Yee v. City of Escondido*, 503 U.S. 519 (1992) (holding the same with regard to mobile home pads).

382. 328 U.S. 256 (1946).

383. In fact, the vast majority of flights apparently did not even pass over Causby’s land. See id. at 259 (flight path over Causby’s property used only 4% of the time in taking off, 7% of the time in landing).

384. See *Kaiser Aetna v. United States*, 444 U.S. 164 (1979). Nevertheless, the Court did hold that the government’s demand for such an easement was a regulatory taking under the ad hoc fairness test.


387. 799 F.2d 1423 (10th Cir. 1986) (en banc).

388. 857 F.2d 1324 (9th Cir. 1988). A handful of other federal cases address this claim in passing. See, e.g., *Clajon Prod. Corp. v. Petera*, 854 F. Supp. 843, 852–53 (D.
dealt with the Wild Free-Roaming Horses and Burros Act. Plaintiffs owned land in a “checkerboarded” area of Wyoming, where sections of federal land alternated with privately owned sections. Wild horses, descendants of those imported to the continent by early Spanish settlers, roamed freely over these checkerboarded lands. The Act forbade the pursuit or capture of these horses, but provided that federal agents would remove them from private land at the owner’s request. Plaintiffs alleged that their repeated requests for removal under this provision had been ignored. Left on their land, the horses had “eroded the topsoil and consumed vast quantities of forage and water.” The Tenth Circuit, sitting en banc, rejected plaintiffs’ claim that the government’s extensive control over the horses carried with it a responsibility enforceable through the takings clause to minimize damage to private property. The court noted that the Wild Horses and Burros Act established no greater degree of control than other federal or state wildlife protection laws. It concluded that the wild horses were not “instrumentalities of the federal government whose presence constitute[d] a permanent governmental occupation.”

The later case, Christy, grew out of the killing of a grizzly bear in violation of the ESA. Marauding grizzly bears attacked Christy’s livestock on a nightly basis. Within a short time he had lost twenty sheep, valued at $1,200. Christy sought help from Interior, which tried unsuccessfully to capture the bears. Frustrated, Christy finally shot and killed a bear in the vicinity of his flock. In response to the civil penalty action Interior brought against him for that killing, Christy argued that the regulations protecting the grizzly bears unconstitutionally took his property without just compensation. Christy contended that “by protecting grizzly bears, the Department [of Interior had] transformed the bears into ‘governmental agents’ who [had] physically taken plaintiff’s property” by destroying his sheep. The Ninth Circuit was not persuaded. It noted that the challenged regulations did not occupy, appropriate, or even

Wyo. 1994), aff’d in part, appeal dismissed in part, 70 F.3d 1566 (10th Cir. 1995) (animals’ presence and consumption of forage on plaintiffs’ land held not physical takings); Southview Associations, Ltd. v. Individual Members of the Vermont Envtl. Bd., 782 F. Supp. 279 (D. Vt. 1991) (denial of a development permit in order to protect deer held not a physical invasion); United States v. Bishop, 126 F. Supp. 449 (Ct. Cl. 1954) (destruction of crops by protected geese held not a compensable taking because no invasion or assertion of proprietary rights).

390. See Mountain States, 799 F.2d at 424.
392. Mountain States, 799 F.2d at 1424.
393. Id. at 1428.
394. See Christy, 857 F.2d at 1326. One commentator reports, based on Christy’s brief, that the loss exceeded 100 sheep by the time Christy moved his livestock to a different pasture. See Lauri Alsup, Comment, The Right to Protect Property, 21 Envtl. L. 209, 222, 223 n.97 (1991).
395. Christy, supra note 388 at 1334.
regulate the use of Christy's property; he remained in full possession of the complete bundle of property rights to his sheep. Furthermore, following *Mountain States*, the court concluded that although the bears had physically taken Christy's property, the government could not be charged with that taking.

*Christy* specifically reserved judgment on whether the government would have been liable if it had brought the grizzly bears to the vicinity of Christy's sheep. In *Moerman v. State*, a California appellate court answered that question in the negative. Tule elk historically ranged throughout California, but by 1870 they had been eliminated from all but a single county. In the 1970s, the State began relocating the elk to portions of its native range. As part of that program, the California Department of Fish and Game released a group of elk about fourteen miles from Moerman's ranch. The elk strayed onto Moerman's property, eating and trampling his forage and damaging his fences. Moerman complained to the Department, which tried without success to drive the elk away from his land. Eventually Moerman filed suit, alleging that the elk had caused more than $74,000 worth of direct damage, and in addition had reduced the market value of his ranch by $20,000. He argued unsuccessfully that this damage was a physical taking by the state. Like the Ninth and Tenth Circuits, the California court noted that the government did not own or control the elk, which therefore were not "instrumentalities of the state." The State's capture, release, and subsequent monitoring of the animals did not affect that conclusion. Nor, the court noted, had the State forced Moerman to open his property to the tule elk, although as a practical matter it would have been difficult to keep them out without harming them in violation of state law.

---

396. See *id.* at 1335.
397. See *id.* The Supreme Court denied certiorari over the dissent of Justice White. See *Christy v. Lujan*, 490 U.S. 1114 (1989).
398. See *Christy*, 857 F.2d at 1335 n.9. The wild horses that gave rise to the complaint in *Mountain States* were introduced to the region, but not by the United States. See *Mountain States*, 799 F.2d at 1425.
400. See *id.* at 331.
401. See *id.* at 331, 333 n.4.
402. See *id.* at 331.
403. See *id.* at 334.
404. See *id.* at 333.
405. See *id.* at 334. Moerman also argued that the elk relocation program should be treated as a public improvement. Under California law, the government is liable in inverse condemnation for damages due to the deliberate design and construction of a public improvement, even if those damages are neither intended nor foreseeable. See *Albers v. County of Los Angeles*, 398 P.2d 129 (Cal. 1965); *Belair v. Riverside County Flood Control Dist.*, 764 P.2d 1070 (Cal. 1988). The court rejected the analogy, however, noting that elk were not "a public improvement or pet, under the control of the state." *Moerman*, 21 Cal. Rptr. 2d, at 334.
These three cases all reach the right result, although none of them provides a completely convincing explanation. The emphasis in all three on the fact that the damaging animals were not governmental agents is misleading. As critics of the decisions have noted, the existence of a physical taking does not depend upon whether government employees or agents personally invade the property. Cable company equipment installers are no more agents of the government than are wild horses or grizzly bears. In Loretto, the Court explicitly stated that the government need not itself be the invader to incur liability.

Nonetheless, wildlife damage is not appropriately analyzed as a physical taking. Wildlife intrusions do not bring the special non-economic injury that justifies Loretto's per se rule. Loretto was concerned with invasion by "strangers." Indigenous animals evolved in harmony with the property; they are not strangers to it in any relevant sense. Furthermore, Loretto's appeal to a special injury associated with invasions by strangers almost certainly refers only to invasions by persons. Invasion of property by other persons violates the strongest expectations of property ownership. Such an invasion with the blessing of the government interferes not only with the owner's economic interests, but also with her sense of personal autonomy and control over her own destiny. Wildlife depredations do not carry the same freight. Although the ability to control nature is an important aspect of the self-image of many rural landowners, no landowner expects to have complete control over the comings and goings of wild creatures. Human owners must anticipate and accept the inevitable sharing of their land, and even their homes, with many uninvited animal guests. Such invasions do not threaten human autonomy or privacy in the way that intrusions by other persons do. Consider an example. A homeowner whose favorite activity is gardening might strongly desire to drive deer away from the prize roses she has labored over. Her frustration at being forbidden to do so, however, would not compare to that of another homeowner forced to allow a homeless family to camp in his backyard. The symbolic and psychological impacts associated with wildlife restoration programs, while real, are simply not of the sort given constitutional dimension in Loretto.

Nor do wildlife intrusions generally subject property to any permanent occupation. Unlike cable equipment, relocated wildlife is not anchored to fixed locations or confined to particular parcels. The theoretical

406. See Harrison, supra note 386, at 1115.
408. See supra notes 376--378 and accompanying text.
409. See supra note 377 and accompanying text.
410. See supra note 296 and accompanying text. Cf. Southview Associates v. Bongartz, 980 F.2d 84 (2d Cir. 1992) (holding that regulation prohibiting development of a deeryard was not a physical taking on the grounds that it authorized physical occupation by deer because the deer were not strangers to the area, which was their winter habitat).
411. See supra notes 193--196.
justification for Loretto, which depends on the close analogy between permanent physical occupation and actual or complete expropriation, simply does not apply in these circumstances. Invasion by wildlife is typically temporary and shifting as animals roam across or through a parcel. It does not slice through the entire bundle of property strands as the cable installation did in Loretto. Property owners do not lose either the legal right or the practical ability to occupy, exclude other persons from, or use land that is occupied by wildlife from time to time.

There may be some circumstances in which reintroduced wildlife do more or less permanently occupy a specific location by, for example, constructing and maintaining a nest or other structure. Beaver are an obvious example because they build lodges that may remain for some time. Those structures, if protected by regulation, could provide a focus for arguing that a physical occupation has occurred. Even in this situation, however, a physical taking claim should fail. The government is neither the direct nor the proximate cause of damage done by restored wildlife. The animals are free to roam as they choose. The government does not purport to grant them affirmative, enforceable rights to use any specific property. Regulations protecting restored wildlife from attack are similar to laws limiting the steps property owners may take to repel human invaders or thieves. While the wisdom of such regulations can always be questioned, they do not physically take property. Wildlife restoration is not akin to a government mandate ordering property owners to deliver crops or livestock for consumption by captive animals. The choices of the animals, not of the government, determine what property bears the impacts of reintroduced animals.

For this argument to be convincing, of course, the animals must have at least some opportunity to choose. Placing animals where they have no option but to immediately seek sustenance on a particular area of private land could well be considered a physical, or for that matter a regulatory, taking. So could actions that limit dispersal so that the effects of the animals are unnaturally concentrated on a small amount of private land. None of the endangered species restoration projects so far proposed or carried out, however, are of that sort.

412. In Barrett v. State, for example, plaintiffs were prohibited by state law from molesting or disturbing beaver or their “dams, houses, homes or abiding places.” 116 N.E. 99 (N.Y. 1917).
413. While wildlife restoration cannot be squeezed into the physical taking category, there may be fairness concerns if the reintroduction area and method chosen seem to target particular property. See infra notes 476-485 and accompanying text.
414. See State v. Herwig, 117 N.W.2d 335 (Wis. 1962) (holding that regulation prohibiting hunting in a small area “unnaturally concentrated” waterfowl and their damaging habits on a few properties).
3. Wildlife Restoration Is Not a Regulatory Taking

Even in the absence of a physical invasion, regulations that “go too far” require compensation.415 Regulatory taking claims are evaluated using two very different tests. Compensation is always required for regulations that deny “all economically beneficial or productive use of land.”416 The government can avoid compensation for such regulations only if they merely make explicit a limitation inherent in background principles of state law.417 Regulations that do not produce such a drastic economic impact receive far greater deference. They are subjected to an ad hoc, fact-specific inquiry to determine if they force “some people alone to bear public burdens that, in all fairness and justice, should be borne by the public as a whole.”418 Courts consider three major factors in evaluating fairness: the economic impact, the extent of interference with reasonable investment-backed expectations, and the “character” of the government action.419 Absent highly unusual circumstances, wildlife restoration will not amount to a taking under either the per se test or the generalized fairness test.

a. Wildlife Restoration Does Not Preclude Economic Use

Lucas v. South Carolina Coastal Council,420 which established the per se requirement for compensation if government action denies all economic use, left two important factors unclear. The first is precisely what it means to deny all economic use, in other words, the extent of the economic impact needed to invoke the rule. In Lucas, the Court relied on the South Carolina court’s questionable conclusion that Lucas’s property had been rendered utterly valueless.421 But it did acknowledge the issue, noting that it was unclear whether a regulation requiring that ninety percent of a parcel be left in its natural state would be a per se regulatory taking.422 Earlier decisions that the Court did not question in Lucas suggest that the loss of value must be very nearly complete. The Court has per-
mitted the government to regulate away more than ninety per cent of the value of a parcel without paying compensation.\textsuperscript{423}

The second unresolved issue is how to identify the property whose remaining use or economic viability should be scrutinized. In \textit{Penn Central Transportation Co. v. New York City}, the Court endorsed a broad interpretation of property for purposes of applying the ad hoc fairness test, writing that: "Taking jurisprudence does not divide a single parcel into discrete segments and attempt to determine whether rights in a particular segment have been entirely abrogated."\textsuperscript{424} Although the \textit{Lucas} majority signaled in a footnote its willingness to move to a narrower test,\textsuperscript{425} the Court has subsequently reaffirmed the broad approach.\textsuperscript{426}

Like the per se rule of \textit{Loretto}, the \textit{Lucas} categorical taking rule should be narrowly construed. The \textit{Lucas} Court conceded that even onerous land use restrictions rarely deprive an owner of all economically viable use of land.\textsuperscript{427} A rule developed for such unusual circumstances should not be unthinkingly extended to a larger class of cases. Moreover, the adverse ramifications of an unjustified conclusion that compensation is categorically required far outweigh those of an unjustified conclusion that it is not. A property owner who cannot shoehorn the impact of a regulation into the per se rule is not necessarily denied a remedy; she can still seek compensation under the generalized fairness test.\textsuperscript{428} But overzealous application of this categorical rule cannot be remedied. By forcing the government to compensate for a regulation whose burden is not unfair, an error of this sort could unnecessarily inhibit government action. Therefore, only that rare class of government actions that literally leave no conceivable economic use of the entire affected parcel should be treated as categorical regulatory takings.

Damage from wildlife reintroduction is exceedingly unlikely to rise to that level. Destruction of livestock and crops, the most common types of wildlife damage, are not categorical takings because the rule of \textit{Lucas}

\begin{flushright}
\textsuperscript{423} See Hadacheck v. Sebastian, 239 U.S. 394 (1915) (upholding an ordinance prohibiting the operation of a brickyard in a residential area despite evidence that the prohibition reduced the value of the affected real property by more than 93%); cf. Hodel v. Virginia Surface Mining & Reclamation Ass'n, 452 U.S. 264, 296 (1981) (holding that the Surface Mining Control and Reclamation Act survives facial takings challenge because it does not completely prohibit mining, nor does it purport to regulate any alternative uses).
\textsuperscript{425} See Lucas, 505 U.S. at 1017 n.7. Justice Scalia singled out for criticism the state court decision in \textit{Penn Central}, which used the total value of the railroad's holdings in the vicinity as the relevant property interest.
\textsuperscript{426} See Concrete Pipe & Prods., Inc. v. Constr. Laborers Pension Trust, 508 U.S. 602, 644 (1993) ("To the extent that any portion of property is taken, that portion is always taken in its entirety; the relevant question, however, is whether the property taken is all, or only a portion of, the parcel in question.").
\textsuperscript{427} See Lucas, 505 U.S. at 1017–18.
\textsuperscript{428} See supra text accompanying notes 415–419.
\end{flushright}
applies only to land. The *Lucas* Court conceded that the "State's traditionally high degree of control over commercial dealings" allows it to completely destroy the economic value of personal property. The *Lucas* Court conceded that the "State's traditionally high degree of control over commercial dealings" allows it to completely destroy the economic value of personal property.429 Even depredations that occur so frequently as to force a rancher out of the livestock business430 would not automatically be a taking. Land in the area of a restoration project typically will retain value for tourism or recreational use.431 The ability to use the land profitably for any purpose, even if it is not the owner's preferred use, precludes a *per se* taking.432 In the unlikely event that livestock production were the only economically viable use of a parcel, changes in methods, species of livestock, or even ownership of the operation might well leave the business viable. Wildlife reintroduction, like pollution control or minimum wage regulations, raises the costs of doing business but does not preclude any particular use.

Furthermore, even if a plaintiff were able to prove loss of all economically viable use, the long history of government regulations protecting wildlife should absolve the government of the obligation to compensate. Regulations that express background principles of state law do not require compensation under *Lucas*, even if they deny all economically viable use.433 Professor Houck points out that the power of the government to restrict and regulate the taking of wildlife "was established in English common law well before the founding of this nation."434 Today's regulations protecting endangered and threatened species are simply the modern expression of the historic right of the state to determine whether and under what conditions property owners may kill wildlife on their property. No matter how narrowly the relevant background principles are

---

430. See supra note 186 and accompanying text.
431. Tourism has shot up in the Yellowstone area following wolf reintroduction. See supra note 184. Supporters of big game reintroduction often appeal to expected increases in tourism as well. See supra note 168.
432. See Hodel v. Virginia Surface Mining & Reclamation Ass'n, 452 U.S. 264 (1981) (holding that regulations that did not absolutely prohibit coal mining or preclude any other potential use did not unconstitutionally take property). But see Whitney Benefits, Inc. v. United States, 926 F.2d 1169 (Fed. Cir. 1991) (holding that regulations did take specific property that could only be mined by prohibited methods, regardless of whether or not the affected parcel could be farmed).
433. See *Lucas*, 505 U.S. at 1029. Justice Scalia suggested that nuisance law, together with the right to respond to emergency situations, might supply the only relevant background principles. See id. at 1029 & n.16. Justice Kennedy, concurring, took a broader view, stating that "reasonable expectations must be understood in light of the whole of our legal tradition." Id. at 1035. Justice Kennedy's position is consistent with the Court's prior cases, which have refused to grant compensation when any background principle of property law supported the challenged government action. For example, no compensation is required for the exercise of the federal navigational servitude. See, e.g., United States v. Cherokee Nation, 480 U.S. 700 (1987); United States v. Rands, 389 U.S. 121 (1967). Similarly an easement imposed by Louisiana law on all land below the mean high water level of the river has been held to excuse compensation for federal destruction of timber in the course of a levee maintenance project. See General Box Co. v. United States, 351 U.S. 159 (1956).
434. Houck, supra note 84, at 308.
construed, they should cover wildlife restoration. The protection of reintroduced wildlife enjoys a sufficiently long history to qualify as a background principle incorporated into property owners' reasonable expectations.\textsuperscript{435}

\textit{b. Restoration Does Not Impose Unfair Burdens}

Regulations that do not deny all economically viable use are tested to see if they impose unfair burdens on a portion of the public. The evaluation concentrates on three factors: economic impact, interference with investment-backed expectations, and the character of the government action. Because this inquiry is ad hoc and intensely fact-specific, it is risky to make general predictions concerning the outcome. Nonetheless, the presumption seems to favor government action; courts applying this ad hoc test rarely require compensation. Wildlife reintroduction is unlikely to impose burdens sufficiently unfair to overcome that presumption.

\textit{i. Economic Impact}

The first factor, the economic impact, asks simply to what extent the challenged government action reduces the value of the affected property or the profits that property can produce. Judicial scrutiny increases with the extent of this impact\textsuperscript{436} until, if all economically viable use is denied, a taking is found regardless of the other factors.\textsuperscript{437}

The economic damage caused by wildlife is generally relatively small.\textsuperscript{438} Furthermore, the damage is not entirely attributable to the government. Christy’s losses from bear attacks,\textsuperscript{439} for example, resulted from three causes: first, the combination of government regulations protecting grizzly bears with Christy’s choice of land on which to graze his livestock; second, Christy’s decision not to protect his flock through guard dogs or other non-lethal measures; and finally, the bears’ urge to prey on Christy’s sheep. A similar confluence of events operates with respect to reintroduced animals. Unless the government physically places those

\textsuperscript{435}. In 1917, New York’s highest court wrote: “[T]he general right of the government to protect wild animals is too well established to be now called in question . . . . They are a species of natural wealth which without special protection would be destroyed. Everywhere and at all times governments have assumed the right to prescribe how and when they may be taken or killed.” Barrett v. State, 116 N.E. 99, 100 (N.Y. 1917). The court went on to point out that government, which had long experimented with translocation of wildlife to new environments, surely enjoyed the right to transport native wildlife to more favorable locations. See id. at 101.


\textsuperscript{437}. See supra note 416 and accompanying text.

\textsuperscript{438}. See supra notes 172–174.

\textsuperscript{439}. See supra note 394.
animals on private property, no damage can occur without at a minimum the intervening act of the animal itself, responding to the dictates of nature alone. This intervening cause may even preclude government liability.\textsuperscript{440}

\textit{ii. Investment-Backed Expectations}

The second factor to consider is the effect of the challenged action on distinct, reasonable investment-backed expectations. \textit{Penn Central} introduced this phrase as one particularly important aspect of the overall economic impact,\textsuperscript{441} but later cases have described it as a separate factor. It seems to encompass two elements: first, the extent of the plaintiff's investment in reliance on the old rule; and second, the extent to which the new rule was foreseeable.\textsuperscript{442}

The extent of reliance calls to mind the distinction in land use law between vested and non-vested rights.\textsuperscript{443} While landowners generally have no right to insist that the rules governing development of their property remain static, those who begin development in reliance on existing regulations can gain the right to complete the project even if the rules are subsequently changed.\textsuperscript{444} The doctrine of nonconforming uses plays a similar role. Property owners who have begun a use lawfully are ordinarily permitted to continue that use even if the area is rezoned to a classification that does not permit that use.\textsuperscript{445} These doctrines prevent the government from changing the rules after landowners, relying in good faith on the existing rules, incur substantial expense or detrimentally change their position. Similar concerns inform the Court's "expectations" cases. For example, in \textit{Pennsylvania Coal Co. v. Mahon},\textsuperscript{446} a mining company had sold surface rights while expressly reserving the right to remove all underlying coal. Subsequent enactment of a statute forbidding any mining that would cause the surface to subside rendered that express
reservation worthless, changing the terms of the deal after the mining company had paid a price premised on its ability to extract all the coal.

The investment-backed expectation factor also considers the reasonableness of reliance. Property owners cannot reasonably expect to avoid new rules that follow from background principles of existing law; therefore such rules do not require compensation. Nor can owners expect to be free of the impact of government actions taken before they acquire property. They may even have to anticipate some new rules or government actions. The more unforeseeable the action, however, the stronger the case for compensation.

Wildlife restoration does not pose much of a threat to reasonable, investment-backed expectations. Restoration does not force anyone to give up any established use. Furthermore, although property owners may have expected a future free of wolves, that expectation was not reasonable. The return of wolves was always foreseeable. Although the government played an important role in eliminating some species from areas to which they are now being restored, property owners could not reasonably expect the government to maintain that past disruption of the natural order. The very fact that the government helped eliminate some species should put property owners on notice of its ability and willingness to alter a region's biota in pursuit of the perceived public welfare. Reintroduction should come as no surprise, in light of more than thirty years of federal legislation protecting endangered species.

Moreover, land in areas likely to be targeted for reintroduction projects often lies on the edge of the wild. The same accessibility to undevel-


448. See supra note 417 and accompanying text.

449. See Creppel v. United States, 41 F.3d 627, 632 (Fed. Cir. 1994) (investment-backed expectations factor "limits recovery to owners who can demonstrate that they bought their property in reliance on the nonexistence of the challenged regulation").

450. See supra notes 431–432 and accompanying text.

451. See supra note 300 and accompanying text.

452. See Sharon S. Tisher, Everglades Restoration: A Constitutional Takings Analysis, 10 J. LAND USE & ENVTL. L. 1 (1994) (arguing that government should not be liable for compensation for changes resulting from restoration of the Everglades to their natural hydrologic patterns, undoing past government-funded channeling, drainage, and flood control projects).

453. Cf. Avenal v. United States, 100 F.3d 933, 937 (Fed. Cir. 1996) ("It is hard for [plaintiffs] to claim surprise, however, that the pre-existing salinity conditions, created at least in part by earlier government activity, were not left alone, but were again tampered with to their (this time) disadvantage.").

oped lands that renders these areas vulnerable to reintroduced wildlife is likely to bring similar impacts from native wildlife. Indeed, landowners affected by red wolf restoration in the Southeast already had to contend with other predators, including coyotes and bears.\textsuperscript{4} Even without the return of the wolf, these landowners could not reasonably expect their land to be free of predators.

It might be argued that state constitutional rights to harm or kill wildlife in defense of property, where they exist,\textsuperscript{456} justify an expectation that property owners would always retain the right to protect their property against wildlife. This argument is unpersuasive, however. It has long been established that federal authority to protect wildlife overrides any conflicting state law,\textsuperscript{457} and no federal constitutional right to kill wildlife in defense of property has ever been recognized.\textsuperscript{458}

\textbf{iii. Character of the Government Action}

The third factor, the “character” or “nature” of the government action, serves as a catch-all for a variety of concerns related to fairness.\textsuperscript{459} Under this rubric, the Court frequently examines the extent to which the challenged action involves a physical intrusion. The degree of judicial scrutiny rises with the extent of physical invasion; at the extreme, permanent physical occupations always require compensation.\textsuperscript{460}

The “character” factor encompasses much more, however. It includes, for example, the importance of the interest upon which the government action intrudes. The owner’s interest in excluding other persons is closely guarded, as are certain other important strands.\textsuperscript{461} Abstract economic interests, such as the potential to produce income, merit less protection; regulations that merely adjust the benefits and burdens of economic life are routinely upheld.\textsuperscript{462} The character factor also covers the

\textsuperscript{455} See Red Wolf Rule Revision, supra note 174, at 18,942. The same goes for ranchers near the Mexican wolf reintroduction area in the Southwest, who already must contend with coyotes, mountain lions, and bears. See Kenworthy, supra note 331.

\textsuperscript{456} See Alsup, supra note 394, at 213–16 (discussing the protection of property generally).

\textsuperscript{457} See Missouri v. Holland, 252 U.S. 416 (1920).

\textsuperscript{458} See Christy v. Hodel, 857 F.2d 1324, 1329 (9th Cir. 1988).

\textsuperscript{459} Professor Peterson lists a number of ways the Court has applied this factor. See Peterson, supra note 419, at 1317–20.

\textsuperscript{460} See Penn Cent. Transp. Co. v. New York Cent. Corp., 438 U.S. 104, 124 (1978) (“A ‘taking’ may more readily be found when the interference with property can be characterized as a physical invasion by the government... than when interference arises from some public program adjusting the benefits and burdens of economic life to promote the common good.”); Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 426 (1982); Andrus v. Allard, 444 U.S. 51, 66 n.22 (1979) (“It should be emphasized that in Pennsylvania Coal the loss of profit opportunity was accompanied by a physical restriction against the removal of the coal.”).

\textsuperscript{461} See Hodel v. Irving, 481 U.S. 704 (1987) (suggesting that the ability to control the disposition of property after one’s death is an essential element of property ownership).

\textsuperscript{462} See, e.g., United States v. Locke, 471 U.S. 84 (1985) (vested economic rights
degree to which government action diverges from historic precedent, the public purpose it serves, and the extent to which it advances that purpose.

Finally, this factor encompasses the distribution of benefits and burdens. Actions that bring the government a direct financial benefit merit close scrutiny, as do actions that burden only a small group. Concentration of the burdens on a small group may indicate a failure of the political process, but limitation of the burdens to a small group is not always unfair. The burdened group can hardly complain if it is itself the cause of the social problem the government seeks to remedy, or if it are subject to regulatory power to redistribute the benefits and burdens of economic life; Connolly v. Pension Benefit Guar. Corp., 475 U.S. 211 (1985) (impact on employers' property rights "arises from a public program that adjusts the benefits and burdens of economic life to promote the common good and, under our cases, does not constitute a taking").

463. Compare Locke, 471 U.S. at 109, with Hodel, 481 U.S. at 716.


466. See Armstrong v. United States, 364 U.S. 40, 48 (1960) (government gained direct financial advantage from destruction of materialmen's liens); Penn Cent., 438 U.S. at 128 ("actions that may be characterized as acquisitions of resources to permit or facilitate uniquely public functions have often been held to constitute ' takings'.").

467. See, e.g., Yee v. City of Escondido, 503 U.S. 519, 522-23 (1992) ("where the government merely regulates the use of property, compensation is required only if considerations such as the purpose of the regulation or the extent to which it deprives the owner of the economic use of the property suggest that the regulation has unfairly singled out the property owner to bear a burden that should be borne by the public as a whole."); Nollan v. California Coastal Comm'n, 483 U.S. 835-36 n.4 (1987) ("If the Nollans were being singled out to bear the burden of California's attempt to remedy these problems, although they had not contributed to it more than other coastal landowners, the State's action, even if otherwise valid, might violate either the incorporated Takings Clause or the Equal Protection Clause."); Penn Cent., 438 U.S. at 131 (appellants concede there would be no taking if a historic district were established, but challenge New York City's landmarks law because it applies only to selected properties); Agins v. City of Tiburon, 447 U.S. 255, 262 (1980) ("There is no indication that the appellants' 5-acre tract is the only property affected by the ordinances. Appellants therefore will share with other owners the benefits and burdens of the city's exercise of its police power."). But see Lucas v. South Carolina Coastal Council, 505 U.S. 1003, 1027 n.14 (1992) (direct regulation of land is no less objectionable because it applies generally).

468. See generally William Michael Treanor, The Original Understanding of the Takings Clause and the Political Process, 95 Colum. L. Rev. 782 (1995). Narrow application of a regulation may also suggest that the government is extorting a public benefit rather than preventing a public harm. See Freyfogle, supra note 196, at 130.

469. See Dolan v. City of Tigard, 512 U.S. 374 (1994) (development exactions sufficiently related to and roughly proportional to the problems caused by development are not constitutionally suspect); Pennell v. City of San Jose, 485 U.S. 1, 20 (1988) (Scalia, J., dissenting in part) ("Since the owner's use of the property is (or, but for the regulation, would be) the source of the social problem, it cannot be said that he has been singled out unfairly.").
receives the benefits as well as the burdens of the action. 470

Wildlife reintroduction projects do not seem to exhibit the unusual traits that might give rise to takings liability under this character factor. Provided that actual release of the animals occurs on public lands or the lands of consenting private owners, restoration involves little physical intrusion on private property. No government agent need ever enter private land without the landowner’s consent. No private land is opened to the public, or designated as an inviolate wildlife reserve. While the animals may physically intrude on private property, that intrusion is a temporary, indirect, and uncertain result of the government action.

That damage to some private property is often a predictable result of wildlife reintroduction471 is immaterial. All nearby landowners face an equal possibility of wildlife damage; none are singled out for particular harm. Although predictable, wildlife damage near a reintroduction site is an incidental consequence, analogous to the effects of freeway construction on property near the right-of-way. The government need not compensate those whose property a road does not cross for increased noise or for increased vandalism due to improved access.472 Similarly, it need not compensate for incidental wildlife damage.

Nor does wildlife reintroduction infringe on essential strands in the property rights bundle. It does not interfere with the keystone right to exclude other persons, preclude economic use of the property, or dedicate property to the government’s chosen purposes. Wildlife restoration efforts, especially when coupled with stringent protective regulations, can impose costs on property owners, but those costs are more akin to economic regulations than to intrusions on core property interests.473 Regulations protecting wildlife, and even reintroduction efforts, are supported by firm historical roots.474 They serve a public purpose long recognized as legitimate.475

The distribution of costs and benefits is the most troubling aspect of the character factor in this context. Inevitably, the burdens accompanying

470. See, e.g., YMCA v. United States, 395 U.S. 85, 92 (1969) (United States is not liable for damage caused to private buildings by rioters after U.S. soldiers defending the buildings retreated inside them); Pennsylvania Coal v. Mahon, 260 U.S. 393, 415 (1922) (explaining that earlier decisions correctly upheld a law requiring that coal be left along the line of adjoining mining sites because “that was a requirement for the safety of employees invited into the mine, and secured an average reciprocity of advantage”); Penn Cent., 438 U.S. at 134–35 (construing reciprocity of advantage much more broadly, to include benefits landowner receives in common with all citizens from landmark law).

471. See supra Part III.B.


473. See Goble, supra note 17, at 116 (stating that damage from protected predators is “among the risks the industry faces,” a “cost of doing business in the western environment.”).

474. See supra note 435 and accompanying text.

wildlife restoration fall most heavily on those who own property within
the historic range of the particular species reintroduced. This geographic
concentration of costs is not intrinsically unfair. Nature has made many
distinctions between different parcels of property. It is neither unfair nor
inappropriate for the government to take the physical and biological dis-
tinctions between parcels into account when designing its reintroduction
projects. In fact, it is essential. Introduction of species outside their na-
tive ranges is less likely to succeed, and may produce unexpected and
undesirable side effects. Since only land within a species' historic range
will serve the purposes of reintroduction, singling that land out for spe-
cial treatment is not unfair. Owners of property within the historic range
also have at least some opportunity to foresee reintroduction, whereas
landowners outside that range have no reason to anticipate conflicts with
the species.

Differential treatment of areas within a species' native range is more
troubling. Gray wolves once occupied vast stretches of the northern
United States. Limiting reintroduction to selected areas of that former
range makes good biological sense. Wolves in Yellowstone will have ac-
tccess to the prey and habitat conditions they need to live autonomous,
natural lives. In Denver or other urban areas they would not. But it may
seem unfair to impose the burden of wolves exclusively on residents of
the Yellowstone area, especially in light of opinion polls showing
stronger support for wolf reintroduction in urban areas than in rural
ones.476

This apparent separation of benefits and burdens merits considera-
tion, and may justify deference to the interests of residents of a reintro-
duction zone under some circumstances. The conclusion that costs are
unfairly concentrated on these residents, however, is not inescapable.
Although Yellowstone area residents will bear disproportionate economic
costs from wolf reintroduction, they also stand to realize economic
benefits that are not available to Denver wolf-lovers. Wolves bring tour-
ists, who bring dollars.477 Although the ranchers who lose sheep to
wolves may not themselves directly reap those tourist dollars, they will
benefit indirectly from increased regional prosperity as sales and hotel
tax receipts increase. If they can attract enough wolves, they may even be
able to directly profit by selling tourists the opportunity to see or hear
wild wolves. In addition, rural residents near a reintroduction site enjoy
special access to the non-economic benefits of restoration. Yellowstone
ranchers have a far greater opportunity to experience the wolf in its na-

476. A recent survey found that residents of predominantly urban eastern Colorado
were more supportive of the concept of wolf reintroduction to the state than residents of
the rural western portion of the state, where restoration would be expected to occur. See
Jennifer Pate et al., Coloradans' Attitudes Toward Reintroducing the Gray Wolf Into Colo-
477. See supra note 184 and accompanying text.
Restoring Endangered Species

tive ecosystem than Denver residents, many of whom will envy these opportunities. These opportunities are likely to translate into increased property values. That the ranchers themselves may not wish to take advantage of the opportunity to enjoy wild wolves does not make that opportunity, or its economic benefit, any less real. Just as the owners of property abutting a new road enjoy a direct benefit for which they can be specially assessed, Yellowstone ranchers enjoy special benefits from wolf reintroduction that diminish the unfairness of imposing upon them a greater share of the costs.

Furthermore, landowners in the immediate vicinity of a restoration project are likely to have most directly profited from the species’ extirpation. That certainly seems to be the case with respect to wolf reintroduction. Wolves were hunted out of the northern United States at the insistence, and for the direct benefit, of livestock producers. Government efforts to exterminate wolves amounted to a subsidy to the livestock industry. It is not unfair to focus the costs of wolf restoration on an industry that demanded, and profited from, the measures that made restoration necessary.

Even if one agrees that focusing the burdens of reintroduction on those near the most suitable remaining habitat will not generally be unfair, however, there is an additional complication. If protected species were distributed more or less evenly across the continent, and all such species were equally likely to be the subject of reintroduction projects, everyone would face the realistic possibility of a reintroduction. That would bolster the conclusion that nature, not the government, had determined the extent of harm any individual would experience. But in fact listed species are concentrated in particular locations, and only a vanishingly small proportion of listed species are even considered for reintroduction. While the lottery of nature plays an important role in determining how the burdens of reintroduction are distributed, human hands are skewing the odds.

The fact that not all listed species will be reintroduced outside their existing range does not necessarily mean the burdens of reintroduction are unfairly distributed, although it does justify a closer look. Politics

479. See, e.g., Schullery, supra note 41, at 157 (“Western stockmen, through their congressional representatives, compelled government agents to pursue predators with a very nearly religious intensity.”).
480. See supra note 469-470 and accompanying text.
481. As of October 31, 1998, a total of 1,175 species in the United States were listed as either endangered or threatened. Of that total, 554, or nearly half, occurred in California or Hawaii. See U.S. Fish & Wildlife Serv., Listed Species Map, Endangered Species (visited Nov. 19, 1998) <http://www.fws.gov/r9endsp/listmap.html>.
482. Special rules under section 10(j) had been issued for only twelve species as of 1997. See 50 C.F.R. § 17.84 (1998).
clearly plays a role in reintroduction choices. Nonetheless, several factors should minimize the risk of arbitrary or oppressive reintroduction. First, biology imposes objective limits. Reintroduction can only succeed if sufficient suitable but unoccupied habitat is available, if the species will tolerate translocation, and if the agency knows enough about the species' needs to provide for them. These background biological requirements are typically detailed in formal recovery plans subject to judicial review. Second, restoration is expensive. The high financial costs will inhibit ill-considered or capricious decisions to undertake restoration. Third, most restoration projects will affect a number of parcels or landowners equally, allowing those affected to band together to defend their interests on the political stage. There is no reason to suppose that, as a class, property owners likely to be affected by reintroduction are less able to use the political process than are wildlife advocates. In fact, the opposite seems to be true.

3. Understanding the Lessons

Takings law teaches the same primary lesson as tort law: whether or not the government should take steps to limit the damage caused by reintroduced wildlife or compensate those who suffer it is a political choice. Government choices create winners and losers in a variety of ways. As Justice Holmes recognized long ago, government "could hardly go on" if it was required to compensate property owners for every change in value produced by government action. Accordingly, compensation is not constitutionally required except in extreme circumstances, such as permanent physical occupation, loss of all economically viable use, or extreme unfairness. Wildlife restoration does raise fairness concerns, but those concerns will rarely, if ever, support a strong constitutional claim. Nonethe-

483. Some species will not stay where they are put. Attempts to reintroduce sea otters to an island off the coast of southern California, for example, proved unsuccessful when the otters simply left. See Wolok, supra note 127, at 10,025; Booth, supra note 3, at 156–57.

484. The California condor restoration program had cost roughly $25 million by 1992; captive breeding of the black-footed ferret cost more than $1.5 million in 1991. See Miller, supra note 133, at 102. These costs are sufficient to discourage the Fish and Wildlife Service, whose 1998 budget for all endangered species recovery activities totaled $42.4 million, from undertaking any reintroduction without strong public support and careful consideration. See Dep't of the Interior, Fish & Wildlife Serv., News Release, President Clinton Proposes Record $1.4 Billion Budget for U.S. Fish and Wildlife Service, Feb. 2, 1998 (available in 1998 WL 38705). On the other hand, in some cases reintroduction may be less expensive than trying to monitor unaided expansion of natural populations. See Kriz, supra note 361 (quoting Fish and Wildlife Service wolf expert Ed Bangs as saying that wolf reintroduction to the northern Rockies will cost half as much as continuing to monitor the region for new wolves).

485. See supra note 338–339 and accompanying text.

Restoring Endangered Species

The takings analysis points out three potential concerns. First, release of wildlife directly to private property without the owner's consent would be an unfair physical intrusion. If a restoration project must be centered on private property to succeed, it is appropriate to use the regulatory flexibility provided by section 10(j) to reduce the regulatory impacts of restored wildlife, encouraging property owners to host them.

Second, control measures that do not completely prevent harm may actually increase the likelihood of takings liability. One of the strongest arguments against liability is that the animals, rather than the government, choose where they go and what they do. The more extensively the government controls the animals, the more it becomes responsible for their conduct.

Third, restoration efforts should not unfairly concentrate burdens on a small group of property owners. The first and most important consideration in choosing a reintroduction site must be its biological suitability. Sufficient habitat must be available to support the species, and the causes of decline must be understood and addressed. Based on the federal government's greater obligation under the ESA, Interior may appropriately concentrate its restoration efforts on species that can be reintroduced successfully to public land, with only incidental consequences to nearby private land, or for which willing private hosts can be found. Where multiple reintroduction sites are available, the choice among them must rest on neutral biological factors, not on the political power of affected landowners. Although choices cannot be entirely freed of subjective influences, courts can help prevent decisions driven by politics by exercising close review if political influence seems likely to have played a role.

These legitimate concerns, however, should not drive Interior to impose stringent control measures on reintroduced populations. Those measures typically are not necessary to achieve a fair distribution of benefits and burdens, and they may reduce the likelihood of establishing a viable wild population. If a particular project seems to raise unusually strong fairness concerns, as the reintroduction of dangerous predators might, for example, Interior should carefully and publicly evaluate those concerns.

---

487. See Kleiman, supra note 21, at 154–55. One group has suggested that standardized, quantitative assessments of potential sites are both desirable and feasible. See Miller et al., supra note 133, at 137.

488. See, e.g., Clark, supra note 32, at 288 (noting that even using numeric habitat rating system, subjectivity cannot be entirely removed from the process of selecting reintroduction sites).

before it decides to impose compensating control measures. The concerns are not uniformly strong enough to justify Interior's generic practice of imposing stringent control measures in the absence of clearer legislative direction.

VII. Conclusion

The reintroduction of endangered species to their historic range represents an exciting opportunity to correct some of the damage ill-considered human actions have caused to the natural world. Interior, with the partnership and support of scientists and non-profit organizations, has worked some miracles of reintroduction already. In its haste to produce tangible results with minimal economic or political repercussions, however, the agency has a tendency to overlook what should be the most important goal of reintroduction and other ESA recovery efforts. That goal is the establishment and long-term maintenance of populations that are not only biologically viable, but as wild as possible in a tame world.

Section 10(j) allows Interior to apply some flexibility in protecting reintroduced populations. That flexibility is appropriately used to persuade states and private landowners to exceed their obligations under the ESA. In particular, it should be used to encourage non-federal landowners to open their land for direct reintroduction, which cannot be carried out without their consent. It should also be employed if animals must be restored to areas outside their historic range. Interior should not, however, reflexively employ section 10(j) to minimize the burdens of the ESA around reintroduction sites. The control measures used to reduce those burdens have costs the agency has not given sufficient weight. Those measures can prevent introduced populations from living as wild creatures, greatly reducing the species' ability to serve the many goals of the ESA.

Neither justice nor any law requires that Interior routinely control reintroduced populations. The impacts of restored wildlife are not, in most cases, unfairly concentrated. Although property owners and local residents may have come to rely on a natural status quo that does not include some species, the ESA calls for correction of that status quo. That connection is not unfair. Nature is never static; those who live in or near wild country must expect to face the challenges of nature, including all the species that evolved there. Moreover, those in the vicinity of restoration projects are likely to have enjoyed the benefits of the original alteration of the natural status quo, namely, local elimination of the species. It is not unfair to demand that they play a major role in returning nature to a more natural state. Only if Interior can articulate specific reasons for concluding that the burden of wildlife restoration falls unfairly on specific property should it consider special control measures.
The pragmatic desire to restore species as quickly as possible with a minimum of conflict offers the strongest argument in support of Interior's eagerness to impose stringent control measures. Interior often claims that, without these measures, it would be politically impossible to undertake reintroduction. That is a fair consideration, particularly when species are being held entirely in captivity, and every passing generation decreases the likelihood of successful reintroduction. If a species slated for reintroduction is needed to restore the ecological balance of its ecosystem, some loss of wildness may well be an acceptable trade-off for that gain.

Short-term human control or dependence on humans is not necessarily objectionable. After all, captivity itself is a stringent short-term control measure. Similarly, newly introduced species may be artificially supplied with food during the transition from captivity to the wild without necessarily compromising their long-term wildness. For example, newly released animals may need to be provided with supplementary food while they adjust to life in the wild, or protected from predation while they establish secure homes.

But Interior should be sensitive to the likelihood that measures intended for the short term may persist. While supplementary feeding can be withdrawn without sparking political controversy when the animals no longer need it, the agency may find it more difficult to end its control measures. Containment efforts, nonessential designation, and similar measures will shape the expectations of landowners in the area, and perhaps of the wider political community. Affected property owners are likely to come to rely on whatever control efforts attend the initial reintroduction. It will not be politically easy to reduce or remove control measures in the future, especially if they were adopted without any

490. See, e.g., Red Wolf Rule Revision, supra note 174, at 18,945 (explaining that nonessential designation and other control measures were “necessary to obtain public support,” and therefore “an essential ingredient” for successful reintroduction).


492. For example, the Mexican wolves released in Arizona were provided with road-killed deer and elk until officials could be sure they had learned to hunt on their own. See McClain, supra note 231. Similarly, Fish and Wildlife Service officials planned to offer supplemental food to the California condors released in Arizona until they learned to locate carcasses independently. See Condor Rule, supra note 163, at 54,048.

493. According to one report, coyotes and badgers are killed or fenced out of release sites before black-footed ferrets are released to the wild. See Mark Matthews, Completing a Prairie Ecosystem, HIGH COUNTRY NEWS, Dec. 8, 1997, at 4.
commitment to terminate them at a set future date. If Interior plans gradually to reduce its control measures, it must make that clear at the outset, so that local residents do not develop other expectations.

Of course, if a species recovers sufficiently to be removed from the protected list, its management will be once again in state, rather than federal, hands. Once they assume control, state authorities are quite likely to permit predation control and perhaps even sport hunting of species like the gray wolf. Assuming that states will impose stringent controls in the long run, Interior may see little point in fighting the political battles necessary to achieve short-term wildness. The agency should remember, however, that delisting should occur only when a sufficient, and sufficiently wild, population has been established. Only if enough wolves, for example, exist away from pervasive human contact, in places where they can live truly wild lives, or if the state has committed itself to a management regime that protects not only biological viability but also wildness, is delisting appropriate.

In some circumstances, it may not be feasible to expect widely distributed, absolutely wild reintroduced populations, even over the very long term. It seems unlikely, for example, that grizzlies will ever be permitted to live truly uncontrolled lives in close proximity to human settlements. Even controlled populations can offer, at least in some degree, many of the values the ESA attempts to protect. Interior’s efforts to confine the gray wolves returned to Yellowstone to the Park, for example, have not prevented the wolves from having a dramatic effect on the Yellowstone ecosystem. It may be that the ecological benefits of having wolves in Yellowstone outweigh the esthetic and symbolic costs of keeping them under control with radio collars and other measures. On the other hand, it may be that the ecological benefits could be obtained without keeping the wolves under such stringent control.

Those determinations are not properly Interior’s alone to make. They require a public political dialogue in which not only local residents but others can make their views heard. In some circumstances, a partially controlled population may be the best that can or should be achieved for the long term. But any measures that compromise the wild nature of restored species should respond to a careful public weighing of all relevant considerations, rather than to short-term political pressures.

494. Delisting of the gray wolf in the northern Rockies seems likely in the near future, given the breeding success of the reintroduced population. Interior has already indicated that it plans to downlist the Rocky Mountain population to threatened. See U.S. Fish & Wildlife Service Press Release, Gray Wolves Making a Strong Comeback, June 29, 1998 (on file with author).
495. See supra note 491.