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The Rhetoric and Reality of Nature Protection: Toward a New Discourse

Holly Doremus

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The Rhetoric and Reality of Nature Protection: Toward a New Discourse

Holly Doremus*

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I. Introduction

Rhetoric matters. That is almost too basic to be worth saying, but it bears repeating because sometimes the rhetoric we use to describe problems becomes so ingrained as to be almost invisible. Even if we are unaware of it, though, rhetoric has the very real effect of severely constraining our perception of a problem and its potential solutions.

Terminology is one aspect of rhetoric. The words we use to describe the world around us condition our response to that world. Whether we use the word "swamps" or "wetlands," for example, may determine whether we drain or protect those areas.¹ Not surprisingly, the battle to control terminology is an important one in the environmental context.² But there is far more to the rhetoric of law. The way words are put together to form stories and discourses shapes the law and society. Stories, which put a human face on

1. See JOHN S. DRYZEK, *THE POLITICS OF THE EARTH: ENVIRONMENTAL DISCOURSES* 3 (1997) (describing how terminology alters debate).

2. The highly polarized debate over the Endangered Species Act provides plenty of fodder for both sides. Critics of the Act focus on non-charismatic species like the Delhi sands flower-loving fly, which they describe as a horsefly or a maggot, and on the projects these creatures are allegedly blocking, such as an emergency medical center. Editorial, *LAS VEGAS REVIEW-JOURNAL*, June 17, 1998, at B10; John Kass, *Out West, Flies Can Flit in the Face of Hospital Plan*, *CHL TRIB.*, June 25, 1998, at 3. The Act's defenders respond by describing the fly as more like a hummingbird than a horsefly and emphasizing the uniqueness of the Delhi sands habitat. See David G. Savage, *Buzz over a Fly Presents Challenge to Species Act*, *L.A. TIMES*, June 15, 1998, at A1; David Wert, *Cities Will Offer Acreage to Meet Needs of Delhi Fly*, *PRESS-ENTERPRISE* (Riverside, Cal.), June 4, 1999, at B1. They prefer to fight the battle on their own rhetorical turf, touting the protection of bald eagles, whooping cranes and other "charismatic megafauna." The National Audubon Society's web page on endangered species issues, for example, features pictures of the gray wolf, bald eagle, peregrine falcon, Florida panther, and other "popular" species. See National Audubon Society, *Endangered Species Campaign* (visited June 23, 1999) <<http://www.audubon.org/campaign/esa/>>.

concerns that might otherwise go unnoticed, exert a powerful emotional tug.³ "Discourses," loose collections of concepts and ideas, provide a shared language for envisioning problems and solutions.⁴

This Article focuses on the use of rhetoric in political battles over the extent to which law should protect nature against human encroachment. At some level, all rhetoric in a democratic society can be tied to the political process; any statement that any member of the political community encounters may influence his or her views, votes, financial contributions, or other political activities. But some communications are more likely than others to affect political outcomes or to play a privileged role in the implementation and interpretation of law. The discussion that follows concentrates on such "political rhetoric," including communications directed to legislatures, agencies, or voters with the intention of influencing the outcome of political decisions;⁵ statements made by legislators or agency personnel to explain or justify their decisions; and legislative, administrative, and judicial actions.

Part II details the three principal discourses called into service in the domestic political arena by advocates of nature protection.⁶ The first, trotted out most frequently in the political debates, treats nature as a material resource for human consumption.⁷ The second, encountered less often, treats nature as an esthetic resource.⁸ This discourse is still instrumental in the sense that it views nature as an object of human use and enjoyment. But it envisions a different sort of use. The aesthetic discourse recognizes nature not just as a source of material goods, but as a source of enjoyment and mental or spiritual sustenance. The third discourse, nearly omitted from the political arena until

3. For that reason, stories are useful as tools to challenge the legal and political status quo in contexts from political organizing to legal scholarship. See, e.g., Paul Gewirtz, *Narrative and Rhetoric in the Law*, in *LAW'S STORIES: NARRATIVE AND RHETORIC IN THE LAW* 2, 5 (Peter Brooks & Paul Gewirtz eds., 1996) [hereinafter *LAW'S STORIES*]; Catharine A. MacKinnon, *Law's Stories as Reality and Politics*, in *LAW'S STORIES*, *supra*, at 232-33; Kevin R. Johnson, "Melting Pot" or "Ring of Fire"? *Assimilation and the Mexican-American Experience*, 85 CAL. L. REV. 1261, 1264 (1998). For criticism of the use of stories in legal scholarship, see generally Daniel A. Farber and Suzanna Sherry, *Telling Stories out of School: An Essay on Legal Narratives*, 45 STAN. L. REV. 807 (1993).

4. See DRYZEK, *supra* note 1, at 8 (defining use of discourses); MAARTENA HAJER, *THE POLITICS OF ENVIRONMENTAL DISCOURSE: ECOLOGICAL MODERNIZATION AND THE POLICY PROCESS* 1-2 (1995) (describing discourse analysis).

5. This category includes books, magazine articles, and other generally circulated statements by politicians. It also includes similar statements made by others with the express or readily apparent intent of influencing political debates.

6. For simplicity, the discussion is limited to domestic law and discourse in the domestic political arena. Many of the same arguments have been used in the international context, as will be apparent from the discussion of, for example, sustainable development.

7. See *infra* notes 18-70 and accompanying text.

8. See *infra* notes 71-133 and accompanying text.

recently, argues that humanity has an ethical obligation to protect nature independent of any instrumental value nature may have.⁹

Many variations on each of these discourses have been elaborated. But only a handful appear in the political rhetoric. In this context, the material discourse has often been reduced to the ecological horror story, warning that careless treatment of nature may result in ecological catastrophe.¹⁰ A more recent variant calls for sustainable development, suggesting that protection of nature can coexist with economic development.¹¹ The most distinctive modern version of the esthetic discourse has been the vision of a pure wilderness, free of all human taint.¹² Although the ethical discourse once lacked distinctive form, the biblical story of Noah saving the animals from the flood has recently become pervasive.¹³

Part III addresses the power and peril of these political stories. Deliberately crafted by nature advocates for maximum political effect, these stories have strongly influenced the law of nature protection. In fact, they have been remarkably effective in spurring legislation addressing the problems they describe. Yet nature advocates remain unsatisfied. One explanation, offered by Gregg Easterbrook, is that environmentalists simply do not recognize the extent to which they have prevailed.¹⁴ I propose an alternative explanation. Nature advocates have obtained much of what they have asked for, but they have not asked for what they really want. In the interest of achieving political success, nature advocates have deliberately limited the vocabulary they use to describe the problem of nature protection. Not surprisingly, the political success they have achieved does not go beyond the problem they have articulated.

The political rhetoric of nature has been directed squarely at what Daniel Esty and Marian Chertow refer to as a "first order problem,"¹⁵ that of implementing basic protections to avert the immediate crisis. But it does not address, and therefore cannot solve, the second-order, long-term problem of creating a viable and appropriate human relationship with nature. Part IV details the gap between the political rhetoric and the reality of the nature problem today. The political stories push us toward a strategy of dividing the world between nature and humanity. The second-order problem, however, is

9. See *infra* notes 134-90 and accompanying text.

10. See *infra* notes 45-66 and accompanying text.

11. See *infra* notes 68-70 and accompanying text.

12. See *infra* notes 108-25 and accompanying text.

13. See *infra* notes 156-90 and accompanying text.

14. GREGG EASTERBROOK, *A MOMENT ON EARTH* xvi (1996).

15. DANIEL C. ESTY & MARIAN R. CHERTOW, *Thinking Ecologically: An Introduction*, in *THINKING ECOLOGICALLY: THE NEXT GENERATION OF ENVIRONMENTAL POLICY* 1-3 (Marian R. Chertow & Daniel C. Esty eds., 1997).

how to integrate nature and humanity, creating both a place for humans in nature and a place for nature in human lives. In order to solve that problem, we must address what nature means in a world dominated by human impacts, what aspects of nature we should seek to protect, how, and what costs we are willing to accept.

It might be argued that the solution to this second-order problem must come through changes in attitudes rather than through law and, therefore, that it is not important that political rhetoric address this problem. Undoubtedly changing attitudes, convincing people to care more about the fate of nature, is crucial to effective long-term nature protection. All kinds of tools other than law can and should be turned to the task of seeking those changes. But nature advocates cannot afford to ignore the law's potential to change, or to reinforce, cultural attitudes toward nature.¹⁶ Moreover, as discussed in Part IV below, nature is either the cause or the subject of many current conflicts. Inevitably, law plays a role in the resolution of these conflicts. If it is to do so in a way that advances progress toward a solution to the modern nature problem, it must be informed by a fuller understanding of that problem.

Even so, it might be argued that although the law itself is important, the precise nature of the rhetoric that produces that law is not. After all, some might say, politicians do not always (or perhaps even generally) believe all the things they say. They employ rhetoric cynically, to manipulate voter opinions. Nature advocates should exploit this tendency by offering rhetoric that provides political cover for votes made with the legislators' own personal ends in view.

Perhaps in some circumstances such manipulation can be effective, and political rhetoric can be used to hide the true basis of a political decision that achieves quite different ends. But in the context of nature protection, that strategy is demonstrably ineffective. The laws that have been enacted to protect nature respond directly to the political stories used to argue for their passage. In other words, they are aimed at the problems those stories describe. As a result they are not likely, as I explain in Part IV, to solve the fundamental problem of nature protection in the modern world. Nor does the political rhetoric become irrelevant once a law or regulation is in place; that rhetoric necessarily forms the background against which the law or regulation is interpreted. Finally, political rhetoric cannot change cultural attitudes without directly addressing the second-order problem.

The stories that nature advocates have employed to date probably have taken us as far as they can. Further progress in the area of nature protection will require a broader political discourse. The search for such a discourse likely will be a long-term one and may not lead immediately to political gains. But the

16. See *infra* notes 191-207 and accompanying text.

protection of nature is a long-term project, and additional progress is not likely if people continue to rely on the stories told to this point. Part V suggests some tentative first steps toward the development of a discourse that more directly addresses the problem of the place and role of modern Americans in nature.

II. Three Discourses Of Nature Protection

Limited protection of natural resources began shortly after European settlement of North America, but protective regulations did not become extensive until the second half of the nineteenth century.¹⁷ From that time to the present, the political rhetoric of nature protection has relied upon three major discourses. Although they have frequently been employed together and sometimes overlap, these three discourses rest on three strikingly different fundamental views of nature: as material resource, as esthetic resource, and as intrinsically valuable object of moral obligations.

A. Nature as Material Resource

1. Early Development of the Material Discourse

Nature has long been viewed not only as the foundation of human subsistence, but also as a source of economically important resources. The quest for gold, spices, and other natural wealth drove the early exploration of the new world by Europeans. Hunger for land and riches brought many settlers to the new world, and carried them westward across the continent.¹⁸

Some early regulations were imposed in an attempt to conserve natural resources, especially timber, for particular uses.¹⁹ But at the time most natural resources seemed virtually inexhaustible. The pressing concern with respect to nature was extension of human control westward across the continent, not conservation.²⁰

By the middle of the nineteenth century, however, people realized that the continent's natural resources had limits. The forests, which were disappearing

17. See generally THOMAS R. DUNLAP, *SAVING AMERICA'S WILDLIFE* (1988); JAMES B. TREFETHEN, *THE AMERICAN CRUSADE FOR WILDLIFE* (1975).

18. ARTHUR A. EKIRCH, *MAN AND NATURE IN AMERICA* 13 (1963); T.H. WATKINS & CHARLES S. WATKINS, *THE LAND NO ONE KNOWS: AMERICA AND THE PUBLIC DOMAIN* 19-20 (1975).

19. Plymouth Colony, for example, began regulating the cutting of timber as early as 1626. British authorities tried, largely unsuccessfully, to reserve the best timber in the colonies for naval use. ALFRED RUNTE, *PUBLIC LANDS, PUBLIC HERITAGE: THE NATIONAL FOREST IDEA* 12-13 (1991). Federal legislation protected live oak and red cedar on lands designated as timber reserves for the U.S. Navy in the early part of the eighteenth century, but enforcement was again spotty. *Id.* at 27.

20. RODERICK NASH, *WILDERNESS AND THE AMERICAN MIND* 23-43 (3d ed. 1982).

at a dramatic rate,²¹ were the earliest focus of concern. George Perkins Marsh, struck by the rapid destruction of forests in his home state of Vermont,²² articulated the beginnings of the conservationist position in his 1864 book *Man and Nature*.²³ Although he recognized that some transformation of nature was an inescapable consequence of human existence, Marsh argued that reckless destruction of the forests threatened the future availability of natural resources essential to human prosperity and possibly to human survival.²⁴

A few years later, the seeds Marsh had planted produced the conservation movement. Gifford Pinchot, a chief architect of that movement, described Marsh's book as "epoch-making."²⁵ Like Marsh, Pinchot feared "the greatest, the swiftest, the most efficient, the most appalling wave of forest destruction in human history."²⁶ He called for scientific forest management to ensure that forests could serve humanity both in the present and in the future.²⁷ To Pinchot, the key service that forests provided was the supply of material resources. He described them as factories for producing wood,²⁸ and he had no patience for those who would close them to logging.²⁹

Unlike Marsh,³⁰ Pinchot had no qualms about putting the government in charge of resource decisions. He believed that conservation and wise use of natural resources were critical to the nation's future.³¹ Unwilling to trust that future to actors motivated principally by the quest for private profit,³² Pinchot regarded natural resource control as a prime duty of the state.³³

21. See ROBERT L. DORMAN, *A WORD FOR NATURE: FOUR PIONEERING ENVIRONMENTAL ADVOCATES, 1845-1913*, at 11 (1998) (stating that in 1850s alone settlers deforested roughly 40 million acres to produce wood, pastureland, and crop fields).

22. *Id.* at 25-26.

23. GEORGE PERKINS MARSH, *MAN AND NATURE* (David Lowenthal ed., Harvard Univ. Press 1965) (1864).

24. *Id.* at 42-43.

25. GIFFORD PINCHOT, *BREAKING NEW GROUND* xxiii (Island Press 1987) (1947).

26. *Id.* at 1.

27. BOB PEPPERMAN TAYLOR, *OUR LIMITS TRANSGRESSED: ENVIRONMENTAL POLITICAL THOUGHT IN AMERICA 18-19* (1992) (quoting GIFFORD PINCHOT, *A PRIMER OF FORESTRY* 7 (1905)).

28. *Id.* at 19.

29. See PINCHOT, *supra* note 25, at 27 (describing 1891 prohibition of logging in New York's Adirondack State Forest Preserve as "indefensible").

30. See MARSH, *supra* note 23, at 259 (concluding that education and "enlightened self interest," rather than government regulation, ultimately must determine the fate of the nation's resources).

31. PINCHOT, *supra* note 25, at 82.

32. *Id.*

33. TAYLOR, *supra* note 27, at 16 (quoting GIFFORD PINCHOT, *THE FIGHT FOR CONSERVATION* 4 (1910)).

By the end of the nineteenth century, the idea that the government should retain ownership of substantial tracts of land in perpetuity in order to manage their natural resources for the material benefit of the public had overtaken the view that all lands ought to be distributed into private hands. Again this change began with the forests. The publication of Marsh's book triggered a series of proposals for national forest ownership and management, which were then debated over a period of many years. The argument in favor of national ownership concentrated on the material value of forests. For example, an 1874 report by the American Association for the Advancement of Science emphasized the "practical importance" of timber to the nation as well as the role of forests in controlling floods.³⁴ Once the Division of Forestry was established in the Department of Agriculture, it also emphasized the material value of forests. Bernard Fernow, who became chief of the Division in 1886, shared Pinchot's view of forests. According to Fernow, "[t]he main service, the principal object of the forest has nothing to do with beauty or pleasure. It is not, except incidentally, an object of aesthetics, but an object of economics."³⁵

In 1891, Congress gave the president the power to set aside nationally owned forest lands as "public reservations."³⁶ It was not immediately clear whether that language permitted logging. The Secretary of the Interior, who controlled the reservations initially, thought not. Fernow disagreed.³⁷ In 1897 Congress resolved this dispute in Fernow's favor when it enacted a law that set out three basic purposes for forest reserves: (1) to "improve and protect the forest;" (2) to ensure "favorable conditions of water flows;" and (3) "to furnish a continuous supply of timber."³⁸

In this same era, the concern for nature as material resource played a key role in the adoption of early federal laws protecting wildlife against market

34. See S. Ex. Doc. No. 43-28, at 2-3 (1874) (reprinting memorial from AAAS). Others who argued in favor of the many forest reserve proposals debated in Congress in the 1870s and 1880s also focused on the possibility of timber shortages and watershed functions. See CHARLES F. WILKINSON & H. MICHAEL ANDERSON, *LAND AND RESOURCE PLANNING IN THE NATIONAL FORESTS* 17 (1987).

35. See Louise A. Halper, *The Adirondack Park and the Northern Forest: An Essay on Preservation and Conservation*, 19 VT. L. REV. 335, 353 (1995) (quoting *Letter to the Editor*, in GIFFORD PINCHOT, *THE ADIRONDACK SPRUCE: A STUDY OF THE FOREST IN NE-HA-SA-NE PARK* (1898)).

36. Forest Reserve Acts of 1891, ch. 561, §§ 24, 26 Stat. 1095, 1103 (repealed 1976); SAMUEL TRASK DANA & SALLY K. FAIRFAX, *FOREST AND RANGE POLICY* 56 (2d ed. 1980).

37. WILKINSON & ANDERSON, *supra* note 34, at 46-47.

38. Act of June 4, 1897, ch. 2, 30 Stat. 34, 35 (codified as amended at 16 U.S.C. §§ 473-482, 551 (1994)). A few years later, Congress gave the Department of Agriculture, whose forestry office was now headed by the unapologetically utilitarian Pinchot, control of the national forest lands. See Act of February 1, 1905, ch. 288, 33 Stat. 628 (codified at 16 U.S.C. § 472 (1994)).

hunting. Much of the pressure for regulation came from recreational hunters, who feared the loss of game species.³⁹ Hunters and their political allies offered both esthetic and ethical arguments.⁴⁰ But material arguments that centered on the economic value of sport hunting and the importance of insectivorous birds to agricultural production dominated the political debate.⁴¹ The House Committee on Interstate and Foreign Commerce justified its endorsement of the bill that became the Lacey Act on the basis of the economic boost insect-eating birds provided to farmers.⁴²

Sportsmen were also at the vanguard of the campaign for federal regulation of waterfowl hunting. Migratory waterfowl often travel long distances, crossing many state boundaries. States had resisted imposing unilateral hunting restrictions, because they feared that unrestrained hunting in other states would undermine any conservation efforts.⁴³ Sport hunters again rallied nature lovers to their cause. But again success did not come until they found additional economic allies. These allies included farmers, whose support was attracted by broadening the proposal to cover migratory insectivores, and manufacturers of firearms and hunting equipment, whose business depended on a robust recreational hunting industry.⁴⁴

2. *The Ecological Horror Story and Other Modern Variants*

George Perkins Marsh suggested in his 1864 book that unbridled human exploitation of nature could threaten human survival.⁴⁵ After lying dormant for nearly a century, that suggestion surfaced at the dawn of the modern era in a powerful new form I call the ecological horror story. Rachel Carson's *Silent Spring*, a book credited with inspiring the modern environmental movement, contains the prototypical example of this story. Carson began her book with a chapter called "A Fable for Tomorrow."⁴⁶ In her fable, tragedy struck a bucolic village that was once alive with flowers, crops, wildlife, songbirds, and fish. People sickened, livestock died, flowers withered, and streams became lifeless. The disappearance of the songbirds gave spring a

39. TREFETHEN, *supra* note 17, at 70-75.

40. See *infra* text accompanying notes 109-10 and 143.

41. See TREFETHEN, *supra* note 17, at 152.

42. See H.R. REP. NO. 56-474, at 1 (1900).

43. TREFETHEN, *supra* note 17, at 148.

44. See *id.* at 151-52. Under pressure from this formidable coalition, Congress passed first the Weeks-McLean Bill, Act of March 4, 1913, ch. 145, 37 Stat. 855, and then the Migratory Bird Treaty Act, ch. 128, 40 Stat. 755 (1918) (currently codified as amended at 16 U.S.C. §§ 703-711 (1994)).

45. See *supra* text accompanying note 24.

46. RACHEL CARSON, *SILENT SPRING* 1-3 (1962).

strange stillness. By the end of the brief fable, overuse of chemical pesticides had transformed the village into a biotic wasteland.⁴⁷

Nearly twenty years later, Paul and Anne Ehrlich conveyed their version of this story through another brief tale. They put the reader in the position of a horrified airline passenger watching a worker pry rivets out of the plane's wings.⁴⁸ They characterized species as the rivets holding together the earth, a plane on which we are all passengers. Removing too many species, or perhaps just a single critical one, could disable the plane, precipitating an ecological catastrophe.⁴⁹

Environmentalists repeated the ecological horror story in various forms through the 1960s and 1970s.⁵⁰ Growing recognition of both the power of human technology, brought home by nuclear weapons programs, and the fragility of the earth, brought home by photographs of the earth from space, encouraged apocalyptic visions of the potential for human destruction of the biotic world.⁵¹

This story contributed to the passage of early federal endangered species legislation. In 1966, when the Endangered Species Preservation Act⁵² was under consideration, the *New York Times* editorialized that "[i]f man refuses to follow wise conservation practices in controlling his economic affairs, the ultimate victim may be not natural beauty or birds and fish but man himself."⁵³ In a 1968 report, Secretary of the Interior Udall characterized extinction as a sign of dangerously declining environmental health. Extinction, he wrote, was

not important because of the anguish of the conservationists, but because bluebirds, Indian paintbrush, cardinals, and grizzly bears should be present – because there is something wrong with an environment in which bluebirds cannot live but where rat populations flourish. An environment

47. *Id.*

48. PAUL & ANNE EHRLICH, EXTINCTION: THE CAUSES AND CONSEQUENCES OF THE DISAPPEARANCE OF SPECIES xi (1981).

49. *See id.* at xiii.

50. *See* PAUL R. EHRLICH, THE POPULATION BOMB xi (1968) ("[W]e must take action to reverse the deterioration of our environment before population pressure permanently ruins our planet. The birth rate must be brought into balance with the death rate or mankind will breed itself into oblivion."). For other examples from this era's writing, see generally BARRY COMMONER, THE CLOSING CIRCLE (1972); DONELLA H. MEADOWS, ET AL., THE LIMITS TO GROWTH (1972); Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968).

51. *See* DONALD WORSTER, NATURE'S ECONOMY 342-47 (2d ed. 1994); U.S. DEPT. OF INTERIOR, MAN . . . AN ENDANGERED SPECIES?, Conservation Yearbook No. 4, at 9 (1968) ("Now that he has forced the lock on Pandora's nuclear tool box, his capacity to tamper with his environment, his destiny is virtually limitless.").

52. Pub. L. No. 89-669, 80 Stat. 926 (1966) (repealed 1973).

53. *Man, the Endangered Species*, N.Y. TIMES, Jan. 26, 1966, at 36.

that threatens these wild creatures is symptomatic of an environment which is going downhill – and taking man with it.⁵⁴

Witnesses who testified in favor of the Endangered Species Conservation Act of 1969,⁵⁵ which extended the reach of the Endangered Species Preservation Act, emphasized the ecological horror story.⁵⁶ Some legislators explicitly indicated that they found this story a compelling justification for the legislation.⁵⁷ In its formal report on the bill, the Senate Committee on Commerce did not directly endorse this apocalyptic approach, but did focus on the importance of nature as material resource. Explaining why species should be protected, the Committee noted that even species without known commercial value might in the future "prove invaluable to mankind in improving domestic animals or increasing resistance to disease or environmental contaminants."⁵⁸

In 1973, the ecological horror story encouraged Congress to pass the Endangered Species Act.⁵⁹ Legislators and witnesses warned against disrupting the balance of nature; many speculated that human survival was at risk.⁶⁰

54. See DEP'T OF INTERIOR, *supra* note 51, at 44.

55. Pub. L. No. 91-135, 83 Stat. 275 (1969) (repealed 1973).

56. See, e.g., *Endangered Species, Hearings Before the Subcomm. on Energy, Natural Resources, & the Env't of the Sen. Comm. on Commerce* 91st Cong. 81 (1969) (statement of Richard S. Cowan, Smithsonian Institution) ("The essential quality of man's environment – yes, even man's ultimate existence – may be determined by the number of concerned individuals who find the preservation of other life forms and their environment a necessity."). Also in 1969, Congress referred to the ecological horror story as an important basis for enacting the National Environmental Policy Act. The House report on the bill that became that Act began its discussion of the need for the legislation by quoting a New York Times editorial stating, "[b]y land, sea and air, the enemies of man's survival relentlessly press their attack." H.R. REP. NO. 91-378 (1969), reprinted in 1969 U.S.C.C.A.N. 2751, 2753; see also *id.* at 2754 ("There may be controversy over how close to the brink we stand, but there is none that we are in serious trouble."); S. REP. NO. 91-295, at 5 (1969) ("Our natural resources – our air, water, and land – are not unlimited. We no longer have the margins for error that we once enjoyed."); *id.* at 13 (human population growth coupled with advancing technology "presents a serious threat to the Nation's life support system").

57. See, e.g., *Endangered Species, Hearings Before the Subcomm. on Fisheries & Wildlife Conservation of the House Comm. on Merchant Marine & Fisheries*, 91st Cong. 79 (1969) (statement of Rep. McCarthy) ("Many [other creatures] are vital to the complex biological web that supports human life. . . . What we choose to call the lesser creatures make possible our life on our oasis in space.")

58. S. REP. NO. 91-526, at 3 (1969).

59. Pub. L. No. 93-205, 87 Stat. 884 (codified as amended at 16 U.S.C. §§ 1531-1543 (1994)).

60. See, e.g., *Protection of Endangered Species: Hearings on H.R. 2275 Before the Subcomm. on Fisheries & Wildlife Conservation & the Env't of the House Comm. on Merchant Marine & Fisheries*, 93d Cong. 280 (1973) (statement of Rep. Whitehurst) ("The concern for protection of threatened and endangered species is a concern for the future of our planet. The threat to wildlife . . . is in reality a part of the threat to mankind from degradation of his envir-

They also emphasized the potential economic costs of extinctions, even short of ecological collapse. The House Report noted that as species disappeared, so did potential cures for cancer.⁶¹ "Sheer self interest," it argued, compelled caution.⁶² Several legislators sounded the same theme.⁶³

The ecological horror story remains a favorite theme of environmentalists today.⁶⁴ In particular, advocates of biodiversity protection commonly emphasize the possibility that *Homo sapiens* will fall victim to the current wave of extinctions, though few rely entirely on that argument.⁶⁵ The story also retains

onment."); *id.* at 307 (statement of Stephen Seater, Defenders of Wildlife) ("In conserving rare and endangered animals and plants, more is at stake than preserving this or that species or a particular wilderness area. Man's attitude toward the biosphere is a barometer by which we can measure his resolve to deal with fundamental problems affecting his own survival."); S. REP. NO. 93-307, at 2 (1973) ("Consideration of this need to protect endangered species goes beyond the aesthetic. In hearings . . . it was shown that many of these animals perform vital biological services to maintain a 'balance of nature' within their environments"); 119 CONG. REC. 30,166 (1973) (statement of Rep. Harrington) ("In his effort to guard the Earth from his own awesome technological capacity, man has yet to learn that an instinct for self preservation is not enough. He must direct both his intellect and ability to plan for the future toward insuring his self-preservation, as well."); *id.* (statement of Rep. Annunzio) ("The balance of nature, on which we depend for our survival, depends on the survival of our wildlife."); *id.* (statement of Rep. Price) ("To protect man from himself is the main thrust [of this bill] If the slaughter of species continues we will have no one to blame but ourselves, and I am sure that we here are not prepared to take the responsibility of jeopardizing future generations with a come-what-may attitude."); *id.* at 25,668 (statement of Sen. Tunney) ("To permit the extinction of any species which contributes to the support of this [ecological] structure without knowledge of the cost or benefits of such extinction is to carelessly tamper with the health of the structure itself.").

61. H.R. REP. NO. 93-412, at 5 (1973).

62. *Id.*

63. See, e.g., 119 CONG. REC. 30,162 (1973) (statement of Rep. Sullivan) ("In a protein-hungry world, the loss of huge potential sources of food is not an occasion which can be lightly considered."); *id.* at 30,163 (statement of Rep. Dingell) ("Our interest in preserving these [plant] species is more than esthetic: they may hold answers to questions which we have not yet learned to ask . . .").

64. See, e.g., NILES ELDRIDGE, LIFE IN THE BALANCE: HUMANITY AND THE BIODIVERSITY CRISIS 157 (1998) ("In fouling our nests, in destroying ecosystems, and driving many species to extinction, we are beginning to approach a limit on how much of the global living system - and we ourselves - can actually survive"); ALBERT GORE, EARTH IN THE BALANCE: ECOLOGY AND THE HUMAN SPIRIT 50 (1992) (stating that challenge for humanity is to change direction "before our momentum carries us past the point beyond which an ecological collapse is inevitable"); WILLIAM OPHULS, REQUIEM FOR MODERN POLITICS: THE TRAGEDY OF THE ENLIGHTENMENT AND THE CHALLENGE OF THE NEW MILLENNIUM 6 (1997) (asserting that although earth itself is virtually indestructible, "man is entirely capable of rendering the biosphere uninhabitable for himself").

65. See, e.g., 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, 321-29 (1995) (arguing that "[w]e protect [endangered species] to protect ourselves," as well as for their esthetic and other qualities); Patrick Parenteau, *Rearranging the Deck Chairs: Endangered Species Act Reforms in an Era of Mass Extinction*, WM. & MARY ENVTL. L. & POL'Y REV. 227, 228-29 (1999) (quoting Union of Concerned

political currency as a justification for endangered species protection. A few years ago, for example, Interior Secretary Babbitt told Congress, "[t]he Endangered Species is a warning light. When one species in an ecosystem's web of life starts to die out, all species may be in peril."⁶⁶

In addition to the ecological horror story, two other variants of the discourse of nature as material resource have recently assumed prominence. The first, the story of nature's services, is closely allied to the ecological horror story, but somewhat less apocalyptic. It focuses on the potential for economic rather than biotic collapse if ecological systems are disrupted.⁶⁷ The second, the sustainable development story, is more optimistic. It views nature as sufficiently resilient to support continued economic development and human exploitation, with careful management. This story gained widespread influence with the 1987 release of the Brundtland Report,⁶⁸ which optimistically declared, "humanity has the ability to make development sustainable – to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs."⁶⁹ Since then, the rhetoric of sustainable development has spread rapidly in both international and domestic circles.⁷⁰

Scientists warning that without fundamental change the world might become "unable to support life in the manner we know it"); *id.* at 240 (speculating that "there may be something to this ecological notion of carrying capacity").

66. *Endangered Species Act Amendments, Hearings on H.R. 2275 Before the House Comm. on Resources*, 104th Cong. 82 (1995). Several legislators endorsed Babbitt's view. See John Copeland Nagle, *Playing Noah*, 82 MINN. L. REV. 1171, 1213 n.166 (1998) (citing nationwide Congressional hearings on Endangered Species Act Amendments). The U.S. Fish and Wildlife Service, charged with primary responsibility for implementing the ESA, echoed Babbitt's view in a 1998 pamphlet on endangered species protection, noting the medical and agricultural value of species, as well as their potential to warn of environmental threats to human life. See U.S. FISH & WILDLIFE SVC., *WHY SAVE ENDANGERED SPECIES?* (Sept. 1998). For a catalogue of other recent invocations of the ecological horror story, see Nagle, *supra*, at 1213 n.167; see also Timothy Egan, *Meet the Fish that Might Save Seattle*, N.Y. TIMES, Apr. 19, 1998, at D4 (reporting that "many policymakers are now arguing that [the Endangered Species Act] may really be about saving us").

67. See, e.g., *NATURE'S SERVICES* (Gretchen Daily ed., 1997); Robert Costanza et al., *The Value of the World's Ecosystem Services and Natural Capital*, 387 NATURE 253 (1997); James Salzman, *Valuing Ecosystem Services*, 25 ECOLOGY L.Q. 887 (1997).

68. WORLD COMM'N ON ENV'T AND DEV., *OUR COMMON FUTURE* (1987) [hereinafter Brundtland Report]. The roots of this idea appear in the 1972 United Nations Conference on the Human Environment in Stockholm, see David R. Hodas, *The Role of Law in Defining Sustainable Development: NEPA Reconsidered*, 3-FALL WIDENER L. SYMP. 1, 8 (1998), and even in the writings of George Perkins Marsh, see DORMAN, *supra* note 23, at 24 (quoting 1847 address in which Marsh argued that consumption of products of nature "should everywhere be compensated by increasing production").

69. Brundtland Report, *supra* note 68, at 8.

70. Both the United Nations and the United States now have advisory commissions on sustainable development. See generally PRESIDENT'S COUNCIL ON SUSTAINABLE DEV., *TOWARDS A SUSTAINABLE AMERICA: ADVANCING PROSPERITY, OPPORTUNITY, AND A HEALTHY ENVIRONMENT FOR THE 21ST CENTURY* (1999); UNITED NATIONS COMM'N ON SUSTAINABLE DEV., *ACTION*

B. Nature as Esthetic Resource

1. Early Development of the Esthetic Discourse

The second major discourse emphasizes the importance of nature as an esthetic resource, contributing to psychological and spiritual, rather than physical or economic, well-being. This discourse also has deep roots in American history. Although the early settlers found the vast wild areas of the new continent dismal and disconcerting,⁷¹ Americans began to recognize nature's esthetic attractions as the continent came under human control.

By the middle of the nineteenth century, a distinctly American esthetic of nature had developed, expressed most famously in the writings of Ralph Waldo Emerson and Henry David Thoreau. The term "esthetic" today may conjure up an effete, frivolous, somewhat self-indulgent obsession with some obscure notion of beauty, but the nature esthetic of Emerson and Thoreau was neither frivolous nor self-indulgent. They saw nature's beauty as an incentive to gain knowledge, and knowledge of nature as the surest path to human wisdom, self-knowledge, and spiritual fulfillment.⁷² Nature was not just something pretty to look at; it served the same function as religion,⁷³ creating a noble human character and contributing to a fulfilling human life.

Early Americans admired cultivated gardens and other domesticated landscapes.⁷⁴ Only later did the edge of the wild, and finally raw nature itself, come to seem beautiful or inspiring. Even Thoreau, famous for his paean to

1996 (1997). Many authors, writing from a variety of perspectives, have advocated sustainable development as the solution to the ecological horror story. *See generally* TERRY L. ANDERSON & DONALD R. LEAL, *ENVIRO-CAPITALISTS: DOING GOOD WHILE DOING WELL* (1997); LESTER R. BROWN, *SAVING THE PLANET: HOW TO SHAPE AN ENVIRONMENTALLY SUSTAINABLE GLOBAL ECONOMY* (1991); INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE, *CARING FOR THE EARTH: A STRATEGY FOR SUSTAINABLE LIVING* (1991); NATIONAL RESEARCH COUNCIL, *FORESTED LANDSCAPES IN PERSPECTIVE: PROSPECTS AND OPPORTUNITIES FOR SUSTAINABLE MANAGEMENT OF AMERICA'S NONFEDERAL FORESTS* (1998); STEPHAN SCHMIDHEINY, *CHANGING COURSE: A GLOBAL BUSINESS PERSPECTIVE ON DEVELOPMENT AND THE ENVIRONMENT* (1992); Jayne E. Daly, *Toward Sustainable Development: In Our Common Interest*, 1995 PACE L. REV. 153 (1995); John C. Dermbach, *Sustainable Development as a Framework for National Governance*, 49 CASE W. RES. L. REV. 1 (1998); J.B. Ruhl, *Sustainable Development: A Five-Dimensional Algorithm for Environmental Law*, 18 STAN. ENVTL. L.J. 31 (1999).

71. *See* NASH, *supra* note 20, at 25-27 (describing European disappointment at "hardship and privations" of New World's wilderness).

72. Emerson wrote, for example, "[s]o much of nature as he is ignorant of, so much of his own mind does he not yet possess . . . [T]he ancient precept, 'Know thyself,' and the modern precept 'Study nature,' become at last one maxim." 1 RALPH WALDO EMERSON, *The American Scholar*, in *THE COMPLETE WORKS* 81, 87 (Centenary Edition 1979); *see also* 6 HENRY DAVID THOREAU, *THE JOURNAL OF HENRY D. THOREAU* 294 (Bradford Torrey & Francis H. Allen eds., 1984) ("This earth which is spread out like a map around me is but the lining of my inmost soul exposed.").

73. *See* EKIRCH, *supra* note 18, at 49.

74. *See, e.g.,* NASH, *supra* note 20, at 31.

wildness,⁷⁵ primarily celebrated the landscape of rural New England, which juxtaposed the primitive with the civilized.⁷⁶ He found the remote, unconquered nature of Maine's mountains "grim," and was happy to leave it for the cultivated valley.⁷⁷ Nonetheless, the quality that drew Thoreau most strongly to nature was its contrast to the human. "I love Nature, . . . partly *because* she is not man, but a retreat from him," he wrote.⁷⁸ Solitude and the sense that some parts of nature remained beyond human control were essential elements of the wildness Thoreau extolled. Places that were wild in that sense could serve as reminders of the larger world beyond human civilization. Thoreau declared that humans "need to witness our own limits transgressed, and some life pasturing freely where we never wander."⁷⁹

At the close of the nineteenth century, John Muir extended the esthetic of nature to ever wilder places. Muir reveled in solitary walks in the wildest places he could find.⁸⁰ In order to confront nature on its own terms, he would climb to the treetops in the midst of raging storms.⁸¹ Muir's affection for nature rested not just on its beauty, but also on its ability to inspire a sense of the palpable presence of God.⁸²

2. Contribution to the Laws of the Progressive Era

Muir set out to publicize his vision in the cause of wilderness preservation. He wrote essays for the *Atlantic Monthly* to gain support for preservation of the nation's remaining wild lands.⁸³ He also helped found the Sierra

75. See 5 HENRY DAVID THOREAU, *Walking*, in THE WRITINGS OF HENRY DAVID THOREAU 205, 224 ("[I]n Wildness is the preservation of the World").

76. See, e.g., DORMAN, *supra* note 21, at 99 (describing Thoreau's home idyll as partially cultivated country). At Walden Pond, Thoreau hardly was removed from civilization. His cabin lay just steps from the railroad track, and he dined weekly at the family home in Concord. *Id.* at 66, 85.

77. *Id.* at 69-71.

78. See EKIRCH, *supra* note 18, at 64 (quoting from Thoreau's Journals) (emphasis in original).

79. HENRY DAVID THOREAU, THE ILLUSTRATED WALDEN 318 (J. Lyndon Shanley ed., 1973).

80. At the age of 29, Muir set out to walk from Indiana to the Gulf of Mexico, seeking "the wildest, leafiest, and least trodden way." LINNIE MARSH WOLFE, SON OF THE WILDERNESS: THE LIFE OF JOHN MUIR 110 (1945) (quoting from Muir's journal). His journey eventually led him not to South America, his original destination, but to California. Landing at San Francisco, he immediately headed out on foot through the central valley to the Sierra Nevada mountains. *Id.* at 116-17.

81. See DORMAN, *supra* note 21, at 126.

82. See, e.g., JOHN MUIR, *The Yosemite National Park*, in OUR NATIONAL PARKS 76, 76 (1901) ("[E]very one of its living creatures . . . and every crystal of its rocks . . . is throbbing and pulsing with the heartbeats of God.").

83. Many of these essays are collected in JOHN MUIR, OUR NATIONAL PARKS (1901) [hereinafter PARKS]. In the preface to the collection Muir wrote, "I have done the best I could

Club as a lobbying group,⁸⁴ and bent the ears of presidents and legislators whenever possible.⁸⁵ His political efforts were dedicated to the cause of preserving the national forest reserves and parks, the wildest remaining lands on the continent.⁸⁶ Although Muir agreed with Thoreau that wild beauty could be found even in the most civilized lands, he feared that few people were sufficiently "sane and free" to find it there.⁸⁷ Lands in the wildest possible state, he argued, were needed to awaken those whose senses civilization had dulled to the beauties of nature.

Nonetheless, many others during this era were less willing to rest their political arguments for preservation on esthetic grounds. According to historian Bob Pepperman Taylor, even Gifford Pinchot was sensitive to the esthetic pull of nature but thought material arguments would carry more political weight.⁸⁸ Bird lovers who believed sincerely that song and plumage birds should be protected for their beauty alone felt compelled to find economic arguments for regulation of market hunting.⁸⁹

Despite this reluctance, the esthetic discourse contributed significantly to the adoption of Progressive-era nature protection laws. Thoreau, writing in 1858, had advocated establishment of national preserves in which native wildlife (and even the indigenous human occupants of the continent) could persist "for inspiration and . . . re-creation."⁹⁰ George Perkins Marsh echoed these sentiments in *Man and Nature*, urging that "some large and easily accessible region of American soil should remain, as far as possible, in its primitive condition" as a museum, a recreation site, and a home for indigenous species.⁹¹ Congress first responded to these and similar calls in 1864, when it granted the Yosemite area to the state of California "for public use, resort,

to show forth the beauty, grandeur, and all-embracing usefulness of our wild mountain forest reservations and parks, with a view to inciting the people to come and enjoy them, and get them into their hearts, that so at length their preservation and right use might be made sure."

84. See DORMAN, *supra* note 21, at 106; WOLFE, *supra* note 80, at 254-55.

85. See DORMAN, *supra* note 21, at 155; WOLFE, *supra* note 80, at 290-93, 330.

86. See MUIR, *Wild Parks of the West*, in PARKS, *supra* note 83, at 1, 13 ("The forty million acres of these reserves are in the main unspoiled yet . . .").

87. *Id.* at 2-3.

88. TAYLOR, *supra* note 27, at 22-23.

89. A 1900 editorial in the Audubon Society's magazine, *Bird-Lore*, declared that until the beauty of birds became "a sufficient reason" to protect them, "we must base our appeals . . . on more material grounds." DUNLAP, *supra* note 17, at 85 (quoting Frank M. Chapman, *A Note on the Economic Value of Gulls*, 2 BIRD-LORE 10 (Feb. 1900)).

90. See HANS HUTH, NATURE AND THE AMERICAN: THREE CENTURIES OF CHANGING ATTITUDES 169 (1957) (quoting from Henry David Thoreau, *Chesuncook*, 2 ATLANTIC MONTHLY 317 (1858)).

91. MARSH, *supra* note 23, at 203.

and recreation.⁹² The creation of Yellowstone National Park followed in 1872.⁹³

The purpose of these reservations was to protect uniquely scenic sites from private exploitation.⁹⁴ Although the protective legislation recognized the esthetic value of nature, it did not fully endorse the esthetic of Emerson, Thoreau, or Muir. Those writers all found beauty in any landscape not entirely under human control.⁹⁵ The parks, however, rested on an esthetic of the spectacular, characterized by a preference for grandiose, easily observed landscapes, as opposed to the more subtle beauties of nature.⁹⁶

Because it limited potential parks to a small number of places, most not suitable for agricultural use, and allowed extensive economic development of those sites provided the scenery was preserved,⁹⁷ this esthetic made it relatively easy to gain political support. But the limitations of this esthetic argument quickly became apparent. In the debate over conversion of the Hetch Hetchy Valley, within the boundaries of Yosemite National Park, to a reservoir for San Francisco, John Muir described the valley's beauty as second only to that of Yosemite Valley itself.⁹⁸ Reservoir proponents answered that

92. Yosemite Act, ch. 184, 13 Stat. 325 (1864).

93. Act of March 1, 1872, ch. 24, 17 Stat. 32.

94. ALFRED RUNTE, *NATIONAL PARKS: THE AMERICAN EXPERIENCE* 28-29, 44 (3d ed. 1997); see also H. REP. 42-26, at 1-2 (1872) (expressing concern over future of wild lands). The report states:

Persons are now waiting for the spring to open to enter in and take possession of these remarkable curiosities, to make merchandise of these beautiful specimens, to fence in these rare wonders so as to charge visitors a fee, as is now done at Niagara Falls, for the sight of that which ought to be as free as the air or water. . . . If this bill fails to become a law this session, the vandals who are now waiting to enter into this wonderland will, in a single season, despoil, beyond recovery, these remarkable curiosities which have required all the cunning skill of nature thousands of years to prepare.

Id. For these few places, esthetic concerns were easily placed above economic ones, in part because these areas were thought to have little economic value for other uses. See *id.* ("The entire area comprised within the limits of the reservation contemplated in this bill is not susceptible of cultivation with any degree of certainty, and the winters would be too severe for stock-raising. . . . [I]t is not probable that any mines or minerals of value will ever be found there.")

95. See MUIR, *supra* note 86, at 4 ("None of Nature's landscapes are ugly so long as they are wild.")

96. Historian Alfred Runte calls this esthetic "monumentalism." RUNTE, *supra* note 94, at 29.

97. Thus Nathaniel P. Langford, one of the early explorers of the Yellowstone area, could actively promote the national park idea while at the same time looking forward to the day when the shores of Yellowstone Lake would be "adorned with villas and the ornaments of civilized life." RUNTE, *supra* note 94, at 43 (quoting NATHANIEL PITT LANGFORD, *DISCOVERY OF YELLOWSTONE PARK* 96-97 (1872)).

98. See JOHN MUIR, *Hetch Hetchy Valley*, in *NATURE WRITINGS* 810, 817 (William Cronon ed., 1997).

Hetch Hetchy, although lovely, was not unique. They also asserted that the reservoir project would improve an ordinary meadow by turning it into a beautiful lake.⁹⁹ With those arguments buttressing the materialist claim that the valley should serve San Francisco's material needs, Hetch Hetchy disappeared under water.

Stung by the loss of Hetch Hetchy, park advocates campaigned for the creation of a government agency dedicated specifically to park management. In 1916 they achieved that goal, in part by converting their esthetic argument into an economic one. Park proponents asserted that the parks would improve the economy directly, by attracting tourists who would otherwise spend their vacations overseas, and indirectly, by providing healthy recreation that would improve worker productivity.¹⁰⁰ Indeed, park advocates were at some pains to explain that their goal was economic prosperity rather than esthetic pleasure. J. Horace McFarland, a leading advocate for parks, characterized the parks idea to Congress as "the idea of service and efficiency, and not an idea of pleasure and ornamentation at all."¹⁰¹

This tactical change brought results. The House Committee on Public Lands, recommending passage of the bill creating the National Park Service, explained: "The growing appreciation of the national assets found in the national parks and monuments is evidenced by the vast increase of visitors. The great trend toward the parks means retaining in this country the millions expended by our tourists in foreign travel previously spent abroad."¹⁰² This economic value depended upon the esthetic attractions of the parks. Accordingly, Congress directed the new National Park Service to protect those attractions, managing the parks so as to conserve their scenery, natural and historic objects, and wildlife unimpaired for the enjoyment of future generations.¹⁰³ Despite the materialist focus of the political debate, the House report

99. See *San Francisco and the Hetch Hetchy Reservoir, Hearings Before the House Comm. on the Public Lands*, 60th Cong. 13 (1908) (decision of Sec. of Interior James Garfield granting reservoir site). Garfield stated:

Hetch Hetchy Valley is great and beautiful in its natural state and scenic effects. If it were also unique, sentiment for its preservation in an absolutely natural state would be far greater. . . . Furthermore, the reservoir will not destroy Hetch Hetchy. It will scarcely affect the canyon walls. It will not reach the foot of the various falls which descend from the sides of the canyon. The prime change will be that, instead of a beautiful but somewhat unusable "meadow" floor, the valley will be a lake of rare beauty.

Id.

100. RUNTE, *supra* note 94, at 91-94, 100-01.

101. *Id.* at 100-01.

102. H.R. REP. NO. 64-700, at 2 (1916).

103. National Park Service Organic Act, ch. 408, 39 Stat. 535 (1916) (codified as amended at 16 U.S.C. § 1 (1994)).

distinguished between the national parks, which were "set apart for the public enjoyment and entertainment," and for the "preservation of nature as it exist[ed]," and the national forests, which were "devoted strictly to utilitarian purposes."¹⁰⁴

During this era, the esthetic discourse also contributed to the passage of laws limiting market hunting. Sport hunting treated nature as an esthetic rather than a material resource. The experience of the hunt, rather than the prize, was primary. Sport hunters arguing for game regulation emphasized the character-building qualities of their chosen recreation, claiming it could imbue men of the industrial age with frontier virtues.¹⁰⁵ They found political allies among women newly attuned to nature appreciation.¹⁰⁶ But material arguments seemed to carry the day.¹⁰⁷

3. *The Modern Ideal of Pure Wilderness*

The most recognizable modern version of the esthetic discourse is associated with the wilderness movement. Environmental historian Roderick Nash attributes the beginning of the wilderness movement largely to Aldo Leopold,¹⁰⁸ who argued in a 1921 article that some large areas of the national forests should be "kept devoid of roads, artificial trails, cottages, or other works of man."¹⁰⁹ Following formation of the National Park Service, the Forest Service came to view the provision of scenery and outdoor recreational opportunities as an important aspect of its mission.¹¹⁰ Leopold argued that large wilderness areas would provide unique recreational opportunities desired by a significant minority of the public.¹¹¹ He was careful, however, to limit his call for wilderness to "only a small fraction of the total National Forest area," and to areas ill-suited to industrial development but with distinctive recreational value.¹¹²

Over the next several years, Leopold expanded his arguments for wilderness preservation. Wilderness could help the nation and its citizens maintain

104. H.R. REP. NO. 64-700, at 3 (1916). The Report also noted the importance of the educational and recreational opportunities offered by the parks. *Id.* at 2.

105. See DUNLAP, *supra* note 17, at 9-11 (discussing idea that hunting "cultivated and tested virtue"); TREFETHEN, *supra* note 17, at 129-33 (quoting 1894 editorial in *Forest and Stream* citing "advantages to individuals and the nation of wide participation in field sports").

106. DUNLAP, *supra* note 17, at 13-15.

107. See *supra* notes 41-42 and accompanying text.

108. See NASH, *supra* note 20, at 185-87.

109. Aldo Leopold, *The Wilderness and Its Place in Forest Recreational Policy*, 19 J. FORESTRY 718, 719 (1921).

110. NASH, *supra* note 20, at 184-85.

111. Leopold, *supra* note 109, at 719-20.

112. *Id.* at 719.

the vigorous character contact with the frontier had fostered.¹¹³ Untouched by human activities, wilderness also could provide a baseline for scientific studies.¹¹⁴ Finally, by reminding humans of their dependence on the environment, wilderness areas could teach humility and encourage the development of an ethical relationship to nature.¹¹⁵

Leopold and his contemporaries persuaded the Forest Service to establish administrative guidelines for designating and managing wilderness areas.¹¹⁶ But wilderness advocates wanted legislation to secure the place of wilderness in the nation's future. Howard Zahniser, director of the Wilderness Society, was the most prominent advocate of wilderness legislation. Like Thoreau, Muir, and Leopold, whose words he frequently invoked, Zahniser did not rely simply on the beauty of wilderness areas as grounds for their preservation. He asserted that wilderness promoted both physical health and mental inspiration.¹¹⁷ The contrast wilderness provided to civilization could keep humanity "in touch with true reality," and offer a "true understanding of our past, ourselves, and our world."¹¹⁸ As a temporary respite from civilization, wilderness would nourish and refresh the nation's citizens, keeping them healthful and happy.¹¹⁹

Echoing Leopold, Zahniser identified those areas least touched by human impacts as worthy of special protection. He wrote of "unspoiled" nature,¹²⁰ entirely "without man's influence."¹²¹ Like Leopold, Zahniser believed that facing such areas without modern technology would bring humanity the humility to recognize its dependence on and responsibility to nature.¹²²

Zahniser's efforts culminated in passage of the Wilderness Act of 1964,¹²³ which rested on a vision of pure, sacred nature unsullied by the sinful human touch. The stated purpose of the Act is "to assure that an increasing popula-

113. See NASH, *supra* note 20, at 188-89.

114. *Id.* at 197-98.

115. *Id.* at 198-99.

116. See WILKINSON & ANDERSON, *supra* note 34, at 336-41 (discussing development of regulations for wilderness preservation).

117. Howard Zahniser, *The Need for Wilderness Areas*, LIVING WILDERNESS, Winter-Spring 1956-57, at 37, 41.

118. Howard Zahniser, *Our World and Its Wilderness*, LIVING WILDERNESS, Summer 1954, at 36.

119. See Zahniser, *supra* note 117, at 42 (explaining that call for wilderness protection "is not a disparagement of our civilization . . . but rather an admiration of it to the point of perpetuating it").

120. Zahniser, *supra* note 118, at 37.

121. *Id.* at 38.

122. See *id.* at 40.

123. 16 U.S.C. §§ 1131-36 (1994 & Supp. 1997).

tion, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition.¹²⁴ It defines wilderness as "an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain."¹²⁵

Although the wilderness vision is the most distinctive story the esthetic discourse has produced in the modern era, it is not the only form of the discourse that has reached the political arena. A vague generalized esthetic of nature has contributed to federal endangered species legislation. In the Endangered Species Preservation Act of 1966, Congress expressed concern about the decline of species with "educational, historical, recreational, and scientific value."¹²⁶ "The future would be far more appealing were there some assurance it would be built in harmony with nature and tradition," wrote the Senate Committee on Commerce.¹²⁷ A few years later, in its report on the Endangered Species Conservation Act,¹²⁸ the same committee, while highlighting material concerns, commented that "the gradual elimination of different forms of life reduces the richness and variety of our environment."¹²⁹ Similar general esthetic arguments were made on behalf of the Endangered Species Act of 1973.¹³⁰

124. 16 U.S.C. § 1131(a) (1994).

125. 16 U.S.C. § 1131(c) (1994).

126. Pub. L. No. 89-669, § 1(a), 80 Stat. 926 (1966) (repealed 1969).

127. S. REP. NO. 89-1463, at 2 (1966); see also 111 CONG. REC. 27,190 (1965) (statement of Rep. Scheuer) ("Where shall we go in our family car for the breath of pure natural beauty which refreshes the body and rekindles the spirit?").

128. Pub. L. No. 91-135, 83 Stat. 274 (1969) (repealed 1973).

129. S. REP. NO. 91-526, at 3 (1969).

130. See, e.g., *Endangered Species Act of 1973, Hearings on S. 1592 and S. 1983 Before the Subcomm. on Env't of the Senate Comm. on Commerce*, 93d Cong. 114 (1973) (statement of Sen. Williams) (supporting Endangered Species Act). Senator Williams stated:

Of course, there are some who question the need for protecting wildlife. And, it is undoubtedly true that we might be able to get along without many of the creatures who share our world. We might be able to do without many of the things which seem to be nonessential, but which give us pleasure, and make life more interesting and more complete. But that does not mean we should.

Id.; see also *Endangered Species, Hearings on H. 4758 Before the Subcomm. on Fisheries & Wildlife Conservation & the Env't of the House Comm. on Merchant Marine & Fisheries*, 93d Cong. 284 (1973) (statement of Rep. Blackburn) ("I do not think we can stand idly by and see endangered species such as the graceful southern bald eagle disappear or forever silence the cry of the Florida panther These animals afford a priceless treasure we must strive to protect."); 119 CONG. REC. 25,675 (1973) (statement of Sen. Williams) ("[O]ne of our most precious natural resources is our wildlife. It is difficult to imagine a world without the many and varied creatures which inhabit our forests, rivers, and oceans.").

In the same era, these general esthetic arguments also contributed to the passage of the National Environmental Policy Act (NEPA), which recognizes the importance of an esthetically pleasing environment to the quality of human life.¹³¹ Esthetic arguments took a backseat to the ecological horror story as a justification for NEPA, however. The Senate report made this point quite explicitly:

Natural beauty, increased recreational opportunity, urban esthetics and other amenities would be important byproducts of a national environmental policy. They are worthy and important public objectives in their own right. But the compelling reasons for a national policy are more deeply based. The survival of man, in a world in which decency and dignity are possible, is the basic reason for bringing man's impact on his environment under informed and responsible control. . . . Today we have the option of channeling some of our wealth into the protection of our future. If we fail to do this in an adequate and timely manner, we may find ourselves confronted, even in this generation, with an environmental catastrophe that could render our wealth meaningless and which no amount of money could ever cure.¹³²

Outside the wilderness context the esthetic discourse continues to be presented without a great deal of content, and with some embarrassment. In political debates, it is often subordinated to material arguments, even by people who plainly love the beauty of nature. In *Silent Spring*, for example, Rachel Carson emphasized the loss of material resources that would accompany the biotic disaster she foresaw.¹³³ But clearly that loss was not the root of her own concern. The title of her book is revealing. If spring truly came without songbirds, Carson would miss their song more than their appetite for agricultural pests.

C. Ethical Obligations to Protect Nature

1. Early Development of the Ethical Discourse

The third discourse emphasizes human ethical obligations to protect nature or its elements without regard to their instrumental value. George Perkins Marsh provided an early glimpse of this discourse in *Man and Nature*,

131. See 42 U.S.C. § 4321 (1994) (purposes of NEPA include "encourag[ing] productive and enjoyable harmony between man and his environment"); *id.* § 4331(b) (declaring national goal to, among other things, "assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings"). The Senate report noted that the American public was "placing a much higher value on the quality of the environment and their surroundings than ever before." S. REP. NO. 91-296, at 8 (1969).

132. S. REP. NO. 91-296, at 17 (1969).

133. See generally CARSON, *supra* note 46.

asserting that "the earth was given to [mankind] for usufruct alone, not for consumption, still less for profligate waste."¹³⁴ Thoreau intimated that nature might have intrinsic rights independent of any human needs, describing hunting as "murder" and the harvest of certain old trees as a crime.¹³⁵ Muir went further, stating that "[t]he universe would be incomplete without man; but it would also be incomplete without the smallest transmicroscopic creature that dwells beyond our conceitful eyes and knowledge."¹³⁶ To strike at nature's creations was to strike directly at God.¹³⁷ He referred to the areas for which he sought protection as "temples" and "cathedrals," suggesting that exploiting them for material advantage would amount to the desecration of sacred objects.¹³⁸ The crusade against market hunting also called on a new ethical concern for animals, fueled by popular writings depicting animals as thinking, feeling beings.¹³⁹

2. *The Land Ethic*

The iconic figure of the ethical discourse, however, is Aldo Leopold. Leopold began his professional life in the shadow of Gifford Pinchot's conservation philosophy. Leopold was trained at the forestry school that the Pinchot family established at Yale, and joined the Forest Service in 1909, just before Pinchot's departure as its chief.¹⁴⁰ But Leopold also read and took to heart the writings of John Muir and others, including botanist Liberty Hyde Bailey and philosopher Albert Schweitzer, who argued that abuse of the earth was morally wrong.¹⁴¹ Leopold's experience as a professional forester showed him

134. MARSH, *supra* note 23, at 35.

135. DORMAN, *supra* note 21, at 87.

136. *See id.* at 121 (quoting JOHN MUIR, A THOUSAND-MILE WALK TO THE GULF 138-39 (1981)); *see also* MUIR, *The Yellowstone National Park*, in PARKS, *supra* note 83, at 37, 58 (arguing that rattlesnakes are "good for themselves, and we need not begrudge them their share of life").

137. *See* DORMAN, *supra* note 21, at 152.

138. *See* MUIR, *supra* note 98, at 817 ("Dam Hetch Hetchy! As well dam for water-tanks the people's cathedrals and churches, for no holier temple has ever been consecrated by the heart of man."); *id.* (describing those who would drown the valley as "temple destroyers").

139. Ernest Thompson Seton, for example, asked rhetorically: "Have the wild things no moral or legal rights? What right has man to inflict such long and fearful agony on a fellow-creature, simply because that creature does not speak his language?" DUNLAP, *supra* note 17, at 23-24 (quoting ERNEST THOMPSON SETON, WILD ANIMALS I HAVE KNOWN 11-12, 357 (1901)).

140. DANA & FAIRFAX, *supra* note 36, at 95; CURT MEINE, ALDO LEOPOLD: HIS LIFE AND WORK 76-83 (1988); MAX OELSCHLAEGER, THE IDEA OF WILDERNESS 211-12 (1991); WORSTER, *supra* note 51, at 271-72.

141. Leopold quoted Muir in an early essay. *See* OELSCHLAEGER, *supra* note 140, at 212. For Leopold's debt to Bailey and Schweitzer, *see* NASH, *supra* note 20, at 194-95.

that utilitarian conservation was not enough. As an avid hunter and outdoorsman, he saw the forests as producers of game, fish and wilderness experiences in addition to timber.¹⁴² He also saw that even with careful management the demand for nature's products in the modern economy exceeded what the land could provide.¹⁴³

Gradually, Leopold groped his way toward a new ethical relationship with nature. His efforts culminated in the classic essay, *The Land Ethic*, published posthumously in 1949.¹⁴⁴ In that work, Leopold argued for extension of the ethical community to encompass all of nature.¹⁴⁵ He stated his land ethic simply: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."¹⁴⁶

This ethic rested in part on materialist concerns. Like the Ehrlichs after him, Leopold worried that people might carelessly discard parts of nature whose instrumental value they did not appreciate.¹⁴⁷ But he also argued that the pillaging of nature was morally wrong, even if it did not lead to human catastrophe.¹⁴⁸ People, he wrote, should see themselves as members of the biotic community, obliged to respect all other community members.¹⁴⁹

Leopold's land ethic reached beyond spectacular or uniquely unspoiled areas. Leopold spent years restoring a worked-out farm in Wisconsin to biotic health;¹⁵⁰ he considered nature worthy of protection and capable of restoration even in areas heavily influenced by human activities. He also saw the impor-

142. NASE, *supra* note 20, at 183-86.

143. *Id.* at 211-17; Eric T. Freyfogle, *The Land Ethic and Pilgrim Leopold*, 61 U. COLO. L. REV. 217, 233-34 (1990). Subsequently, comparison of the intensely managed forests of Germany with a Mexican wilderness brought home to Leopold just how biotically different Pinchot's wood factory was from a natural forest. *Id.* at 229.

144. ALDO LEOPOLD, *The Land Ethic*, in A SAND COUNTY ALMANAC 201 (1949).

145. *Id.* at 204.

146. *Id.* at 224-25.

147. Leopold explained:

[A] system of conservation based solely on economic self-interest is hopelessly lopsided. It tends to ignore, and thus eventually to eliminate, many elements in the land community that lack commercial value but that are (as far as we know) essential to its healthy functioning. It assumes, falsely, I think, that the economic parts of the biotic clock will function without the uneconomic parts.

Id. at 214. At the same time, Leopold recognized that at least some natural communities had been able to continue functioning despite extensive modification. *See id.* at 218-19 (noting western Europe and Japan underwent significant modification without disorganization).

148. *Id.* at 211-12, 224-25.

149. *Id.* at 204 (arguing that land ethic changes role of people from conquerors of land to members of land community).

150. *See* Freyfogle, *supra* note 143, at 223 (describing Leopold's work on abandoned farm near Madison).

tance of close contact with a particular area over many seasons for development of the land ethic.¹⁵¹

Since Leopold, philosophers have debated whether nature has intrinsic value. Leopold himself felt no need to engage in an extensive defense of his view. Its intuitive rightness sufficed. He wrote:

Possibly, in our intuitive perceptions, which may be truer than our science and less impeded by words than our philosophies, we realize the indivisibility of the earth – its soil, mountains, rivers, forests, climate, plants, and animals, and respect it collectively not only as a useful servant but as a living being.¹⁵²

Others, less willing to rely on intuition, have struggled to articulate ethical principles applicable to nature. Although Peter Singer and Tom Regan have concluded that individual animals have rights,¹⁵³ many environmentalists believe that intrinsic rights must be assigned above the level of the individual creature. Holmes Rolston, III, J. Baird Callicott, and others have argued for the moral considerability of species, ecosystems, or biotic communities.¹⁵⁴ Not everyone, however, accepts the claim that such abstract entities as species, ecosystems, or communities can have moral rights or be the object of moral obligations.¹⁵⁵

3. *The Noah Story*

Like the esthetic discourse, the rhetoric of ethical obligations to nature has been brought to the political fray somewhat haltingly. Although most advocates for nature seem to be motivated by a sense that the protection of nature is intrinsically right,¹⁵⁶ many of them emphasize material arguments, adding

151. See LEOPOLD, *supra* note 144, at 223-24; Freyfogle, *supra* note 143, at 230-31 (suggesting that by example Leopold calls us to become "place people").

152. See Freyfogle, *supra* note 143, at 217 (quoting Aldo Leopold, *Some Conceptual Fundamentals of Conservation in the Southwest*, 1 ENVTL. ETHICS 131, 139 (1979) (originally written in 1923 but unpublished until 1979)).

153. TOM REGAN, *THE CASE FOR ANIMAL RIGHTS* 279-80 (1983); PETER SINGER, *ANIMAL LIBERATION* 1-26 (1975).

154. See J. BAIRD CALLICOTT, *On the Intrinsic Value of Nonhuman Species*, in *IN DEFENSE OF THE LAND ETHIC: ESSAYS IN ENVIRONMENTAL PHILOSOPHY* 129, 153-55 (1989) [hereinafter *IN DEFENSE OF THE LAND ETHIC*]; Holmes Rolston, III, *Duties to Ecosystems*, in *COMPANION TO A SAND COUNTY ALMANAC* 246, 246-72 (J. Baird Callicott ed., 1987); J. Baird Callicott, *Intrinsic Value, Quantum Theory, and Environmental Ethics*, 7 ENVTL. ETHICS 257, 275 (1985); Holmes Rolston, III, *Duties to Endangered Species*, 35 BIOSCIENCE 718, 720-23 (1985).

155. See, e.g., Harley Cahen, *Against the Moral Considerability of Ecosystems*, 10 ENVTL. ETHICS 195, 197 (1988) (contending that "ecosystems cannot be morally considerable because they do not have interests").

156. See CALLICOTT, *supra* note 154, at 130 (noting that utilitarian arguments for species

ethical ones almost as an afterthought.¹⁵⁷ Some openly acknowledge relying on material arguments because they fear only those will carry political weight.¹⁵⁸

Recently, however, nature advocates have seized on a familiar story, that of Noah's ark, to express their ethical arguments. According to the book of Genesis, God decided that both man and the earth itself were wicked, and determined to destroy them with a flood.¹⁵⁹ He instructed Noah to build an ark and bring into it two of every kind of beast on earth.¹⁶⁰ God then sent a prodigious flood upon the earth, destroying everything outside the ark.¹⁶¹ Eventually the waters abated, enabling Noah, his family, and the animals to emerge.¹⁶² God promised never again to send such a destructive force against the earth, sealing the promise with a rainbow.¹⁶³

That is as much of the story as nature advocates generally tell. But there is more. After the flood, God told Noah to go forth and multiply upon the

preservation seem to be "a way of selling the public on policies that are felt to be somehow right independently of present and future human well-being").

157. In his classic work *The Sinking Ark*, for example, Norman Myers devoted three brief pages to the ethical argument for saving species and more than twenty to the utilitarian benefits of species preservation. NORMAN MYERS, *THE SINKING ARK* 46-48, 57-81 (1979).

158. See Paul R. Ehrlich, *The Strategy of Conservation, 1980-2000*, in *CONSERVATION BIOLOGY: AN EVOLUTIONARY-ECOLOGICAL PERSPECTIVE* 329, 338 (Michael E. Soulé and Bruce A. Wilcox eds., 1980) ("Arguments about the aesthetic value of nonhuman life forms or their intrinsic interest, or appeals for compassion for what may be our only living companions in the universe, mostly fall on deaf ears. Conservation must be promoted as an issue of human well-being and, in the long run, survival."). James Nations put it this way:

In the developing world, as well as in our overdeveloped world, we are obligated to present economic, utilitarian arguments to preserve the biological diversity that ultimately benefits us all The day may come when ethical considerations about biological diversity become our most important reason for species conservation. But in the meantime, if we want to hold on to our planet's biological diversity, we have to speak the vernacular. And the vernacular is utility, economics, and the well-being of individual human beings.

James D. Nations, *Deep Ecology Meets the Developing World*, in *BIODIVERSITY* 79, 80-81 (E.O. Wilson ed., 1988). To some extent recent history bears out the fears of these commentators. Even hidden or implicit suggestions that nature protection is a moral issue have provoked sharp resistance, such as the 1988 accusation by Senator Symms that the Endangered Species Act is an attempt to change moral attitudes by "the sheer brute force of Government." 134 CONG. REC. 18,582 (1988).

159. *Genesis* 6:1-17 (King James).

160. *Id.* at 6:14-19. Some readers believe this passage refers to two pair rather than two individuals. See Nagle, *supra* note 66, at 1217 n.177 (citing *NEW GENEVA STUDY BIBLE* 20 (New King James) (R.C. Sproul et al. eds., 1995)). Subsequent verses report that Noah was told to bring seven of the clean beasts and fowl but only two of other creatures. *Genesis* 7:2-3 (King James).

161. *Genesis* 7:17-24 (King James).

162. *Id.* at 8:13-19.

163. *Id.* at 9:15. This promise extended to the animals of the ark as well as to its human inhabitants. *Id.* at 9:10.

earth, and promised to make all other creatures fear mankind.¹⁶⁴ The story harks back to the first chapter of Genesis, in which God instructed the first humans to subdue the earth and have dominion over all its living inhabitants.¹⁶⁵

In 1965, the World Wildlife Fund adopted the Noah story as a symbol of its efforts to preserve dwindling species, issuing a report entitled "The Launching of a New Ark."¹⁶⁶ Biologist David Ehrenfeld seems to have been the first to present the tale as an argument on behalf of nature preservation. Ehrenfeld recognized that many species are not essential to global ecological functioning, and lack demonstrable economic value.¹⁶⁷ Nonetheless, his intuitions told him that such species deserved protection. He proposed "the Noah principle," that all species deserve protection on non-instrumental grounds, as a reason for saving such "non-resources."¹⁶⁸

Since that time, scientists and environmental activists have frequently employed the Noah image. Not all share Ehrenfeld's suspicion of instrumental arguments. Some use subtle references to the Noah parable to bolster their materialist arguments for saving nature.¹⁶⁹ Others have invoked the rhetorical appeal of the Noah story without attempting to explain its significance.¹⁷⁰ A

164. *Id.* at 9:1-2.

165. *Id.* at 1:28.

166. THE LAUNCHING OF A NEW ARK: FIRST REPORT OF THE PRESIDENT AND TRUSTEES OF THE WORLD WILDLIFE FUND (Peter Scott ed., 1965). A few years later, the Fund issued its second report, again evoking the Noah image. See generally THE ARK UNDER WAY: SECOND REPORT OF THE WORLD WILDLIFE FUND 1965-67 (Fritz Vollmar ed., 1968). Others quickly adopted the image. See, e.g., PHILIP KINGSLAND CROWE, THE EMPTY ARK (1967) (documenting dwindling species worldwide).

167. See David W. Ehrenfeld, *The Conservation of Non-Resources*, 64 AM. SCIENTIST 648, 650-51 (1976).

168. *Id.* at 654.

169. Norman Myers, for example, titled his book, the first comprehensive exploration of the dwindling state of the world's biological resources, *The Sinking Ark*. Myers explained the material benefits of species preservation at great length, but touched only lightly on ethical arguments. MYERS, *supra* note 157, at 46-48, 57-81. For others invoking the Noah imagery but relying primarily on utilitarian arguments, see, e.g., Oliver A. Houck, *On the Law of Biodiversity and Ecosystem Management*, 81 MINN. L. REV. 869, 978-79 (1997); 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 ENVTL. L. 845, 875-76 (1997); Eric Christensen, Note, *Genetic Ark: A Proposal to Preserve Genetic Diversity for Future Generations*, 40 STAN. L. REV. 279, 321 (1987).

170. See, e.g., Holly Doremus, *Patching the Ark: Improving Legal Protection of Biological Diversity*, 18 ECOLOGY L.Q. 265, 304 (1991); Jeffrey S. Kopf, *Slamming Shut the Ark Doors: Congress's Attack on the Listing Process of the Endangered Species Act*, 3 ANIMAL L. 103, 104 (1997); John Charles Kunich, *The Fallacy of Deathbed Conservation Under the Endangered Species Act*, 24 ENVTL. L. 501, 553 (1994) (describing ESA as "the Noah's Ark of conservation law"); Noah's New Challenge, NEW SCIENTIST, June 17, 1995, at 33, 35; Leslie

few commentators have argued directly that modern humanity cannot afford to save all species and therefore must choose some at the expense of others.¹⁷¹ But most who use the image of the ark explicitly invoke its moral power, arguing that humanity is obliged to protect all species, regardless of their instrumental value.¹⁷²

Although ethical concerns were always implicit in the very concept of endangered species protection,¹⁷³ the Noah story did not appear in the legislative history of the Endangered Species Act (ESA) or its predecessors. In 1966, when Congress considered the Endangered Species Preservation Act, the committee reports said little of the ethical reasons for protecting species, although some individual legislators mentioned their ethical concerns in the floor debates.¹⁷⁴ In 1969, both the popular press and the Department of Interior appealed to the nation's social conscience in support of the Endangered Spe-

Roberts, *Beyond Noah's Ark: What Do We Need to Know*, 242 SCIENCE 1247 (1988); *Noah's Ark in the Gulf*, ECONOMIST, Jan. 10, 1998 (describing center for breeding rare animals as "Noah's ark of a rescue project").

171. See CHARLES C. MANN & MARK L. PLUMMER, NOAH'S CHOICE: THE FUTURE OF ENDANGERED SPECIES 212-213 (1995); Don L. Coursey, *The Revealed Demand for a Public Good: Evidence from Endangered and Threatened Species*, 6 N.Y.U. ENVTL. L. REV. 411, 430 (1998) (stating that country will never have sufficient resources to save all endangered species and that budget constraints may exclude some animals from ark).

172. See, e.g., GORE, *supra* note 64, at 244-45 (noting that Noah story might be translated in modern form as: "Thou shalt preserve biodiversity"); Bruce Babbitt, *Between the Flood and the Rainbow: Our Covenant to Protect the Whole of Creation*, 2 ANIMAL L. 1, 5 (1996); Kevin D. Batt, *Above All, Do No Harm: Sweet Home and Section Nine of The Endangered Species Act*, 75 B.U. L. REV. 1177, 1187 (1995) (stating that "the ESA's legislative directive to sustain all species echoes God's command to Noah to save a breeding pair of each kind of animal"); Anna R.C. Caspersen, *The Public Trust Doctrine and the Impossibility of "Takings" by Wildlife*, 23 B.C. ENVTL. AFF. L. REV. 357, 358 (1996) (suggesting that duty to preserve wildlife may flow from "the desire to emulate Noah and his Ark by saving God's creatures"); Catharine L. Krieps, *Sustainable Use of Endangered Species Under CITES: Is It a Sustainable Alternative?*, 17 U. PA. J. INT'L ECON. L. 461, 461 (1996) (quoting from RAYMOND BONNER, AT THE HAND OF MAN: PERIL AND HOPE FOR AFRICA'S WILDLIFE 23 (1993), which quoted Namibian village elder who referred to Noah story as basis for prevention of destruction of wildlife); Nagle, *supra* note 66; Holmes Rolston, III, *Property Rights and Endangered Species*, 61 U. COLO. L. REV. 283, 305 (1990) ("The last time there was a divine command on this matter was in the days of Noah: '[K]eep their kind alive upon the face of all the earth.'").

173. Several commentators have remarked that it is difficult to understand the Act's blanket prohibition on extinction of species without reference to an ethical taboo against human-caused extinction. See RODERICK FRAZIER NASH, THE RIGHTS OF NATURE 175-76 (1989); MARK SAGOFF, THE ECONOMY OF THE EARTH 36-37, 67 (1988); Andrew E. Wetzler, Note, *The Ethical Underpinnings of the Endangered Species Act*, 13 VA. ENVTL. L.J. 145, 171-74 (1993).

174. See, e.g., 111 CONG. REC. 27,192 (1965) (statement of Rep. Bennett) ("What God has carefully created, we should surely protect. In so doing we serve ourselves and future generations, as we fulfill what I believe to be an obligation."); *id.* at 27,191 (statement of Rep. Reuss) (declaring that animals "have a claim to survival based on esthetic and ethical considerations. Wherever they may live, these irreplaceable creatures belong, in a broader sense, to all men.").

cies Conservation Act.¹⁷⁵ The Senate report opined that mankind, by hastening the extermination of species, had assumed "an immense ethical burden."¹⁷⁶ Many legislators and witnesses also invoked moral justifications for protecting species.¹⁷⁷ But material concerns continued to dominate the debate.¹⁷⁸

By the time Congress passed the Endangered Species Act in 1973, the ethical overtones were palpable. The legislative history of the Act is replete with ethical references, although most are veiled. On behalf of the Nixon administration, which sought the legislation, Assistant Secretary of Interior Nathaniel Reed explained that "man must share his environment if we are to honor the natural order."¹⁷⁹ The House report called for caution, self-searching, and humility.¹⁸⁰ Some legislators were bold enough to assert directly that human-caused extinction was morally wrong,¹⁸¹ and other legislators and witnesses indirectly expressed similar intuitions.¹⁸²

175. *See Of Leopards and Alligators*, N.Y. TIMES, Oct. 27, 1969, at 42 ("It is not for man to outdo [predatory animals] in predation."); U.S. DEPT. OF INTERIOR, *supra* note 51, at 44 ("The Department of the Interior and [Bureau of Sport Fisheries and Wildlife], along with other federal agencies, have a strong moral responsibility and commitment to maintain this environment.").

176. S. REP. NO. 91-526, at 3 (1969).

177. *See, e.g., Endangered Species, Hearings Before the Subcomm. on Fisheries & Wildlife Conservation of the House Comm. on Merchant Marine & Fisheries*, 91st Cong. 50 (1969) (statement of Rep. Fascell) ("Those of us given the stewardship of public office have a right and a duty to do all we can to preserve the beauties of nature for our children and future generations to enjoy."); *id.* at 55 (statement of Charles H. Callison, National Audubon Society) ("I personally find the moral answer is the most compelling [reason for saving the alligator]."); *Endangered Species, Hearings Before the Subcomm. on Energy, Natural Resources, & the Env't of the Sen. Comm. on Commerce*, 91st Cong. 69 (1969) (statement of Christine Stevens, Animal Welfare Inst.) ("The desecration of the earth for the most paltry and selfish of commercial motives must not be condoned by the United States."); *id.* at 72 (statement of Lloyd Tupling, Sierra Club) ("No native species of vertebrate should be allowed to become extinct."). Answering a question about the reasons for preserving species, Dr. James Peters of the Smithsonian Institution said, "[T]he Texas blind salamander has just as long an evolutionary history behind it as I have. Therefore, it has an equal right to the opportunity to survive as I have." *Id.* at 93; *see also* 115 CONG. REC. 33,569 (1969) (statement of Sen. Yarborough) ("The responsibility is ours, and therefore, it is only right that we take prompt action to correct this situation.").

178. *See supra* notes 58-70.

179. *Predatory Mammals and Endangered Species, Hearings Before the Subcomm. on Fisheries & Wildlife Conservation of the House Comm. on Merchant Marine & Fisheries*, 92d Cong. 105 (1972).

180. H.R. REP. NO. 93-412, at 4 (1973).

181. *See, e.g.,* 119 CONG. REC. 30,166 (1973) (statement of Rep. Annunzio) ("Passage of this measure today will be one more significant step toward righting a serious wrong."); 119 CONG. REC. 25,668 (1973) (statement of Sen. Tunney) ("To allow the extinction of animal species is ecologically, economically, and ethically unsound."); *see also id.* at 236 (statement of Guy Hodge, Humane Society of the United States) ("[E]thically, we recognize that man is part of the natural world; he cannot separate himself from it without losing an important part of his own heritage.").

182. *See, e.g., Endangered Species Act of 1973, Hearings Before the Subcomm. on Env't*

By providing a familiar story to anchor these ethical intuitions, the Noah story seems to have helped bring the ethical justifications for species protection out of the political closet. By 1985, the story of Noah's ark had made its way explicitly into legislative discussions of endangered species policy.¹⁸³ In 1996, when the new Republican majority in Congress sought to substantially weaken the ESA, the Noah story was the strongest political response. Both Jewish and evangelical Protestant groups mounted press campaigns based on this story and used it to great effect in testimony before Congress.¹⁸⁴ Secretary of the Interior Bruce Babbitt enthusiastically endorsed it as a commandment "to protect creation in all its diversity."¹⁸⁵ The rhetorical power of the Noah story is perhaps best illustrated by the response of ESA critics to its use. Unwilling to concede control of such a powerful story to their opponents,

of the Sen. Comm. on Commerce, 93d Cong. 229 (1973) (statement of Howard Pollock, National Oceanic and Atmospheric Administration) ("We recognize [government conservation measures] to be both a duty and an obligation to future generations and a necessity if the real benefits from the seas are to be obtained."); *id.* at 256 (statement of Christine Stevens, Society for Animal Protective Legislation) ("a genuine respect for the myriad magnificent forms of life with which we are privileged to share the Earth [is] needed."); 119 CONG. REC. 25,670 (1973) (statement of Sen. Tunney) ("These animals are part of our natural resources, part of our history, and part of our evolutionary heritage. We have a duty to restore what we have endangered – for ourselves and for posterity."). Similar intuitions seem to underlie President Nixon's statement on signing the bill that, "Nothing is more priceless or worthy of preservation than the rich array of animal life with which our country has been blessed." *Weekly Comp. Pres. Docs.* Jan 1974.

183. See *Endangered Species Act Reauthorization: Hearings Before the House Subcomm. on Fisheries & Wildlife Conservation & the Env't of the House Comm. on Merchant Marine & Fisheries*, 99th Cong. 3 (1985) (statement of Rep. Claudine Schneider) ("[W]e need to incorporate into our thinking what David Ehrenfeld of Rutgers has called 'the Noah Principle.' When Noah brought into his ark representatives of every living creature on earth, he did so without any economic justification, but on the ethical principle of the rightness of their survival.").

184. See, e.g., *Endangered Species Recovery Act, Hearings Before the Sen. Comm. on Env't & Public Works* 105th Cong. 213 (1997) (testimony of The Coalition on the Environment and Jewish Life et al.) ("The Endangered Species Act has served as a modern ark."); Nagle, *supra* note 66, at 1176-77; James Bornemeier, *The Washington Connection: A Political Noah's Ark Fights Wildlife Bill*, L.A. TIMES, Mar. 8, 1996, at A3; Bill Broadway, *Tending God's Garden: Evangelical Group Embraces Environment*, WASH. POST, Feb. 17, 1996, at C8; Suzanne Peterson, *Earth Day: An Exercise in Stewardship*, DES MOINES REGISTER, Apr. 19, 1996, at 15 ("We are the Noahs of our day and the Endangered Species Act is our ark."); Peter Steinfelds, *Evangelical Group Defends Laws Protecting Endangered Species as a Modern "Noah's Ark"*, N.Y. TIMES, Jan. 31, 1996, at A12 (quoting leader of Evangelical Environmental Network as saying that ESA is "the Noah's ark of our day" but Congress is trying to sink it). The Noah parable was also cited during debate over the lifting of the temporary moratorium imposed by the 104th Congress on species listings. See 142 CONG. REC. S1842 (daily ed. Mar. 12, 1996) (statement of Sen. Chafee) ("I note that when Noah led the animals into the ark, he included all species.").

185. Babbitt, *supra* note 172, at 5.

ESA critics sought to portray the ESA itself as a roadblock in the path of modern Noahs.¹⁸⁶

Today the tale of Noah's ark plays a major role in the ongoing debate over reauthorization of the Endangered Species Act.¹⁸⁷ It is linked to a larger religious discourse which draws on Jewish and Christian doctrine to argue for nature protection. This discourse explains that the special position of humanity in the creation carries with it special obligations of stewardship, and points out, recalling the writings of John Muir, that all creation is valuable because it is valued by the creator.¹⁸⁸ Perhaps because it makes such a good soundbite, though, the limited Noah story continues to dominate the religious arguments raised in the political arena on behalf of nature protection.

With the benefit of hindsight, many observers now connect the 1973 passage of the ESA to the Noah story. Interior Secretary Babbitt recently wrote that Congress was compelled by the ancient command of the Noah's ark story when it enacted the ESA.¹⁸⁹ Even Senator Slade Gorton, no supporter of endangered species protection, has recognized the impact of the story, declaring: "In writing [the ESA], Congress, in all its wisdom, decided that it could, in fact, become Noah."¹⁹⁰

III. Parable as Paradigm

A. Telling Political Stories

It is not difficult to understand why the complex strands of each of the three discourses of nature have been reduced in the political context to a handful of shorthand stories. In the political arena, the most nuanced discourse tends to be simplified in this way. Political argument is better suited to soundbite-sized stories, brief accounts that evoke striking images intended to communicate larger points, than to multifaceted discussion.

186. See 142 CONG. REC. S1848 (daily ed. Mar. 12, 1996) (statement of Sen. Kempthorne) ("I believe that Noah had to have two-by-fours in order to construct the ark to save those animals, so we need balance. If there had been an Endangered Species Act in existence at the time that Noah was charged with saving those species, I do not know if he would have gotten permits before the floods came.").

187. See Nagle, *supra* note 66, at 1176-77.

188. See generally *ECOLOGY AND THE JEWISH SPIRIT: WHERE NATURE AND THE SACRED MEET* (Ellen Bernstein ed., 1998); Richard H. Hiers, *Reverence for Life in Biblical Law and Covenant*, 13 J.L. & RELIGION 127 (1996-98); Nagle, *supra* note 66, at 1226-30. Pope John Paul II greatly raised the profile of environmental concerns in organized Judeo-Christian religion with his 1990 New Year's address, which called on all people to respect nature and safeguard the integrity of the natural world. Pope John Paul II, *Peace With God the Creator, Peace With All Creation* (1990), available at <<http://listserv.american.edu/catholic/church/papal/jp.ii/ecology.crisis>> (visited Nov. 24, 1999).

189. See Babbitt, *supra* note 172, at 5.

190. 141 CONG. REC. S6337, 6340 (daily ed. May 9, 1995).

It is easy to condemn the tendency of political debate to simplify arguments. Political rhetoric certainly can camouflage complexity, encourage people to overlook important principles, and distort issues.¹⁹¹ Sound-bites can substitute for, or even obscure, principled analysis.

But these brief stories can also serve a valuable, and valid, political function. Stories, particularly familiar ones, are well suited to quick, effective communication. Every teacher knows the power of a good rhetorical image to communicate a subtle concept. Stories also can invoke intuitions that may otherwise be overlooked because they are not readily accessible through reason alone.¹⁹² Furthermore, the emotional power of stories can spur listeners to action in ways that abstract rational argument, no matter how logically compelling, typically does not.¹⁹³

Stories are especially important in moral discourse because ethical reactions are often strongly intuitive rather than entirely rational.¹⁹⁴ Parables and fables have long been told for the express purpose of inculcating or reinforcing moral values.¹⁹⁵ We should not be surprised to see stories playing an important role in the creation of laws that are, in Professor Sunstein's terminology, "expressive," that is intended not only to regulate conduct but to express and reinforce societal values.¹⁹⁶

191. Because of their strong political impact, anecdotal stories have become key weapons in the policy wars, deployed by advocates on both sides of the political spectrum. Several commentators have warned that these supposedly true stories often do not survive close scrutiny. *E.g.*, Lisa Heinzerling, *Regulatory Costs of Mythic Proportions*, 107 *YALE L.J.* 1981, 1984 (1998); David A. Hyman, *Lies, Damned Lies, and Narrative*, 73 *IND. L.J.* 797, 804-07 (1998); Michael Allen Wolf, *Overtaking the Fifth Amendment: The Legislative Backlash Against Environmentalism*, 6 *FORDHAM ENVTL. L.J.* 637, 641-50 (1995).

192. Martha Minow, *Stories in Law*, in *LAW'S STORIES*, *supra* note 13, at 24, 26; Eric Freyfogle, *Owning the Land: Four Contemporary Narratives*, 13 *J. LAND USE & ENVTL. L.* 279, 279 (1998) ("Ordinary people use narratives . . . to exemplify a bit of wisdom or probe the meaning behind an event.").

193. Anthony Kronman, *Leontius' Tale*, in *LAW'S STORIES*, *supra* note 3, at 54, 55-56.

194. See ALLAN BLOOM, *THE CLOSING OF THE AMERICAN MIND* 194-216 (1987) (cited in Freyfogle, *supra* note 148, at 254 n.122) (explaining that ethical values are more closely associated with intuitive right brain than with rational left).

195. See *XI OXFORD ENGLISH DICTIONARY* 177 (2d ed. 1989) (defining "parable" as "a fictitious narrative or allegory (usually something that might naturally occur), by which moral or spiritual relations are typically figured or set forth" and as "something that may be pointed to as an example or illustration (to follow or to avoid)"); *id.* at 638 (defining "fable" as "a short story devised to convey some useful lesson; *esp.* as one in which animals or inanimate things are the speakers or actors"). See generally Olivia & Robert Temple, *Introduction to AESOP, THE COMPLETE FABLES* (Olivia & Robert Temple trans., 1998) (explaining that many fables began as rough jokes or political parodies and were adapted later to communicate moral messages); *PARABLE AND STORY IN JUDAISM AND CHRISTIANITY* (Clemens Thoma & Michael Wyschogrod eds., 1989).

196. Cass R. Sunstein, *On the Expressive Function of Law*, 144 *U. PA. L. REV.* 2021, 2025-26 (1996).

Environmentalists seek expressive law in the nature protection context. They recognize that nature protection can only be effective in the long term if the political community comes to care more deeply about nature.¹⁹⁷ Law is one tool for changing societal values; appropriately framed and enforced, it can "tip" a society struggling to find consensus on values.¹⁹⁸ Even if it is not framed with a specific expressive goal in mind, the law in this area inevitably expresses societal values, endorsing certain formulations of the appropriate relationship between human beings and nature and rejecting others.¹⁹⁹ Because the politics of nature protection are necessarily so value-intensive, stories are likely to be indispensable.

In addition, nature protection frequently takes the form of restrictions on the rights of landowners to determine the uses of their land. The law of landownership, with which nature advocates must contend, is strongly expressive. It not only reflects current societal values but also helps to pass those values along to future generations.²⁰⁰ Not surprisingly, the law in this area has relied heavily on narrative since the days of John Locke, and continues to resist reduction to logical principles.²⁰¹

The effective use of storytelling by modern property rights advocates has helped provoke a responsive search for stories by proponents of nature protection. The property rights stories often depict powerful regulators running roughshod over landowners whose entire financial and emotional lives are closely tied to their land. They describe mortgages foreclosed because the presence of the golden-cheeked warbler blocked intended development; homes consumed by flames because their owners were prevented from discing fire breaks by regulations protecting the lowly kangaroo rat; land lost to the

197. See, e.g., LEOPOLD, *supra* note 144, at 208-09 (noting that improvement in land health will require change in social conscience); *id.* at 225 ("By and large, our present problem is one of attitudes and implements."); E. O. Wilson, *The Current State of Biological Diversity*, in BIODIVERSITY 3, 16 (E.O. Wilson ed., 1986) ("In the end, I suspect it will all come down to a decision of ethics . . ."); Ehrenfeld, *supra* note 167, at 655 (noting that changes in cultural attitudes are needed before nonresource arguments can carry their full weight).

198. Robert Cooter, *Expressive Law and Economics*, 27 J. LEGAL STUD. 585, 586 (1998).

199. See, e.g., Holly Doremus, *Restoring Endangered Species: The Importance of Being Wild*, 23 HARV. ENVTL. L. REV. 1, 36-37 (1999).

200. Eric Freyfogle, *The Owning and Taking of Sensitive Lands*, 43 UCLA L. REV. 77, 109 (1995).

201. See, e.g., Carol M. Rose, *Canons of Property Talk, or, Blackstone's Anxiety*, 108 YALE L. J. 601, 604 (1998); Carol M. Rose, *Property as Storytelling: Perspectives from Game Theory, Narrative Theory, Feminist Theory*, 2 YALE J. L. & HUMAN. 37, 38-39 (1990) [hereinafter *Property as Storytelling*]. The continuing struggles of courts and legislatures to define regulatory takings illustrate the difficulties of reducing property issues to general principles. For a compilation of references decrying the incoherence of takings law, see Jed Rubenfeld, *Usings*, 102 YALE L.J. 1077, 1078 n.2 (1993).

sea because erosion-prevention measures might harm the even lowlier tiger beetle.²⁰² Although not always voiced directly, these stories assume that private property is the ultimate guarantor of human autonomy, and the most effective spur to productive labor.²⁰³

In response, champions of nature have derived their own stories from the three discourses discussed above. The material discourse of nature has been reduced primarily to the attention-grabbing ecological horror story. The esthetic discourse has produced the story of a pure wilderness to be protected against human invasion. The ethical discourse was virtually missing from the political forum until given the form of the Noah story. In these abbreviated forms, the dominant discourses have become powerful political tools.

But political stories can be double-edged swords. They surely can capture the imagination of the political community and build support for policy changes. But their power does not end with passage of the laws that solidify those changes. In order to be politically effective, stories must be widely distributed and often repeated. Those that appeal to the public are readily absorbed into the collective subconscious, framing assumptions that are then accepted without further principled justification.²⁰⁴ Those stories inevitably shape future attitudes and behavior.²⁰⁵ Adoption of law that rests on and expresses those stories magnifies their power to mold cultural attitudes because the law itself plays an important role in defining the community and

202. See William Michael Treanor, *The Armstrong Principle, the Narratives of Takings, and Compensation Statutes*, 38 WM. & MARY L. REV. 1151, 1158-60 (1997) (introducing numerous examples of Endangered Species Act horror stories); Wolf, *supra* note 191, at 641-50 (discussing horror stories of middle-class landowners); see also Gregory S. Alexander, *Takings, Narratives, and Power*, 88 COLUM. L. REV. 1752, 1753 (1988) (noting that striking images and powerful metaphors have shaped takings doctrine).

203. See, e.g., Albert Gidari, *The Economy of Nature, Private Property, and the Endangered Species Act*, 6 FORDHAM ENVTL. L. J. 661, 687 (1995) (stating that if environmental harm always can be prevented without compensation, "the fundamental building blocks of our representative democracy will be imperiled. Property rights protect liberty."); Wolf, *supra* note 191, at 651 (stating that "[o]f all the freedoms we enjoy in this country, the ability to own, care for, and develop private property is perhaps the most crucial to our free enterprise economy" (quoting 140 CONG. REC. S2639 (Mar. 9, 1994) (statement of Sen. Don Nickles))).

204. See, e.g., Rose, *Property as Storytelling*, *supra* note 201, at 51-53.

205. For example, repeated exposure to the simplistic economic story that presents people as rational maximizers of their personal well-being encourages self-interested behavior. See, e.g., Robert H. Frank et al., *Does Studying Economics Inhibit Cooperation?*, 7(2) J. ECON. PERSPECTIVES 159 (1993) (presenting evidence that exposure to economic model of self-interested action encourages self-interested behavior in prisoner's dilemma game); Gerald Marwell & Ruth E. Ames, *Economists Free Ride, Does Anyone Else? Experiments on the Provision of Public Goods, IV*, 15(3) J. PUB. ECON. 295, 306 (1981) (finding that graduate students in economics are far more likely than others to free-ride in experiments testing extent of contribution to public goods).

its core assumptions.²⁰⁶ The law, like our most fundamental societal stories, reminds us not only of what we are, but of what we aspire to be.²⁰⁷ Stories that become embedded in law are thus powerful forces in shaping society and social attitudes. They can point us toward the future, or chain us to the past.

B. The Power and Peril of Political Stories

Both the power and the risk of political story-telling are evident in the current law of nature protection. The power of the stories helped enact a series of laws designed to protect nature. But those powerful stories have led to strategies that cannot solve some aspects of the nature problem and do not address others.

1. The Material Discourse

The material discourse has been most heavily relied on in the political arena. It has proven effective, contributing to creation of the national forest and national park systems,²⁰⁸ restriction of hunting,²⁰⁹ and protection of endangered species.²¹⁰

The heavy reliance of nature advocates on the material discourse should come as no surprise. Nature obviously is important to people as a source of material resources. In addition, this discourse facilitates discussion in the seemingly objective language of mathematical comparison of costs and benefits. When society is struggling to balance or accommodate deeply held divergent values, both sides may favor a decision that seems to transcend those divergent values. Moreover, the appeal of the material discourse should extend beyond dedicated supporters of nature protection. Because it does not rely on emotional attachment to nature, it can influence the hard-headed rational self-maximizer who has never visited the wilderness or even hung a bird feeder.

In recent years, this discourse frequently has taken the form of the ecological horror story. That too is no mystery. The ecological horror story is unquestionably an attention-getter, especially in the hands of skilled writers

206. James Boyd White, *Law as Rhetoric, Rhetoric as Law: The Arts of Cultural and Communal Life*, 52 U. CHI. L. REV. 684, 696-98 (1985).

207. See, e.g., Sunstein, *supra* note 196, at 2052. Law has been employed self-consciously as an educational tool since the beginning of the American republic. James Madison, author of the takings clause, reportedly wanted that clause not only to provide a basis for judicial review of government action but "also to serve the broader function of informing the political process by educating the public against illegitimate redistribution." Treanor, *supra* note 202, at 1173.

208. See *supra* text accompanying notes 34-38.

209. See *supra* text accompanying notes 39-44.

210. See *supra* text accompanying notes 52-63.

like Carson and the Ehrlichs. The image of the airplane earth, its wings wobbling as rivet after rivet is carelessly popped out, is difficult to ignore. The apocalyptic depiction of an impending crisis of potentially dire proportions is designed to spur the political community to quick action. Furthermore, this story suggests a goal that appeals to many nature lovers: that virtually everything must be protected. To reinforce this suggestion, tellers of the ecological horror story often imply that the relative importance of various rivets to the ecological plane cannot be determined. They offer reams of data and dozens of anecdotes demonstrating the unexpected value of apparently useless parts of nature. The moth that saved Australia from prickly pear invasion, the scrubby Pacific yew, and the downright unattractive leech are among the uncharismatic flora and fauna who star in these anecdotes.²¹¹ The moral is obvious: because we cannot be sure which rivets are holding the plane together, saving them all is the only sensible course.

Notwithstanding its attractions, the material discourse in general, and the ecological horror story in particular, are not likely to generate policies that will satisfy nature lovers. The ecological horror story implies that there is no reason to protect nature until catastrophe looms. The Ehrlichs' rivet-popper account, for example, presents species simply as the (fungible) hardware holding together the ecosystem. If we could be reasonably certain that a particular rivet was not needed to prevent a crash, the rivet-popper story suggests that we would lose very little by pulling it out. Many environmentalists, though, would disagree.²¹²

Reluctant to concede such losses, tellers of the ecological horror story highlight how close a catastrophe might be, and how little we know about what actions might trigger one. But the apocalyptic vision is less credible today than it seemed in the 1970s. Although it is clear that the earth is experiencing a mass wave of extinctions,²¹³ the complete elimination of life on earth seems unlikely.²¹⁴ Life is remarkably robust. Nor is human extinction probable any time soon. *Homo sapiens* is adaptable to nearly any environment. Even if the world of the future includes far fewer species, it likely will hold people.²¹⁵

211. See, e.g., EDWARD O. WILSON, *THE DIVERSITY OF LIFE* 347 (1992). In the hands of a skilled exponent, even blue-green algae can be presented as essential keys to a bright human future. See MYERS, *supra* note 157, at 59.

212. See, e.g., Michael E. Soulé, *Are Ecosystem Processes Enough?*, 6(1) *WILD EARTH* 59, 60 (1996).

213. See, e.g., ELDREDGE, *supra* note 64, at 171-76; WILSON, *supra* note 211, at 243-80.

214. See, e.g., MANN & PLUMMER, *supra* note 171, at 124-34; Callicott et al., *Current Normative Concepts in Conservation*, in *CONSERVATION BIOLOGY* 22, 27 (1999); Callicott, *supra* note 154, at 142.

215. See David Quammen, *Planet of Weeds*, *HARPER'S MAGAZINE*, Oct. 1998, at 57, 68.

One response to this credibility problem tones the story down a bit, arguing not that humans will go extinct but that ecological disruption will bring economies, and consequently civilizations, to their knees.²¹⁶ But this too may be overstating the case. Most ecosystem functions are performed by multiple species. This functional redundancy means that a high proportion of species can be lost without precipitating a collapse.²¹⁷

Another response drops the horrific ending and returns to a more measured discourse of the many material benefits nature provides humanity. Even these more plausible tales, though, suffer from an important limitation. They call for nature protection only at a high level of generality. For example, human-induced increases in atmospheric carbon dioxide levels may cause rapid changes in global temperatures in the near future, with drastic consequences for sea levels, weather patterns, and ecosystem services.²¹⁸ Similarly, the loss of large numbers of species undoubtedly reduces the genetic library from which we might in the future draw useful resources.²¹⁹ But it is difficult to translate these insights into convincing arguments against any one of the small local decisions that contribute to the problems of global warming or biodiversity loss.²²⁰ It is easy to argue that the material impact of any individual decision to increase carbon emissions slightly or to destroy a small amount of habitat will be small. It is difficult to identify the specific straw that will break the camel's back. Furthermore, no unilateral action at the local or even national level can solve these global problems. Local decisionmakers may feel paralyzed by the scope of the problems, or may conclude that any sacrifices they might make will go unrewarded if others do not restrain their actions. In sum, at the local level at which most decisions affecting nature are made, the material discourse provides little reason to save nature. Short of the ultimate catastrophe, the material benefits of destructive decisions frequently will exceed their identifiable material costs.²²¹

216. See, e.g., Costanza et al., *supra* note 67, at 253 ("The economies of the Earth would grind to a halt without the services of ecological life-support systems.").

217. See, e.g., R. O'NEIL ET AL., A HIERARCHICAL CONCEPT OF ECOSYSTEMS 192 (1986); Nagle, *supra* note 66, at 1211-15.

218. See generally, e.g., CHERYL SIMON SILVER & RUTH S. DEFRIES, ONE EARTH, ONE FUTURE: OUR CHANGING GLOBAL ENVIRONMENT (1992).

219. See, e.g., National Ass'n of Home Builders v. Babbitt, 130 F.3d 1041, 1050-52 (D.C. Cir. 1997); H.R. Rep. No. 93-412, at 4-5 (1973).

220. Professor Dan Tarlock has pointed out that protection of biodiversity requires control of local land use decisions. A. Dan Tarlock, *Local Government Protection of Biodiversity: What Is Its Niche?*, 60 U. CHI L. REV. 555, 557-58 (1993). The global warming problem also arises from the combination of many individual or local decisions.

221. One widely cited recent study estimated the total annual economic value of the world's ecosystem services at roughly \$33 trillion. See Costanza et al., *supra* note 67, at 256. Although

The key shortcoming of the material discourse is that it ignores and devalues many of the reasons why nature is important to people. This discourse concentrates on the economic value of nature's products and services. But surveys reveal that the strong support of nature protection does not rest on economic concerns. When asked whether environmental protection or economic growth should take priority, for example, respondents consistently choose environmental protection.²²² In part, this may be because the public believes the ecological horror story.²²³ But there is also evidence that most Americans see nature as more than a material resource. In a detailed survey encompassing members of Earth First!, members of the Sierra Club, Californians generally, managers of dry cleaning operations and sawmill workers, Willett Kempton and co-workers found that large majorities of each group disagreed with the statement that plants and animals exist only to serve human needs.²²⁴ Both esthetic and noninstrumental moral concerns seem to motivate the desire to protect nature. In the Kempton survey, large majorities of each group said that because God created the natural world, it is wrong to abuse it,²²⁵ and that obligations to preserve nature spring from a responsibility to nature itself.²²⁶ These respondents also agreed overwhelmingly that close contact with nature can revitalize people.²²⁷ Excessive emphasis on the material discourse encourages the audience to think of nature *solely* in re-

that number sounds enormous, it represents the combined value of all of the land and water area of the earth. It translates to an average of only \$804 per year per hectare of land, with some types of land, particularly wetlands, carrying a higher value and others, such as grasslands, carrying a lower value. Surely development frequently offers greater economic returns, even considering marginal costs rather than global averages.

222. See, e.g., Gallup/CNN/USA Today Poll, Apr. 14, 1999, available in Westlaw, POLL database (stating that 67% say protection of the environment should be given priority, even at the risk of curbing economic growth); GALLUP POLL MONTHLY, Apr. 1998, at 43 (stating that 68% would give priority to environmental protection); National Opinion Research Center, General Social Survey, 1996, available in Westlaw, POLL database (stating that 57% agree strongly or somewhat with the following statement: "Natural environments that support scarce or endangered species should be left alone, no matter how great the economic benefits to your community from developing them commercially might be.").

223. One survey revealed that majorities of groups ranging from Oregon sawmill workers to members of Earth First! agreed with the statement, "[w]e should be more concerned about the environment than the economy because if the environment is all right we can at least survive, even if the economic system is not in good shape." WILLET KEMPTON ET AL., ENVIRONMENTAL VALUES IN AMERICAN CULTURE 42 (1995).

224. *Id.* at 102. These authors report similar results from a 1993 Gallup poll. *Id.* at 102-03.

225. *Id.* at 91. Interestingly, more than two-third of respondents who said they did not belong to any organized religion, and nearly half of those who said they did not believe in any spiritual force in the universe, agreed with this statement. *Id.*

226. *Id.* at 113.

227. See *id.* at 105.

source terms. In so doing, it sacrifices the political support these intuitions could motivate. Perhaps more critically for the long term, it fails to nurture those intuitions.

Combining esthetic and ethical arguments with the material discourse does not automatically solve this problem. Because material benefits are more readily quantified, they are likely to outweigh nonmaterial benefits in the cost-benefit comparisons encouraged by the material focus. The predictable result is that material benefits will be maximized at the cost of nonmaterial ones. The national parks provide a concrete example. Park proponents first argued that national parks were important for their esthetic qualities, which could express and strengthen the national character. But in order to build political support they added that parks would benefit local and national economies. As a result, park managers felt compelled to promote heavy visitation in order to realize the economic benefits they had promised, at the expense of maintaining the parks' distinctive esthetic and character-building values.²²⁸

With this history as background, environmentalists should be wary of emphasizing the material discourse in political debates. They are likely to find that the political benefits of that strategy, although real, are outweighed by its tendency to skew policies in ways that systematically underestimate, or even deny, the nonmaterial values of nature.

2. *The Esthetic Discourse*

Although well-developed in American art and literature, the esthetic discourse has been less thoroughly developed in political discussions. It is difficult to explain the esthetic that motivates many nature lovers in the shorthand form that is the currency of political conversations. Reduced merely to visual preferences, the esthetic argument is vulnerable to charges of arbitrariness, elitism, and dictating tastes that should be left to individual choice.²²⁹ Opponents of nature protection may even convince the political community that modifying nature will increase, not decrease, its beauty.²³⁰

228. E.g., MICHAEL FROME, *REGREENING THE NATIONAL PARKS* 48-49 (1992); RUNTE, *supra* note 94, at 82-105.

229. See John J. Costonis, *Law and Aesthetics: A Critique and a Reformulation of the Dilemmas*, 80 MICH. L. REV. 355, 367-71 (1982) (explaining shortcomings of esthetics, conventionally defined as visual beauty, as a basis for regulation).

230. They certainly tried to do so in the Hetch Hetchy dispute. See *supra* text accompanying notes 98-100; see also Douglas O. Linder, *New Direction for Preservation Law: Creating an Environment Worth Experiencing*, 20 ENVTL. L. 49, 54 (explaining that in dispute over construction of barge fleeting facility, Army Corps of Engineers found witnesses who would testify "that they preferred watching barges to observing the scenery afforded by dramatic river bluffs").

Nonetheless, when framed effectively, the esthetic discourse has undeniable political pull. The monumental esthetic was critical to early protection of spectacular or uniquely scenic places. The wilderness story, too, has succeeded in gaining substantial protection for a limited number of places. This story has great power because it is rooted firmly in our cultural subconscious. Americans identify the frontier as the crucible that forged our national identity, and they see wilderness as the closest modern equivalent to the frontier.²³¹ This story's emphasis on symbolic and historic appeal also moves the argument away from visual beauty alone. Wilderness advocates do not seek merely to have the government cater to particular tastes. Rather, they seek to have the government create institutions that can, like public schools or public libraries, afford individual opportunities for self-enrichment and, in the aggregate, build the kind of society they believe the nation should desire.²³²

But there are important drawbacks to both the monumental esthetic and wilderness story. Because they rely on the uniqueness of the places identified for protection, they can apply only to a limited number of sites.²³³ William Cronon suggests that protecting this handful of areas may allow us to rationalize the rampant destruction of nature over much larger areas.²³⁴

More critically for the long term the wilderness story, like the ecological horror story, can impede the development of a caring human relationship with nature. The wilderness story presents nature as the absence of human influence and suggests that human intrusion can only destroy nature.²³⁵ But

231. William Cronon, *The Trouble with Wilderness: Or, Getting Back to the Wrong Nature*, in *OUT OF THE WOODS: ESSAYS IN ENVIRONMENTAL HISTORY* 28, 35-36 (Char Miller and Hal Rothmann eds., 1997).

232. See, e.g., JOSEPH L. SAX, *MOUNTAINS WITHOUT HANDRAILS* 104 (1980) (noting that for preservationists to prevail, they must persuade national majority that nation needs national parks as much as it needs public schools and libraries).

233. Advocates of the Wilderness Act were careful to emphasize its limited scope. At best, they pointed out, the wilderness system they sought could not include more than 2% of the nation's land. See NASH, *supra* note 20, at 223.

234. Cronon suggests that the wilderness focus may allow urban people whose lifestyles impose heavy resource impacts to pretend that, because they visit and love the wilderness, they have a healthy relationship with nature. Cronon, *supra* note 231, at 40-41. In other words, there is a danger that people will come to see nature only in the few areas preserved as wilderness, making it simply irrelevant to their decisions elsewhere. *Id.* at 45 (stating that "[i]dealizing a distant wilderness too often means not idealizing the environment in which we actually live, the landscape that for better or worse we call home"); see also Sahotra Sarkar, *Wilderness Preservation and Biodiversity Conservation – Keeping Divergent Goals Distinct*, 49 *BIOSCIENCE* 405, 409 (1999) (noting that strategy of pure wilderness preservation "may result in compromises in which regions outside the reserves are entirely unprotected").

235. William Cronon describes this as the paradox of the wilderness idea. Cronon, *supra* note 231, at 40.

contact with nature is essential to building the kinds of emotional connections that lead to political support for nature protection. The importance of human contact with nature argues for relatively open access to parks and wilderness areas. It also argues against limiting our efforts to a wilderness strategy. Experiencing remote wilderness requires substantial effort. Only people already convinced of the appeal of nature are likely to seek out such experiences. Consequently, wilderness protection alone is unlikely to build broad, long-term support for nature protection.

3. *The Ethical Discourse*

Like the esthetic discourse, the strength of the ethical discourse in the political debate has not matched the extent to which it motivates nature lovers.²³⁶ Recently, however, rediscovery of the Noah parable has energized this discourse. As John Copeland Nagle has remarked, the story of Noah's Ark "occupies a unique place in our consciousness."²³⁷ Like the wilderness image, it makes a wonderfully evocative sound bite.

The religious force that the Noah tale holds for a sizeable chunk of the population makes it even more effective. It has helped nature advocates gain political allies among groups from whom they had become estranged. For a generation, environmentalists had been at odds with the Judeo-Christian religious community.²³⁸ The story of Noah's Ark has provided a rallying point for the combination of faith and environmental concern. That combination has proven to be politically powerful.²³⁹

236. See *supra* text accompanying notes 156-58.

237. Nagle, *supra* note 66, at 1216; see also Jim Chen, *Of Agriculture's First Disobedience and Its Fruit*, 48 VAND. L. REV. 1261, 1262-64 (1995) (noting power of Noah's ark story).

238. The environmental community has long viewed Judeo-Christian doctrine as conducive to the destruction of nature. For a classic explication of that view, see Lynn White, Jr., *The Historic Roots of Our Ecologic Crisis*, 155 SCIENCE 1203, 1205-07 (1967).

239. The formation of a religious environmental lobby, the Evangelical Environmental Network, and "Noah congregations" across the country proved effective in turning back a 1996 bill that would have severely weakened the ESA. See Kopf, *supra* note 170, at 103 n.1; Nagle, *supra* note 66, at 1176-77 & n.16. Support from religious groups helped put ESA supporters on the "moderate" side of the debate, allowing them to paint those who sought to weaken the ESA as extremists out of touch with even their own conservative Christian supporters. See, e.g., James Bornemeier, *A Political Noah's Ark Fights Wildlife Bill*, L.A. TIMES, Mar. 8, 1996, at A3. Religious support was also used to advocate lifting of the 1995-96 moratorium on listing of endangered species. See, e.g., 142 CONG. REC. S1837, S1840 (daily ed. Mar. 12, 1996) (statement of Sen. Reid) ("The Endangered Species Act is not something that is being promoted by the left wing of the body politic. It is being promoted by people from all walks of life, of all political persuasions, including some evangelical and political organizations asking that we protect the species that have been placed on this Earth.").

Moreover, the Noah story has brought the underlying ethical and spiritual rationale for the ESA out of the political closet, allowing long-time supporters of species protection openly to declare their moral, and even religious, motivations.²⁴⁰ Direct reference to the widely held intuition that people have an ethical or religious duty to protect species, or nature more generally, seems likely to increase political support for protective legislation.²⁴¹

Beyond its political effectiveness, there is much for nature advocates to like in the parable of Noah's ark. Noah was not allowed to choose creatures to save on the basis of his personal preferences or their instrumental value. He simply followed God's directions to bring all the beasts of the earth into the ark, undoubtedly including some he would not have chosen to save. Moreover, God did not offer Noah economic incentives to induce compliance or seek consensus among stakeholders before finalizing the plan. This parable may be the earliest recorded example of command-and-control environmental policy, squarely rejecting economic efficiency in favor of moral obligation.

Reference to the Noah parable not only invokes ethical intuitions on behalf of nature, it nurtures those intuitions. With the Noah story in the background, the ESA seems to have succeeded in implanting, or perhaps reinforcing, a powerful societal norm against human-caused extinctions. Although a few critics charge that we simply cannot afford to save all species,²⁴² most participants in the public debate now take it as a given that we should try.²⁴³ By emphasizing a national moral consensus against extinction, the Noah story may help the ESA achieve its goals by reducing the temptation to evade its prohibitions.²⁴⁴

240. See, e.g., 142 CONG. REC. S1842 (daily ed. Mar. 12, 1996) (statement of Sen. Chafee) ("[B]y refusing to protect these species, we fail to live up to our moral obligation to act as good stewards."); John Windrow, *A Kennedy Talks to AARP Crowd About Environmental Responsibility*, MINN. STAR-TRIBUNE, June 4, 1998, at A16 (quoting environmental lawyer Robert Kennedy, Jr. to effect that causing extinction is "one of the worst sins one generation can commit against another").

241. For evidence that large proportions of the American public share this intuition, see *supra* notes 222-26 and accompanying text. In a 1992 poll, 63% of respondents said that they thought the statement that people have a moral duty to help all kinds of plants and animals to survive was a strong argument for endangered species protection. Times Mirror Poll, Feb.-Mar. Question 47, 1992, available in Westlaw, POLL database.

242. E.g., MANN & PLUMMER, *supra* note 171, at 216-36; Coursey, *supra* note 171, at 430.

243. See, e.g., 142 CONG. REC. at S1840 (daily ed. Mar. 12, 1996) (statement of Sen. Reid) ("I defy anyone to tell me that there are people -- organizations; I will not say people -- there are organizations that support the elimination of the Endangered Species Act. I have not found any."); *id.* at S1848 (statement of Sen. Kempthorne) (observing that landowners "want to save the species"); Wolf, *supra* note 191, at 652 (quoting Rep. Billy Tauzin, no environmentalist, as stating "I support the goals of our nation's environmental laws, such as the Endangered Species Act.").

244. Some property owners have reportedly tried to surreptitiously destroy endangered species or their habitats. See Barton H. Thompson, Jr., *People or Prairie Chickens: The Un-*

The Noah story also offers a response to the narratives of land rights and economic opportunity with which nature protection must compete.²⁴⁵ It allows the political community to acknowledge the importance of property rights but to conclude that obligations to protect nature outweigh those rights when extinction is at issue.²⁴⁶

Still, environmentalists should be cautious in employing the ark parable. It tells the story of a short-term crisis. The flood required that Noah share his ark temporarily with all manner of beasts. However, once the waters receded, the beasts dispersed, with an admonition to go in fear of humanity. Noah and his family started their lives anew with, so far as the parable reveals, no special concern for the animals. The story may subtly suggest that the nature problem should be solved quickly and easily. That may lead to impatience and frustration when the problem inevitably proves difficult to solve. Moreover, because God sent both the flood and the information Noah needed to survive it, the tale may imply that humanity is not responsible either for causing or for solving the nature problem.

Additionally, the extent of protection Noah afforded nature was sharply limited. Noah left plants and fish to fend for themselves. He had only to save animals, and those only in minimal numbers. God did not require Noah to save subspecies or distinct populations, or to protect habitat or ecosystems.²⁴⁷ Noah's ark was a floating temporary zoo, a short-term, ex situ conservation strategy.²⁴⁸

certain Search for Optimal Biodiversity, 51 STAN. L. REV. 1127, 1153-54 (describing phenomenon known as "shoot, shovel, and shut up"). Strong societal condemnation of such behavior could help prevent it. See, e.g., Carol M. Rose, *Rethinking Environmental Controls: Management Strategies for Common Resources*, 1991 DUKE L.J. 1, 31 (suggesting that people are in fact subject to moral suasion).

245. See *supra* notes 202-03 and accompanying text.

246. In a recent poll, 61% of Americans surveyed expressed the view that protecting endangered species should take precedence over protecting property rights where the two conflict. Gallup/CNN/USA Today Poll, April 1999, Question 35, available in Westlaw, POLL database. In a 1992 poll, 53% of those surveyed said they would protect an endangered butterfly against harm rather than allow a property owner to build a golf course, and 68% indicated that an endangered bird should have priority over a logging company's desire to harvest its timber. Times Mirror Poll, Feb.-Mar. 1992, Questions 60 and 62, available in Westlaw, POLL database.

247. Professor Nagle has also noted this feature of the Noah story. Nagle, *supra* note 66, at 1221-23, 1251-52.

248. In fact, some of the earliest uses of the Noah's ark image in connection with conservation referred to zoos. See generally WILFRID BLUNT, *THE ARK IN THE PARK: THE ZOO IN THE NINETEENTH CENTURY* (1976); GERALD DURRELL, *THE OVERLOADED ARK* (1953) (detailing author's experiences collecting wild specimens for zoos). The ark image continues to be associated with ex situ conservation methods. See, e.g., VICKI CROKE, *THE MODERN ARK: THE STORY OF ZOOS: PAST, PRESENT, AND FUTURE* 254 (1997); *THE ARK EVOLVING: ZOOS AND*

Finally, Noah may have acted out of self-interest rather than because of any special regard for the animals he saved. Noah and his family could survive the flood only by building the ark. In this sense, the Noah story suggests the same lesson as the ecological horror story: that people are literally in the same boat with the rest of nature.²⁴⁹ That lesson, however, does not necessarily lead to extensive nature protection.²⁵⁰

IV. The Gap Between Rhetoric and Reality

The crux of the modern nature problem is the need to find an appropriate human role in nature. Human beings are both of nature, having evolved through the same processes that govern other creatures, and outside nature, having developed the ability to modify and control the environment on a scale far beyond any other creature. The nature problem, therefore, is as much about people as it is about nature. Instead of focusing on how to divide the world between humanity and nature, as we have done so far, we must consider how best to combine the two.

The dominant stories in our current political discourse do not help us do that. The ecological horror story gives us no reason to see ourselves as a part of nature or to value contact with nature. The wilderness story tells us that we are not part of nature and should stay away from it. The Noah story tells us that we may have to share space with nature to weather a crisis but does not encourage an ongoing relationship with nature.

If we are to maintain species, ecosystems, or wild nature in the long term we must develop such a relationship. Because we cannot avoid contact with nature, we must learn how to live with it. We also must learn to resolve the inevitable conflicts among persons over the extent to which nature should remain outside human control and over the conflicting uses, both consumptive and non-consumptive, to which we might put nature. Because the current stories do not address these issues, they offer at best only incomplete solutions to the nature problem.

A. The Shortcomings of Gene Banks, Zoos and Reserves

Each of the currently prominent political stories suggests that the way to solve our nature problem is to preserve a minimum number of examples of

AQUARIUMS IN TRANSITION (Christen M. Wemmer ed. 1995); BRYAN G. NORTON ET AL., ETHICS ON THE ARK: ZOOS, ANIMAL WELFARE, AND WILDLIFE CONSERVATION (1995); JAKE PAGE, ZOO – THE MODERN ARK (1990); *Noah's Ark in the Gulf*, THE ECONOMIST, Jan. 10, 1998, at 40 (discussing captive breeding program in United Arab Emirates).

249. Professor Oliver Houck draws precisely that "ecological horror story" lesson from the ark story. See Houck, *supra* note 169, at 978-79.

250. See *supra* text accompanying notes 212-21.

certain static elements. The ecological horror story points us toward saving the rivets that hold the plane together. The most politically appealing way to preserve species might be the creation of large zoos, or even gene banks, which would preserve genetic resources for their future option value without locking up large areas for habitat preservation. The wilderness story points directly toward saving the most pristine areas from all human intrusion. The Noah story suggests that we build a protective ark around some minimal sample of nature.

In any of these forms, the strategy of saving nature through reserves is fundamentally flawed. Although gene banks might be able to preserve much of the genetic potential of the world's biodiversity at relatively low cost, most environmentalists would not regard them as a satisfactory solution to the biodiversity problem.²⁵¹ Gene banks address only the material benefits of nature, not its esthetic value or our ethical obligations to protect it. Because esthetic and ethical intuitions are important to society's urge to protect nature,²⁵² gene banks are an insufficient answer.

The next logical step might be zoos. But they too would not solve the problem. Species in captivity experience different evolutionary stresses than in the wild. Most rapidly diverge from their wild character, so that we end up with something different than what we thought we were protecting.²⁵³ Zoos also do not protect many aspects of nature, including interactions among species.²⁵⁴

If, as many environmentalists believe, those things are important, we must move up to nature reserves. But the reserve strategy is also problematic, particularly if, as the wilderness story suggests, we must completely protect reserves from human encroachment. If one goal is to protect the processes of nature, including evolution, only very large reserves will suffice.²⁵⁵ But such reserves are expensive and politically difficult to create.

251. See, e.g., Doremus, *supra* note 199, at 11-15; Houck, *supra* note 65, at 298-99.

252. See *supra* notes 221-226 and accompanying text.

253. See, e.g., Doremus, *supra* note 199, at 12 & n.68 (explaining differences between captive and wild animals).

254. See, e.g., G. Ledyard Stebbins, *Why Should We Conserve Species and Wildlands*, in *CONSERVATION BIOLOGY: THE THEORY AND PRACTICE OF NATURE CONSERVATION, PRESERVATION AND MANAGEMENT*, 453, 466 (Peggy L. Fiedler & Subodh K. Jain eds., 1992) ("One compromise with nature that several biologists have recommended for saving rare species is to maintain them in domestication or cultivation. . . . Nevertheless, these domesticated and cultivated relics, however useful they may be in various ways, are no substitute for wild species that are preserved in their native habitat.").

255. Animals at the top of the food chain, which often require very large home ranges, are difficult to accommodate in limited reserves. Some scientists claim that the evolution of large mammals has ceased worldwide because of a lack of large reserves. See, e.g., REED F. NOSS &

If we move beyond the wilderness paradigm, we may find that people need not always be locked out of nature in order to achieve preservationist goals. Substantial human presence and activity may be compatible with many nature protection goals, including the protection of biological diversity.²⁵⁶ Surely there is room to argue over the extent of that compatibility, or whether human encroachment, once allowed, can be held to acceptable levels. Even "low-impact" wilderness recreation, for example, can have dramatic effects on species composition.²⁵⁷ But the emphasis on inviolate reserves makes it difficult even to envision the combination of people and nature. Within this paradigm, it may be impossible to see that excluding people can be inconsistent with some purposes of nature protection. The paradox of the wilderness vision, which William Cronon has pointed out, is that wilderness cannot perform its esthetic or character-building functions unless people are allowed into it.²⁵⁸

Besides potentially inhibiting the creation of large reserves, a strict hands-off strategy is inconsistent with the protection of species, ecosystems, or natural processes. No place in the United States remains entirely unaffected by human actions. Ongoing management efforts are often necessary to compensate for the effect of past actions, or current actions outside the designated reserves. Competition with or predation by alien species, for example, is one of the leading threats to domestic biodiversity.²⁵⁹ Once introduced, alien species often spread rapidly and are difficult, if not impossible to remove. Protecting native species from the threat of such exotics requires ongoing management.²⁶⁰ Intensive management may also be required to substitute for

ALLEN Y. COOPERRIDER, *SAVING NATURE'S LEGACY: PROTECTING AND RESTORING BIODIVERSITY* 161-64 (1994).

256. See, e.g., Sarkar, *supra* note 234, at 408 (noting that human presence alone is not necessarily detrimental to biodiversity).

257. See, e.g., Richard J. Camp & Richard L. Knight, *Effects of Rock Climbing on Cliff Plant Communities at Joshua Tree National Park, California*, 12 *CONSERVATION BIOLOGY* 1302, 1305 (1998) (finding rock climbing significantly affects cliff plant communities); Scott G. Miller et al., *Influence of Recreational Trails on Breeding Bird Communities*, 8 *ECOLOGICAL APPLICATIONS* 162, 168 (1998) (concluding recreational trails affect distribution, abundance, and reproductive success of bird species); Doug Whittaker & Richard L. Knight, *Understanding Wildlife Responses to Humans*, 26 *WILDLIFE SOC'Y BULL.* 312, 312 (1998).

258. Cronon, *supra* note 231, at 40. Taking the wilderness view to its logical extreme, Cronon notes, leads to the conclusion that "the only way to save nature is to kill ourselves." *Id.* at 43.

259. Theodore C. Foin et al., *Improving Recovery Planning for Threatened and Endangered Species*, 48 *BIOSCIENCE* 177, 180-81 (1998); David S. Wilcove et al., *Quantifying Threats to Imperiled Species in the United States*, 48 *BIOSCIENCE* 607, 608-09 (1998).

260. See, e.g., Foin et al., *supra* note 259, at 180; Wilcove et al., *supra* note 259, at 614; David S. Wilcove & Linus Y. Chen, *Management Costs for Endangered Species*, 12 *CONSERVATION BIOLOGY* 1405, 1405 (1998).

changes in historic fire regimes,²⁶¹ predation levels,²⁶² and other elements of the biophysical environment. Given the extensive changes in background conditions, ecologists tell us that most areas dedicated to the preservation of nature cannot simply be left to their own devices, but will require active human management.²⁶³

Finally, remote reserves are unlikely to create new emotional ties to nature. Only people who are already nature lovers are likely to seek out and experience such reserves, especially those kept wild enough to make the experience arduous. The early national parks movement rested on the hope that the experience of nature in the parks would help cultivate concern for nature in other locations.²⁶⁴ But the reverse seems just as likely – the experience of nature at home may be necessary to cultivate support for parks and reserves.

B. Boundary Conflicts

A nature protection strategy based on setting aside reserves suffers from yet another complication. It assumes that nature can be allowed to function without human interference within reserves, while humans can be allowed to function without concern for nature outside them. In fact, however, it is extraordinarily difficult to maintain that separation. Both nature and the impacts of human activity tend to spill over boundaries, creating conflicts.

Boundary conflicts arise at the edges of the largest nature reserves. In harsh winters, for example, bison stray from Yellowstone National Park to surrounding lands in search of forage. Cattle ranchers outside the park fear those bison may infect their livestock with brucellosis. The result has been a prolonged, bitter dispute over responsibility for preventing contact between park bison and nearby livestock.²⁶⁵

261. Historically, periodic fire maintained many vegetation complexes. See, e.g., Richard J. Hobbs & Laura F. Huenneke, *Disturbance, Diversity and Invasion: Implications for Conservation*, 6 CONSERVATION BIOLOGY 324, 326-27 (1992).

262. See FREDERIC H. WAGNER ET AL., WILDLIFE POLICIES IN THE U.S. NATIONAL PARKS 17-40 (1995); Robert B. Keiter, *Preserving Nature in the National Parks: Law, Policy, and Science in a Dynamic Environment*, 74 DENV. U.L. REV. 649, 670-75 (1997).

263. See Donald A. Falk & Peggy Olwell, *Scientific and Policy Considerations in Restoration and Reintroduction of Endangered Species*, 94 RHODORA 287, 303 (1992) ("The 'managed natural area' is no longer considered an oxymoron, but rather the dominant mode of preserving land and ecological values."); see also Jared Diamond, *Reflections on Goals and on the Relationship Between Theory and Practice*, in RESTORATION ECOLOGY: A SYNTHETIC APPROACH TO ECOLOGICAL RESEARCH 329, 331-33 (William R. Jordan III et al. eds., 1987).

264. See RUNTE, *supra* note 94, at 31 (citing John Muir's hope that spectacular wonders of nature in parks would help visitors learn to see smaller wonders of nature in other places).

265. Currently, state wildlife officials routinely shoot bison leaving the park. See, e.g., Dana Hull, *When the Buffalo Roam They May Not Get Home, Bitter Debate Follows Halving*

Boundary conflicts are not limited to the edges of pristine reserves, however. They can arise at any point where wilder lands meet tamer ones. Cabins and vacation homes near Lake Tahoe, for example, are much in demand as getaways for wealthy residents of the urban centers of northern California. In recent years, black bear populations in the nearby national forests have soared, largely due to hunting restrictions.²⁶⁶ The predictable result is more encounters between people and bears, many ending in the death of the offending bear.²⁶⁷ Boundary conflicts can also result in death or injury to livestock, pets, or people. In 1995, a black bear attacked a teenage girl in her backyard in Washington state.²⁶⁸ In the preceding year, a mountain lion killed a California jogger.²⁶⁹ Coyotes in California have killed many suburban pets²⁷⁰ and have attacked children.²⁷¹

Management activities in natural areas can also have spillover effects. For example, periodic burning may be necessary to maintain fire-dependent ecosystems.²⁷² But fires deliberately set for that purpose sometimes escape control.²⁷³ The problem of juxtaposing fire with residential development is

of Yellowstone Herd, WASH. POST, July 22, 1997, at A1; Robert B. Keiter, *Greater Yellowstone's Bison: Unraveling of an Early American Wildlife Conservation Achievement*, 61 J. WILDLIFE MGMT. 1, 1-3 (1997); *Montana Can Keep Killing Bison to Protect Cattle*, PORTLAND OREGONIAN, May 9, 1999, at A18.

266. Bear populations have grown substantially across the country in recent years. *See, e.g.*, Kirsten Andelman, *Hungry Bears Make Farmers Growl*, B. GLOBE, Aug. 1, 1999, at B6; John Larrabee, *"Bearanoia" is Out of the Woods*, USA TODAY, Aug. 20, 1999, at A3; Gordon Smith, *A Bear of A Problem: Group Tries to Keep the Peace Between Prowling Animals, Worried Neighbors*, SAN DIEGO UNION-TRIB., Aug. 9, 1999, at A1.

267. *See* Smith, *supra* note 266, at A1.

268. Anthony Brandt, *Not in My Backyard*, 99 AUDUBON 58, 60 (1997).

269. Peter H. King, *The Lion and the Jogger*, L.A. TIMES, May 1, 1994, at A3.

270. *See, e.g.*, Peter Hecht, *Coyotes Kill Pets in Ritzy Suburb*, SACRAMENTO BEE, Nov. 25, 1996, at B1 (reporting that "nearly 40 cats and a few small dogs have been dragged off over the past several months by coyotes darting into the neighborhood from nearby wildlands").

271. *See* Thao Hua, *Coyote Attack Spurs a Neighborly Warning*, L.A. TIMES, Sept. 8, 1995, at B1; Cynthia Hubert, *Coyotes Get Bolder, Roam More Widely, Experts Say*, SACRAMENTO BEE, Feb. 19, 1997, at A1.

272. *See supra* note 261 and accompanying text.

273. In the summer of 1999, a prescribed burn that the Bureau of Land Management undertook near Lewiston, California, to combat the invasive alien weed yellow star thistle escaped control, destroying 23 homes before it was contained. *See* Lowden Ranch Prescribed Fire Review, Final Report, U.S. Dept. of the Interior, Bureau of Land Management (visited Aug. 31, 1999) <<http://www.blm.gov/nhp/Preservation/FireSuppression/lowden.htm>>. Although sovereign immunity might shield the United States from liability for the fire, the government has admitted liability for claims up to \$25,000. Established tort claim procedures require that larger claims receive Department of Justice approval. Letter from Jeffrey Axelrad, Director, Torts Branch, Civil Division, U.S. Dept. of Justice, to John D. Leshy, Solicitor, U.S. Dept. of the Interior (July 29, 1999) (visited Aug. 31, 1999) <http://www.ca.blm.gov/news/doj_ltr.html>.

particularly acute where efforts are being made to protect remnants of fire-dependent ecosystems in densely populated areas²⁷⁴ or where expanding human populations abut lands vulnerable to lightning fires.

Although many boundary conflicts occur at the edges of public lands, they can also arise when neighboring private landowners hold differing views about how wild their land should be. In suburban Oregon, for example, a recent wet spring caused the tree frog population to boom. Biologists considered the boom a rare success story. But not everyone rejoiced. Some area residents claimed that the multitude of tree frogs singing at night interfered with their sleep. They demanded that their neighbors fill in the ponds that harbored frogs.²⁷⁵

Neighbors may also object to the regulatory impacts nature brings. Several years ago, a landowner in California's agricultural Central Valley who had restored his once-farmed land to wetlands found himself facing a county order to reestablish row crops.²⁷⁶ A neighboring property owner who feared that wildlife attracted to the wetlands would damage his crops, or worse that an endangered species might colonize the area, bringing regulatory restrictions, sought the county action.²⁷⁷ Similar fears have prompted disputes over the extent to which lands bordering areas designated for endangered species protection in habitat conservation plans should be insulated from potential regulatory consequences,²⁷⁸ or to which landowners who manage their land for

274. Such efforts, often driven by the ESA, can lead to disputes over prescribed burning of preserves and over prohibitions on fire-prevention measures. For example, the city of Canyon Lake in Riverside County has complained that dry vegetation on land owned by the Bureau of Land Management poses a fire threat to nearby residents. But federal officials refuse to allow the mowing of firebreaks without mitigation for the resulting loss of California gnat-catcher habitat. See Sandy Stokes, *Endangered Species vs. Residents*, PRESS-ENTERPRISE (Riverside, Cal.), Aug. 7, 1998, at A1.

275. Bill Monroe, *Tree Frogs' Chorus Rivets Homeowners*, PORTLAND OREGONIAN, June 6, 1998, at B1.

276. See Board of Supervisors, County of Colusa, Notice of Findings and Decision on Appeal, In the Matter of the Appeal of ED#96-1, TPM 96-1-1, Christopher and Sharon Steele/Willow Creek Ranch, Oct. 1, 1996 (on file with *Washington and Lee Law Review*) (ordering return of property in question to agricultural use). Faced with litigation, the County recanted its order.

277. See Verified Petition for Writ of Mandate; Complaint for Declaratory Relief, Stay, Damages, and Reasonable Attorney Fees at 8-9, *Steele v. County of Colusa*, CV 20518 (Ca. Super. Ct. filed Dec. 17, 1996) (on file with *Washington and Lee Law Review*) (claiming that owners of neighboring property persuaded Board of Supervisors to issue nuisance abatement order).

278. See, e.g., William Pauli, President, California Farm Bureau, Testimony to the Sen. Comm. on Envt. & Public Works, Habitat Conservation Planning and the Endangered Species Act (1999), available in Westlaw, 1999 WL 27595783 ("HCPs must not be allowed that require any exterior habitat buffers on agricultural lands. They must instead provide protection for

endangered species should enjoy a "safe harbor" from the regulatory impacts of resulting population increases.²⁷⁹

Boundary conflicts also occur where protected animals encroach on developed areas. In northern California, dozens of herons and egrets colonized trees next to an apartment complex. Schoolchildren and bird-watchers delighted in seeing these impressive birds in the heart of a city, but residents of the apartments were less pleased. The birds coated the sidewalks, parking lots, and patios with droppings and with half-eaten fish and frogs. The smell and constant squawking chased some apartment dwellers out of their homes. Public health officials warned that the droppings might cause lung irritation or even spread diseases such as salmonella. The Migratory Bird Treaty Act precluded apartment owners from removing the birds during the nesting season.²⁸⁰ After the season, though, the apartment owners cut down the trees to discourage the birds from returning. The next year, the birds nested in trees in a nearby median strip.²⁸¹

The Migratory Bird Treaty Act also protects geese, which sometime chase children and leave lawns, parks, and golf courses a slimy mess.²⁸² Deer, which thrive in the suburbs but cannot be hunted there, munch on carefully

adjacent landowners should listed species migrate onto their property. We must stop turning endangered species into a nightmare of liability for neighboring landowners.").

279. The Safe Harbor Policy encourages property owners to manage their property in ways beneficial to endangered or threatened species by assuring them that they will not be legally responsible for maintaining the increased populations that may result. Such property owners can get advance permission to "take" members of the species, so long as the population does not fall below baseline levels. See Dept. of the Interior, Fish and Wildlife Service, Announcement of Final Safe Harbor Policy, 64 Fed. Reg. 32,717 (1999). The Department recognizes that management of safe harbor lands may attract the species to neighboring properties as well. It "will make every effort" to include neighbors in safe harbor agreements. *Id.* at 32,720.

280. See 16 U.S.C. § 703 (1994).

281. See Bob Norberg, *Bird Mess May Pose Health Hazard*, PRESS-DEMOCRAT (Santa Rosa, Cal.), June 5, 1997, at B1 (reporting on health hazards created by colony of egrets and herons nesting in apartment complex trees); Bob Norberg, *Birds Driving People Batty Near Coddingtontown, Nesting Area Noisy, Stinky*, PRESS-DEMOCRAT (Santa Rosa, Cal.), May 31, 1997, at A1 (describing nuisances created by colony); Bob Norberg, *Students Sing Praises of Egrets, Herons, Neighbors Squawk about Noise*, PRESS-DEMOCRAT (SANTA ROSA, CAL.), Apr. 2, 1998, at B1 (describing student fascination with colony located along median strip across street from school).

282. See, e.g., Steve Kemper, *What's Good for the Goose May Not Be Good for You*, 25(10) SMITHSONIAN 70 (Jan. 1995) (describing nuisances that accompany presence of Canada geese); Mark Clayton, *No Giggles When Gaggles of Geese Goop Up Your Town*, CHRISTIAN SCI. MON., June 16, 1997, at 11 (reporting on efforts to remove Canada geese from Toronto parks). The Fish and Wildlife Service is exploring alternatives available under the Migratory Bird Treaty Act to control resident Canada goose populations. See Dept. of Interior, Fish & Wildlife Svc., Migratory Bird Permits: Notice of Intent to Prepare an Environmental Impact Statement on Resident Canada Goose Management, 64 Fed. Reg. 45,269 (1999).

cultivated flower gardens.²⁸³ Seals foul piers, eat fish off lines, and pollute popular swimming areas.²⁸⁴ Some encounters threaten more serious harm. Above the Nevada desert, white pelicans occasionally collide with military aircraft on training runs, damaging the planes and posing the threat of a crash.²⁸⁵ Collisions between automobiles and large animals claim hundreds of lives each year.²⁸⁶

C. *The Costs and Benefits of Nature Protection*

The boundary conflicts described above raise questions about how the costs and benefits of nature should be distributed. Distributional issues arise in a variety of other contexts as well, but are particularly acute in the context of ecological restoration, the buzzword of the millennium.

Distributional issues haunt long-established restoration programs. Beaver, once nearly extinct in North America, have been returned to much of their former range. But as their populations rebound to robust levels, beaver increasingly come into conflict with the humans who now share their habitat. These conflicts result in millions of dollars worth of damage annually. Many landowners resent having to bear these costs.²⁸⁷ Ambitious new restoration proposals also face difficult cost distribution hurdles. The Florida Everglades restoration project, for example, will require extensive changes in water flows and land uses, as well as the development of "lifestyles and economics that do not have a negative impact on the natural environment and do not degrade the quality of life."²⁸⁸ The extent to which the financial costs of this shift should be borne by the sugar industry, which historically profited from the draining of the Everglades, has been a major sticking point for the project.²⁸⁹

283. See Brandt, *supra* note 268, at 58.

284. See, e.g., Terry Rodgers, *Showdown Looms with Seals*, SAN DIEGO UNION-TRIBUNE, Mar. 20, 1999, at A1 (reporting that seals forced closure of popular swimming pool).

285. See Nancy Vogel, *Keeping Birds, Pilots Apart*, SACRAMENTO BEE, Feb. 1, 1999, at A1 (describing effort to predict pelican flight patterns to prevent bird-plane collisions).

286. See Brandt, *supra* note 268, at 58.

287. See, e.g., Jon R. Luoma, *Back to Stay*, 98(1) AUDUBON 52, 55 (Jan.-Feb. 1996) (stating that in New York State alone beaver caused \$6.2 million in damage to crops and structures in 1994); Magnus Linklater, *Humans Are Fair Game for Greens*, TIMES (London), Nov. 5, 1998, at 26 (criticizing plan to reintroduce European beaver to England). Recently two beavers which caught the nation's attention by gnawing on the ornamental cherry trees planted around the Tidal Basin in Washington, D.C. were trapped and transported to Pennsylvania. See *Second Beaver Trapped Amid Cherry Blossoms*, N.Y. TIMES, Apr. 12, 1999, at A19.

288. General Accounting Office, *South Florida Ecosystem Restoration: An Overall Strategic Plan and a Decision-Making Process Are Needed to Keep the Effort on Track 6* (1999).

289. See, e.g., James C. McKinley, Jr., *Sugar Companies Play a Pivotal Role in Effort to Restore Everglades*, N.Y. TIMES, Apr. 20, 1999, at A20 (describing success of sugar industry in averting both loss of cane fields to the plan and major financial responsibility for it).

The distribution of costs can determine whether restoration projects proceed. Although polls often show the public favoring nature protection over economic prosperity when the question is posed generally, when pressed people sometimes seem unwilling to pay much for specific protective steps.²⁹⁰

Restoration, which alters the status quo, also imposes substantial non-economic costs. Although potential financial losses are often cited as the basis for opposition to predator reintroduction programs, for example, the intensity of the controversy over these programs far exceeds the extent of those costs.²⁹¹ The intensity of disagreements regarding the relationship between people and nature gives these disputes their ferocity. Opponents of ecological restoration fear not just financial setbacks but also the loss of a way of life which defines them. They resent society's condemnation of their way of life as insufficiently sensitive to nature's needs.

The distributional issues are not limited to human costs and benefits. Restoration creates non-human winners and losers as well. Efforts to control the invasive plant tamarisk (*Tamarix chinensis*) provide an example. Imported from Asia in the nineteenth century, tamarisk has run wild along western waterways, outcompeting native willows and cottonwoods that once sheltered bighorn sheep and native birds. But proposals to import a Chinese beetle to combat tamarisk have proven unexpectedly controversial because the endangered Southwestern willow flycatcher (*Empidonax traillii extimus*) has adapted to nesting in tamarisk. Biologists are uncertain whether the native vegetation on which the flycatchers used to depend will return once tamarisk is removed.²⁹²

D. Conflicts Between and Within Discourses

In the Progressive era, when the three discourses of nature were first applied in the political arena, they all appeared to point toward government ownership of forest and park lands and government regulation of hunting. John Muir and other esthetic preservationists enthusiastically supported the quest for a national forest system, even with the understanding that the primary purpose of that system would be to ensure a perpetual national timber supply.²⁹³ Although the forests no longer seemed inexhaustible under intense

290. See, e.g., Sandi Doughton, *Poll Finds Strong Support for Protecting Wild Salmon*, NEWS TRIBUNE (Tacoma, Wash.), Feb. 20, 1998, at A1 (reporting that in poll of Washington residents 70% characterized protecting and restoring wild salmon as extremely or very important to them, but only 10% were willing to pay extra \$12 per month in taxes to achieve that protection).

291. See Doremus, *supra* note 199, at 35.

292. David Malakoff, *Plan to Import Exotic Beetle Drives Some Scientists Wild*, 284 SCIENCE 1255 (1999).

293. See MUIR, *The American Forests*, in PARKS, *supra* note 83, at 331, 336-37 (stating that forests would provide "perennial harvest" of timber); see also Mark Sagoff, *The View from*

logging pressure, with proper management Muir believed they could supply "a never failing fountain of wealth and beauty."²⁹⁴

Today, it is often true that the protection of natural resources for material purposes is consistent with their esthetic enjoyment and our moral intuitions regarding the preservation of nature. But not always. The use of nature as a material resource sometimes conflicts with its preservation for esthetic or ethical reasons. Such conflicts have dogged timber harvests in western national forests, and even on private forest lands, for the past two decades.²⁹⁵ Even esthetic enjoyment and preservation can conflict. Hunting, for example, can be inconsistent with the urge to protect species. Worse yet, even nonconsumptive esthetic use can sometimes conflict with preservation.²⁹⁶ Given the current trend toward increased recreational use of public lands, these conflicts are likely to become more frequent, and more contentious, in the future.²⁹⁷

Nonetheless, nature advocates have continued to appeal to all three discourses more or less indiscriminately, failing to acknowledge the potential for conflicts among them. Acknowledging those conflicts must be the first step toward resolving them.

V. *Toward a New Political Discourse of Nature*

A. *Essentials of a New Discourse*

If progress is to be made in the law of nature protection, the political discussion must more closely address the crux of the problem, asking how humans can live with and in nature. As a practical matter, relatively brief stories and evocative rhetorical images are well suited to the political process, and can capture the emotions and intuitions that underlie the urge to protect

Quincy Library: Civic Engagement and Environmental Problem-Solving, in CIVIL SOCIETY, DEMOCRACY AND CIVIC RENEWAL 151 n.18 (Robert K. Fullinwider ed., 1999) (describing "wall-to-wall political consensus" favoring federal control of public lands in this period).

294. MUIR, *supra* note 293, at 360. No one expected the national forests to produce much timber in their early years; indeed, national forest managers were under some pressure to keep timber harvest down in order not to compete with private timber operations. See HAROLD K. STEEN, *THE U.S. FOREST SERVICE: A HISTORY* 113 (1976).

295. For an example of a recent conflict over timber harvests, see *Oregon Natural Resources Council Action v. U.S. Forest Service*, 59 F. Supp. 2d 1085 (W.D. Wash. 1999).

296. Access to some popular recreational areas in several Southern California national forests was recently restricted in order to protect endangered or threatened species. Irritated recreationists sounded almost like loggers. One was quoted as saying that closing campgrounds that served as the gateway to popular swimming holes amounted to "compromising people's rights for the frogs." Gary Polakovic, *Limited Access*, L.A. TIMES, Mar. 22, 1999, at B1.

297. See Jan G. Laitos & Thomas A. Carr, *The Transformation on Public Lands*, 26 *ECOLOGICAL* L.Q. 140, 142 (1999) (contending that "the looming conflict in public land use" is between the formerly allied recreation and preservation interests).

nature. Advocates of long-term nature protection, therefore, might be well advised to work on identifying or developing stories and images that can help us achieve a viable and satisfying human relationship with nature.

The second-generation discourse should not emphasize the role of nature as a material resource. Any discourse of nature protection must acknowledge that role, and ecologists surely should point out material values that might otherwise escape notice, such as ecosystem services. Nonetheless, despite its political appeal, a discourse grounded primarily in the material value of nature is unlikely to justify protection sufficiently broad to satisfy nature advocates. Nature's economic value offers only a limited reason to protect it. A discourse focused on the material is far more likely to emphasize the competing economic values, increasing nature's vulnerability rather than its security.

For that reason, nature advocates should not rush to jump on the sustainable development bandwagon. Sustainable development is fundamentally a material story, which cannot solve the non-material nature problem. The sustainable development story does have two important elements of a second generation discourse. It promises to balance the human with the natural, and to balance the needs of the present with those of the future.²⁹⁸ The problem with the sustainable development concept is that it is subject to a variety of interpretations. Economists and ecologists tend to think it means sustaining different things. Economists typically worry about sustaining the level of human well-being, broadly defined, over time.²⁹⁹ If resources, including the resources of nature, are fungible or substitutable, as economists are accustomed to believe they are, aggregate capital is the proper focus of sustainability.³⁰⁰ Ecologists and others who support strong protective measures are less likely to view natural capital as fungible with human-made resources.³⁰¹ They see the maintenance of ecosystem processes, and even individual species, as important in order to provide options for the future.

298. The Brundtland report defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Brundtland Report, *supra* note 68, at 43. Sustainable development also tries to address the weaknesses of the wilderness story, looking for conservation strategies that do not require the absolute exclusion of human beings. See International Union for the Conservation of Nature and Natural Resources, *The Issue of Sustainable Development*, 7 COLO. J. INT'L ENVIL. L. & POL'Y 213, 217-18 (1995).

299. Emery N. Castle et al., *The Economics of Sustainability*, 36 NATURAL RES. J. 715, 716-17 (1996); Bryan G. Norton & Michael A. Toman, *Sustainability: Ecological and Economic Perspectives*, 73 LAND ECON. 553, 555 (1997).

300. Robert M. Solow, *Sustainability: An Economist's Perspective*, in ECONOMICS OF THE ENVIRONMENT: SELECTED READINGS (Robert Dorfman & Nancy Dorfman eds., 3d ed. 1993).

301. See Norton & Toman, *supra* note 299, at 559 (comparing ecologist's focus on preserving existing environment with economist's focus on maintaining adequate capital).

The emphasis that sustainable development places on nature as material resource may give the economic interpretation the upper hand. The rosy assumption voiced by some sustainable development advocates that environment, economy, and equity necessarily point in the same policy direction³⁰² makes it unlikely that sustainable development will produce robust tools for resolving conflicts among those different goals. It seems more likely that this rhetoric could be used to paper over the nature problem, giving lip service to esthetic and ethical concerns while giving primacy to economic uses.

What is needed to foster further progress in nature protection is not a better explanation of the economic value of nature, but a better explanation of why nature should be protected when economics points in the other direction. That explanation must come from the esthetic and ethical discourses, which can address nature's other contributions to a fulfilling and honorable human life.

Today the nature problem is as much about who we are, and who we aspire to be, as it is about how to save species or ecosystems. The new discourse, therefore, should be as much about people as it is about nature. It should explain how people can fit into nature and fit nature into their lives. It should address not only the ways nature can shape individual identity and character, but the ways it can shape, and be shaped by, human communities. In order to provide guidance for local action, the discourse should focus on ways in which frequent contact with nature can make a difference to people, and make people different. It should acknowledge that nature can, and should, be found even in places heavily modified by human action. It should recognize the potential for conflicts, helping people understand how and when human comfort, economic advantage, and even esthetic enjoyment of nature ought to give way to nature protection. Finally, it should be sensitive to the real costs of limiting or reversing human control of nature, and take seriously the fair distribution of those costs.

B. Building Blocks

The development of a new discourse incorporating all the elements described above is obviously a tall order, and must be a long-term project. Beginning the project need not be difficult, however. Several building blocks that might play a role in the new discourse have already been articulated, although they have not been emphasized in the political arena. Those who believe the law can and should do more to build a viable human relationship with nature face the task of turning these building blocks to that purpose, and filling whatever rhetorical gaps remain.

302. See PRESIDENTIAL COUNCIL ON SUSTAINABLE DEVELOPMENT, BUILDING ON CONSENSUS: A PROGRESS REPORT ON SUSTAINABLE AMERICA v (1997). Professor Ruhl challenges that assumption. See Ruhl, *supra* note 70, at 51.

1. Putting People in the Picture

If it is to address the problem of defining and developing a viable and fulfilling human relationship with nature, the rhetoric of nature protection must include people in the picture. It cannot simply rely on the wilderness vision of nature necessarily isolated from humanity, unable to bear even the lightest human touch. Putting people in the picture means acknowledging people as a part of nature and emphasizing human connections to nature.

The rhetoric of sustainable development tries to put people in the picture. But the people it depicts use nature only as a material resource; they do not have emotional connections to it. The picture is one-dimensional; as a result, it would likely sanction the loss of much more nature than environmentalists would be willing to give up.³⁰³ In order to build support for preserving more, environmentalists must concentrate their rhetoric on emotional or spiritual, rather than material, connections with nature.

One lesson we can draw from the success of the esthetic arguments for wilderness protection is that people do care about the ways in which nature can affect human character. Wilderness has been presented partly as a way to maintain the desirable aspects of the frontier character in an era which would not otherwise produce them.³⁰⁴ The second-generation discourse should take the idea that nature shapes human character beyond the wilderness context. Creating rugged, self-reliant individualists capable of surviving on the frontier cannot be the focus of nature protection efforts in the tamer places closer to home, but some other parts of the wilderness idea can. Contact with nature in our daily lives can help imbue the sense of humility and of being part of a larger world to which wilderness advocates referred.³⁰⁵ Furthermore, contact with a local natural community can help build a larger sense of community with the people with whom we share nature. Large numbers of Americans say they are anxious to develop those sorts of connections to community and place.³⁰⁶

We already have some tools to help communicate those concepts. Aldo Leopold's land ethic portrays people as members of a community that includes the land and its biota. Leopold's famous statement that the right and wrong of human actions should be measured by their impact on the integrity, stability, and beauty of the biotic community³⁰⁷ emphasizes both the esthetic

303. See *supra* text accompanying notes 218-27.

304. See *supra* note 113 and accompanying text.

305. See *supra* note 115 and accompanying text.

306. See, e.g., Jeff McLaughlin, *Where Do We Go From Here?*, B. GLOBE, June 20, 1999, at 1 (examining perceived loss of "community character" through suburbanization); Steve Twomey, *Lots Not to Like*, WASH. POST, July 5, 1999, at C1 (detailing Trust for Historic Preservation's view that urban sprawl has negative impact on sense of community).

307. LEOPOLD, *supra* note 144, at 224-25.

pull nature exerts on us, and the responsibility we bear for protecting nature. He suggests that we should aspire to be the kind of people who fulfill that responsibility.

The enduring popularity of Leopold's essay indicates that it speaks powerfully to many people, an important quality for a political story. But it speaks to an ecologically educated audience and does not provide a strong motivation for others to join those ranks. Although Leopold described the road to an ecological conscience as both an intellectual and an emotional journey,³⁰⁸ *The Land Ethic*, unlike some of his other writings, leans heavily to the intellectual side. It dryly recounts the pathways of energy flow through the biotic community. It helps the reader understand intellectually why actions like the removal of predators from an ecosystem have broad ramifications, but it does not explain why, aside from the possibility of ecological collapse, the reader should care.

In order to reach a broader audience, arguments for nature protection must incorporate and promote the whole spectrum of ways in which people form bonds with nature. One place to look for such arguments is the bio-regional movement. The term bioregionalism is associated with a loosely defined movement that incorporates environmental, social, and political goals. Its adherents, many of whom can be described as naive extremists,³⁰⁹ have not brought their arguments directly into the mainstream political arena. Nonetheless, the language of bioregionalism has much to contribute to the political rhetoric of nature protection. The central tenet of bioregionalism is that human beings should become "dwellers in the land"³¹⁰ in order to fulfill their human potential and live satisfying lives. Its supporters emphasize the importance to people of developing connections to nature and offer useful guidance on making those connections.

Even city-dwellers can come to know the natural world that surrounds, supports, and invades the margins of their urban community. They need not become experts in ecology. They need only observe the area in which they live, becoming familiar with the birds, plants, animals, watercourses, and rock formations that define it. The relevant ways of knowing the local community

308. *Id.* at 263.

309. They argue, for example, that people should live in concentrated communities of five to ten thousand, supported by locally-based economies. KIRKPATRICK SALE, *DWELLERS IN THE LAND: THE BIOREGIONAL VISION* 94 (1985). But they do not tell us how to redistribute the people of Los Angeles or New York to those small communities either, or how to make the transition from a global market economy to a collection of independent local subsistence economies. Annie L. Booth, *Critical Questions in Environmental Philosophy*, in *PHILOSOPHY AND GEOGRAPHY I: SPACE, PLACE, AND ENVIRONMENTAL ETHICS* 255, 260-62 (Andrew Light & Jonathan Smith eds., 1997).

310. SALE, *supra* note 309, at 41.

include but are not limited to science. Physical and biological science can provide some types of knowledge, explaining how natural forces have shaped the local rivers, soils, and biota. History and anthropology can describe how the physical and biological attributes of the area have affected, and been affected by, human inhabitants. Art, music, and literature can clarify and communicate the esthetic values of nature in the region and its emotional importance to the people who experience them. By calling on a wide variety of perspectives, the bioregional movement offers the broadest possible means of establishing connections with the surrounding environment.³¹¹

Bioregionalism also offers the beginning of an answer to the conflict between nature and economic progress or convenience. People who form emotional links with nature come to see nature as an important part of their lives. That should increase their willingness to give up some of the economic advantages of development, and to accept some of the inconveniences that inevitably accompany uncontrolled nature.

2. *Putting the Complexity of Nature in the Picture*

Another problem with the current stories is that they do not give a realistic picture of the complexity of nature. The wilderness and Noah stories point us toward reserve strategies, ignoring the difficulties those strategies pose. The ecological horror story suggests, contrary to the intuitions of many nature advocates, that the individual elements of nature have little value beyond their role as material goods or providers of ecosystem services.

The land ethic tries to address those shortcomings, emphasizing the protection of entire natural systems rather than of selected elements removed from those systems. Leopold advocated the preservation of entire systems in part because he feared the careless loss of some essential cog.³¹² But he also realized that much of the esthetic appeal of nature derived from the complex processes of those systems, processes that could be observed only by the ecologically educated.³¹³ His ecological eye allowed him to distinguish native from exotic species, and intact from disrupted ecosystems. When Leopold described as right actions that preserve the beauty of the biotic community, he had much more than superficial visual attraction in mind.

311. It also gives the public, not just a limited group of experts, an important role in decisions about nature. Recognizing such a public role may be essential to the long-term political success of any program of nature preservation.

312. One of Leopold's most-quoted lines is "[t]o keep every cog and wheel is the first precaution of intelligent tinkering." ALDO LEOPOLD, *The Round River*, in *A SAND COUNTY ALMANAC WITH ESSAYS ON CONSERVATION FROM ROUND RIVER* 188, 190 (1966).

313. J. BAIRD CALLICOTT, *Leopold's Land Aesthetic*, in *IN DEFENSE OF THE LAND ETHIC*, *supra* note 154, at 240-41.

Leopold's vision of the esthetic experience of nature, like his land ethic, communicates powerfully to those who already have an ecological education or considerable experience in nature, but it is more difficult to communicate to others. Leopold's exhortation that we must develop a "refined taste in natural objects" is unlikely to reach those who have not already developed such a taste.³¹⁴

Others, however, have offered images that can help convey the difference between a healthy ecosystem, full of complex feedback loops and evolutionary relationships, and a degraded one. David Quammen warns that the current wave of extinctions is carrying us toward a "planet of weeds," full of aggressive generalist species that reproduce quickly, tolerate a broad range of habitat conditions, and succeed in disturbed habitats.³¹⁵ In that world, starlings and pigeons will dominate the skies; rats and racoons will be everywhere, but grizzly bears and sea otters will be gone; and the vegetation will consist largely of species like purple loosestrife, tamarisk, and leafy spurge.

Carlos Davidson offers another helpful, accessible vision of the value of intact nature. He describes nature as a tapestry, and the impacts of human activity as pulling threads out of various parts of the tapestry.³¹⁶ This image makes it clear that much is lost long before the tapestry physically falls apart. The picture blurs, the colors fade, and repairs stand out as ill-fitted. It also helps show why isolated reserves will not work. Preserving a small piece of a large tapestry will not preserve the beauty of the full work. Moreover, a small piece cut out of a large tapestry is likely to quickly unravel.

3. *From the Global to the Local*

Another shortcoming of our current stories is that they do not help us make decisions about how much nature is appropriate, and under what constraints, at the local level. But that is exactly where most of our decisions must be made, where many of our stickiest problems occur, and where some of the strongest public concerns seem to be anchored.³¹⁷

This rhetorical gap can be filled by arguments drawing on the notion of a sense of place founded on enduring connections to the local community, both human and biotic. The invocation of a sense of place has great appeal in our transient, rootless society. The importance of such a sense is implicit in the writings of Thoreau, among others.³¹⁸ But bioregionalists can claim credit

314. LEOPOLD, *supra* note 312, at 194.

315. Quammen, *supra* note 215, at 66-68.

316. Carlos Davidson, *Economic Growth and the Environment: Alternatives to the Limits Paradigm*, BIOSCIENCE (forthcoming 2000).

317. See *supra* notes 218-26 and accompanying text.

318. Thoreau's most famous work, *Walden*, related how his life was enriched by close contact with nature in a particular place over a period of years.

for spurring a vigorous revival of this concept, which is now firmly planted in the mainstream of environmental history,³¹⁹ philosophy,³²⁰ and even legal scholarship.³²¹

Development of a robust sense of place requires that places be distinct. As environmental historian Donald Worster puts it, "A West without animals would be like a Brazil without rain forests, an Iceland without ice."³²² It would be just like any other place; its people would be just like any other people, without a unique sense of identity. The emphasis on distinctive places gives us another reason to fight the homogenization of the world's biota that is moving us toward a "weed world."³²³

The concept of place also helps to explain why we should protect species with little or no economic value, why we should place them in nature rather than in zoos, and why we should keep them in many locations rather than the minimum number needed to buffer them against extinction. Only if nature is accessible can people form emotional bonds with it, and only if nature is wild and where it belongs can they get an authentic sense of their place.

The vocabulary of place, together with that of the esthetic complexity of nature, provides far more cogent answers to questions such as whether we should preserve the tiny fairy shrimp of California's Central Valley than do our current stories. We should worry about fairy shrimp because they are an integral part of vernal pool ecosystems, which in turn are a distinctive element of the Central Valley bioregion. We should protect them not just in some zoo or artificial pond (assuming that we could do so), but in the vernal pools in which they evolved, together with their associated flora, fauna, soils, and water regimes. In doing so, we protect the valley's biotic and physical identity, and with them the identity and rootedness of the valley's human population.

4. *Extending the Ethical Vocabulary*

Perhaps the most difficult aspect of the project of developing a new discourse will be extending the ethical vocabulary beyond the Noah story. It is important that the political discussion draw on ethical concepts. Ethical intuitions play a strong role in public support of nature protection,³²⁴ and motivate many of the environmental advocates who seek protective regulation.

319. See generally, e.g., DONALD WORSTER, *AN UNSETTLED COUNTRY* (1994).

320. See, e.g., Bryan G. Norton & Bruce Hannon, *Environmental Values: A Place-Based Theory*, 19 ENVTL. ETHICS 227 (1997); Mark Sagoff, *Settling America: The Concept of Place in Environmental Ethics*, 12 J. ENERGY, NATURAL RES., & ENVTL. L. 351 (1992).

321. See, e.g., Freyfogle, *supra* note 143, at 231; Eric Freyfogle, *Illinois Life: An Environmental Testament*, 1997 U. ILL. L. REV. 1081, 1083.

322. WORSTER, *supra* note 319, at 59.

323. See *supra* note 315 and accompanying text.

324. See *supra* notes 224-26.

But precisely how to call on those intuitions in a way that will get beyond the limitations of the Noah image while retaining political appeal is a daunting problem.

The notion of ethical obligations to future human generations is probably a good place to start. The idea that current generations have a responsibility to leave something for the future resonates with a great many people.³²⁵ Kempton found that even childless people frequently referred to obligations to future generations as a reason for protecting the environment.³²⁶ He concluded that the "desire to protect the environment for our descendants appears to be a nearly universal American value."³²⁷ Not surprisingly, this concern for the future has already demonstrated considerable political power. It is implicit in the National Parks Organic Act, which directs the Park Service to maintain park resources unimpaired "for the enjoyment of future generations,"³²⁸ and explicit in the National Environmental Policy Act, which declares the responsibility of each generation to act "as trustee of the environment for succeeding generations."³²⁹ Concern for future generations has also played a role in passage of endangered species legislation,³³⁰ and is an important component of sustainable development rhetoric.³³¹

But an effective discourse cannot simply argue that we owe some duty to future generations. The precise nature of that obligation is crucial, as the discussion of sustainable development above demonstrates.³³² Nature advocates who are convinced that human ingenuity is not an acceptable substitute for nature's bounty must find a way to make that case to the polity. One

325. The leading scholarly advocate of an obligation of environmental protection owed to future generations is Edith Brown Weiss. She has noted that concern for future generations is found in many of the world's major cultural, religious, and legal traditions. EDITH BROWN WEISS, IN *FAIRNESS TO FUTURE GENERATIONS: INTERNATIONAL LAW, COMMON PATRIMONY AND INTERGENERATIONAL EQUITY* 17-21 (1989). Paul Barresi contends that people are "biologically and culturally predisposed" to care at least about the reproductive success of future generations as a necessary result of the processes of evolution. Paul A. Barresi, *Beyond Fairness to Future Generations: An Intergenerational Alternative to Intergenerational Equity in the International Environmental Arena*, 11 *TUL. ENVTL. L.J.* 59, 70-75 (1997).

326. KEMPTON ET AL., *supra* note 223, at 96, 101.

327. *Id.* at 101.

328. 16 U.S.C. § 1 (1994).

329. 42 U.S.C. § 4331(b)(1) (1994).

330. See S. REP. NO. 89-1463 (1966), *reprinted in* 1966 U.S.C.C.A.N. 3342, 3343-44 (stating that Endangered Species Preservation Act of 1966 will implement international recommendation that nations protect endangered animals and plants be provided with natural habitat in order to meet responsibilities to future generations).

331. Sustainable development is defined in the Brundtland report as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Brundtland Report, *supra* note 68, at 430.

332. See *supra* text accompanying notes 300-04.

strategy is to talk about the need to preserve the largest possible range of options for future generations, enabling them to make their own autonomous choices.³³³ Another might take advantage of the observation, sometimes cited as an objection to the notion of obligations to future generations, that the actions we take today will inevitably affect not only the number but the identity of people born in the future.³³⁴ That knowledge may actually support the concept of obligations to tailor our actions now with an eye to the future if we care not only about the wealth available to future generations, but also about the kind of people who make up those generations. Opportunities to experience nature, or the lack of such opportunities, will shape the character of future generations. Nature advocates should openly discuss the kind of people a world without nature will spawn.

The discourse of nature also needs to include some discussion of fairness within the current generation. This may be the most difficult aspect of the project, but it is essential to success. We must begin to talk about when it is fair to expect individuals to bear the costs, both financial and otherwise, of protecting nature, and when the public should bear those costs instead. We have plenty of language for talking about the distribution of these costs, but so far none of it seems to have helped in resolving our disputes. Perhaps it would help to develop a fuller explanation of the benefits nature offers people to counter the costs it imposes. That explanation might begin with a clearer sense of the scope of the communities that share in the benefits and costs of nature. Professor Eric Freyfogle has offered one way to approach this issue, suggesting that burdens should be shared at the appropriate geographic scale by, for example, requiring that all rural landowners, and "perhaps even some suburban ones," share the burdens of leaving room for wildlife and maintaining ecosystem processes.³³⁵ I would suggest we need to go even further. By expanding our political discourse to include stories that help us see and connect to nature even in developed areas perhaps we could get beyond some of the current disputes about the costs of nature protection by convincing the public to support additional public funding of protective efforts.

333. See, e.g., WEISS, *supra* note 325, at 40-45.

334. This is Parfit's paradox, which says that we cannot have any meaningful obligation to future individuals because any action we take today changes the set of people who will exist in the future. Derek Parfit, *On Doing the Best for Our Children*, in *ETHICS AND POPULATION* 100, 101-02 (M. Bayles ed., 1976). Anthony D'Amato has advanced Parfit's paradox as a basis for rejecting any claim of obligations to future generations. Anthony D'Amato, *Do We Owe a Duty to Future Generations to Preserve the Global Environment?*, 84 *AM. J. INT'L L.* 190, 191 (1990) (describing Parfit's logic as "unassailable"). D'Amato concedes, however, that "our preverbal sense of morality" tells most of us that we should not despoil the environment. *Id.* at 197.

335. Eric T. Freyfogle, *Ethics, Community, and Private Land*, 23 *ECOLOGY L.Q.* 631, 654 (1996).

VI. Conclusion

The stories we tell to explain and justify our view of the relationship of humanity with nature are important determinants of the policies we adopt and the attitudes we develop. To date we have relied on three primary discourses to explain why and how the law should protect nature. These discourses are all valid. Nature is an important material resource for human use, a unique esthetic resource for human enjoyment, and most people agree that we have some kind of ethical obligation to protect nature.

While the discourses themselves are both valid and inevitable, the forms in which they have been brought to the political debate limit our ability to respond to, and even our ability to fully perceive, the problem of nature protection. The ecological horror story encourages us to view nature solely as a bundle of resources for human consumption or convenience, to rely on cost-benefit accounting in making decisions about what parts of nature we should protect, and to ignore the loss of nature short of catastrophic ecological collapse. The wilderness story teaches us that nature is defined by our absence, and encourages us to establish a limited number of highly protected reserves. The story of Noah's ark allows us to believe we are facing a short-term crisis, resolvable through straightforward temporary measures.

None of these stories addresses the crux of the modern nature problem, which is where people fit into nature. In order to address the boundary conflicts, distributional issues, and conflicts between discourses that currently plague our efforts to protect nature, we must find ways to address those issues in our political conversation. We already have a substantial number of building blocks that could contribute to a new discourse about people and nature. Constructing such a discourse should be a high priority in the new millennium for those who hope nature will survive into the next one.

