Denver Law Review

Volume 74
Issue 3 *Symposium - The National Park System*

Article 7

January 2021

Preserving Nature in the National Parks: Law, Policy, and Science in a Dynamic Environment

Robert B. Keiter

PRESERVING NATURE IN THE NATIONAL PARKS: LAW, POLICY, AND SCIENCE IN A DYNAMIC ENVIRONMENT

ROBERT B. KEITER*

---

* James I. Farr Professor of Law and Director, Wallace Stegner Center for Land, Resources and the Environment, University of Utah College of Law. B.A., Washington University, 1968; J.D., Northwestern University, 1972. I am grateful to Bill Lockhart, who offered helpful comments on an earlier draft of this article. The University of Utah College of Law's Faculty Development Fund provided support for this research.

I. INTRODUCTION

America's national parks represent a major national commitment to nature preservation. Begun in 1872 when Congress created Yellowstone National Park, the United States' national park system has grown to 369 designated park sites located in each of the fifty states and several territories.[1] Since 1916, the National Park Service has been responsible for managing the national park system to promote public understanding and appreciation of the nation's wilderness heritage and its natural splendor.[2] What controversy originally surrounded establishment of the national park system and the then-suspect idea of removing public lands from settlement or development has largely dissipated; the American public strongly supports the concept of national parks and has a high regard for the Park Service as a public institution.[3] Nevertheless, the Park Service and its resource management policies are under intense scrutiny over what it means to preserve nature.

National parks are generally regarded as pristine settings where nature is preserved in a fundamentally unaltered state. Originally conceived as a tribute to monumentalism,[4] the national park system is governed by organic legislation that encourages human visitation and provides that park resources are to be "conserved" in an "unimpaired" condition for future generations.[5] For over half a century, the National Park Service pursued its preservationist mission by managing its lands primarily to accommodate visitors: hotels and other tourist facilities were constructed in the parks, often on environmentally sensitive lands; "bad" animals, such as wolves and other predators, were systematically eradicated; yet other animals were put on display for the public's easy viewing pleasure.[6] During the 1960s, however, following publication of the landmark Leopold Report,[7] the Park Service was admonished to manage its natural ar-

---

1. *See* NATIONAL PARK SERV., NATIONAL PARK SERVICE STRATEGIC PLAN FINAL DRAFT 2-3, 10 (1996) [hereinafter 1996 NPS STRATEGIC PLAN]; NATIONAL PARK SERV. STEERING COMM., NATIONAL PARK SERV., NATIONAL PARKS FOR THE 21ST CENTURY: THE VAIL AGENDA 10 (1992) [hereinafter THE VAIL AGENDA].

2. *See* National Park Service Organic Act, 16 U.S.C. §§ 1-18f (1994). *See generally* WILLIAM C. EVERHART, THE NATIONAL PARK SERVICE (1983) (detailing the history of the National Park Service); JOHN ISE, OUR NATIONAL PARK POLICY: A CRITICAL HISTORY (1961) (chronicling the development of national park policy through successive administrations).

3. *See* JEANNE NIENABER CLARKE & DANIEL C. MCCOOL, STAKING OUT THE TERRAIN: POWER AND PERFORMANCE AMONG NATURAL RESOURCE AGENCIES 82 (2d ed. 1996).

4. *See* ALFRED RUNTE, NATIONAL PARKS: THE AMERICAN EXPERIENCE 11-47 (rev. 2d ed. 1987); JOSEPH SAX, MOUNTAINS WITHOUT HANDRAILS: REFLECTIONS ON THE NATIONAL PARKS 7 (1980).

5. 16 U.S.C. § 1 (1994). *See* Robert B. Keiter, *National Park Protection: Putting the Organic Act to Work*, *in* OUR COMMON LANDS: DEFENDING THE NATIONAL PARKS 75 (D. Simon ed., 1988); John Lemons & Dean Stout, *A Reinterpretation of National Park Legislation*, 15 ENVTL. L. 53 (1984).

6. RUNTE, *supra* note 4, at 138-54; *see* Richard West Sellars, *Manipulating Nature's Paradise: National Park Management Under Stephen T. Mather, 1916-1929*, 43 MONT.: MAG. W. HIST. 2 (1993).

7. Leopold et al., *Wildlife Management in the National Parks*, *in* TRANSACTIONS OF THE TWENTY-EIGTH NORTH AMERICAN WILDIFE & NATURAL RESOURCES CONFERENCE 29, 29-44 (1963), *reprinted in* AMERICA'S NATIONAL PARK SYSTEM: THE CRITICAL DOCUMENTS 237, 237-

eas "toward maintaining, and where necessary re-establishing, indigenous plant and animal life."[8] In response, national park preservation policy was revised: The Park Service implemented controversial nonintervention and restoration policies, based on the related premises that human interference with ecological processes generally should be avoided or corrected where necessary to restore a functioning ecological complex.[9]

Nowhere is this revised preservation policy more controversial than in Yellowstone National Park.[10] Critics charge that Yellowstone's nonintervention management policy was responsible for the summer 1988 conflagration that engulfed much of the park in flames, threatened surrounding communities, and ruined the local tourist season.[11] Critics also charge that the same policy is responsible for the gradual destruction and imminent ecological collapse of Yellowstone's northern range to an uncontrolled ungulate population.[12] In addition, the livestock industry is convinced that the Park Service's nonintervention policy has allowed Yellowstone's bison population to proliferate beyond the park's carrying capacity, thus essentially forcing the bison to migrate out of the park where they may spread brucellosis to local cattle.[13] Moreover, critics have assailed the Park Service's wolf reintroduction program as an ill-advised attempt to reconstruct a past landscape.[14] At bottom, Yellowstone's critics are convinced that any attempt to manage national parks by discounting

---

51 (Lary M. Dilsaver ed., 1994) [hereinafter Dilsaver]. Dilsaver's useful volume assembles and organizes most of the key statutes, policy statements, and other documents relating to the evolution of national park policy. Citations to key Park Service and related documents in this article will be cross-referenced to this volume.

8. Memorandum from Secretary of the Interior Stuart Udall, on Management of the National Park System to National Park Service Director, (July 10, 1964), *reprinted in* Dilsaver, *supra* note 7, at 272, 273 [hereinafter 1964 Udall Memorandum].

9. NATIONAL PARK SERV., ADMINISTRATIVE POLICIES FOR NATURAL AREAS (1968), *reprinted in* Dilsaver, *supra* note 7, at 354 [hereinafter 1968 NPS NATURAL AREAS POLICIES].

10. *See, e.g.*, ALSTON CHASE, PLAYING GOD IN YELLOWSTONE: THE DESTRUCTION OF AMERICA'S FIRST NATIONAL PARK (1986) (hereinafter CHASE, YELLOWSTONE); FREDERIC H. WAGNER ET AL., WILDLIFE POLICIES IN THE U.S. NATIONAL PARKS (1995); Steve W. Chadde & Charles E. Kay, *Tall-Willow Communities on Yellowstone's Northern Range: A Test of the "Natural Regulation" Paradigm*, *in* THE GREATER YELLOWSTONE ECOSYSTEM: REDEFINING AMERICA'S WILDERNESS HERITAGE 231-262 (Robert B. Keiter & Mark S. Boyce eds., 1991) [hereinafter THE GREATER YELLOWSTONE ECOSYSTEM]; Frederic H. Wagner & Charles E. Kay, *"Natural" or "Healthy" Ecosystems: Are U.S. National Parks Providing Them?*, *in* HUMANS AS COMPONENTS OF ECOSYSTEMS: THE ECOLOGY OF SUBTLE HUMAN EFFECTS AND POPULATED AREAS 257, 257-270 (Mark J. McDonnell & Steward T.A. Pickett eds., 1993).

11. *See The Economic Impact of Fires in Yellowstone National Park and Western Montana on Small Business: Hearing Before the Subcomm. on Rural Econ. and Family Farming of the Senate Comm. on Small Business*, 100th Cong. 50 (1988) [hereinafter *Economic Impact Hearings*]; *see also infra* notes 99-103 and accompanying text.

12. *See* WAGNER ET AL., *supra* note 10, at 48-53; Chadde & Kay, *supra* note 10, at 231. *See also infra* notes 65-74 and accompanying text; *see generally* DON DESPAIN ET AL., WILDLIFE IN TRANSITION: MAN AND NATURE ON YELLOWSTONE'S NORTHERN RANGE (1986).

13. *See* Robert B. Keiter & Peter H. Froelicher, *Bison, Brucellosis, and Law in the Greater Yellowstone Ecosystem*, 28 LAND & WATER L. REV. 1 (1993); E. Tom Thorne et al., *Brucellosis in Free-Ranging Bison: Three Perspectives*, *in* THE GREATER YELLOWSTONE ECOSYSTEM, *supra* note 10, at 275. *See also infra* notes 75-84 and accompanying text.

14. *See* L. David Mech, *Returning the Wolf to Yellowstone*, *in* THE GREATER YELLOWSTONE ECOSYSTEM, *supra* note 10, at 309-22 (discussing wolf reintroduction criticisms); *see also infra* notes 85-89 and accompanying text.

a human presence in nature is flawed historically and doomed to fail in today's ever more populated world.

The stakes in this controversy should not be underestimated. America's national parks play a prominent role in national and international conservation efforts. Domestically, the national parks occupy a critical niche in current efforts to preserve the nation's biological legacy; many parks are situated at the core of larger ecosystems, which contain species facing imminent decline due to surrounding habitat degradation.[15] In these threatened ecosystems, the parks are regarded as vital sanctuaries in regional, ecosystem-based management initiatives, where the idea of minimizing human intervention into natural systems is an important goal.[16] Internationally, the American national park system—the first one ever established in the world—continues to serve as a model for preservation policy,[17] which includes a major biodiversity conservation campaign that has been enshrined in an international treaty.[18] If the Park Service's critics are correct that its preservation policy is unsound or if the policy is legally vulnerable, then the agency may have little choice but to alter its basic approach to managing national park resources. Not only would such a policy shift significantly affect America's national parks, but it could also impact international conservation policy.

This article will examine the policy implications and legal underpinnings of the Park Service's preservation policy. The article begins by reviewing the evolution of resource management policy in the national parks and by defining the contours of current preservation policy. The article then recounts how preservation policy has been applied in the Yellowstone setting to illustrate why it has been so controversial. Next, the article identifies and rejoins the principal criticisms that have been leveled against the policy. The article then examines the legal basis for the policy as well as related legal ramifications to assess its legitimacy. The article concludes with observations endorsing the basic philosophy underlying national park preservation policy, but also suggests that the policy should be further clarified and legitimized.

---

15. *See* R. EDWARD GRUMBINE, GHOST BEARS: EXPLORING THE BIODIVERSITY CRISIS (1992); REED F. NOSS AND ALLEN Y. COOPERRIDER, SAVING NATURE'S LEGACY: PROTECTING AND RESTORING BIODIVERSITY 71-72 (1994); William D. Newmark, *Legal and Biotic Boundaries of Western North American National Parks: A Problem of Congruence*, 33 BIOLOGICAL CONSERVATION 197, 197-208 (1985).

16. *See* Robert B. Keiter & Mark S. Boyce, *Greater Yellowstone's Future: Ecosystem Management in a Wilderness Environment*, *in* THE GREATER YELLOWSTONE ECOSYSTEM, *supra* note 10, at 379; Hal Salwasser et al., *The Role of Inter-Agency Cooperation in Managing for Viable Populations*, *in* VIABLE POPULATIONS FOR CONSERVATION 160 (Michael E. Soule ed., 1987).

17. THE VAIL AGENDA, *supra* note 1, at 1; 1996 NPS STRATEGIC PLAN, *supra* note 1, at 45.

18. Convention on Biological Diversity, *opened for signature* June 5, 1992, 31 I.L.M. 818 (1992). *See* Catherine J. Tinker, *Introduction to Biological Diversity: Law, Institutions, and Science*, 1 BUFF. J. INT'L LAW 1 (1994).

II. HISTORICAL BACKGROUND: THE EVOLUTION OF NATIONAL PARK PRESERVATION POLICY

A. *Early Preservation Policy, 1872-1962*

The national park concept first gained official recognition in 1872, when Congress designated Yellowstone National Park as "a pleasuring-ground for the benefit and enjoyment of the people."[19] Through enabling legislation, Congress instructed the Secretary of the Interior to preserve the park "from injury or spoilation, of all timber, mineral deposits, natural curiosities or wonders within said park, and their retention in their natural condition."[20] The Secretary also was instructed to "provide against the wanton destruction of the fish and game within said park."[21] To accomplish these preservation objectives, Congress gave the Secretary power to promulgate regulations.[22] And to enforce this preservation mandate, the United States cavalry was enlisted to protect the new park's resources from early interlopers and poachers.[23]

The Yellowstone Park Act of 1872 represented the first time that any nation had preserved such a large block of undeveloped public land—nearly 2 million acres—from settlement or development, and then opened it for public enjoyment. Until then, the nation's public lands were available for settlement or disposition, following the general policy that cheap land would promote development of the Western frontier.[24] The designation of Yellowstone changed that and formally introduced the notion of setting some public lands aside for nature conservation purposes.[25] Following the Yellowstone designation, Congress soon proceeded to protect several other Western scenic marvels, including Yosemite, Mount Rainier, and Glacier.[26] But given its prominence, Yellowstone has become a crucible for formulating and testing preservation policies, making it both an international model as well as a symbolic battleground over competing park management philosophies.[27]

---

19. 16 U.S.C. § 21 (1994). *See generally* AUBREY L. HAINES, THE YELLOWSTONE STORY: A HISTORY OF OUR FIRST NATIONAL PARK (rev. ed. 1966) (providing a historical account of the social and political forces behind the designation of the Park).

20. 16 U.S.C. § 21 (1994).

21. *Id.*

22. *Id.*

23. *See* H. DUANE HAMPTON, HOW THE U.S. CAVALRY SAVED OUR NATIONAL PARKS 165-67 (1971).

24. On the settlement and development of the western United States, see PAUL W. GATES, PUBLIC LAND LAW REVIEW COMM'N, HISTORY OF PUBLIC LAND LAW DEVELOPMENT (1979); *See generally* W. WYANT, WESTWARD IN EDEN: THE PUBLIC LANDS AND THE CONSERVATION MOVEMENT (1982) (discussing the settlement and development of the western United States).

25. *See* RODERICK NASH, WILDERNESS AND THE AMERICAN MIND 108 (3d ed. 1982). *See generally* MICHAEL COHEN, THE PATHLESS WAY: JOHN MUIR AND THE AMERICAN WILDERNESS (1984); STEPHEN FOX, THE AMERICAN CONSERVATION MOVEMENT: JOHN MUIR AND HIS LEGACY (1985).

26. *See* RUNTE, *supra* note 4, at 65-81. *See generally* ISE, *supra* note 2, at 51-182 (detailing the history and characteristics of Yosemite, Mount Rainier, and Glacier national parks).

27. John J. Craighead, *Yellowstone in Transition*, *in* THE GREATER YELLOWSTONE ECOSYSTEM, *supra* note 10, at 27-39. *See, e.g.*, TIM W. CLARK & STEVEN C. MINTA, GREATER YELLOWSTONE'S FUTURE: PROSPECTS FOR ECOSYSTEM SCIENCE, MANAGEMENT, AND POLICY

In 1916, Congress formally established the National Park Service and vested it with management responsibility for the nation's fledgling park system. In the National Park Service Organic Act of 1916,[28] Congress mandated that the national parks were to be managed to "conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."[29] The Secretary of the Interior was given responsibility for the new National Park Service, and empowered to promulgate rules and regulations deemed "necessary or proper for the use and management of the parks."[30] In 1918, to implement these statutory mandates, Secretary of the Interior Franklin Lane instructed Stephen Mather, who had been named the first Park Service Director, that "every activity of the Service is subordinate to the duties imposed on it to faithfully preserve the parks for posterity in essentially their natural state."[31] With this instruction, the Secretary officially acknowledged that the goal of national park management was to preserve natural conditions,[32] thus establishing an important standard that has since become a dominant park management goal. However, defining exactly what "natural" means and then reconciling competing visitor and other interests to accomplish naturalness goals has proven more elusive.

Indeed, the Park Service has frequently subordinated its statutory preservationist obligation to its public use obligation. Early management of the national parks was primarily designed to encourage visitation to these remote areas. Railroad lines, hotels, roads, and other facilities were constructed with the dual objectives of promoting tourism and cultivating a national constituency to support the Park Service in the congressional legislative arena.[33] While

---

(1994); THE GREATER YELLOWSTONE ECOSYSTEM: REDEFINING AMERICA'S WILDERNESS HERITAGE (Robert B. Keiter & Mark S. Boyce eds., 1991); THE YELLOWSTONE PRIMER: LAND AND RESOURCE MANAGEMENT IN THE GREATER YELLOWSTONE ECOSYSTEM (John A. Baden & Donald Leal eds., 1990).

28. 16 U.S.C. §§ 1-18f (1994).

29. *Id.* § 1.

30. *Id.* § 3.

31. Letter from Franklin K. Lane, Secretary of the Interior, to Stephen W. Mather, Director, Nat'l Park Serv. (May 13, 1918), *reprinted in* Dilsaver, *supra* note 7, at 48-52.

32. In his 1918 letter, Secretary of the Interior Lane also set forth three important national park management principles:

> First that the national parks must be maintained in absolutely unimpaired form for the use of future generations as well as those of our own time; second, that they are set apart for the use, observation, health, and pleasure of the people; and third, that the national interest must dictate all decisions affecting public or private enterprise in the parks.

Id. at 48.

33. *See* RUNTE, *supra* note 4, at 82-105; Sellars, *supra* note 6, at 2. *See generally* HORACE M. ALBRIGHT & ROBERT CAHN, THE BIRTH OF THE NATIONAL PARK SERVICE: THE FOUNDING YEARS, 1913-33 (1985) (detailing the passage of the National Parks Act and the formation of the National Park Service); ROBERT SHANKLAND, STEVE MATHER OF THE NATIONAL PARKS (1951) (providing insight into Mather's role as Assistant to the Secretary in raising the National Park System to its present day status); DONALD C. SWAIN, WILDERNESS DEFENDER: HORACE M. ALBRIGHT AND CONSERVATION (1970) (discussing Albright's role as a leading spokesperson for conservation during the 1920s and 1930s).

park facilities were usually constructed with a view toward minimizing intrusiveness on the surrounding scenery, little concern was paid to the impact these facilities may have on wildlife habitat.[34] With its emphasis on providing visitors a pleasurable experience and with no regard for ecological consequences, the Park Service undertook to eliminate wolves and other predators, to suppress fires throughout the system, to introduce exotic game fish species, and to promote wildlife spectacles by feeding bears at garbage dump sites.[35] Upon reviewing how strongly the Park Service's early preservation policies were oriented toward scenic resources, the agency's own historian has labeled this approach "facade management."[36] In short, ecology and the role of ecological processes were given short shrift in most early park policies.

In the early 1930s, Park Service biologist George Wright spearheaded a major initiative to elevate the stature of scientists within the agency and to integrate scientific principles into park management policy. Wright and his colleagues published a ground-breaking Faunal Survey report, which recommended restoring park fauna to its pristine state and acquiring necessary winter habitat.[37] Wright's far-sighted report, however, had little immediate impact on Park Service policy. Shortly after the report was published, Wright was tragically killed in an automobile accident. His scientific colleagues soon found themselves again subordinated within the Park Service's hierarchy to its rangers, landscape architects, and engineers, a situation that continued over the next thirty years.[38] As a result, the Park Service lacks a strong tradition of scientific research or management—a shortcoming that has rendered it vulnerable to charges of mismanagement and biological indifference, even after explicitly incorporating ecological considerations into its management philosophy.[39]

---

34. *See, e.g.*, NATIONAL PARK SERV., U.S. DEP'T OF THE INTERIOR, YELLOWSTONE NATIONAL PARK MASTER PLAN 17-18 (1973).

35. *See* RUNTE, *supra* note 4, at 111, 168-69; R. GERALD WRIGHT, WILDLIFE RESEARCH AND MANAGEMENT IN THE NATIONAL PARKS 35-42, 55, 59-69 (1992). *See also* Richard West Sellars, *The Rise and Decline of Ecological Attitudes in National Park Management, 1929-40* (pts. 1-3), 10 GEORGE WRIGHT FORUM 38, 55, 79 (1993) (providing a concise early history of the Park Service's biological resource management policies).

36. Sellars, *supra* note 6, at 6.

37. GEORGE WRIGHT ET AL., U. S. DEP'T OF THE INTERIOR, FAUNA OF THE NATIONAL PARKS OF THE UNITED STATES: A PRELIMINARY SURVEY OF FAUNAL RELATIONS IN NATIONAL PARKS (1932), *reprinted in* Dilsaver, *supra* note 7, at 104, 109.

38. Sellars, *supra* note 35, at 107-08.

39. NATIONAL ACADEMY OF SCIENCES COMM. ON IMPROVING SCIENCE & TECH. PROGRAMS OF THE NAT'L PARK SERV., SCIENCE AND THE NATIONAL PARKS (1992), *partially reprinted in* Dilsaver, *supra* note 7, at 446 [hereinafter NATIONAL ACADEMY OF SCIENCES]; COMMISSION ON RESEARCH & RESOURCE MANAGEMENT IN THE NAT'L PARK SYS., NATIONAL PARKS & CONSERVATION ASS'N, NATIONAL PARKS: FROM VIGNETTES TO A GLOBAL VIEW (1989); *see also* Ervin H. Zube, *Management in National Parks: From Scenery to Science*, *in* SCIENCE AND ECOSYSTEM MANAGEMENT IN THE NATIONAL PARKS 11-22 (William L. Halvorson & Gary E. Davis eds., 1996) [hereinafter SCIENCE AND ECOSYSTEM MANAGEMENT].

B. *The Leopold Report and Its Aftermath, 1963-Present*

During the 1960's, almost half a century after its creation, the Park Service finally elevated scientific management to a prominent position on the agency's policy agenda. Confronted with an adverse public reaction to the shooting of elk on Yellowstone National Park's northern range, the Secretary of the Interior appointed a committee of prominent scientists, under the direction of Starker Leopold, to provide advice on how to address the park's elk population problem.[40] The ensuing recommendations, since dubbed the Leopold Report,[41] profoundly reshaped how the Park Service views its natural resource management role. These same recommendations also set the stage for the ongoing debate over the Park Service's revised preservation policy.

The concise yet eloquent 14-page Leopold Report made a powerful case for revising the Park Service's natural resource management policies. In its most widely quoted statement, the Committee concluded:

> As a primary goal, we would recommend that the biotic associations within each park be maintained, or where necessary recreated, as nearly as possible in the condition that prevailed when the area was first visited by the white man. A national park should represent a vignette of primitive America.[42]

Calling for "an overall scheme to preserve or restore a natural biotic scene," the report proposed restoring missing species, eliminating exotic species, stopping artificial feeding programs, reducing road construction, eliminating inappropriate tourism facilities, and enhancing the Park Service's scientific research capabilities.[43] Notwithstanding the reference to "a natural biotic scene," the report acknowledged that intensive management, based on the best ecological data available, would be necessary to accomplish these policy objectives, including the controlled use of fire and the shooting of excess ungulates.[44] Moreover, the report noted that most parks were too small to contain all of the habitat required by resident species, and that past human manipulations or intrusions had so altered ecological processes that active intervention would be necessary to restore anything approaching a natural ecological order.[45] The Leopold Report's recommendations were reinforced by a contemporaneous National Academy of Sciences study, which likewise concluded that national parks should be managed to maintain and perpetuate natural features and processes.[46]

The Leopold Report had an immediate and far-reaching impact on Park Service management policies. In 1964, relying upon the Report's recommen-

---

40. WRIGHT, *supra* note 35, at 27-28; WAGNER ET AL., *supra* note 10, at 22.
41. Leopold, et al., *supra* note 7.
42. WRIGHT, *supra* note 35, at 31; Leopold et al., *supra* note 7, at 239.
43. WRIGHT, *supra* note 35, at 33-37; Leopold et al., *supra* note 7, at 241-45.
44. WRIGHT, *supra* note 35, at 37-42; Leopold et al., *supra* note 7, at 244-49.
45. WRIGHT, *supra* note 35, at 33-34; Leopold et al., *supra* note 7, at 240-41.
46. NATIONAL ACADEMY OF SCIENCES, NATIONAL RESEARCH COUNCIL, A REPORT BY THE ADVISORY COMMITTEE TO THE NATIONAL PARK SERVICE ON RESEARCH (1963) [hereinafter NATIONAL RESEARCH COUNCIL], *partially reprinted in* Dilsaver, *supra* note 7, at 253.

dations, Secretary of the Interior Stewart Udall instructed the Park Service to manage national parks "toward maintaining, and where necessary reestablishing, indigenous species" while "preserving the total environment."[47] In 1968, the Park Service issued a policy document providing that national parks should be managed as ecological entities. The document stated that "the concept of preservation of a total environment, as compared with the protection of an individual feature or species, is a distinguishing feature of national park management."[48] Noting that national parks were becoming "islands of primitive America" impacted by development activities on surrounding lands and by escalating visitation numbers, the document called for "active management" of the natural environment.[49] It then concluded that such an approach will entail "application of ecological management techniques to neutralize the unnatural influence of man, thus permitting the natural environment to be maintained essentially by nature."[50]

More recently, in its 1988 Management Policies document,[51] the Park Service reaffirmed and refined its commitment to an ecologically-driven preservation policy. As a general goal, the Park Service will "try to maintain all the components and processes of naturally evolving park ecosystems, including the natural abundance, diversity, and ecological integrity of the plants and animals."[52] Committing itself to "perpetuate the native animal life . . . as part of the natural ecosystems of parks," the document calls for "minimizing human impacts on natural animal population dynamics."[53] The document also provides that "[n]atural processes will be relied on to control populations of native species to the greatest extent possible."[54] Park management goals and practices are to be based on the best scientific information available, established through comprehensive planning processes, and subjected to public review.[55] In short, building upon the Leopold Report, the Park Service now defines its statutory preservation responsibilities in terms of maintaining and restoring native species and processes, while minimizing human intervention into natural ecological processes.

---

47. 1964 Udall Memorandum, *supra* note 8, at 272, 273, 275; *see also* text accompanying *supra* note 8.

48. 1968 NPS NATURAL AREAS POLICIES, *supra* note 9, at 354.

49. *Id.*

50. *Id.*

51. NATIONAL PARK SERV., U.S. DEP'T OF THE INTERIOR, MANAGEMENT POLICIES (1988) [hereinafter 1988 NPS MANAGEMENT POLICIES]. For purposes of establishing natural resource management policies, the document divides national park lands into three zones: natural zones, cultural zones, and park development zones. The references throughout this article are to policies that prevail in natural zones.

52. 1988 NPS MANAGEMENT POLICIES, *supra* note 51, at 4:1. In addition, the document recognizes that "interference with natural processes . . . will be allowed . . . to restore native ecosystem functioning that has been disrupted by past or ongoing human actions." *Id.* at 4:2.

53. *Id.* at 4:5. The document also states that the Park Service will strive "to protect the full range of genetic types (genotypes) native to plant and animal populations in parks by perpetuating natural evolutionary processes and minimizing human interference with evolving genetic diversity." *Id.* at 4:10.

54. *Id.* at 4:6.

55. *Id.* at 4:6.

III. THE YELLOWSTONE CONTROVERSIES: TO INTERVENE OR NOT

A. *Yellowstone and Its Ecological Systems*

Most challenges to the Park Service's preservation policy have focused on Yellowstone National Park's management policies. As the world's first national park and the site of recurrent, high-profile controversies, Yellowstone serves as a bellwether for defining resource management policies for national parks.[56] Encompassing approximately two million acres of high plateau and mountainous terrain, Yellowstone National Park has the full assembly of wildlife species that historically populated the region, including recently reintroduced gray wolves.[57] Because the park is mostly surrounded by undeveloped national forest lands, much of which is protected as wilderness, the region's ecological systems have not been significantly disturbed by human actions. Knowledgeable observers refer to the park and surrounding lands as the Greater Yellowstone Ecosystem, labeling it the world's largest relatively intact temperate ecosystem.[58] But with annual park visitation approaching 3 million visitors, with subdivisions beginning to dot perimeter ranch lands, and with development pressures mounting in the surrounding national forests, the park often seems more like an endangered island than the vibrant core of a healthy ecosystem.[59]

Nonetheless, the Greater Yellowstone region offers one of the few locations where natural processes still operate on an expansive scale. In Yellowstone, therefore, the Park Service has sought to maintain and restore ecological processes with minimal human intervention.[60] The policy—sometimes labeled "a grand experiment"[61]—directly influences how the Park Service manages ungulate populations, bison, predators, and fires, which are examined in more detail below.[62] In each instance, drawing upon Leopold Report recommenda-

---

56. *See, e.g.*, RICHARD A. BARTLETT, YELLOWSTONE: A WILDERNESS BESIEGED (1985); CHASE, YELLOWSTONE, *supra* note 10.

57. JOHN J. CRAIGHEAD ET AL., THE GRIZZLY BEARS OF YELLOWSTONE: THEIR ECOLOGY IN THE YELLOWSTONE ECOSYSTEM, 1959-1992, at 3-7 (1995); DESPAIN, ET AL., *supra* note 12. On wolf reintroduction, see HANK FISCHER, WOLF WARS: THE REMARKABLE INSIDE STORY OF THE RESTORATION OF WOLVES TO YELLOWSTONE (1995); GARY FERGUSON, THE YELLOWSTONE WOLVES: THE FIRST YEAR (1996).

58. *See, e.g.*, Duncan T. Patten, *Defining the Greater Yellowstone Ecosystem*, in THE GREATER YELLOWSTONE ECOSYSTEM, *supra* note 10, at 19-26; RICK REESE, GREATER YELLOWSTONE: THE NATIONAL PARK AND ADJACENT WILDLANDS (2d ed. 1991); GREATER YELLOWSTONE COALITION, AN ENVIRONMENTAL PROFILE OF THE GREATER YELLOWSTONE ECOSYSTEM (1991).

59. GREATER YELLOWSTONE COALITION, SUSTAINING GREATER YELLOWSTONE: A BLUEPRINT FOR THE FUTURE (1994); GREATER YELLOWSTONE COALITION, AN ENVIRONMENTAL PROFILE OF THE GREATER YELLOWSTONE ECOSYSTEM (1991).

60. YELLOWSTONE NATIONAL PARK, RESOURCE MANAGEMENT PLAN 2 (1995); YELLOWSTONE NAT'L PARK, NATURAL RESOURCE MANAGEMENT PLAN AND ENVIRONMENTAL ASSESSMENT 7 (1983); *see also* DESPAIN ET AL., *supra* note 12, at 6-13, 27.

61. DESPAIN, ET AL., *supra* note 12, at 10; *see also* WAGNER ET AL., *supra* note 10, at 152.

62. The ensuing sections briefly describe several controversial management policy shifts that were implemented in Yellowstone in the aftermath of the Leopold Report to address these resources. The account of these controversies is truncated due to space limitations; it is offered as an overview of how the Park Service has interpreted and implemented its revised preservation poli-

tions, the Park Service has reversed longstanding, interventionist policies and implemented new ones designed to maintain or restore ecological systems.[63] Where the ecological system has been severely disrupted, the Park Service has actively intervened to restore missing ecological components and processes, such as wolves and fire, and to eliminate exotic intruders, such as lake trout.[64] However, in the face of often heavy criticism and recurrent political pressure, the Park Service has also modified its preservation policy for nonecological reasons, thus raising both consistency and legitimacy concerns.

B. *Ungulates and the Northern Range*

The Park Service's decision to withdraw from actively managing Yellowstone's northern range elk population has generated charges of biological mismanagement. Prior to the Leopold Report, Yellowstone's northern elk herd was intensively monitored and managed to control the population size. Despite public protests, the Park Service culled (*i.e.* shot) elk from the herd to limit its size based on the northern range's perceived limited carrying capacity.[65] Following the Leopold Report, the Park Service concluded that the northern range could support substantially more elk than previously believed. Park officials terminated the controversial culling program and began relying upon natural factors, mainly the region's harsh winters and limited habitat, to control the elk population.[66] In addition, the elk continued to be hunted in Montana during their fall migration from the park to lower elevation winter habitat.

Following implementation of this nonintervention policy, many elk perished during periodic harsh winters, but overall elk population numbers steadily mounted. Critics responded by asserting that the park's elk population had grown too large, that elk were overbrowsing the northern range and permanently altering its ecological character.[67] They argued that the northern range's aspen stands were being virtually eliminated by overbrowsing, as was the beaver population that relied upon these trees.[68] In short, critics concluded

---

cies. More detailed and nuanced discussions of these issues can be found in the general references that are cited in the accompanying footnotes.

63. WRIGHT, *supra* note 35, at 35-59; WAGNER ET AL., *supra* note 10, at 10-43. *See generally* DESPAIN ET AL., *supra* note 12; *see also* Alston H. Chase, *How to Save Our National Parks*, ATLANTIC MONTHLY, July 1987, at 35.

64. *See* WRIGHT, *supra* note 35, at 35-39. During this century, Yellowstone's fisheries management policy has undergone a profound evolution that raises related ecological restoration and intervention issues. After first importing exotic game species of fish to establish a world class fishery, the Park Service has sought to restore a native cutthroat trout fishery by eliminating exotic species. Limited space does not permit a full recounting of this preservation management issue. *See generally* John D. Varley & Paul Schullery, *Yellowstone Lake and its Cutthroat Trout*, *in* SCIENCE AND ECOSYSTEM MANAGEMENT, *supra* note 39, at 49.

65. DOUGLAS HOUSTON, THE NORTHERN YELLOWSTONE ELK: ECOLOGY AND MANAGEMENT 18 (1982); *see also* WAGNER ET AL., *supra* note 10, at 48-50.

66. DESPAIN ET AL., *supra* note 12, at 22-36; WAGNER ET AL., *supra* note 10, at 48-54.

67. *See* CHASE, YELLOWSTONE, *supra* note 10, at 14-91; Chadde & Kay, *supra* note 10, at 231; WAGNER ET AL., *supra* note 10, at 48-54.

68. Id. *But see* Francis J. Singer et al., *Ungulate Herbivory of Willows on Yellowstone's Northern Winter Range*, 47 J. RANGE MGMT. 435 (1994); Michael B. Coughenor & Francis J.

that the proliferating elk had taken over the northern range and were eating it into ecological collapse.[69] They advocated establishing elk population goals so park officials could actively control elk numbers to achieve a healthy ecological balance.

The Park Service, however, has adhered to a nonintervention policy and resisted calls for more intensive management. Yellowstone officials and other scientists believe that elk population numbers have always fluctuated widely depending upon seasonal weather and other conditions, and that similar fluctuations occur regularly in most wildlife populations.[70] Although the northern elk population has exceeded original Park Service projections, Yellowstone officials believe the population remains within an ecologically acceptable range.[71] Various scientists basically concur, and also observe that there is insufficient trend data to draw any definitive biological conclusions.[72] They also note that the recent wolf reintroduction will affect the elk population,[73] and that hunting outside the park will continue to help limit the population.[74] As a result, park officials have not resumed active elk management.

C. *Bison, Brucellosis, and Domestic Livestock*

As with elk management, Yellowstone's bison management policy has evolved through several distinct phases. At the turn of the century, Yellowstone's military caretakers imported bison to supplement the park's

---

Singer, *The Concept of Overgrazing and Its Application to Yellowstone's Northern Range*, *in* THE GREATER YELLOWSTONE ECOSYSTEM, *supra* note 10, at 209. While acknowledging that elk may account for the decline in aspen on the Northern Range, Yellowstone officials also cite other potential causes, including plant succession, climate change, and fire suppression. *See* HOUSTON, *supra* note 65, at 129.

69. In addition, a dispute continues over whether elk historically used Yellowstone's northern range as winter habitat. *See* HOUSTON, *supra* note 65, at 23-25; *see also* Cathy Whitlock et al., *A Prehistoric Perspective on the Northern Range*, *in* THE GREATER YELLOWSTONE ECOSYSTEM, *supra* note 10, at 289.

70. DESPAIN ET AL., *supra* note 12, at 32-36; Michael B. Coughenor & Francis J. Singer, *Elk Population Processes in Yellowstone National Park Under the Policy of Natural Regulation*, 6 ECOLOGICAL APPLICATIONS 573 (1996). *But see* WAGNER ET AL., *supra* note 10, at 145-49. *See generally* James G. MacCracken, *Managing and Understanding Wild Ungulate Population Dynamics in Protected Areas*, in NATIONAL PARKS AND PROTECTED AREAS: THEIR ROLE IN ENVIRONMENTAL PROTECTION 249 (R. Gerald Wright ed., 1996); NATIONAL PARK SERVICE, U.S. DEP'T OF THE INTERIOR, EFFECTS OF GRAZING BY WILD UNGULATES IN YELLOWSTONE NATIONAL PARK (1996) [hereinafter EFFECTS OF GRAZING].

71. DESPAIN ET AL., *supra* note 12, at 32-36; Coughenour & Singer, *supra* note 68.

72. Coughenour & Singer, *supra* note 68; *Yellowstone Science Interview: Sam McNaughton, Grazing and Yellowstone*, 4 YELLOWSTONE SCI. 12, 13 (1996). *See generally* EFFECTS OF GRAZING, *supra* note 70; YELLOWSTONE NAT'L PARK RESEARCH DIV., INTERIM REPORT YELLOWSTONE NATIONAL PARK NORTHERN RANGE RESEARCH (1992).

73. Before wolves were reintroduced to Yellowstone, scientists predicted that they would have an inhibiting (but not devastating) effect on elk population numbers. *See* Mark S. Boyce, *Wolf Recovery for Yellowstone National Park: A Simulation Model*, *in* 2 YELLOWSTONE NAT'L PARK ET AL., WOLVES FOR YELLOWSTONE?: A REPORT TO THE UNITED STATES CONGRESS 3-3, 3-5 (1990); Edward O. Garton et al., *The Potential Impact of a Reintroduced Wolf Population on the Northern Yellowstone Elk Herd*, *in id.* at 3-61.

74. Montana's revised late season elk hunt along the park's northern border is generally seen as complimenting the park's elk management policies. DESPAIN ET AL., *supra* note 12, at 35; HOUSTON, *supra* note 65, at 199-200. *But see* CHASE, YELLOWSTONE, *supra* note 10, at 77-78.

small remnant bison population.[75] The experiment was successful, and the herd gradually grew in size.[76] In 1917, however, a contagious livestock disease—brucellosis—was discovered in Yellowstone's bison.[77] Because brucellosis can cause cattle to abort, the Park Service began to test bison for the disease and to slaughter those testing positive. During this period, most of the park's bison were managed on the Buffalo Ranch; the herd was periodically culled to keep population numbers within the perceived range carrying capacity. After World War II, however, the Park Service closed the Buffalo Ranch, though culling still continued.

In the mid 1960's, following the Leopold Report, Yellowstone officials ceased culling bison and adopted a nonintervention management approach. The bison population rose sharply[78] and began moving outside the park during winter months to access new forage areas.[79] Local ranchers, joined by Montana livestock and federal agriculture officials, became increasingly concerned that park bison might transmit brucellosis to area cattle and jeopardize the state's brucellosis-free status.[80] However, whether Yellowstone's wild bison actually can transmit brucellosis to domestic livestock in the region's wilderness environment is a hotly contested matter.[81] When hazing failed to deter

---

75. HAMPTON, *supra* note 23, at 165-67; HAINES, *supra* note 19, at 3-21. For an historical overview of Yellowstone's bison, see generally MARY MEAGHER, NATIONAL PARK SERV., THE BISON OF YELLOWSTONE NATIONAL PARK (1973) (Scientific Monograph Series Number One, U.S. Government Printing Office, Washington, D.C.).

76. By 1930, Yellowstone's bison population had grown to over 1,000 bison. MEAGHER, *supra* note 75, at 32.

77. Ironically, scientists generally agree that brucellosis was originally passed to Yellowstone's bison by diseased livestock. *See* Mary Meagher & Margaret E. Meyer, *On the Origin of Brucellosis in Bison of Yellowstone National Park: A Review*, 8 CONSERVATION BIOLOGY 645 (1994); James D. Herriges, Jr. et al., *Vaccination to Control Brucellosis in Free-Ranging Elk on Western Wyoming Feed Grounds*, *in* THE BIOLOGY OF DEER 107 (Robert D. Brown ed., 1992).

78. The park's bison population grew from 397 bison in 1967 to more than 3000 bison in 1988, and currently totals approximately 3000-3500 bison. NATIONAL PARK SERV. & STATE OF MONT., INTERIM BISON MANAGEMENT PLAN DRAFT ENVIRONMENTAL ASSESSMENT 2 (1995).

79. Different theories have been put forth to explain the recent bison migration pattern. It has been argued that the bison are migrating because the park ranges are depleted from overgrazing. It also has been suggested that hard-packed park roads, which have been groomed for winter snowmobile traffic, are responsible because they make it possible for bison to exit the park despite the deep winter snows. And it has been noted that the bison may simply have found new forage areas and are naturally migrating to them. *See* Robert B. Keiter, *Greater Yellowstone's Bison: Unraveling of an Early American Wildlife Conservation Achievement*, 61 J. WILDLIFE MGMT. 1, 3 (1997) [hereinafter Keiter, *Greater Yellowstone's Bison*].

80. During the late 1940s, relying upon the amended Animal Industry Act, 21 U.S.C. §§ 111-143 (1994), the Department of Agriculture's Animal and Plant Health Inspection Service (APHIS), the states, and the livestock industry initiated an aggressive national effort to eradicate brucellosis from livestock herds. 21 U.S.C.A. § 114a. Among other things, APHIS has promulgated regulations dividing states into different classes according to the prevalence (or absence) of brucellosis in livestock. *See* 9 C.F.R. §§ 78.1-78.44 (1995). States classified as brucellosis-free can freely market cattle interstate while nonbrucellosis-free states face inspection and other requirements before selling cattle interstate. 9 C.F.R. §§ 78.40-78.43 (1995). Montana is classified as a brucellosis-free state, but has been threatened with loss of that status based on the presence of brucellosis-exposed bison from Yellowstone on lands outside the park. For a more detailed description of the legal and regulatory structure governing brucellosis, see Keiter & Froelicher, *supra* note 13, at 21-27.

81. Margaret E. Meyer & Mary Meagher, *Brucellosis in Free-ranging Bison (Bison bison) in Yellowstone, Grand Teton, and Wood Buffalo National Parks: A Review*, 31 J. WILDLIFE DISEASES

bison from leaving the park, Montana instituted a controversial public bison hunt that was quickly cancelled following public protests.[82]

Meanwhile, Montana and federal agriculture officials continued to voice concern over the Park Service's basically "laissez faire" bison management policy, asserting that depleted range conditions attributable to overgrazing were precipitating the winter exodus. Faced with litigation challenging its bison management policies,[83] the Park Service has agreed to implement an intensive bison management plan that entails capturing, testing, and slaughtering bison within the park to protect adjacent landowners and grazing allotments.[84] In the case of bison, therefore, the Park Service has essentially abandoned its nonintervention preservation policy and is poised to begin managing bison as if they were livestock rather than wildlife.

D. *Wolves, Grizzly Bears, and Endangered Species Management*

Yellowstone's controversial predator management policies have changed dramatically over the past century. During the early 20th century, the Park Service systematically eliminated wolves from the park, subscribing to the view that wolves were "bad" animals that killed valuable wildlife as well as domestic livestock.[85] But following the Leopold Report and the subsequent listing of wolves under the Endangered Species Act,[86] the U.S. Fish and Wildlife Service, with strong support from the Park Service, adopted a wolf recovery plan in 1987 that called for reintroduction in Yellowstone.[87] However, in response to local political opposition, actual reintroduction was delayed as proponents and opponents vigorously debated the impact wolves would have on livestock and the ramifications of endangered species protection.

In 1994, gray wolves were finally reintroduced into the park as a nonessential "experimental population."[88] These reintroduced wolves, which were

---

579 (1995); *see also* Keiter, *Greater Yellowstone's Bison*, *supra* note 79, at 4; Keiter & Froelicher, *supra* note 13, at 27-32.

82. The contemporary bison-brucellosis controversy is recounted in Keiter & Froelicher, *supra* note 13. *See also* Thorne et al., *supra* note 13, at 275.

83. *See infra* note 197 for a brief discussion of this litigation.

84. *See* YELLOWSTONE NAT'L PARK & MONT. DEP'T OF LIVESTOCK, INTERIM BISON MANAGEMENT PLAN (1996); Keiter, *Greater Yellowstone's Bison*, *supra* note 79, at 8. Under this interim policy, 1080 bison were slaughtered by federal and state employees during the 1996-1997 winter. James Brooke, *Yellowstone Bison Herd Cut in Half Over Winter*, THE N.Y. TIMES, April 13, 1997.

85. Sellars, *supra* note 6, at 7-8. *See generally* BARRY HOLSTUN LOPEZ, OF WOLVES AND MEN (1978) (discussing the relationship between wolves and humans).

86. 16 U.S.C. § 1533 (1994); 50 C.F.R. § 17.11 (1995). Under the Endangered Species Act, terrestrial species listed as endangered or threatened are managed by the Secretary of the Interior through the U.S. Fish and Wildlife Service; similarly listed marine species are managed by the Secretary of Commerce through the National Marine Fisheries Service. 16 U.S.C. § 1532(15) (1994).

87. U.S. FISH & WILDLIFE SERV., NORTHERN ROCKY MOUNTAIN WOLF RECOVERY PLAN (1987); Robert B. Keiter & Patrick T. Holscher, *Wolf Recovery Under the Endangered Species Act: A Study in Federalism*, 11 PUB. LAND L. REV. 19 (1990); *see* Mech, *supra* note 14, at 309-22.

88. 16 U.S.C. § 1539(j); 50 C.F.R. § 17.80-84 (1995); *see* 1982 U.S.C.C.A.N., 2833-35, 2845-46, 2857, 2870-76 (discussing "experimental population" provisions of the Endangered Spe-

initially live-captured in Canada and then held in acclimation pens, are being intensively monitored through radio collars; they can be removed if found preying on domestic livestock.[89] With wolf reintroduction, Yellowstone now has a full compliment of its original predators, and traditional predator-prey relationships are being reestablished with the abundant ungulate population. To accomplish its wolf reintroduction ecological goals, however, the Park Service has committed itself to active, interventionist management and made key political compromises to accommodate local interests.

In the case of Yellowstone's grizzly bears, Park Service policy has been quite different from the wolf, yet equally contentious. Because the grizzly bear is a top-of-the-food-chain carnivore, ecologists have long regarded Yellowstone's grizzly bear population as an important barometer for measuring the health of the regional ecosystem.[90] By the mid 20th century, Yellowstone's bears had grown habituated to people; they frequented campgrounds and roadways, and were fed at park garbage dumps.[91] Following the Leopold Report, however, the Park Service summarily closed the garbage dumps and left the bears to fend for themselves from natural food sources. Local wildlife biologists protested vehemently, arguing that the bears were not adequately accustomed to foraging in the wild and that the garbage dumps should therefore be phased out.[92] As was predicted, several bear-human conflicts ensued and problem bears were killed, which raised concern about overall grizzly bear population numbers. Nonetheless, the Park Service persisted with its revised nonintervention policy.

In 1975, the grizzly bear was listed under the Endangered Species Act as a threatened species,[93] and a recovery plan was prepared to protect the bear and its habitat.[94] When the Park Service, in a controversial decision, declined to close Yellowstone's Fishing Bridge campground to protect grizzly habitat, it

---

cies Act). Under the "experimental population" designation, the wolves are treated as a threatened—rather than endangered—species, and they do not enjoy the full protections of the Endangered Species Act, principally the jeopardy review process. On the experimental population provision, see Keiter & Holscher, *supra* note 87, at 36-37. *See also* Dale D. Goble, *Of Wolves and Welfare Ranching*, 16 HARV. ENVTL. L. REV. 101 (1992). *See generally* U.S. FISH & WILDLIFE SERV., THE REINTRODUCTION OF GRAY WOLVES TO YELLOWSTONE NATIONAL PARK AND CENTRAL IDAHO: FINAL ENVIRONMENTAL IMPACT STATEMENT (1994) (describing alternative ways for re-introducing gray wolves into Yellowstone).

89. *See* FISCHER, *supra* note 57, at 150; Robert C. Moore, Comment, *The Pack is Back: The Political, Social, and Ecological Effects of the Reintroduction of the Gray Wolf to Yellowstone National Park and Central Idaho*, 12 T.M. COOLEY L. REV. 647 (1995); *see also* James M. Peek & John C. Carnes, *Wolf Restoration in the Northern Rocky Mountains*, *in* NATIONAL PARKS AND PROTECTED AREAS, *supra* note 70, at 325; Edward E. Bangs, *Restoring Wolves to the West*, in RECLAIMING THE NATIVE HOME OF HOPE: COMMUNITY, ECOLOGY, AND THE WEST (Robert B. Keiter, ed., 1998) (forthcoming) (*hereinafter* RECLAIMING THE NATIVE HOME OF HOPE).

90. *See* U.S. FISH & WILDLIFE SERV., GRIZZLY BEAR RECOVERY PLAN 28 (1993) [hereinafter 1993 GRIZZLY BEAR RECOVERY PLAN]; GRUMBINE, *supra* note 15, at 66; *see also* CRAIGHEAD ET AL., *supra* note 57; FRANK C. CRAIGHEAD, JR., TRACK OF THE GRIZZLY (1979); THOMAS MCNAMEE, THE GRIZZLY BEAR (1984).

91. RUNTE, *supra* note 4, at 168-69.

92. *See* CRAIGHEAD, *supra* note 90, at 192-94; MCNAMEE, *supra* note 90, 90, at 107-22.

93. 16 U.S.C. § 1533 (1994); 50 C.F.R. § 17.11 (1995).

94. U.S. FISH & WILDLIFE SERV., GRIZZLY BEAR RECOVERY PLAN (1982). For the latest update and revisions to the plan, see 1993 GRIZZLY BEAR RECOVERY PLAN, *supra* note 90.

was sued—unsuccessfully—for violating its Organic Act and Endangered Species Act obligations.[95] According to federal officials, grizzly bear population numbers have gradually increased in the Greater Yellowstone region and the bear's range has expanded.[96] Several observers, however, believe that current population figures are unreliable and that grizzly habitat is not secure either inside or outside the park.[97] Moreover, problem bears (*i.e.* those posing a threat to human life or property) are monitored intensively and continue to be removed to minimize bear-human conflicts. Against the backdrop of the Endangered Species Act, the Park Service has therefore generally adhered to a nonintervention policy with Yellowstone's grizzly population, while selectively intervening on occasion for nonecological purposes.

E. *Fire as an Ecological Process*

The Park Service's revised preservation policy has also triggered a reversal in its approach to fire management. Through the mid 1960s, Yellowstone officials actively suppressed all fires within the park. Across the public domain, fire was viewed only as a destructive force that burned forests and rangelands, threatened human lives and property, and scarred aesthetic landscapes.[98] During this total suppression period, Yellowstone's lodgepole pine forests continued to mature and die, creating a heavy fuel load. Following the Leopold Report, however, park officials adopted a new fire management policy, generally allowing natural fires to burn while still suppressing human-ignited blazes.[99] The policy did not authorize active intervention through the use of prescribed (*i.e.* human-ignited) fires to reduce the fuel load.

The revised fire policy worked reasonably well until the summer 1988 season when multiple fires—some natural and others human-caused—charred nearly one third of the park.[100] Although several fires were fought aggressively from the outset, the heavy fuel load and extreme weather conditions caused the fires to burn out of control for over a month. Local politicians and other critics blamed the conflagration on the Park Service's laissez faire policy

---

95. National Wildlife Fed'n v. National Park Serv., 669 F. Supp. 384, 385-86 (D. Wyo. 1987); *see also* Brian L. Kuehl, Comment, *Conservation Obligations Under the Endangered Species Act: A Case Study of the Yellowstone Grizzly Bear*, 64 U. COLO. L. REV. 607, 636 (1993).

96. *See* 1993 GRIZZLY BEAR RECOVERY PLAN, *supra* note 90, at 2-12, 41-58.

97. *See* Fund for Animals v. Babbitt, 903 F. Supp. 96 (D.D.C. 1995); *see also* MARK L. SHAFFER, THE WILDERNESS SOCIETY, KEEPING THE GRIZZLY BEAR IN THE AMERICAN WEST: A STRATEGY FOR REAL RECOVERY (1992). In addition, some biologists argue that supplemental food sources (*i.e.* ecocenters) are necessary to ensure full grizzly bear recovery. *See* CRAIGHEAD ET AL., *supra* note 57, at 484.

98. *See* STEPHEN J. PYNE, FIRE IN AMERICA: A CULTURAL HISTORY OF WILDLAND AND RURAL FIRE (1982).

99. *See* YELLOWSTONE NAT'L PARK, U.S. DEP'T OF THE INTERIOR, YELLOWSTONE NATIONAL PARK WILDLAND FIRE MANAGEMENT PLAN 11 (1992) [hereinafter YELLOWSTONE FIRE MANAGEMENT PLAN]; Paul Schullery, *The Fires and Fire Policy*, 39 BIOSCIENCE 686 (1989); Dennis H. Knight, *The Yellowstone Fire Controversy*, *in* THE GREATER YELLOWSTONE ECOSYSTEM, *supra* note 10, at 87, 90-91.

100. *See* MICAH MORRISON, FIRE IN PARADISE: THE YELLOWSTONE FIRES AND THE POLITICS OF ENVIRONMENTALISM (1993); NATIONAL PARK SERV., THE YELLOWSTONE FIRES: A PRIMER ON THE 1988 FIRE SEASON (1988).

and labeled the park a disaster.[101] Park Service and other scientists responded that large forest fires had historically occurred in Yellowstone's lodgepole pine forests and represented an ecological renewal.[102]

Following an extensive policy review, Department of the Interior officials have reaffirmed the basic scientific validity of the Park Service's fire management policy, though with some modifications.[103] Under its revised fire management plan, Yellowstone officials will continue allowing some naturally-caused fires to burn subject to tighter controls (or prescriptions) to protect park resources and neighboring property owners.[104] These controls include regular monitoring of weather and fuel conditions, application of detailed standards to predict fire behavior, delineation of predetermined fire management zones, daily monitoring of fire progress, and maintenance of adequate fire suppression equipment and personnel.[105] And the Park Service has begun experimenting with a prescribed burning program, though critics question whether it can adequately reduce the remaining fuel load.[106] In the case of fire, therefore, Yellowstone's nonintervention policy has been substantially modified to address political as well as ecological concerns.

F. *Preservation Policy Elsewhere*

Beyond Yellowstone, the Park Service has pursued similarly controversial preservation policies with a view toward maintaining or restoring ecological processes. In Rocky Mountain National Park, as in Yellowstone, the Park Service's decision not to regulate the park's elk population has led to charges that the proliferating herd is destroying native trees and grasses in its quest for food.[107] At Grand Canyon National Park, following recent recommendations triggered by the Grand Canyon Protection Act of 1992,[108] federal reclamation officials have experimented with increased release flows from the upstream Glen Canyon Dam.[109] This experimental release regime is designed to simu-

---

101. *See Economic Impact Hearings*, *supra* note 11, at 43, 48-51.

102. THE GREATER YELLOWSTONE POSTFIRE ECOLOGICAL ASSESSMENT WORKSHOP, ECOLOGICAL CONSEQUENCES OF THE 1988 FIRES IN THE GREATER YELLOWSTONE AREA: FINAL REPORT (1989); Christensen et al., *Interpreting the Yellowstone Fires of 1988*, 39 BIOSCIENCE 678, 679-80 (1989).

103. YELLOWSTONE FIRE MANAGEMENT PLAN, *supra* note 99; *see also* U.S. DEPT. OF THE INTERIOR AND U.S. DEPT. OF AGRICULTURE, FEDERAL WILDLAND FIRE MANAGEMENT: POLICY & PROGRAM REVIEW FINAL REPORT (1995) [hereinafter 1995 FEDERAL WILDLAND FIRE MANAGEMENT].

104. YELLOWSTONE FIRE MANAGEMENT PLAN, *supra* note 99, at 12-13; *see* 1995 YELLOWSTONE NATIONAL PARK RESOURCE MANAGEMENT PLAN, *supra* note 60, at YELL-N-020.000.

105. YELLOWSTONE FIRE MANAGEMENT PLAN, *supra* note 99, at 52-57.

106. *Id.* at 50-52; *see* Paul Schullery & Don G. Despain, *Prescribed Burning in Yellowstone National Park: A Doubtful Proposition*, 15 W. WILDLANDS 30 (1989).

107. *See* KARL HESS, JR., ROCKY TIMES IN ROCKY MOUNTAIN NATIONAL PARK: AN UNNATURAL HISTORY 15-49 (1993). Moreover, the Park Service's fire suppression policy, which was adopted to protect nearby residents from uncontrollable forest fires, has been criticized as an example of too much intervention into ecological processes. *Id.* at 51-76.

108. Pub. L. No. 102-575, 106 Stat. 4669; *see* Michael Conner, *Extracting the Monkey Wrench from Glen Canyon Dam: The Grand Canyon Protection Act — An Attempt at Balance*, 15 PUB. LAND L. REV. 135 (1994).

109. *See* BUREAU OF RECLAMATION, U.S. DEPT. OF THE INTERIOR, OPERATION OF GLEN

late the original hydrologic impacts that Colorado River spring floods had on adjacent river banks and sandbars, but critics are concerned that it could disrupt power distribution in the Southwest and destroy the cold water trout fishery below the dam.[110] In Yosemite National Park, the Park Service is actively involved in restoring natural fire to the landscape and reintroducing bighorn sheep.[111] In Olympic National Park, the Park Service has invoked ecological restoration goals to support proposals to remove two small hydropower dams on the Elwha River[112] and to cull exotic mountain goats that are destroying vegetation on the park's fragile mountain slopes.[113] Similar resource management policies have been implemented—and often criticized—in other parks where the Park Service has sought to maintain or restore ecosystems by curtailing human intervention into ecological processes.[114]

IV. PRESERVATION POLICY EXAMINED: A CRITICAL ANALYSIS

Since adopting the Leopold Report recommendations, the Park Service has been dogged with controversy over its revised preservation policy. Critics have attacked the policy on philosophical and scientific grounds. Local communities and residents have secured notable modifications to the policy. The ensuing discussion first puts the Park Service's preservation policy in historical context and then sets forth the principal criticisms against it. It then responds to these criticisms, concluding that the related nonintervention and ecological restoration concepts represent a viable though still experimental preservation policy. As a consequence, without further clarification and legitimization, the policy will remain vulnerable in political and other arenas.

A. *Nonintervention, Restoration, and its Critics: An Overview*

Because the Park Service's preservation policy represents a significant departure from conventional natural resource management practices, it has been subject to intense scrutiny and criticism. Two dimensions of the policy have come under repeated attack. The Park Service's nonintervention philosophy has been criticized as an ill-conceived biocentric policy that ignores the human presence in nature, lacks a credible scientific basis, and is unattainable

---

CANYON DAM: FINAL ENVIRONMENTAL IMPACT STATEMENT (1995).

110. *See id.* at 122-25, 166-73.

111. ALFRED RUNTE, YOSEMITE: THE EMBATTLED WILDERNESS 216-17 (1990); *see also* WAGNER ET AL., *supra* note 10, at 67.

112. Elwha River Ecosystem and Fisheries Restoration Act of 1992, Pub. L. No. 102-495, 106 Stat. 3173, 3174. NATIONAL PARK SERV., FINAL ENVIRONMENTAL IMPACT STATEMENT FOR ELWHA RIVER ECOSYSTEM RESTORATION IMPLEMENTATION, OLYMPIC NATIONAL PARK, WASHINGTON (1996); *see* Catherine Hawkins Hoffman & Brian D. Winter, *Restoring Aquatic Environments: A Case Study of the Elwha River*, *in* NATIONAL PARKS AND PROTECTED AREAS, *supra* note 70, at 303.

113. WRIGHT, *supra* note 35, at 101-05; WAGNER ET AL., *supra* note 10, at 61-62.

114. *See* EVERGLADES: THE ECOSYSTEM AND ITS RESTORATION (Steven M. Davis & John C. Ogden eds., 1994); David J. Parsons & Jan W. van Wagtendonk, *Fire Research and Management in the Sierra Nevada National Parks*, *in* SCIENCE AND ECOSYSTEM MANAGEMENT IN THE NATIONAL PARKS, *supra* note 39, at 25.

in the altered national park environment. The related ecological restoration policy, which paradoxically often involves active human intervention into ecosystem processes, has been attacked on similar grounds, primarily by local property owners who view reintroduced predators or officially sanctioned fires as a direct threat. In both cases, the policies under attack reflect a renewed faith in the value of maintaining and restoring relatively pristine ecological conditions in national parks.

Historically, natural resource management policy has focused on managing select resources on clearly defined land designations for productive purposes. Early on, natural resources were viewed as discrete commodities, and laws were adopted establishing detailed management regimes for water, minerals, timber, forage, and wildlife.[115] The goal was production for human consumption and enjoyment.[116] State game agencies, for example, focused wildlife management efforts on featured hunting species; population targets were established, necessary habitat was acquired and then managed for select species, and other species were largely ignored.[117] Perceived negative natural influences, such as fire and predators, were systematically eliminated to protect more valuable resource commodities. A similar philosophy prevailed in the national parks, which were managed to produce "good" scenic, wildlife viewing, and recreation experiences for visitors.[118]

During the late 20th century, drawing upon the insights of Aldo Leopold and others, this resource production focus has begun to change, with resource managers beginning to view the landscape as an ecological entity.[119] Gradually, a consensus is emerging that resource management efforts must be expanded to encompass the entire ecological complex, both species and processes.[120] As a legal matter, the first shifts in this direction were manifested in legislation like the Endangered Species Act and National Forest Management Act.[121] Recent administrative initiatives promoting ecosystem management

---

115. *See* SAMUEL P. HAYS, CONSERVATION AND THE GOSPEL OF EFFICIENCY: THE PROGRESSIVE CONSERVATION MOVEMENT, 1890-1920 (1959); CHARLES F. WILKINSON, CROSSING THE NEXT MERIDIAN: LAND, WATER, AND THE FUTURE OF THE WEST (1992).

116. R. McGreggor Cawley & John Freemuth, *Tree Farms, Mother Earth, and Other Dilemmas: The Politics of Ecosystem Management in Greater Yellowstone*, 6 SOC'Y & NAT. RESOURCES 41, 44-46 (1993); Winifred B. Kessler, *A Tale of Two Paradigms: Multiple Use and Ecosystem Management*, 8 GEORGE WRIGHT FORUM 13-20 (1992).

117. *See* THOMAS A. LUND, AMERICAN WILDLIFE LAW 60-79 (1980); George Cameron Coggins & Michael E. Ward, *The Law of Wildlife Management on the Federal Public Lands*, 60 ORE. L. REV. 59, 62-63 (1981); *see also* ALDO LEOPOLD, GAME MANAGEMENT 3-21 (1933).

118. Sellars, *supra* note 6, at 11-13; *see supra* notes 33-36 and accompanying text.

119. *See generally* ECOSYSTEM MANAGEMENT FOR PARKS AND WILDERNESS 9-10 (James K. Agee & Darryll R. Johnson eds., 1988); SAMUEL P. HAYS, BEAUTY, HEALTH AND PERMANENCE: ENVIRONMENTAL POLITICS IN THE UNITED STATES, 1955-1985 (1987); DONALD WORSTER, THE WEALTH OF NATURE: ENVIRONMENTAL HISTORY AND THE ECOLOGICAL IMAGINATION 108-09 (1993); DONALD WORSTER, NATURE'S ECONOMY: A HISTORY OF ECOLOGICAL IDEAS (1994). *See* ALDO LEOPOLD, A SAND COUNTY ALMANAC (1966).

120. *See, e.g.*, 1 INTERAGENCY ECOSYSTEM MANAGEMENT TASK FORCE, THE ECOSYSTEM APPROACH: HEALTHY ECOSYSTEMS AND SUSTAINABLE ECONOMIES: OVERVIEW REPORT 31-34 (1995) [hereinafter HEALTHY ECOSYSTEMS AND SUSTAINABLE ECONOMIES I]; SOCIETY OF AM. FORESTERS, TASK FORCE REPORT ON SUSTAINING LONG-TERM FOREST HEALTH AND PRODUCTIVITY (1993).

121. *See* Robert B. Keiter, *Beyond the Boundary Line: Constructing A Law of Ecosystem*

among the federal land management agencies are a further example of this shift.[122] For national parks, the Leopold Report—with its recommendations for applying these new ecological insights for preservation purposes—represents an early manifestation of this new philosophical approach to natural resource management. But as the Park Service has withdrawn from intensive, manipulative management and simultaneously promoted controversial reintroductions, it has met a skeptical response from those accustomed to a more active and goal-driven (or quantitative) management approach.

Criticism of the Park Service's preservation policy has focused on its nonintervention or natural regulation approach,[123] which is designed to let nature take its course with minimal human interference. Convinced that the concept of naturalness is ambiguous, subjective, and value-laden, critics have asked, what exactly is "natural" and how can it be defined?[124] Does "natural" imply the complete absence of humans and human influence from nature? Or does "natural" contemplate the presence of Native Americans during the pre-European settlement period?[125] Few if any places on earth, they argue, have not been trammeled by man, which means the human presence must be integrated into any natural resource management policy.[126] Asserting that Native American hunting and burning practices had profound effects on the early American landscape,[127] they contend that the Park Service cannot recreate a natural setting in that image without knowing these effects.[128] Moreover, arguing that "natural" is a subjective construct, critics assert that the idea of

---

Management, 65 U. COLO. L. REV. 294, 314-16 (1994); 2 INTERAGENCY ECOSYSTEM MANAGEMENT TASK FORCE, THE ECOSYSTEM APPROACH: HEALTHY ECOSYSTEMS AND SUSTAINABLE ECONOMIES: IMPLEMENTATION ISSUES 69 (1995) [hereinafter HEALTHY ECOSYSTEMS AND SUSTAINABLE ECONOMIES II].

122. For examples of these initiatives, see CONGRESSIONAL RESEARCH SERV., ECOSYSTEM MANAGEMENT: FEDERAL AGENCY ACTIVITIES (1994); GENERAL ACCOUNTING OFFICE, ECOSYSTEM MANAGEMENT: ADDITIONAL ACTIONS NEEDED TO ADEQUATELY TEST A PROMISING APPROACH (1994); THE KEYSTONE CTR., THE KEYSTONE NATIONAL POLICY DIALOGUE ON ECOSYSTEM MANAGEMENT: FINAL REPORT (1996).

123. The term "natural regulation" has often been used to describe the Park Service's basic management philosophy in the aftermath of the Leopold Report, but the term does not appear in official Park Service documents. *See infra* notes 138-40 and accompanying text. The term "nonintervention" is therefore used throughout this article to describe this aspect of Park Service preservation policy. However, this term is also not entirely accurate: Park Service policy provides for limited interventions, and park officials have often intervened into park ecosystems, both for ecological and other purposes. *See supra* notes 65-106 and accompanying text.

124. ALSTON CHASE, IN A DARK WOOD: THE FIGHT OVER FORESTS AND THE RISING TYRANNY OF ECOLOGY 2-3, 411, 413 (1996) [hereinafter CHASE, DARK WOOD]; HESS, *supra* note 107, at 94-95.

125. CHASE, YELLOWSTONE, *supra* note 10, at 92-115; WAGNER ET AL., *supra* note 10, at 139-45.

126. HESS, *supra* note 107, at 95; WAGNER ET AL., *supra* note 10, at 139-45. The human presence also means that resource managers must employ the social sciences as well as natural sciences in establishing natural resource policy. CHASE, YELLOWSTONE, *supra* note 10, at 320-21.

127. *See* Charles E. Kay, *Aboriginal Overkill and Native Burning: Implications for Modern Ecosystem Management*, 10 W.J. APPLIED FORESTRY 121 (1995).

128. This raises additional problems: because nature is not static but rather constantly changing, it is both misleading and undesirable to recreate a static former condition, even if it could be reliably defined. It is likewise impossible to calculate how an area like Yellowstone would have evolved over nearly two centuries since it was first explored by white men. *See generally* WAGNER ET AL., *supra* note 10, at 139-45.

recreating nature represents a romantic ideal not a viable scientific or objective standard.[129]

How to achieve naturalness goals in a national park setting engenders perhaps even more controversy. According to one critic, the Park Service's preservation policy is based upon the erroneous notion of ecosystem stability; it blindly accepts the premise that nature—knowing what is best and tending toward equilibrium—can take care of itself.[130] Observing that national parks often lack original predators and have evolved under a regime of fire suppression, critics also contend that national park environments are so altered that a natural regulation policy could actually jeopardize park ecosystems when so many critical ecological components are missing.[131] And observing that national parks are not defined by actual ecosystem boundaries, critics note that park resources are subject to pervasive development activity and human influences from beyond the border that fragment wildlife habitat and otherwise adversely affect park ecology, making it impossible for ecological processes to function.[132] Moreover, critics note that the Leopold Report did not endorse "hands off" management; rather, it expressly acknowledged the continuing need to intervene to ensure a functional ecological setting.[133] In short, the critics believe that more rather than less intervention is necessary to sustain park ecosystems.

The Park Service's preservation policies have also engendered less philosophical but more concrete local opposition, which has led to significant policy modifications. In the case of Yellowstone, adjacent landowners and gateway communities have actively resisted efforts to restore species or ecological processes. Believing that wolves and natural fire threaten paramount human safety and property concerns, park neighbors have applied intense political and legal pressure to stop or modify specific restoration efforts.[134] Similarly, local hunters, ranchers, and state wildlife officials, often imbued with a traditional range carrying capacity philosophy, have vigorously challenged Yellowstone's elk and bison management policies.[135] Responding to these constituencies, regional congressional delegations have exerted their political influence and sought modifications to these preservation policies. As a result, reintroduced wolves are radio collared and subject to strict limitations, tight monitoring controls have been placed on natural fires, and park bison migrating toward private property are being captured and slaughtered.[136] Thus, despite its ostensible commitment to a nonintervention preservation policy, the Park Service has made significant modifications for political rather than ecological reasons.

---

129. *See* HESS, *supra* note 107, at 77-100.
130. CHASE, YELLOWSTONE, *supra* note 10, at 318-19.
131. *See* WAGNER ET AL., *supra* note 10, at 145. *See generally* CHASE, YELLOWSTONE, *supra* note 10.
132. WAGNER ET AL., *supra* note 10, at 145.
133. *Id.* at 28-30.
134. *See* Mech, *supra* note 14, at 312; *Economic Impact Hearings*, *supra* note 11.
135. *See* DESPAIN ET AL., *supra* note 12, at 26, 35, 42.
136. *See supra* notes 83-84, 88-89, 103-06 and accompanying text.

B. *Clarifying Preservation Policy: Further Perspectives*

Nonetheless, the Park Service's basic preservation policy remains largely intact and can be generally sustained against these criticisms. Much of the criticism either mischaracterizes the basic policy itself or reflects a fundamental disagreement with policy objectives. Other criticism raises difficult scientific issues on which no consensus has yet emerged.[137] The fact that the Park Service has regularly adjusted its preservation policy to accommodate the concerns of neighbors indicates that it is acutely aware of the environmental and human pressures on national parks. Nevertheless, the criticisms suggest the need for further clarification of national park preservation policy and for additional public involvement in defining and implementing policy objectives.

Park Service preservation policy is not framed in terms of an absolute "hands off" or natural regulation policy. The term "natural regulation" does not appear in Park Service management documents.[138] In the 1988 Management Policies statement,[139] the Park Service establishes a biological resource management goal of perpetuating native animal life and natural evolutionary processes by "minimizing human impacts on natural animal population dynamics."[140] The document frames Park Service preservation policy in aspirational terms: Managers are enjoined to utilize natural processes "to the greatest extent possible."[141] Strictly speaking, national park preservation policy is not simply natural regulation; rather, the policy is based on minimizing human interventions and on using scientific data as the basis for intervention decisions. Indeed, there are numerous examples of Park Service intervention into natural systems to achieve ecological as well as nonecological objectives, including bison, fire, and fisheries management. In cases where Park Service officials have not intervened in ecological processes, as is true with elk on Yellowstone's northern range, the policy decision seems to reflect a scientific as well as philosophical judgment.

Park Service preservation policy does not contemplate a static environment or a stable ecosystem. The 1988 Management Policies document recognizes that "change . . . [is] an integral part of the functioning of natural systems," which will not be preserved "as though frozen at a given point in time."[142] It also provides for perpetuating "park natural resources and natural

137. This article, written by a nonscientist, focuses on the legal and policy dimensions of the controversy over national park preservation policy. Points of scientific disagreement are noted, but no effort is made to resolve these differences. The role of science in policy formulation, however, is examined.

138. *See supra* note 123; *see also* DESPAIN ET AL., *supra* note 12, at 6-13. *But see* Douglas B. Houston, *Ecosystems of National Parks*, 172 SCIENCE 648 (1971) (calling for "natural regulation of animal numbers" as a means of maintaining national park ecosystems in "as nearly pristine a condition as possible").

139. For a description of this document, see *supra* notes 51-55 and accompanying text.

140. 1988 NPS MANAGEMENT POLICIES, *supra* note 51, at 4:5, 4:10.

141. *Id.* at 4:6. Similarly, the Leopold Report only provided for park managers to recreate primitive vignettes "as nearly as possible." *See* Leopold et al., *supra* note 7, at 239.

142. 1988 NPS MANAGEMENT POLICIES, *supra* note 51, at 4:2.

processes,"[143] and instructs park managers to "try to maintain all the components and processes of naturally evolving park ecosystems."[144] Similarly, Yellowstone's 1995 Resource Management Plan "focuses on preserving the components and processes of naturally evolving ecosystems."[145] Thus, the policy recognizes the dynamic and evolutionary nature of park ecosystems and is not designed to capture a snapshot in time.

The Park Service, however, has not adequately addressed either the naturalness concept or the vignette of primitive America metaphor, which have been the focus of much criticism. Although the principal policy documents contain several references to the term "natural,"[146] it is not otherwise defined or placed in historical context. The "primitive America" metaphor[147] also is not referenced or discussed, though such discussion might clarify whether national park ecological maintenance and restoration goals are tied to an historical target. Viewed from a traditional natural resource management perspective and its commitment to objective production standards, these omissions further the perception that park preservation policy is ambiguous, unquantifiable, and standardless. Moreover, a policy framed in general rather than specific ecological terms leaves the agency open to the charge that it is basically unaccountable for its management decisions and actions.[148]

These omissions are not, however, fatal to the policy itself, particularly given the experimental nature of this new approach to natural resource management and the complexities involved in implementing such a policy in the modern world. As a conceptual matter, the term "natural" can—and should—be interpreted in a relative sense to distinguish among potential influencing events, recognizing that some of these events may involve human presence or intervention.[149] For example, spontaneous occurrences in a pristine

---

143. *Id.* at 4:2, 4:10.

144. *Id.* at 4:1.

145. YELLOWSTONE NAT'L PARK, NATIONAL PARK SERV., RESOURCE MANAGEMENT PLAN 1 (1995) [hereinafter 1995 YELLOWSTONE RESOURCE MANAGEMENT PLAN]. For example, despite political recriminations in the aftermath of the 1988 Yellowstone fires, the park's plan acknowledges that fire is a critical ecological process and provides that natural fires will be allowed to burn, albeit subject to more rigorous limitations than before. *Id.* at Yell-N-020.000.

146. *See, e.g.*, 1988 NPS MANAGEMENT POLICIES, *supra* note 51, at 4:5, 4:6; 1995 YELLOWSTONE RESOURCE MANAGEMENT PLAN, *supra* note 145, at 1, 2. *But see* NATIONAL PARK SERV., NATURAL RESOURCE MANAGEMENT GUIDELINES NPS-77, at 3 (1991) (defining "natural conditions" as "those that would exist today in the absence of the effects of European man"). Significantly, the NPS-77 document is an internal policy manual prepared for Park Service resource managers, but not generally available or circulated to the public.

147. Holmes Rolston III, *Biology and Philosophy in Yellowstone*, 5 BIOLOGY & PHILO. 241, 245 (1990). *See also* Dan E. Huff, *Wildlife Management in America's National Parks: Preparing for the Next Century*, 12(1) GEORGE WRIGHT FORUM 25, 30-31 (1997).

148. *See infra* notes 279-89 and accompanying text.

149. It has been argued that these problems could be addressed and national park preservation policy clarified if the Park Service adopted the terminology "ecological process management." Mark S. Boyce, *Natural Regulation or the Control of Nature*, *in* THE GREATER YELLOWSTONE ECOSYSTEM, *supra* note 10, at 183, 190. This terminology would avoid the term "natural," cast management policy in scientific terms, and acknowledge that human intervention may be required to achieve these goals. *Id.* at 183, 203. Boyce asserts that the Park Service's management goal is not merely to abstain from any intervention into the natural system, but to promote ecosystem integrity by sustaining and restoring ecological processes that have shaped dynamic landscapes

setting are one matter, human interventions to restore species or mimic processes are another, and human interventions for other purposes are yet another matter.[150] As for the vignette of primitive America metaphor, the Park Service should clarify whether its ecological management and restoration goals are historically defined or whether ecological history simply serves as a general point of reference.[151] A forthright discussion of the difficulties involved in defining and recreating a past ecological setting in today's world would lend additional credibility to a preservation policy not tied inextricably to the past. In the final analysis, concepts like nature, naturalness, and wilderness are cultural—and not just scientific—constructs that society regularly employs to define and characterize relatively undisturbed environmental settings.[152]

The Park Service's preservation policy cannot be said to ignore human values or concerns. At one level, by seeking to minimize human intrusions into park ecosystems, the policy is consistent with the strong national commitment—reflected in the law—to preserve national park lands and resources in an "unimpaired" condition for the enjoyment of future generations.[153] Human values and contemporary priorities, as manifested in endangered species legislation and related laws,[154] are similarly reflected in national park management decisions protecting and restoring dwindling species, such as grizzly bears and wolves.[155] At another level, the Park Service has taken account of competing human concerns by authorizing managers to intervene aggressively when problem animals or fire directly threaten human lives or property.[156] Park Service policy documents also specify that park planning and resource management decisions should provide for public involvement,[157] which rep-

---

within the national parks. *Id.* at 183, 190. He concludes that ecological process management more accurately reflects park management goals and more closely tracks the Leopold Report's recommendations. *Id.* at 190.

150. Rolston, *supra* note 147, at 244-46.

151. DANIEL B. BOTKIN, DISCORDANT HARMONIES: A NEW ECOLOGY FOR THE TWENTY-FIRST CENTURY 194-97 (1990). For example, the Forest Service has proposed using the "identification of trends and historic conditions" as one factor in an ecosystem analysis that would become part of the forest planning process under proposed revisions to the National Forest Management Act regulations. National Forest System Land and Resource Management Planning, 60 Fed. Reg. 18886, 18925 (1995) (to be codified at 36 C.F.R. § 219.7) (proposed Apr. 13, 1995).

152. Dan Flores, *Making the West Whole Again: An Historical Perspective on Restoration*, in RECLAIMING THE NATIVE HOME OF HOPE, *supra* note 89. *See also* 16 U.S.C. § 1131(c) (defining "wilderness" as "an area of undeveloped Federal Land retaining its primeval character and influence, without permanenent improvements or human habitation . . . and which generally appears to have been affected primarily by the forces of nature, with the imprint of man's work subatantially unnoticed . . . .").

153. 16 U.S.C. §§ 1, 1a-1 (1994). For a discussion of the national park organic legislation, see *infra* notes 171-89 and accompanying text. *Cf.* 16 U.S.C. § 1132(c) (1994) (authorizing Congress to designate national park lands as wilderness).

154. For a discussion of the Endangered Species Act, see *infra* notes 213-21 and accompanying text.

155. *See* Alistair J. Bath, *Public Attitudes about Wolf Restoration in Yellowstone*, *in* THE GREATER YELLOWSTONE ECOSYSTEM, *supra* note 10, at 367.

156. *See supra* notes 83-84, 88-89, 103-06 and accompanying text.

157. *See* 1988 NPS MANAGEMENT POLICIES, *supra* note 51, at 6. *Cf.* 16 U.S.C. § 1a-10 (1994) (requiring the Secretary of the Interior to provide for public involvement in preparing a periodic report on "current and future needs of each unit of the National Park System for resource management, interpretation, construction, operation and maintenance").

resents an opportunity to inject human values and concerns into preservation policy. However, whether the public has been afforded an adequate opportunity to participate in defining and implementing preservation policy is another question.[158]

The altered state of national park ecosystems is not a basis for rejecting the Park Service's predominantly nonintervention preservation policy. Although most national park ecosystems were historically impacted by Native Americans and early settlers, they have since been much less affected by human activities than most other locations. By law, most national parks do not allow hunting, trapping, or other extractive uses,[159] which means the human imprint has diminished over time. To be sure, visitor facilities and roads are located within national parks, and growing visitation numbers mean these settings are not free from a human presence. In Yellowstone and elsewhere, however, this disturbance is generally limited to discrete visitor areas and road corridors; it has not significantly affected the expansive back country regions or most wildlife species. To the extent that earlier fire suppression and predator elimination policies altered park ecosystems, current preservation policy—often through human intervention—is designed to reverse these impacts by reintroducing fire and extirpated species. Although it may be neither possible nor desirable to recreate the original ecological setting, it is still possible to re-establish the principal ecological components and processes that shaped national park environments.

National park preservation policy does not—and cannot—ignore the impact that development on adjacent public and private lands may have on park resources. National parks are no longer isolated; they are part of larger ecosystems and are affected by activities occurring beyond their borders.[160] Adjacent development, in the form of proliferating subdivisions, timber harvesting, or similar intensive activities, has fragmented sensitive ecosystems and displaced wildlife species. These developments highlight the important yet fragile role national parks play as reserves in biodiversity conservation efforts.[161] An increased human presence on park borders, however, has also brought pressure to bear on park officials to protect neighbors from fire, predators, and foraging wildlife. Given its uncertain jurisdictional authority over adjacent lands,[162] the Park Service has sought to address external concerns through cooperative

158. WAGNER ET AL., *supra* note 10, at 161-62; *see infra* notes 260-61 and accompanying text.

159. 16 U.S.C. § 1; Michigan United Conservation Clubs v. Lujan, 949 F.2d 202, 203 (6th Cir. 1991); National Rifle Ass'n v. Potter, 628 F. Supp. 903 (D.D.C. 1985).

160. 1988 NPS MANAGEMENT POLICIES, *supra* note 51, at 1:4, 2:9-10. *See generally* JOHN C. FREEMUTH, ISLANDS UNDER SIEGE: NATIONAL PARKS AND THE POLITICS OF EXTERNAL THREATS (1991); GENERAL ACCOUNTING OFFICE, PARKS AND RECREATION: LIMITED PROGRESS MADE IN DOCUMENTING AND MITIGATING THREATS TO THE PARKS (1987); NATIONAL PARK SERV., STATE OF THE PARKS, 1980: A REPORT TO CONGRESS (1980); Robert B. Keiter, *On Protecting the National Parks From the External Threats Dilemma*, 20 LAND & WATER L. REV. 355 (1985) [hereinafter Keiter, *Protecting the National Parks*]; William J. Lockhart, *External Threats to Our National Parks: An Argument for Substantive Protection*, 16 STANFORD ENVTL. L.J. 3 (1997).

161. *See supra* notes 15-18 and accompanying text.

162. *See infra* notes 205, 231-21 and accompanying text.

planning and similar processes.[163] More recently, these efforts have been advanced under the rubric of ecosystem management.[164] Whether the Park Service's preservation goal of perpetuating and restoring park ecosystems with minimal human intervention can be maintained in this venue remains to be seen. There is mounting evidence, as reflected in the Yellowstone bison management controversy, that park preservation goals may be subordinated to the interests of neighboring land owners and managers to minimize political repercussions.[165]

The Leopold Report indicated that human intervention, including culling, may be required to protect park resources.[166] Park Service policies acknowledge that aggressive intervention may sometimes be necessary to protect human safety, to remove exotic species, to promote genetic diversity, and to restore missing ecological components.[167] In Yellowstone, the Park Service plainly has not adhered to a strict nonintervention policy; it has intervened, sometimes aggressively, to control bears, wolves, bison, and fire.[168] Given these interventions, the fact that Yellowstone officials have not culled the park's northern elk herd may represent less a rigid adherence to a nonintervention philosophy and more a scientific disagreement over the propriety of intervention to achieve specific ecological goals.[169] Or, since powerful political forces have influenced other interventions, the park's reluctance to intervene in the elk controversy may reflect a calculated political judgment about the public's tolerance for ungulate culling.[170] In any event, given the complex jurisdictional setting and often volatile political climate that surrounds most national parks, intervention decisions under the Park Service's preservation policy will undoubtedly continue to reflect a combination of ecological and political judgments.

This cursory review of the Park Service's preservation policy suggests that it represents a viable though controversial natural resource management policy. The basic goal of maintaining and restoring the ecological landscape while minimizing human intervention in the national park setting is plainly

---

163. 1988 NPS MANAGEMENT POLICIES, *supra* note 51, at 2:9-10. *See generally* Joseph L. Sax & Robert B. Keiter, *Glacier National Park and Its Neighbors: A Study in Federal Interagency Relations*, 14 ECOLOGY L.Q. 207 (1987).

164. *See, e.g.*, Keiter, *supra* note 121; CLARK & MINTA, *supra* note 27; *see also* THE KEYSTONE CENTER, *supra* note 122.

165. *See supra* notes 75-84 and accompanying text.

166. *See supra* note 44 and accompanying text.

167. 1988 NPS MANAGEMENT POLICIES, *supra* note 51, at 4:6, 4:10. In fact, current Park service policy provides for fencing and culling to manage large ungulates at Theodore Roosevelt, Wind Cave, and Badlands national parks. *See* Huff, *supra* note 147 at 26.

168. For a description of how Yellowstone has managed these resources, see *supra* notes 75-106 and accompanying text.

169. *See* YELLOWSTONE NAT'L PARK RESEARCH DIV., INTERIM REPORT: YELLOWSTONE NATIONAL PARK NORTHERN RANGE RESEARCH (1992).

170. Indeed, the Park Service's original decision to cease culling elk was adopted, at least in part, to appease animal humane groups. *See* DESPAIN ET AL., *supra* note 12, at 24-27; *see also* Allen T. Rutberg & Wayne Pacelle, *Embracing Humane Value in National Park Management*, 14(1) GEORGE WRIGHT FORUM 38 (1997) (arguing that the Park Service is the principal communicator of the Federal Government's ethical views on wildlife).

consistent with the preservationist purpose underlying the national park system and is still achievable within many national park settings. Nonetheless, the Park Service's preservation policy could be fortified by further clarifying the ecological goals and by involving the public in this process. Additional clarification of the role that historic ecological conditions play in establishing restoration and other objectives (or why this is not possible or desirable), would help address lingering accountability concerns. Public involvement in the policy definition and implementation process would help build support from myriad constituencies and add legitimacy to these new preservation concepts.

V. LAW AND PRESERVATION POLICY: ASSESSING THE LEGAL FOUNDATION

Despite the critical scrutiny directed toward the Park Service's revised preservation policy and related management decisions, the fundamental legality of the policy has not been seriously questioned. Several laws directly support the policy itself, while other laws governing Park Service management decisions can be reconciled with it. The principal legal basis for the policy is the amended National Park Service Organic Act as well as the enabling legislation for individual parks. General administrative law principles can be squared with the Park Service's decision adopting this new preservation policy, and will govern its implementation and any significant modifications. Other statutes, such as the National Environmental Policy Act (NEPA), the Endangered Species Act, and the Federal Tort Claims Act, may affect or modify the policy, but do not undermine it. Moreover, because the policy can impact adjacent landowners, its implementation raises difficult but not fatal legal questions concerning the scope of Park Service authority and its potential liability beyond park boundaries.

A. *The Organic Act*

The National Park Service Organic Act of 1916 establishes the basic legal framework governing the Park Service's management authority and responsibility. Under the Organic Act, the Park Service is obligated to administer national parks to conserve scenery, wildlife, natural and historic objects, and to provide for public enjoyment, while ensuring that parks are left "unimpaired for the enjoyment of future generations."[171] Although the Act speaks in terms of both preservation and public use, the statutory "nonimpairment" standard indicates that resource preservation responsibilities should take precedence over public use in the event of conflict.[172] The 1978 amendments to the Or-

171. 16 U.S.C. § 1 (1994).

172. Keiter, *Protecting the National Parks*, *supra* note 160; Lockhart, *supra* note 160; Lemons & Stout, *supra* note 5; Robin Winks, *Dispelling the Myth*, 70 NAT'L PARKS 52 (1996). In 1918, in his seminal letter defining the fledgling Park Service's role, Secretary of the Interior Franklin Lane reached this same conclusion: "Every activity of the Service is subordinate to duties imposed upon it to faithfully preserve the parks for posterity in essentially their natural state." *See supra* note 31 and accompanying text; *see also* 1988 NPS MANAGEMENT POLICIES, *supra* note 51, at 1:3-4.

ganic Act, which provide that national parks shall be protected and managed "in light of the high public value and integrity" of the system, reaffirms and strengthens Congress' commitment to the basic Organic Act preservation tenets.[173] Indeed, several courts have concluded that the amended statute clearly gives primacy to resource preservation over competing uses or interests.[174] This construction of the Organic Act, with its emphasis on preserving nature, supports the basic nonintervention and ecological restoration premises of the Park Service's preservation policy.

Under the Organic Act, the Secretary of the Interior is vested with broad regulatory authority over the national parks.[175] This provision provides the Secretary with adequate legal authority to implement nonintervention and restoration preservation policies. The courts have consistently sustained Park Service regulations and policies designed to protect park resources, including limitations on hunting, fishing, rafting, mountain biking, and vehicle use within the parks.[176] Where the Park Service has sought to limit visitor activities in deference to protecting the ecological health or appearance of park resources, the courts have deferred to the agency's judgments.[177] Even in the face of a First Amendment constitutional challenge to Park Service regulations prohibiting camping on park grounds, the Supreme Court concluded that the judiciary does not have "the authority to replace the Park Service as the manager of the Nation's parks or . . . the competence to judge how much protection of park lands is wise and how that level of conservation is to be attained."[178] Nevertheless, despite its considerable authority, the Park Service generally has not translated its resource management policies into governing regulations,[179] choosing instead to define its preservation policies through general policy statements.[180]

The Park Service has implemented its preservation policy through the park planning process. Under the Organic Act, the Park Service is obligated to develop general management plans "for the preservation and use of each unit

---

173. 16 U.S.C. § 1a-1 (1994).

174. *See* Bicycle Trails Council v. Babbitt, 82 F.3d 1445, 1468 (9th Cir. 1996); Michigan United Conservation Clubs v. Lujan, 949 F.2d 202, 204-05 (6th Cir. 1991); National Rifle Ass'n v. Potter, 628 F. Supp. 903, 910 (D.D.C. 1985).

175. 16 U.S.C. § 3 (1994).

176. *See Bicycle Trails Council*, 82 F.3d at 1450-51 (mountain biking); *Michigan United Conservation Clubs*, 949 F.2d at 210-11 (trapping); Conservation Law Found. v. Hodel, 864 F.2d 954 (1st Cir. 1989) (motorized vehicles); Organized Fishermen v. Hodel, 775 F.2d 1544 (11th Cir. 1985) (fishing); Wilderness Public Rights Fund v. Kleppe, 608 F.2d 1250 (9th Cir. 1979) (rafting); *National Rifle Ass'n*, 628 F. Supp. at 909 (hunting).

177. *See, e.g.*, *Bicycle Trails Council*, 82 F.3d at 1445 (applying Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984), to invoke principles of judicial deference to agency statutory interpretations to sustain Park Service regulations and management plans); *National Rifle Ass'n*, 628 F. Supp. at 909-12 (applying the same principles of judicial deference to sustain Park Service regulations). For a discussion of the *Chevron* principle, see *infra* notes 191-97 and accompanying text.

178. Clark v. Community for Creative NonViolence, 468 U.S. 288, 299 (1984).

179. *See* Robert B. Keiter, *Ecosystem Management: Exploring the Legal-Political Framework*, *in* NATIONAL PARKS AND PROTECTED AREAS, *supra* note 70, at 82-83.

180. *See, e.g.*, 1988 NPS MANAGEMENT POLICIES, *supra* note 51; 1968 NPS NATURAL AREA POLICIES, *supra* note 9.

of the National Park system."[181] General management plans are required to address park resource preservation measures, visitor facilities plans, visitor carrying capacities, and boundary modifications.[182] Most national parks, including Yellowstone, have prepared management plans that contain general wildlife and fire management principles as well as policies governing individual species and ecological processes.[183] These general management plans are sometimes supplemented by more specific management plans, such as Yellowstone's rather detailed bison and fire management plans.[184] Given the environmental consequences attached to both types of plans, they ordinarily should be subject to NEPA compliance requirements.[185] This would provide the public an opportunity to participate in formulating and implementing preservation policy, and subject underlying ecological assumptions to some degree of scrutiny. However, it is unclear whether preservation policies established in general management plans would be subject to judicial review at this planning stage.[186]

The Organic Act and individual park enabling statutes also contain specific exceptions to the notion that national parks are inviolate natural sanctuaries. Under the Organic Act, the Secretary of the Interior may cut timber to protect park resources and scenery against insects or disease, and destroy animals or plants "as may be detrimental to the use of . . . parks."[187] These provisions evidently allow the Secretary to elevate other park resource considerations above preservation, so long as intervention can be reconciled with these statutory responsibilities. Individual park enabling acts also may require or authorize management approaches inconsistent with general preservation policy. For example, elk hunting is statutorily sanctioned in Grand Teton National Park,[188] and Yellowstone National Park is authorized to "sell or otherwise dispose of" its surplus bison.[189] Although neither provision precludes Park Service officials from pursuing a nonintervention preservation policy, they

---

181. 16 U.S.C. § 1a-7(b) (1994).

182. *Id.*

183. *See* YELLOWSTONE NAT'L PARK, RESOURCE MANAGEMENT PLAN (1995); YELLOWSTONE NAT'L PARK, NATURAL RESOURCES MANAGEMENT PLAN AND ENVIRONMENTAL ASSESSMENT (1982); *see also* YELLOWSTONE NAT'L PARK, STATEMENT FOR MANAGEMENT (1991).

184. *See, e.g.*, STATE OF MONT. & NAT'L PARK SERV., INTERIM BISON MANAGEMENT PLAN (1996); YELLOWSTONE FIRE MANAGEMENT PLAN, *supra* note 99.

185. For a discussion of NEPA procedures, see *infra* notes 205-12 and accompanying text.

186. *Cf.* Sierra Club v. Robertson, 28 F.3d 753 (8th Cir. 1994) (denying environmental oganizations standing to challenge adoption of a format plan for lack of a concrete and particularized inquiry in fact); Wilderness Soc'y v. Alcock, 867 F. Supp. 1026 (N.D. Ga. 1994), *aff'd*, 83 F.3d 386 (11th Cir. 1996) (concluding that adoption of a forest plan does not present a justiciable controversy subject to judicial review until a more specific project level decision is made). *But see* Idaho Conservation League v. Mumma, 956 F.2d 1508 (9th Cir. 1992) (rejecting justiciability arguments and reviewing legal challenges to a forest plan). Of course, park general management plans should at least be subject to judicial review for NEPA compliance. *See infra* notes 205-12 and accompanying text.

187. 16 U.S.C. § 3 (1994); *see* New Mexico State Game Comm'n v. Udall, 410 F.2d 1197, 1199-1201 (10th Cir. 1969).

188. 16 U.S.C. § 673(c)(a) (1994). *See* Huff, *supra* note 147 at 26, 28 (noting significant variation in the legislation mandate governing individual park units).

189. 16 U.S.C. § 36 (1994).

nonetheless indicate that other specified considerations may take precedence.

B. *Administrative Law Principles*

Although the Leopold Report recommendations called for a major shift in the Park Service's general preservation policy, the ensuing change in direction should not undermine its legal validity. Under well-established administrative law principles, a federal agency is free to change policy direction, so long as the changes do not violate its organic mandate and it provides a reasoned explanation for the shift.[190] Moreover, in the absence of clear statutory language, the courts generally must defer to an agency's reasonable legal interpretation of its own statutory mandates.[191] Thus, even significant administrative policy shifts that can be squared with governing legal obligations should ordinarily escape judicial reversal.[192] Of course, because the Park Service's preservation policy was revised nearly thirty years ago, these doctrines may have limited application to this initial policy shift.[193]

Nonetheless, measured by these administrative law principles, the Park Service's original 1968 decision to adopt nonintervention and ecological restoration preservation policies plainly passes muster.[194] The Organic Act, as interpreted by the Secretary of the Interior, clearly supports a preservation policy that gives precedence to maintaining and restoring ecological conditions in national parks while minimizing human intervention into these processes.[195] Besides the Leopold Report, several Park Service documents explain the governing principles underlying the modified preservation policy and the rationale for its adoption.[196] However, even though the basic preservation policy may be safe from challenge, proposed applications as well as modifications are still subject to legal challenge. In fact, recent litigation involving Yellowstone's bison management policy has raised the question of whether the Park Service violated its Organic Act responsibilities by not constraining bison within the park.[197] Moreover, any shift or modification in the policy would at least re-

---

190. *See* Motor Vehicles Mfrs. Ass'n v. State Farm Ins. Co., 463 U.S. 29, 57 (1983); Atchison, Topeka, & Santa Fe Ry. Co. v. Wichita Bd. of Trade, 412 U.S. 800, 806-09 (1973).

191. Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 842-44 (1984); Federal Election Comm'n v. Democratic Senatorial Campaign Comm., 454 U.S. 27, 31-32 (1981). *See generally* Cass R. Sunstein, *Law and Administration After* Chevron, 90 COLUM. L. REV. 2071 (1990).

192. Sunstein, *supra* note 191, 191, at 2101-04.

193. Not only are these doctrines of relatively recent origin, but the Park Service's Leopold Report-based policy decision is probably no longer ripe for judicial review.

194. For a description of the Park Service's policy shift, see *supra* notes 40-50 and accompanying text.

195. *See supra* notes 171-89 and accompanying text. *Cf.* Bicycle Trails Council v. Babbitt, 82 F.3d. 1445, 1468 (9th Cir. 1996) (sustaining a Park Service regulation limiting bicycle use in national parks to protect natural resources); Michigan United Conservation Clubs v. Lujan, 949 F.2d 202, 210-11 (6th Cir. 1991) (sustaining a Park Service regulation prohibiting trapping in national parks unless Congress has specifically authorized it).

196. *See, e.g.*, 1988 NPS MANAGEMENT POLICIES, *supra* note 51; 1968 NPS NATURAL AREA POLICIES, *supra* note 9; 1964 Udall Memorandum, *supra* note 8.

197. In 1995, the state of Montana sued the National Park Service, alleging that Yellowstone's nonintervention bison management policy violated its Organic Act responsibilities.

quire a clear explanation and compliance with NEPA procedures prior to implementation.

Under the Administrative Procedures Act (APA),[198] a Park Service decision to translate its preservation policies into legally binding rules would require adherence to statutory rulemaking procedures and be subject to judicial review.[199] To promulgate a rule, informal rulemaking procedures require public notification and comment opportunities, as well as preparation of a concise basis and purpose statement.[200] The Park Service has translated some of its natural resource management responsibilities into legal rules,[201] but it has not formalized its basic preservation policy in this manner. Although this limits the agency's ability to enforce these policies against the public,[202] it means that the Park Service has retained considerable discretion in implementing—and even changing—its approach to preservation. Indeed, the policy can evidently be modified without public involvement or any meaningful threat of judicial review so long as a reasonable explanation is provided.[203] Some opportunity for public involvement may be available under NEPA during the park planning process and when implementation decisions are made.[204] But

---

The litigation was settled, with the Park Service agreeing to implement an interim, interventionist bison management policy, including capturing, testing, and slaughtering bison within the park. Montana v. United States, No. 95-6-H-CCL (D. Mont. 1995). For a brief description of this controversy, see *supra* notes 83-84 and accompanying text. In subsequent litigation, environmental organizations sued the Park Service, alleging that its interventionist interim bison management policy violates the Organic Act. Greater Yellowstone Coalition v. Babbitt, 952 F.Supp. 1435 (D. Mont. 1996). That argument was rejected by a Montana federal district court, which concluded that "park managers [have] broad discretion in determining how best to conserve wildlife and to leave them unimpaired for future generations." *Id.* at 1441. The denial of interim injunctive relief was affirmed on appeal. Greater Yellowstone Coalition v. Babbitt, 1997 WL 121046 (9th Cir.(Mont.). On the Yellowstone bison controversy, see generally Keiter & Froelicher, *supra* note 13.

198. 5 U.S.C. §§ 551-612 (1994).

199. Significantly, the APA rulemaking procedures do not apply "to interpretative rules, general statements of policy, or rules of agency organization, procedure, or practice." 5 U.S.C. § 553(b)(3)(A). For a general discussion of the legal difference between substantive rules, interpretive rules, and statements of policy, see Robert A. Anthony, *Interpretive Rules, Policy Statements, Guidances, Manuals, and the Like—Should Federal Agencies Use Them to Bind the Public?*, 41 DUKE L.J. 1311 (1992).

200. 5 U.S.C. § 553. *See generally* BERNARD SCHWARTZ, ADMINISTRATIVE LAW 161-222 (3d ed. 1991). The Park Service, however, may not be legally obligated to adhere to the APA's informal rulemaking procedures: 5 U.S.C. § 553(a)(2) excepts matters involving "public property" from these rulemaking procedures. *See* Wilderness Public Rights Fund v. Kleppe, 608 F.2d 1250, 1253 (9th Cir. 1979); Clipper Cruise Line, Inc. v. United States, 855 F. Supp. 1, 3 (D.D.C. 1994). While recognizing this exception, courts also have ruled that it should be narrowly construed. United States v. Picciotto, 875 F.2d 345, 347 (D.C. Cir. 1989). Even if the Park Service is exempt from § 553 compliance, it still must comply with 5 U.S.C. § 552(a)(1), which requires public notification through the Federal Register of substantive rules or general statements of policy. In any event, Park Service regulations addressing preservation policy are subject to judicial review under an "arbitrary and capricious" standard. 5 U.S.C. § 706(2)(A) (1994).

201. *See, e.g.*, 36 C.F.R. pts. 2, 3, 6 (1996); *see also* Keiter, *Ecosystem Management*, *supra* note 179, at 82-83.

202. *Cf.* United States v. Picciotto, 875 F.2d 345 (D.C. Cir. 1989) (reversing a criminal conviction based on a Park Service regulation not adopted in compliance with APA requirements). *See generally* Anthony, *supra* note 199.

203. *See supra* notes 190-93 and accompanying text.

204. *See infra* notes 205-12 and accompanying text.

otherwise, the APA's commitment to public participation in rulemaking and to judicial oversight seems to have limited application to the formulation of national park preservation policy, which can only exacerbate accountability concerns.

C. *Related Concerns: NEPA, Endangered Species, and Tort Liability*

Although the Park Service has broad legal authority to define its own preservation policy, additional statutory obligations may affect the scope and implementation of the policy. When a park decides to adopt or pursue a specific nonintervention or restoration policy, its decision is potentially subject to National Environmental Policy Act (NEPA) procedural requirements.[205] Under NEPA, a major federal action significantly affecting the quality of the human environment requires preparation of an Environmental Impact Statement (EIS).[206] This EIS requirement is designed to ensure fully informed administrative decisions by requiring public disclosure of the environmental consequences of proposed actions and public involvement in the decision process.[207] These NEPA procedural requirements are subject to judicial oversight,[208] though the courts have not consistently required federal agencies to prepare full EISs before taking action.[209]

Significantly, the Park Service's general preservation policy has not been subject to NEPA review. The 1988 Management Policies document, for example, was not prepared under NEPA procedures.[210] This means that the general policy has escaped the harsh glare of public scrutiny that accompanies NEPA disclosures, and that it has been effectively insulated from judicial review. Moreover, very few General Management Plans for individual parks have been accompanied by EISs. And the same is true for specific policy applications, such as Yellowstone's northern range elk management policy. But even when the Park Service policy calls for nonintervention or "no action," NEPA procedural obligations would seem to attach, because such a decision could have potentially significant environmental ramifications.[211]

---

205. 42 U.S.C. §§ 4321-4347 (1994). *See generally* WILLIAM H. RODGERS, JR., ENVIRONMENTAL LAW § 9 (2d ed. 1994).

206. 42 U.S.C. § 4332(2)(C) (1994).

207. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989).

208. *See, e.g.*, Conner v. Burford, 848 F.2d 1441 (9th Cir. 1988); Thomas v. Peterson, 753 F.2d 754 (9th Cir. 1985).

209. *See, e.g.*, Cabinet Mountains Wilderness v. Peterson, 685 F.2d 678 (D.C. Cir. 1982); Park County Resource Council, Inc. v. United States Dep't of Agric., 817 F.2d 609 (10th Cir. 1987).

210. Some opportunity, however, for public comment on the policy proposal was provided, though the agency made no formal response to these comments. 53 Fed. Reg. 9821 (1988). Earlier policy documents, such as the 1968 NPS NATURAL AREAS POLICIES, *supra* note 9, predated NEPA and could not be expected to address NEPA concerns. *See* John Donahue, *Wildlife in Parks: Policy, Philosophy and Politics*, 14(1) GEORGE WRIGHT FORUM 47, 53-55 (advocating preparation of a programmatic action plan with NEPA documentation to examine wildlife management alternatives for the national parks).

211. *See* 40 C.F.R. § 1508.18 (1996) (providing that failure to act can constitute agency action). Whether NEPA compliance attaches to a federal nonintervention decision raises an interesting legal question; it might be argued that no "action" has been taken that "significantly af-

Ignoring NEPA may be counterproductive. The NEPA process provides the Park Service with an opportunity to clarify its preservation policies, to garner public support for them, and to respond directly to scientific and other criticisms. It also provides the public with an opportunity to inject its values and concerns into the decision process. Moreover, NEPA processes can—and should—be employed to assess the full ecological dimensions of implementation decisions, to engage other affected agencies in the implementation process, and to promote ecosystem management initiatives, which is particularly important given the transboundary impacts that accompany many Park Service preservation policies.[212] In short, by ensuring broad involvement in defining and implementing Park Service preservation policy, NEPA procedures can be used to legitimize nonintervention and ecological restoration decisions.

The powerful Endangered Species Act (ESA),[213] which is administered by the U.S. Fish and Wildlife Service, also impacts national park preservation policy. Designed to protect any species facing possible extinction and its habitat,[214] the ESA prohibits federal agencies from jeopardizing a "listed" species or from adversely modifying its habitat.[215] It also prohibits anyone from "taking" a "listed" species, which includes habitat modification.[216] Finding that the Endangered Species Act is fundamentally preservationist in nature, the Supreme Court has ruled that it gives species protection priority over other considerations.[217]

---

fects" the environment. One court has ruled that the Secretary of the Interior's decision not to intervene into Alaska's decision authorizing a wolf hunt on federal lands did not constitute a major *federal* action for NEPA purposes. Defenders of Wildife v. Andrus, 627 F.2d 1238 (D.C. Cir. 1980). However, in the case of the Park Service's preservation policy, it seems clear that a *federal* resource management action has occurred when park officials implement a nonintervention management policy for certain species of wildlife, such as elk.

212. In short, NEPA can be used to broaden the Park Service's environmental focus and to promote interjurisdictional cooperation for its preservation policies. NEPA processes also can be used to inject biodiversity considerations into resource management policy and decisions. *See* Dinah Bear, *Using the National Environmental Policy Act to Protect Biological Diversity*, 8 TUL. ENVTL. L.J. 77, 80-83 (1994); Robert B. Keiter, *NEPA and the Emerging Concept of Ecosystem Management on the Public Lands*, 25 LAND & WATER L. REV. 43, 44-54 (1990); Cynthia Carlson, *NEPA and the Conservation of Biological Diversity*, 19 ENVTL. L. 15 (1988); HEALTHY ECOSYSTEMS AND SUSTAINABLE ECONOMIES II, *supra* note 121, at 69.

213. 16 U.S.C. §§ 1531-1543 (1994). *See generally* George Cameron Coggins & Irma S. Russell, *Beyond Shooting Snail Darters in Pork Barrels: Endangered Species and Land Use in America*, 70 GEO. L.J. 1433 (1982) (discussing the developments leading to the enactment of and the implications of the Endangered Species Act).

214. 16 U.S.C. § 1531(b) (1994). Under the ESA, among other things, a species facing possible extinction is to be "listed" as either endangered or threatened, a recovery plan is to be prepared, and critical habitat is to be designated. 16 U.S.C. § 1533 (1994); *see* Federico M. Cheever, *The Road to Recovery: A New Way of Thinking About the Endangered Species Act*, 23 ECOLOGY L.Q. 1 (1996); Katherine Simmons Yagerman, *Protecting the Critical Habitat Under the Federal Endangered Species Act*, 20 ENVTL. L. 811 (1990).

215. 16 U.S.C. § 1536(a)(2) (1994). *See, e.g.*, Sierra Club v. Yeutter, 926 F.2d 429 (5th Cir. 1991); Thomas v. Peterson, 753 F.2d 754 (9th Cir. 1985).

216. 16 U.S.C. § 1538 (a)(1)(B) (1994); *see* Babbitt v. Sweet Home Chapter of Communities, 115 S. Ct. 2407 (1995). *See generally* Federico M. Cheever, *An Introduction to the Prohibition Against Takings in Section 9 of the Endangered Species Act of 1973: Learning to Live with a Powerful Species Preservation Law*, 62 U. COLO. L. REV. 109 (1991) (discussing the history, importance, and future of section 9).

217. *See* Tennessee Valley Auth. v. Hill, 437 U.S. 153 (1978).

In national parks where ESA-listed species are present, the Endangered Species Act has become the driving force behind species preservation efforts. For example, Yellowstone's grizzly bear management and wolf reintroduction programs are being implemented under the Endangered Species Act rather than the National Parks Organic Act.[218] Should a conflict arise between these two statutes, the more specific and protective Endangered Species Act provisions would appear to take precedence over any less protective park management policies.[219] To facilitate controversial species reintroductions, such as Yellowstone's wolf reintroduction, the ESA contains an "experimental population" provision, which authorizes special rulemaking and limited taking to address the concerns of nearby landowners and others.[220] In addition, because the ESA prohibition on takings extends to private as well as public land, it provides a legal basis for extending preservation efforts beyond park boundaries.[221] Thus, when ESA-protected species are involved, the Endangered Species Act can be viewed as supplementing and strengthening national park preservation efforts.

The threat of tort liability, based upon the Federal Tort Claims Act (FTCA),[222] generally should not deter the Park Service from pursuing its preservation policy. In the national park setting, the typical FTCA case involves a personal injury claim based on the Park Service's alleged negligence for not protecting visitors from wilderness hazards.[223] When faced with such claims, the courts have consistently relied upon the FTCA's "discretionary function" provision[224] to reject attacks on the Park Service's resource man-

---

218. *See supra* notes 85-97 and accompanying text.

219. In other words, the ESA's species protection requirements should prevail over any national park management policies that might "jeopardize" or "take" a protected species. For example, a Park Service decision to locate visitor facilities or to construct a road in critical habitat for an ESA-listed species would be subject to challenge under the Endangered Species Act. *Cf.* National Wildlife Fed'n v. National Park Serv., 669 F. Supp. 384, 390-91 (D. Wyo. 1987) (rejecting both ESA and Organic Act claims in a challenge to Yellowstone's decision not to close the Fishing Bridge campground despite its location in prime grizzly bear habitat). However, Park Service limitations on visitor activities to protect endangered species are subject to review under an arbitrary and capricious standard and must be based on real not speculative evidence. Mausolf v. Babbitt, 913 F. Supp. 1334 (D. Minn. 1996) (enjoining the Park Service from closing part of Voyageurs National Park to snowmobiling to protect ESA-listed wolves because there was no evidence of potential harm to wolves). Nonetheless, the Park Service would appear to have the authority under the Organic Act to adopt and implement more protective policies than are required under the Endangered Species Act, so long as the policy is reasonably related to conserving park resources in an unimpaired condition and is supported by credible factual evidence. 16 U.S.C. § 1 (1994). In short, the Endangered Species Act establishes a maximum threshold but not a minimum governing the protection of natural resources in national parks.

220. 16 U.S.C. § 1539(j) (1994). On the use of the "experimental population" provision to facilitate wolf reintroduction in Yellowstone, see Steven H. Fritts, *Management of Wolves Inside and Outside Yellowstone National Park and Possibilities of Wolf Management Zones in the Greater Yellowstone Area*, in WOLVES FOR YELLOWSTONE?, *supra* note 73, at 1-9.

221. *See infra* Parts V.D, V.D.1.

222. 28 U.S.C. §§ 2671-2680 (1994).

223. *See, e.g.*, Johnson v. United States, 949 F.2d 332 (10th Cir. 1991); Zumwalt v. United States, 928 F.2d 951 (10th Cir. 1991); Martin v. United States, 546 F.2d 1355 (9th Cir. 1976); Smith v. United States, 546 F.2d 872 (10th Cir. 1976).

224. 28 U.S.C. § 2680(a) (1994). *See generally* Gisele C. DuFort, Note, *All the King's Forces or The Discretionary Function Doctrine in the Nuclear Age:* Allen v. United States, 15 ECOLOGY L.Q. 477 (1988).

agement policies. Under the discretionary function doctrine, government agencies are absolved from liability for public policy judgments "grounded in social, economic and political policy."[225] In *Martin v. United States*,[226] for example, Yellowstone officials were not responsible for a deadly grizzly bear attack attributed to their decision closing the park dumps to bears. Concluding that Yellowstone's grizzly bear management policy involved discretionary judgments, the court observed that Congress did not intend to make the United States "an insurer of the safety of all Yellowstone National Park visitors."[227]

In the national park setting, however, the courts have not consistently accepted the discretionary function defense when the tort claim is based on a failure to warn of a hazardous condition. In *Smith v. United States*,[228] for example, the court found that the government's duty to warn visitors of a potential national park hazard (*i.e.* thermal pools) provided a separate basis for potential liability and did not involve a discretionary policy judgment. But where the hazard is apparent and merely reflects the fact that national parks are wilderness settings, the courts generally have rejected failure-to-warn claims.[229] Only in cases where the hazard was not evident and was known to the Park Service have the courts found liability. Yet even in these cases, the Park Service can avoid the risk of liability by providing an adequate warning. Thus, the threat of FTCA liability for visitor injuries should not be a significant limitation on national park preservation policy.

D. *Beyond the Boundary: Regulation and Liability*

In implementing its preservation policy, the Park Service must acknowledge that park wildlife and ecological processes will not respect park boundaries. Predators may prey on domestic livestock outside the park, ungulates may graze on adjacent private lands, and fire may burn beyond the boundary and destroy adjoining property. When this occurs, park neighbors may respond by killing park wildlife or suing for damages. These ecological and practical realities raise two important legal questions.[230] First, does the Park Service have any legal authority to protect park resources beyond the boundary line? Second, does the Park Service face any liability for damages that occur beyond park boundaries?

---

225. United States v. Varig Airlines, 467 U.S. 797, 814 (1984); *see* Berkovitz v. United States, 486 U.S. 531, 536-39 (1988).

226. 546 F.2d 1355 (9th Cir. 1976).

227. *Martin*, 546 F.2d at 1360. Similarly, in *Johnson v. United States*, 949 F.2d 332 (10th Cir. 1991), the discretionary function doctrine was invoked to reject liability claims predicated on the Park Service's alleged failure to regulate mountain climbing activities in Grand Teton National Park. *Id.* at 337; *see also Zumwalt*, 928 F.2d at 954-56.

228. 546 F.2d 872 (10th Cir. 1976); *see also* Boyd v. United States *ex rel.* U.S. Army, Corps of Engineers, 881 F.2d 895 (10th Cir. 1989).

229. *See, e.g.*, Kiehn v. United States, 984 F.2d 1100, 1102-06 (10th Cir. 1993); *Johnson*, 949 F.2d at 337-38; *Zumwalt*, 928 F.2d at 955-56.

230. Transboundary impacts also may raise legal issues under NEPA and the Endangered Species Act. *See supra* notes 205, 231-43 and accompanying text for a brief discussion of how these statutes may apply beyond park boundaries.

1. Regulatory Authority on Adjacent Lands

Although national park wildlife ordinarily can be expected to stray beyond park boundaries, the Park Service has only limited authority to regulate these animals once they leave the park. Whether the expansive regulatory power that the Park Service enjoys within its own domain extends beyond the boundary line remains an uncertain and contentious issue. As a result, when wildlife cross the boundary, they are ordinarily subject to state jurisdictional authority.[231] State wildlife agencies are not governed by a preservation mandate, and they generally do not practice nonintervention management.[232] Rather, state wildlife agencies are primarily devoted to producing an annual big game crop to meet the demand of local hunters. In some cases, state wildlife management policies can serve to compliment the Park Service's ecological goals, as in the case of Yellowstone's northern elk herd.[233] In other cases, however, these policy differences could threaten the integrity of national park ecosystem components or processes.

To address these policy differences, the Park Service may consider extending its regulatory authority onto adjacent lands for ecological purposes. Under the Property Clause,[234] Congress plainly has the authority to regulate activities on adjoining nonfederal lands that could harm public lands or resources.[235] Congress can also delegate its regulatory power to the federal agencies that are responsible for those lands.[236] According to one court, a general congressional grant of regulatory power is sufficient to enable federal public land management agencies to regulate threatening activities on adjacent nonfederal lands. In *United States v. Lindsey*,[237] the Ninth Circuit Court of Appeals upheld a Forest Service regulation prohibiting fires—even on nonfederal lands—within the boundaries of a national recreation area.[238]

Congress has not expressly delegated extra-territorial regulatory powers to the Park Service that might be invoked to protect park ecological resources beyond park boundaries.[239] Nonetheless, Congress has imposed a responsibility on the Park Service, through the 1978 amendments to the Organic Act, to protect park resources against threatening activities, whether those activities arise on park lands or adjacent lands.[240] The so-called Redwood Amendment

231. 16 U.S.C. § 528 (1994); 43 U.S.C. § 1732(b) (1994). *See generally* Coggins & Ward, *supra* note 117 (providing an historical overview of public land wildlife management policy and arguing for consideration of wildlife when making any resource decision).

232. *See generally* Coggins & Ward, *supra* note 117; LUND, *supra* note 117.

233. *See supra* note 74 and accompanying text.

234. U.S. CONST. art. IV, § 3, cl. 2.

235. Kleppe v. New Mexico, 426 U.S. 529 (1976); Camfield v. United States, 167 U.S. 518 (1897); Minnesota v. Block, 660 F.2d 1240 (8th Cir. 1981); *see* GEORGE CAMERON COGGINS & ROBERT L. GLICKSMAN, PUBLIC NATURAL RESOURCES LAW 3-17 (1996).

236. *See* United States v. Grimaud, 220 U.S. 506 (1911).

237. 595 F.2d 5 (9th Cir. 1979).

238. *Lindsey*, 595 F.2d at 6; *see also* United States v. Arbo, 691 F.2d 862 (9th Cir. 1982); Free Enter. Canoe Renters Ass'n v. Watt, 549 F. Supp. 252 (E.D. Mo. 1982), *aff'd*, 711 F.2d 852 (8th Cir. 1983).

239. However, the Park Service has been given general regulatory powers that might be extended beyond park boundaries under the *Lindsey* rationale. *See Lindsey*, 595 F.2d at 6.

240. National Park Service Act Amendments of 1978, Pub. L. No. 95-250, § 101, 92 Stat.

provides that "the protection, management and administration of [national parks] shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which those areas have been established."[241] Although courts have ruled that the amended Organic Act imposes a legal duty on the Secretary of the Interior to protect park resources, they have not affirmatively obligated park officials to intervene into the natural resource management judgments made by neighboring agencies.[242] Given the contentious federalism and property rights issues at stake, Park Service officials have been reluctant to assert their authority aggressively beyond park boundaries.[243] Thus, although the Park Service may have the latent power to pursue its preservation objectives beyond park boundaries, legal ambiguities as well as practical realities may effectively prevent it from doing so.[244]

2. Tort and Takings Liability

Under its preservation policy, a Park Service decision not to intervene with wildlife or natural processes raises the specter of liability for injuries that occur outside park boundaries. Is the Park Service, for example, liable under the Federal Tort Claims Act for damages caused by wildlife that wander outside the park or by wildfires that burn beyond the boundary? Or is the Park Service liable, under constitutional takings doctrine, if park wildlife impair the value of adjacent property? In each case, the answer appears to be no.

Under the Federal Tort Claims Act, the same analysis that applies to injuries within national parks would apply to claims arising beyond park boundaries.[245] Because the Park Service's nonintervention and ecological restoration policies are based upon a legally permissible preservation policy judgment, they should be protected under the discretionary function doctrine.[246] In the case of Yellowstone, the Park Service should be immunized from tort liability if bison carrying brucellosis wander unchecked beyond park boundaries or if a lightning-caused fire should burn beyond park boundaries. In both cases, the preservation policy decision can be traced directly to a judgment

---

163, 166 (codified as amended at 16 U.S.C. § 1a-1 (1994)); *see* Robert B. Keiter, *On Protecting the National Parks From the External Threats Dilemma*, 20 LAND & WATER L. REV. 355, 370-75 (1985); George Cameron Coggins, *Protecting the Wildlife Resources of National Parks from External Threats*, 22 LAND & WATER L. REV. 1, 15-19 (1987); William J. Lockhart, *External Park Threats and Interior's Limits: The Need for an Independent Park Service*, *in* OUR COMMON LANDS: DEFENDING THE NATIONAL PARKS, *supra* note 5, at 3, 30-36.

241. 16 U.S.C. § 1a-1 (1994).

242. *See* Sierra Club v. Andrus, 487 F. Supp. 443 (D.D.C. 1980); *see also* Sierra Club v. Department of the Interior, 424 F. Supp. 172 (N.D. Cal. 1976).

243. *See* Robert B. Keiter, *Taking Account of the Ecosystem on the Public Domain: Law and Ecology in the Greater Yellowstone Region*, 60 U. COLO. L. REV. 923, 948-51 (1989); Sax & Keiter, *supra* note 163, at 217-22; THE CONSERVATION FOUNDATION, NATIONAL PARKS FOR A NEW GENERATION: VISIONS, REALITIES, PROSPECTS 151 (1985).

244. *But see supra* notes 213-21 and accompanying text (suggesting that the Endangered Species Act's protection against takings effectively extends federal regulatory power beyond national park boundaries).

245. *See supra* notes 222-29 and accompanying text.

246. *See supra* notes 225-29 and accompanying text.

consistent with the Park Service's organic responsibilities. The fact that no FTCA claims were successfully litigated in the aftermath of Yellowstone's 1988 fires further supports the conclusion that tort liability concerns generally should not deter the Park Service from pursuing its preservation policy.[247]

There is, however, one ruling that raises the specter of potential tort liability. In *Parker Livestock and Cattle Co., Inc. v. United States*,[248] a Wyoming federal district court summarily rejected the argument that the discretionary function doctrine barred a FTCA claim based on transmission of a wildlife disease and found that the Park Service had a duty to warn of the potential for disease transmission. In *Parker*, a Wyoming rancher claimed that his cattle herd contracted brucellosis from bison or elk that had wandered outside Yellowstone National Park. The court did not explain its discretionary function ruling, even though it is inconsistent with other Federal Tort Claims Act decisions. It is particularly difficult to reconcile the *Parker* ruling, which effectively reviews a national park wildlife management policy, with the ruling in *United States v. Martin*,[249] which clearly immunized Yellowstone's grizzly bear management policy from tort suits.[250] Nonetheless, the *Parker* court ultimately ruled the rancher did not establish that park wildlife were responsible for infecting his cattle herd.[251] Thus, even without FTCA discretionary function immunity, causation proof problems make it difficult to challenge national park preservation policies through the medium of a tort suit.

A constitutional takings claim is also unlikely to succeed against Park Service preservation policies that might indirectly damage adjacent property. Although the Supreme Court has recently reinvigorated constitutional takings doctrine, these cases have involved government zoning limitations imposed on private landowners.[252] In cases involving public land and resources, the courts have continued to reject most takings claims.[253] This is particularly true in cases involving takings claims against federal officials responsible for wildlife that allegedly damaged private property. In *Mountain States Legal Foundation v. Hodel*,[254] for example, the court ruled that no taking occurred when wild horses protected by federal law consumed forage on private land, finding that a reduction in the value of property was not a taking.[255] Similar-

247. Relatedly, the federal government does not offer compensation for livestock or other damages attributed to reintroduced wolves. FISH & WILDLIFE SERV., DEP'T OF THE INTERIOR, THE REINTRODUCTION OF GRAY WOLVES TO YELLOWSTONE NATIONAL PARK AND CENTRAL IDAHO: DRAFT ENVIRONMENTAL IMPACT STATEMENT 2-5 (1993).

248. 796 F. Supp. 477 (D. Wyo. 1992); *see also* Parker Land & Cattle Co. v. Wyoming Game & Fish Comm'n, 845 P.2d 1040 (Wyo. 1993).

249. 546 F.2d 1355 (9th Cir. 1976); *see supra* notes 226-27 and accompanying text.

250. For a detailed analysis of the *Parker* ruling and its treatment of the FTCA discretionary function doctrine, see Keiter & Froelicher, *supra* note 13, at 38-45.

251. *Parker*, 796 F. Supp. at 488.

252. *See* Dolan v. City of Tigard, 512 U.S. 374 (1994); Lucas v. South Carolina Coastal Council, 505 U.S. 1003 (1992); Nollan v. California Coastal Comm'n, 483 U.S. 825 (1987).

253. *See* GEORGE CAMERON COGGINS ET AL., FEDERAL PUBLIC LAND AND RESOURCES LAW 228-51 (3d ed. 1993).

254. 799 F.2d 1243 (10th Cir. 1986).

255. *Mountain States Legal Found.*, 799 F.2d at 1431.

ly, in *Christy v. Hodel*,[256] the court rejected a takings challenge to the Endangered Species Act, concluding that the Act's prohibition against killing grizzly bears depredating on livestock was a legitimate exercise of federal regulatory power.[257] Given the well-known risks associated with property ownership in the Yellowstone region and other national park settings, adjacent property owners can—and should—reasonably expect some losses attributed to the national park's presence and its preservation management policies.[258] When these management policies are clearly established and well-known, any other result would essentially make the government an unlimited insurer and give adjacent landowners a virtual veto over national park preservation policy.

VI. PRESERVATION REVISITED: EXPANDING THE VISION AND PROCESS

A. *A Policy at Risk*

Despite its apparently firm legal foundation, the Park Service's preservation policies still appear curiously vulnerable. Persistent criticism has taken a toll on national park preservation policy and called into question its validity in today's world. In part, this is because the related concepts of nonintervention and ecological restoration represent such a significant departure from earlier resource management policies. In part, it is because the national parks are no longer isolated islands, but must coexist with neighbors who are also part of the larger ecological complex. And in part, it is because the scientific assumptions and conclusions supporting specific preservation policies have not been fully accepted. As a result, national park preservation policy is in danger of being modified to accommodate more rather than less intensive management, which could render the basic policy suspect as well as the Park Service's commitment to it.

The greatest risk to the policy is its incremental or piecemeal erosion in the face of local political pressure and scientific criticism. In Yellowstone's case, significant adjustments already have been made to address adjacent landowner concerns in the case of bison, wolves, and fire.[259] In each instance, the Park Service has modified its nonintervention approach to address nonecological concerns, even agreeing to erect corrals to capture park bison. At the same time, Yellowstone's ungulate management policies are also under attack, primarily on scientific grounds for allegedly ignoring ecological con-

256. 857 F.2d 1324 (9th Cir. 1988).

257. *Christy*, 857 F.2d at 1335.

258. *See* Joseph L. Sax, *Ecosystems and Property Rights in Greater Yellowstone: The Legal System in Transition*, *in* THE GREATER YELLOWSTONE ECOSYSTEM, *supra* note 10, at 77, 77-82. *See generally* Eric T. Freyfogle, *Ownership and Ecology*, 43 CASE W. RES. L. REV. 1269 (1993) (discussing private land ownership and its relationship to ecology); John A. Humbach, *Law and a New Land Ethic*, 74 MINN. L. REV. 339 (1989) (explaining that existing use zoning will survive under the U.S. Supreme Court interpretations of the takings clause); James M. McElfish, Jr., *Property Rights, Property Roots: Rediscovering the Basis for Legal Protection of the Environment*, 24 ENVTL. L. REP. 10231 (1994) (discussing the limits of the rights of property owners).

259. See *supra* notes 83-84, 88-89, 103-06 and accompanying text for descriptions of these modifications.

cerns. Should the Park Service decide to intervene in this case, then Yellowstone's commitment to limited intervention will have been effectively compromised in each instance where it has come under attack.

The risk to national park preservation policy is exacerbated by the Park Service's traditional insularity, which further exposes its policy to powerful political, scientific, and other pressures. Historically, Park Service management has rarely reached beyond park boundaries; resource policy and implementation decisions have been viewed primarily as internal park matters and not subjected to much outside scrutiny.[260] Even when outside experts have been consulted (*e.g.* the Leopold Report), the resulting policy recommendations have ordinarily been promulgated internally without public involvement or consultation.[261] When national park preservation policy was refined in the 1988 Management Policies document,[262] it was not subjected to formal public involvement, through either NEPA review, APA rulemaking, or like procedures.[263] In addition, site-specific applications of the policy have not always been subject to full NEPA review.[264] At the same time, the Park Service's science program has been repeatedly criticized because it lacks independent stature and funding within the agency, has not taken full advantage of independent scientists, and does not consistently subject park research to outside peer review.[265] With limited public involvement in the policy formula-

260. This traditional insularity may reflect several related factors: Until recently national parks were physically isolated from most neighbors and park policies therefore did not often affect others; operating under a single-use (preservation) mandate, park management decisions generally have not been as controversial as those made by the multiple-use agencies; and environmental and other watchdog organizations have been preoccupied elsewhere on the public domain because development and other environmental pressures have been greater outside the national parks. *See generally* Sax & Keiter, *supra* note 163.

261. See *supra* notes 40-41 and accompanying text for a description of the origins of the policy.

262. *See supra* notes 51-55 and accompanying text.

263. WAGNER ET AL., *supra* note 10, at 161-62. Indeed, the Park Service has not regularly employed the law and legal procedures for resource management purposes. *See* Keiter, *Ecosystem Management*, *supra* note 179, at 82-83; Sax & Keiter, *supra* note 163, at 217-22; *see also* CLARKE & MCCOOL, *supra* note 3, at 205-207 (noting that the Park Service, in comparison to other federal resource management agencies, has not fully integrated NEPA processes into its policymaking or decisionmaking). However, in the case of the 1988 Management Policies document, the Park Service did announce preparation of the document in the Federal Register and solicit public comment. 53 Fed. Reg. 9821 (1988).

264. Rather than prepare full EISs on resource management decisions, the Park Service has often prepared less rigorous environmental assessments, which provide fewer opportunities for public involvement and entail less detailed environmental analysis. For example, Yellowstone's revised fire management policy and interim bison management policies are based on environmental assessments rather than EISs. *See supra* notes 83-84, 103-06 and accompanying text. Moreover, many park General Management Plans have been based on EAs rather than EISs, which is again true in Yellowstone's case. *See supra* note 60; *see also* WAGNER ET AL., *supra* note 10, at 161-62.

265. NATIONAL PARKS & CONSERVATION ASS'N, *supra* note 39, at 11; NATIONAL ACADEMY OF SCIENCES, *supra* note 39, at 446; *see also* Ervin Zube, *supra* note 39; U.S. DEP'T OF THE INTERIOR, OFFICE OF INSPECTOR GENERAL, AUDIT REPORT, NATURAL RESOURCE ACTIVITIES: NATIONAL PARK SERVICE, RPT. NO. 90-19 (1989). Recently, following creation of the Biological Resource Division in the U.S. Geological Survey, many Park Service were transferred to this new entity, further diminishing the agency's own scientific resources. *See* Zube, *supra* note 39, at 20-21. *See also* Huff, *supra* note 147, at 27 (noting that the Park Service "employs very few wildlife biologists and has no Service-wide organizational structure to support wildlife management profes-

tion process and diminished public confidence in the underlying scientific research, it is difficult for the Park Service to rebut the twin charges that national park preservation policies lack scientific justification and are insensitive to human concerns.

Of course, because the national parks are legislatively created entities, political reality will dictate some compromise and adjustment in management policy.[266] Moreover, any preservation policy that is based on ecological goals will require periodic adjustment as new scientific information becomes available and as environmental conditions change. But if incremental policy modifications and adjustments are not carefully conceived, supported by well-accepted scientific data, and harmonized with fundamental ecological preservation goals, then the policy itself may disappear in a welter of exceptions. As exceptions and implementation inconsistencies mount, preservation policies will become even more vulnerable to legal and political attack and will require more rather than less justification.[267] Should this occur, the American public will find the national parks subject to the same intensive management that prevails on all other public lands.

B. *Broadening the Policy Debate*

When national park preservation policy is placed in a larger historical and ecosystem context, several powerful arguments can be advanced to support the basic nonintervention and ecological restoration policies. These arguments are grounded in legal, scientific, and political considerations that highlight the unique and important role national parks play in the nation's commitment to promoting biological conservation and to advancing scientific knowledge.

The national parks occupy a unique legal position among the nation's public lands and thus offer otherwise unavailable resource management opportunities. By law, the national parks are the only federal lands where wildlife are preserved and not managed intensively for harvest purposes.[268] On national forest and BLM multiple-use public lands, wildlife are managed by state game and fish agencies primarily as a harvestable resource.[269] In federally

---

sionalism . . .").

266. *See* John Freemuth, *The National Parks: Political Versus Professional Determinants of Policy*, 49 PUBLIC ADMIN. REV. 278 (1989). *See generally* James L. Huffman, *The Inevitability of Private Rights in Public Lands*, 65 U. COLO. L. REV. 241 (1994) (concluding that as long as the political process controls resources on public lands, special interest politics will play a role in establishing management policy).

267. *See supra* Part V.B.

268. *See supra* note 159 and accompanying text. *See also* John Freemuth, *Our national Park Policy: Some Thoughts on Politics and the Role of Science*, 14(1) GEORGE WRIGHT FORUM 34, 37 (1997) (arguing that the Park Service's statutory obligation to manage national parks "for future generations" requires a "long term 'public interest' perspective," which distinguishes national park management from the management standards governing other public land management agencies).

269. *See supra* notes 232-33 and accompanying text. Although the Forest Service has a biodiversity conservation responsibility, 16 U.S.C. § 1604(g)(3)(B) (1994), this mandate is qualified by multiple-use language and has not been consistently enforced by the courts. *See, e.g.*, Leavenworth Audubon Adopt-a-forest Alpine Lakes Protection Soc. v. Ferraro, 881 F. Supp. 1482 (W.D. Wash. 1995); Sierra Club v. Robertson, 845 F. Supp. 485 (S.D. Ohio 1994). *But see* Seattle

designated wilderness areas, state game and fish agencies are also responsible for wildlife management,[270] and the emphasis is on maintaining harvestable populations of big game species. Even in national wildlife refuges, which are designed to protect wildlife habitat, hunting is permitted as are other secondary activities.[271] The national parks are therefore the sole public land designation where the legal opportunity exists to pursue a noninterventionist wildlife management policy.[272] Moreover, as relatively isolated enclaves of undisturbed lands, the national parks offer one of the few suitable locations for controversial species recovery and reintroduction efforts.

Indeed, important national ecological preservation goals are inherently linked to the Park Service's preservation policies. An emerging yet powerful national commitment to biodiversity conservation is reflected in such laws as the National Park Service Organic Act, Endangered Species Act, Wilderness Act, Wild and Scenic Rivers Act, and National Forest Management Act.[273] Scientists agree that effective biodiversity conservation requires an ecosystem-oriented strategy that transcends the boundaries of current land designations.[274] The national parks, which often contain extensive expanses of undeveloped lands, are vital components in these ecosystem-based conservation efforts. In Yellowstone's case, for example, the park is a critical refuge for grizzly bears, wolves, bison, and other wide-ranging and controversial species that do not coexist easily with people. In essence, the park serves as a protected ecological core, where human intrusions into biological processes are limited and where dwindling species can be nurtured back to health. A national park preservation policy emphasizing limited intervention and ecological restoration should help ensure the integrity of this ecosystem core, and thus supplement broader biological conservation goals.

The national parks also have enormous scientific value as large outdoor

---

Audubon Society v. Evans, 952 F.2d 297, 301 (9th Cir. 1991) (treating the NFMA biodiversity provision as a substantive restraint on Forest Service resource management decisions). *See generally* Jack Tuholske & Beth Brennan, *The National Forest Management Act: Judicial Interpretation of a Substantive Environmental Statute*, 15 PUB. LAND L. REV. 53, 68-77 (1994).

270. 16 U.S.C. § 1133(b)(8) (1994 & Supp. 1997).

271. 16 U.S.C. §§ 668dd-668ee (1994); Humane Society v. Lujan, 768 F. Supp. 360 (D.D.C. 1991); Defenders of Wildlife v. Andrus, 455 F. Supp. 446 (D.D.C. 1978). *See generally* Richard J. Fink, *The National Wildlife Refuges: Theory, Practice, and Prospect*, 18 HARV. ENVTL. L. REV. 1 (1994).

272. The same is also true regarding national parks and fire management policy, though federal policy is moving toward allowing some natural and prescribed fires to burn on other public lands. This is particularly true in designated wilderness areas, which are usually large enough to allow lightning caused fires to burn without threatening private property or lives. *See* 1995 FEDERAL WILDLAND FIRE MANAGEMENT, *supra* note 103.

273. See *Biodiversity Symposium*, 8 TUL. ENVTL. L.J. 1 (1994); William M. Flevares, *Ecosystems, Economics, and Ethics: Protecting Biological Diversity at Home and Abroad*, 65 S. CAL. L. REV. 2039 (1992); Holly Doremus, *Patching the Ark: Improving Legal Protection of Biological Diversity*, 18 ECOLOGY L.Q. 265 (1991); *see also* BIODIVERSITY AND THE LAW (W.J. Snape, ed. 1995); ENVIRONMENTAL POLICY AND BIODIVERSITY (R.E. Grumbine, ed. 1994). Beyond these statutes, biodiversity considerations are now being integrated into NEPA processes. *See* Bear, *supra* note 212; Carlson, *supra* note 212; OFFICE OF TECH. ASSESSMENT, U.S. CONGRESS, TECHNOLOGIES TO MAINTAIN BIOLOGICAL DIVERSITY (1987); *see also* Robert L. Fischman, *Biological Diversity and Environmental Protection: Authorities to Reduce Risk*, 22 ENVTL. L. 435 (1992).

274. See *supra* notes 15-18 and accompanying text.

biological laboratories.[275] As a scientific matter, the Park Service's nonintervention and restoration policies represent an important experiment in understanding ecological processes on a broad scale. Not subject to extensive human intervention, national park ecosystems provide scientists with the opportunity to study how a basically unaltered ecosystem functions. This opportunity is unique: Outside the national parks, most landscapes have been altered by intensive human management to promote agricultural cultivation, resource extraction, housing developments, and the like. National park ecosystems also provide scientists with an important baseline for measuring the impact that human intrusions have on ecological processes.[276] By understanding how an undisturbed ecosystem functions and evolves, scientists are better able to assess the impact that human activities may have on ecological processes and to determine when intervention may be necessary to protect critical components.[277]

As a practical matter, much of the data necessary to make informed ecological intervention judgments concerning park ecosystems is not available. Scientists now understand that ecosystem processes are dynamic and often chaotic, tending toward disequilibrium rather than stability and balance.[278] To manage these dynamic ecological systems effectively, more rather than less scientific information and historical data is necessary. But there is little long term scientific data available to predict how national park ecosystems function or how they will respond to human interventions or perturbations.[279] In short, scientists often do not know enough about national park biological resources and ecological processes to offer reliable predictions that can serve as the basis for an informed interventionist policy. In the face of this uncertainty, the national parks represent particularly appropriate locations for gathering this scientific information over ecologically significant time periods.[280]

Moreover, the Park Service's commitment to minimal intervention represents a singular acknowledgment of the complexities involved in ecological management. In the history of utilitarian resource management, scientific management techniques based on human manipulation of ecological systems have often failed and imperiled important biological resources. Public land manage-

---

275. *See, e.g.*, Boyce, *supra* note 149, at 203; NATIONAL RESEARCH COUNCIL, *supra* note 46, at 261; NATIONAL PARKS & CONSERVATION ASS'N, *supra* note 39, at 6-7.

276. NATIONAL PARKS AND PROTECTED AREAS, *supra* note 70, at 415-49; NATIONAL PARKS & CONSERVATION ASS'N, *supra* note 39, at 7, 11.

277. Jane Lubchenco et al., *The Sustainable Biosphere Initiative: An Ecological Research Agenda*, 72 ECOLOGY 371, 397-401 (1991).

278. *See* DANIEL B. BOTKIN, DISCORDANT HARMONIES: A NEW ECOLOGY FOR THE TWENTY-FIRST CENTURY (1990); A. Dan Tarlock, *The Nonequilibrium Paradigm in Ecology and the Partial Unraveling of Environmental Law*, 27 Loy. L.A. L. Rev. 1121 (1994). *See generally* Fred P. Bosselman & A. Dan Tarlock, *The Influence of Ecological Science on American Law: An Introduction*, 69 CHI.-KENT L. REV. 847 (1994).

279. Boyce, *supra* note 149, at 184-89; NATIONAL PARKS & CONSERVATION ASS'N, *supra* note 39, at 5-7; Huff, *supra* note 147 at 29.

280. This endorsement of long term monitoring and data gathering is not a recommendation against any interventionist management; rather, it is consistent with the concept of adaptive management and the need for caution before intervening in the face of scientific uncertainty. *See infra* notes 289-91 and accompanying text.

ment agencies have not always accurately predicted or understood how ecosystems will react to manipulation or disturbance. The Forest Service, despite its sustained yield mandate and its extensive scientific research program, has not been able to operate a sustainable timber harvest program on the national forests.[281] Similarly, the BLM's range management program has left federal rangelands in poor ecological condition.[282] As often as not, the scientific assumptions underlying established thresholds of intervention have proven wrong, leaving natural resource managers unsure how to manipulate complex ecological systems. Given this recurrent pattern of failure in applying interventionist management techniques, the Park Service's preservation policy should not be faulted for advocating less rather than more intervention in the face of uncertainty.

C. *Toward Enhanced Legitimacy and Accountability*

But these arguments—no matter how compelling—can not alone sustain and validate national park preservation policy. Underlying legitimacy and accountability concerns also must be addressed. The legitimacy concern reflects the fact that the scientific and other assumptions underlying preservation policy have not been opened widely to outside review or scrutiny through public involvement or related processes,[283] which means the policy has not been validated outside of the agency. The related accountability concern is based upon the asserted lack of objectively verifiable management standards or goals,[284] which makes it difficult to determine whether national park preservation policy is working or not.[285] Additional public involvement and scientific review opportunities would address most of these legitimacy and accountability concerns; it would provide a forum to evaluate policy assumptions, it would obligate agency officials to respond to criticisms, and it would promote public education and understanding.

Legal opportunities are available to open Park Service preservation policy more broadly to public and scientific scrutiny. During the past several decades, as public confidence in agency expertise throughout the federal bureaucracy

---

281. *See* PAUL W. HIRT, A CONSPIRACY OF OPTIMISM: MANAGEMENT OF THE NATIONAL FORESTS SINCE WORLD WAR TWO 271-78 (1994); DAVID A. CLARY, TIMBER AND THE FOREST SERVICE 195-99 (1986).

282. *See* BUREAU OF LAND MANAGEMENT, U.S. DEPT. OF THE INTERIOR, RANGELAND REFORM '94: DRAFT ENVIRONMENTAL IMPACT STATEMENT (1994); Joseph M. Feller, *What is Wrong with the BLM's Management of Livestock Grazing on the Public Lands?*, 30 IDAHO L. REV. 555 (1993-94); U.S. HOUSE OF REP. COMM. ON GOVERNMENT OPERATIONS, FEDERAL GRAZING PROGRAM: ALL IS NOT WELL ON THE RANGE, 99TH CONG., 2D SESS., H. RPT. 99-593 (1986).

283. *See supra* notes 260-65 and accompanying text.

284. *See supra* notes 123-29 and accompanying text.

285. To the extent that national park preservation policy is based on general, nonquantifiable standards (*i.e.* limited intervention and ecological restoration) rather than specific, quantifiable standards, the lack of accountability criticism is not entirely fair. As noted earlier, these general preservation policies are significant departures from conventional natural resource management approaches, and should therefore not be judged solely by traditional criteria. *See supra* notes 115-22 and accompanying text. However, the Park Service still must be accountable for its policies, which can be achieved by ensuring that the policies are subject to public scrutiny and judicial oversight under NEPA, the APA, and related laws.

has waned,[286] multiple laws have been passed opening administrative decision processes to public scrutiny and judicial review. The NEPA EIS process and APA rulemaking procedures both offer opportunities for public review and comment on national park preservation policy and specific applications of the policy.[287] These laws also require the Park Service to respond to the public comments,[288] a process designed to promote thoughtful and accountable administrative decisionmaking. Alternatively, under the Federal Advisory Committee Act,[289] the Park Service could utilize a neutral advisory committee to review the scientific conclusions and assumptions underlying controversial preservation policies. The FACA imposes specific neutrality, openness, and public notification requirements, which should ensure an open and even-handed assessment of basic policy assumptions and of the ramifications of specific applications. Moreover, judicial review is available to ensure procedural compliance and rational decisionmaking.

National park preservation policy can also be validated through the use of adaptive management techniques.[290] Much of the criticism directed toward the policy is based on fundamental disagreement over scientific assumptions and interpretations.[291] Whether or not, for example, Yellowstone's northern range is on the verge of ecological collapse from ungulate overbrowsing raises difficult scientific questions. Adaptive management, which contemplates regular monitoring and assessment of ecological conditions along with periodic adjustments (or adaptations), can be employed to test scientific assumptions.[292] Other criticism of national park preservation policy reflects a basic

---

286. Neither the Park Service nor other federal agencies any longer enjoy an unqualified public trust or ready deference to claims of agency expertise. An often skeptical public readily understands that most policy decisions are based upon value judgments rather than objective, value-free determinations. *See* Freemuth, *supra* note 266; WAGNER ET AL., *supra* note 10, at 158-63.

287. See *supra* notes 198-12 and accompanying text for a brief description of the EIS and APA rulemaking processes. Use of these procedures would provide Park Service officials with a basis for determining whether the policy is consistent with contemporary public values. It also would provide an opportunity to test the Park Service's scientific justifications for the policy against the claims of its scientific critics. And it would provide an opportunity to coordinate national park policy with neighboring agencies, which is an important dimension of any ecological management policy.

288. 40 C.F.R. § 1503.4 (1996) (requiring agencies preparing EISs to respond to comments); 5 U.S.C.A. § 553(c) (1994) (requiring a concise statement of the basis and purpose of the rule); *see also* Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402 (1971) (establishing the "hard look" doctrine for judicial review purposes, which effectively requires federal agencies to prepare an administrative record to facilitate judicial review in rulemaking challenges); ALFRED C. AMAN, JR. & WILLIAM T. MAYTON, ADMINISTRATIVE LAW § 2.1.5 (1993).

289. 5 U.S.C. app. § 2 (1994); *see* Sheila Lynch, Note and Comment, *The Federal Advisory Committee Act: An Obstacle to Ecosystem Management by Federal Agencies?*, 71 WASH. L. REV. 431 (1996).

290. On adaptive management, see generally KAI N. LEE, COMPASS AND GYROSCOPE: INTEGRATING SCIENCE AND POLITICS FOR THE ENVIRONMENT (1993); C.J. WALTERS, ADAPTIVE MANAGEMENT OF RENEWABLE RESOURCES (1986).

291. *See supra* notes 123-33 and accompanying text.

292. However, to the extent that adaptive management also contemplates aggressive intervention as part of the experimental adjustment process, this approach—which runs contrary to the Park Service's basic nonintervention policy—should only be employed after sufficient ecological data has been acquired over a long enough time frame. Moreover, in a region like Greater Yellowstone with expansive and ecologcially intertwined public lands, it would generally be preferable to experiment with manipulative management approaches on multiple-use public lands outside the national park, while using the park as a baseline for long term study of nonintervention manage-

disagreement over policy objectives and their impact on human interests. Adaptive management, which acknowledges that human value judgments and interests are critical dimensions of any natural resource policy, also contemplates the regular assessment and reevaluation of public concerns. This process can be used to secure public involvement in formulating and implementing preservation policy, which should ensure that it takes account of changing public concerns. In short, an adaptive management approach can be used to clarify policy objectives and assumptions, to address scientific complexity and uncertainty concerns, and to build needed support from myriad constituencies.

To be sure, utilizing these legal and adaptive management processes to validate national park preservation policy is not risk free. The processes can be cumbersome and expensive; they will almost certainly entail some diminution of managerial discretion; and they will subject the Park Service to additional public and even judicial scrutiny. But when the controversy involves a disagreement among scientific experts, the advisory committee and adaptive management processes provide a useful forum for addressing such problems. And when the controversy is over public values and concerns, the various public involvement processes offer an appropriate forum for identifying and addressing such differences. If the concern is that local rather than national resource management values may prevail in these settings, the Organic Act's clear preservationist mandate as well as the strong national constituency for national park protection should protect against most local excesses.[293] In sum, the openness, neutrality, responsiveness, and judicial review requirements that attach to these processes should promote accountability, which can only strengthen and further legitimize national park preservation policy.

VII. CONCLUSION

National park preservation policy embodies a fundamental shift in natural resource management philosophy. With its emphasis on minimizing human intervention into ecological systems and its commitment to ecological restoration, the policy has acknowledged a vital, new relationship between humans and the environment. Not surprisingly, this unconventional and largely untested preservation policy has been met with skepticism and resistance from several quarters. Yet drawing upon its flexible legal authority, the Park Service has administratively charted a new course, and done so without express congressional guidance. But the national parks are public lands, which means the

---

ment techniques.

293. Indeed, the legal processes described here are double-edged swords that can be invoked by any interested party, including those who advocate less intervention and more aggressive restoration efforts. If concerned about undue local influence, the Park Service would be well advised to motivate its national constituency to participate in formulating and implementing critical preservation policies. Not only would this counterbalance parochial participants, but it also would provide some protection against intermeddling by local congressional delegations. For a discussion of these problems in the Yellowstone context, see Robert B. Keiter, *Greater Yellowstone: Managing a Charismatic Ecosystem*, 3 UTAH ST. UNIV. NAT. RESOURCES & ENVTL. ISSUES 75 (1995); R. McGreggor Cawley & John Freemuth, *Tree Farms, Mother Earth, and Other Dilemmas: The Politics of Ecosystem Management in Greater Yellowstone*, 6 SOC'Y & NAT. RESOURCES 41 (1993); *see also supra* note 32 (noting that Secretary of the Interior Lane asserted, as early as 1918, that "the national interest must dictate all decisions affecting public and private enterprise in the parks").

ultimate validity of the policy is as much a political as a scientific question. Not only must these new ecological preservation policies be squared with prevailing social norms and preferences, but they must be sustained or at least tolerated in the arena of public opinion.

In the dynamic natural and political environment that engulfs the national parks, the Park Service faces manifold challenges maintaining and implementing its revised preservation policy. Often without complete knowledge, it must address scientific complexity and uncertainty, and it must respond to competing social and economic concerns. In this volatile atmosphere, it must seek to guard against incremental erosion of its basic commitment to nonintervention and restoration. The existing legal structure not only provides firm support for this new approach to preservation, but it is also flexible enough to allow further experimentation, clarification, and adjustment. However, neither the law nor the political system will long sustain an unaccountable policy or its consequences. The Park Service, therefore, should take full advantage of the existing legal flexibility to garner public support and to respond to its critics. In the final analysis, the continuing validity of national park preservation policy depends on the agency's ability to justify these new conceptions of the human relationship with nature.