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COMMENT

Struggling to Protect Ecosystems and Biodiversity Under NEPA and NFMA: The Ancient Forests of the Pacific Northwest and the Northern Spotted Owl

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I. Introduction

Like a canary in a coal mine, the northern spotted owl has been used to measure the health and vitality of the ancient forest ecosystems of the Pacific Northwest.[1] The Douglas Fir forests which covered this region have been diminished and fragmented across their range. Consequently, animal species native to the region have been banished, threatened with extinction, and driven to extinction.[2] The northern spotted

1. The area of the Pacific Northwest considered by this comment is the west side of the Pacific Crest. The area includes the Coast Range of California north from San Francisco Bay, Mt. Shasta, the Kalimiopsis along the California-Oregon border, the Coast Range in Oregon, the Cascade Range in Oregon and Washington, and the Olympic Mountains. The geographic area continues north through coastal British Columbia to southern Alaska, but that area is beyond the scope of this comment.

2. The grizzly bear is no longer found in the Cascades; the northern spotted owl has been listed as a threatened species under the Endangered Species Act; the cas-

owl has been listed as a threatened species under the Endangered Species Act (ESA).[3] The spotted owl is seen as an indicator species, a measure of the health and vitality of the ecosystem upon which it depends.[4] However, preserving the spotted owl means closing forest lands to logging interests. Workers, who thought that they could always do the work of their grandfathers, are finding themselves unemployed and without any prospect for jobs with comparable wages and benefits.[5]

The dispute over the spotted owl has been described as a "National Train Wreck."[6] It has been characterized by Congressional legislation of federal land management practices and driven by litigation. Timber sales in the federal forest reserves are available only sporadically, and are subject to the varying winds of litigation, agency action, and congressional policy. Timber sales in spotted owl habitat on national forest land have been barred by an injunction.[7] Under a court order, the Fish and Wildlife Service (FWS) has designated 6.9 million acres as habitat critical for the spotted owl's survival.[8] But the Bureau of Land Management (BLM) attempted to release its lands in Oregon from the obligation to preserve the spotted owl.[9]

The debate over the preservation of the spotted owl is

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cade wolf is extinct. *See* R. EDWARD GRUMBINE, GHOST BEARS - EXPLORING THE BIODIVERSITY CRISIS 66-69 (1992).

3. 16 U.S.C. §§ 1531-1543 (1988); 50 C.F.R. § 17.11(H)(1992).

4. *See infra* text accompanying notes 70-75. Remaining areas of habitat for the northern spotted owl totaled 7.1 million acres throughout the Pacific Northwest in 1989 and was distributed across a variety of public and private lands as follows: National Forest lands,74%; Bureau of Land Management (BLM) lands, 12%; National Park Service lands, 8%. INTERAGENCY SCIENTIFIC COMMITTEE TO ADDRESS THE CONSERVATION OF THE NORTHERN SPOTTED OWL, A CONSERVATION STRATEGY FOR THE NORTHERN SPOTTED OWL 14-15 (1990) (commonly known as the THOMAS REPORT for the Committee's chair, Jack Ward Thomas, a Forest Service biologist). Small habitat areas were also found on Indian lands, Fish and Wildlife Service (FWS) lands, state lands, and private lands. *Id.*

5. *See infra* text accompanying notes 41-52.

6. William K. Stevens, *Interior Secretary is Pushing a New Way To Save Species*, N.Y. TIMES, Feb. 17, 1993, at A1.

7. *See infra* text accompanying notes 76-82.

8. *See infra* text accompanying notes 125-32.

9. *See infra* text accompanying notes 147-63.

primarily concerned with the preservation of the ancient forest ecosystems. Working with existing legislation, environmentalists[10] have attempted to use the spotted owl's precarious status as a means of protecting the ancient forest ecosystems the spotted owl requires for its survival.

It is the intent of this comment to examine the effectiveness of existing statutes in protecting the ancient forest ecosystems as a whole rather than their effectiveness in conserving the habitat of individual species. Part II provides a brief description of the Northwest forests and the economics of the timber industry. Part III examines the history of recent litigation together with congressional and administration activities and the role played by the Endangered Species Committee. Part IV examines the ability of the National Environmental Policy Act (NEPA)[11] and the National Forest Management Act (NFMA)[12] to conserve ecosystems and the principles of Ecosystem Management. Part V concludes with an examination of the statutory protection of biodiversity in conjunction with modern ethical and philosophical attitudes in favor of conserving ecosystems and biodiversity.

II. The Forests, the Federal Forest Reserves, and the Timber Economy

" 'Beauty is truth, truth beauty,' — that is all
Ye know on Earth, and all ye need to know."

— John Keats[13]

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10. In this comment, "environmentalists" is used as a collective term for the numerous groups that are working to preserve the ancient forests. These groups include prominent national organizations such as the Wilderness Society, the National Wildlife Federation, and local chapters of the National Audubon Society. Also prominent in the debate are regional groups like the Oregon Natural Resources Council and local groups such as Headwaters. Most of the litigation brought by environmentalists has been coordinated by the Seattle office of the Sierra Club Legal Defense Fund. *See* GRUMBINE, *supra* note 2, at 221-22.

11. 42 U.S.C. §§ 4321-4370a (1988).

12. Forest and Rangeland Renewable Resources Planning Act, 16 U.S.C. §§ 1600-1687 (1988).

13. *Ode on a Grecian Urn*, *in* POETICAL WORKS 209, 210 (H.W. Garrod ed., 1970).

The controversy created over the northern spotted owl is a product of the land management policies of the Forest Service and BLM, timber industry practices, the economics of timber dependent communities, and the nature of the forests themselves. Despite the increasing evidence of the spotted owl's decline, the Forest Service and BLM refused to alter their policies until the agencies were brought into court and ordered to protect the spotted owl.[14]

A. The Forests

The forests of the Pacific Northwest are home to several species of large conifer trees. These forests extend inland from the Pacific Coast to the crest of the Cascade Mountains and from San Francisco Bay north to southeastern Alaska. These forests are most often identified as "Douglas-fir" forests after the tree that is the most economically utilized. Geographic and climatic variances within the region favor different tree species so that six different forest communities are found along the Northwest's Pacific Slope.[15]

The ancient forests of the Pacific Northwest have a number of unique and special characteristics.

> Among ecosystems in North America, the Pacific Northwest has one of the highest number of bird species, the most bird families, the second highest number of mammal species, and many endemic or relic amphibian species. This species richness and abundance depends to a large extent on the presence of mature and older forests . . . .

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14. *See infra* text accompanying notes 76-116.

15. Andy Feeney, *The Pacific Northwest's Ancient Forests: Ecosystems under Siege*, AUDUBON WILDLIFE REP. 92, 97-100 (1989-1990). The six types of forests are described as Sitka Spruce/Western Hemlock (found in coastal areas with more than 200 inches of precipitation per year), Douglas-fir/Western Hemlock (found inland in areas more prone to fires), True Fir (found along lower elevations of the Cascades), Mountain Hemlock (found in the highest elevations), Mixed Conifer (found in the dryer and more fire-prone areas of southern Oregon and northern California), and mixed Evergreen (found in the Siskiyou and Klamath Mountains of northern California and southwestern Oregon) *Id. See generally* ELIOT NORSE, ANCIENT FORESTS OF THE PACIFIC NORTHWEST (1990); Helen Caufield, *The Ancient Forest*, THE NEW YORKER, May 14, 1990, at 46.

> Redwood and Douglas-fir forests accumulate more biomass than tropical rainforests.[16]

Conservation of the biological diversity within the Northwest forests requires the maintenance of all of the forests' successional stages, particularly the mature or "old-growth" stage.[17] In addition to the Northern Spotted Owl, the ancient forests of the Coastal Northwest are habitat for the Marbled Murrelet.[18] The Marbled Murrelet is primarily a sea bird, but it comes inland to nest.[19] Like the spotted owl, the Marbled Murrelet has also been designated as a threatened species under the ESA.[20]

These ancient forests are identified by a number of structural components, beginning with the presence of very tall (200-300 feet) and very old trees (700-1000 years).[21] The ancient forests are ecologically diverse and structurally complex, with several canopy layers and trees of varying age.[22] The overstory canopy is diversified with trees of different heights, and contains openings where trees have been blown down.[23] Due to the height of the trees, the overstory can be 50-100

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16. Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Northern Spotted Owl, 57 Fed. Reg. 1796, 1827 (1992) (codified at 50 C.F.R. § 17.95(B)(1992)) (citations omitted) [hereinafter *Critical Habitat*].

17. Jerry F. Franklin, *Structural and Functional Diversity in Temperate Forests*, *in* BIODIVERSITY 166, 167 (Edward O. Wilson ed., 1988).

18. Determination of Threatened Status for the Washington, Oregon, and California Population of the Marbled Murrelet, 57 Fed. Reg. 45,328, 45,329 (1992) (codified at 50 C.F.R. § 17.11(H)(1992)) [hereinafter *Marbled Murrelet*].

19. *Marbled Murrelet*, 57 Fed. Reg. at 45,328.

20. 50 C.F.R. § 17.11(H)(1992).

21. Feeney, *supra* note 15, at 101.

22. Pacific Northwest Research Station, U.S. Department of Agriculture, PNW-GTR-229, FROM THE FOREST TO THE SEA: A STORY OF FALLEN TREES, 5-9 (1988) [hereinafter FROM THE FOREST TO THE SEA].

> Old-growth stands obviously have a greater range of tree sizes and conditions than do younger stands and generally have a more heterogeneous forest understory. Large live trees, large standing dead trees (or snags), and large fallen logs are the most conspicuous structures that distinguish old-growth forests. Furthermore, these structures are often the key to the unique compositional and functional attributes of the forest, such as habitat for the northern spotted owl and its prey.

FRANKLIN, *supra* note 17, at 169.

23. FROM THE FOREST TO THE SEA, *supra* note 22, at 6-7.

feet above the ground, creating large open spaces beneath the trees.[24] It is believed that the canopy structure is essential for the survival of the northern spotted owl.[25] There is also an understory canopy of shrubs and small trees.[26]

In the ancient forest, an overstory tree may spend only one-third of its structural life span as a living tree.[27] A Douglas-fir may spend 100 years growing to its maximum height. The tree may then spend the next 500 years as a mature tree, expanding in girth.[28] Mature trees may be struck by lightning or blown down during winter storms.

In falling, the great trees open holes in the canopy, allowing sunlight to reach the floor of the forest, stimulating new growth.[29] As they decay, the downed trees return nutrients to the soil.[30] The down trees also serve to protect the soil from eroding and serve as wildlife habitat.[31] The standing dead trees, or snags, may remain upright for several hundred years, serving as shelter for birds and mammals.[32]

Also, ancient forest ecosystems serve to maintain water quality within watersheds.[33] Shade is provided by the forest canopy, and the presence of coarse, woody debris in the rivers and streams provides fish habitat and protects aquatic diversity.[34]

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24. Ancient forest groves are at times referred to as "cathedral forests" because of the open space beneath the boughs and the large column-like trees supporting the canopy.

25. *Critical Habitat*, *supra* note 16, at 1797-99; Seattle Audubon Soc'y v. Evans, 771 F. Supp. 1081, 1091 (W.D. Wash.), *aff'd*, 952 F.2d 297 (9th Cir. 1991) [hereinafter *Seattle Audubon III*].

26. Feeney, *supra* note 15, at 101.

27. *Seattle Audubon III*, 771 F. Supp. at 1088, *aff'd*, 952 F.2d 297; FROM THE FOREST TO THE SEA, *supra* note 22, at 9-18.

28. Feeney, *supra* note 15, at 101-02.

29. FROM THE FOREST TO THE SEA, *supra* note 22, at 7-8.

30. *Id.* at 34-41.

31. *Id.* at 32-42.

32. *Id.* at 29-31.

33. *Id.* at 51-53; *Critical Habitat*, *supra* note 16, at 1827; FRANKLIN, *supra* note 17, at 171; *see also* RANDALL O'TOOLE, REFORMING THE FOREST SERVICE 82-84 (1988).

34. FROM THE FOREST TO THE SEA, *supra* note 22, at 47-81; FRANKLIN, *supra* note 17, at 171-72.

B. The Federal Forest Reserves & Timber Economics

The federal forest reserves in the Pacific Northwest are primarily managed with the intent to ensure the nation's lumber supply and to provide habitat for wildlife, particularly game animals such as deer.[35] Administration of the federal timberland is divided between the Forest Service (Department of Agriculture) and the BLM (Department of Interior). Timber sales in ancient forest stands have been disputed in thirteen national forests.[36]

Although the National Forests are one of the greatest repositories of the nation's assets, earning more than $300 million in revenues annually, the Forest Service has consistently lost money operating the forests, requiring an annual appropriation from Congress in excess of $1 billion.[37] Timber sales from the National Forests are offered at public auction with the intention of obtaining a fair price for the sale, but the acceptable minimum bid for a sale is set below a level that would allow the Forest Service to recover its interest charges and costs.[38] Furthermore, the planning model used by the Forest Service to determine the economic value of its timber sales does not consider the return on investment in second growth timber nor does it account for the offsetting negative impact timber sales can have on the economic values of recreation, wildlife and water quality.[39] Many forest plans also underestimate the costs of road construction associated with timber sales or misrepresent the costs by placing a portion of the costs for roads in the budget for recreation.[40]

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35. Multiple-Use Sustained Yield Act, 16 U.S.C. § 528 (1988); *see* Charles F. Wilkinson & H. Michael Anderson, *Land and Resource Planning in the National Forests*, 64 OR. L. REV. 1, 60-63 (1985).

36. The forests involved are the Shasta-Trinity, Six River and Klamath National Forests in California (Region 5); the Rogue River, Siskiyou, Umpqua, Siuslaw, Willamette and Mt. Hood National Forests in Oregon (Region 6); and the Gifford Pinchot and Olympic National Forests in Washington (Region 6). Feeney, *supra* note 15, at 94.

37. *See* O'TOOLE, *supra* note 33, at 13-16.

38. *Id.* at 27, 112-23.

39. *Id.* at 54-55.

40. *Id.* at 66-68, 74.

1. The Modern Timber Economy

During World War II, the federal forest reserves were first intensively logged.[41] Approximately one-third of the nation's lumber is produced by the northwest lumber industry.[42] Timber and timber-related industries constituted about 35% of Oregon's total employment in 1985.[43] In parts of southern Oregon, local economies can be as much as 70% dependent on the timber industry.[44] Timber industry jobs are high paying manufacturing jobs which, as has occurred with other industries across the country, are difficult, if not impossible, to replace with equivalent paying jobs.[45] Additionally, county governments can be dependent on forest receipts for 20-50% of their revenue.[46] Consequently, declining jobs and declining timber receipts have meant that local governments have been forced to reduce social services and other spending at the time residents need such services most.[47]

Employment in the timber industry declined throughout the eighties; during this time the timber industry experienced

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41. *Seattle Audubon III*, 771 F. Supp. 1081, 1088 (W.D. Wash. 1991), *aff'd*, 952 F.2d 297 (9th Cir. 1991).

42. Feeney, *supra* note 15, at 116.

43. In 1990, estimates of the number of timber-related jobs that could be lost in Oregon varied from a high of 18,000 jobs (industry calculation) to 11,015 jobs (Congressional Research Service) to a low of 8,000 jobs (Wilderness Society). Roberta Ulrich, *Job Total Linked to Owl Fight Unclear*, OREGONIAN, Apr. 16, 1990, at B1. As the figures indicate, it is important to take into account who prepared the statistics when examining the results. One reason for the differences in the calculations of job losses is that each figure is based on an estimation of the number of timber industry jobs lost directly and the supposition of a multiplier to calculate jobs lost indirectly (e.g. restaurant workers, store clerks, etc.). *Id.*

44. Feeney, *supra* note 15, at 117; *but see* O'TOOLE, *supra* note 33, at 90-91.

45. Feeney, *supra* note 15, at 120; *Western Timber Industry Hit by National Housing Slump, Timber Supply Problems*, Daily Labor Rep. (BNA) Jan. 16, 1992, at A8. By late 1992, the restrictions placed on the timber supply were driving the price of lumber up as a stronger economy increased interest in new homes. Daniel Southerland, *Lumber's Across the Board Increases: Prices Soar but Industry, Environmentalists at Odds as to Why*, WASH. POST., Feb. 13, 1993, at C1; *see also* Richard Manning, *Chainsaw Logic*, N.Y. TIMES, Feb. 25, 1993, at A19 (criticizing the timber industry's claims of how restrictions on supply have increased the price of homes).

46. Feeney, *supra* note 15, at 117-18.

47. The Forest Service has also been forced to reduce and reorganize its staff. Meg Walker, *It's Owls or Jobs in the Northwest Forests*, FEDERAL TIMES, Feb. 8, 1993, at 4.

a number of fundamental changes. The most significant of these has been mechanization and automation, through which the amount of labor required in the production process has been reduced.[48] Also, mills with machinery designed to process large diameter trees have been forced to compete over the dwindling supply of ancient trees.[49] Many mills unable to afford modern machinery have closed.[50] The profitability of the Northwest timber industry has also been undermined by economic competition from wood products companies in the South.[51] Today, the Northwest's timber-dependent communities are in the midst of an economic transition that is leading them away from their cultural and economic traditions.[52]

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48. *Seattle Audubon III*, 771 F. Supp. 1081, 1089 (W.D. Wash. 1991), *aff'd*, 952 F.2d 297 (9th Cir. 1991); *Critical Habitat*, *supra* note 16, at 1813. "Employment in the Northwest [wood products sector] dropped by 40,000 workers from 1979 to 1985 . . . ." *Id.* Between 1975 and 1988, productivity increased from 109,000 board feet per worker to 146,000 board feet per worker. *Id.*

49. *Western Timber Industry Hit By National Housing Slump, Timber Supply Problems*, Daily Labor Rep. (BNA) Jan. 16, 1992, at A8.

50. *Id.*

51. Michael Parish, *Western Debate Hides Timber's Flight South*, L.A. TIMES, Feb. 9, 1992, at D1. Nevertheless, the dispute over the spotted owl has engendered a fervent anti-environment backlash in timber-dependent communities. *See* Brad Knickerbocker, *Counter Movement Backs Wise Use*, CHRISTIAN SCI. MONITOR, Jan. 12, 1993, at 11; Maura Dolan, *Bush Woos West by Trying to Ease Land Restrictions*, L.A. TIMES, Aug. 4, 1992, at A1; Keith Schneider, *Environment Laws Are Eased by Bush as Election Nears*, N.Y. TIMES, May 20, 1992, at A1; Jon Krakauer, *Brownfellas*, OUTSIDE, Dec. 1991, at 68.

52. Eric Pryne, *Timber No Longer King in Seattle's Back Yard*, THE SEATTLE TIMES, June 22, 1922, at A1. However, some in the industry are looking to the future instead of the past. Neil Sampson of The American Forest Association recently stated that:

> It is clear that the region's timber-related employment continues in broad decline, and that it will not be reversed by logging spotted owl habitat. Public debate and policy need to now focus on how to protect and manage the forest ecosystems in the region, while helping individuals and communities come to grips with the continuing economic changes.

Forestry Group Says Industry in Broad Decline, Greenwire, Mar. 13, 1992, *available in* LEXIS, Nexis library, Currnt file.

Vice-President Gore in describing a Senate debate over protection of the northern spotted owl commented that:

> [i]ronically, if those wishing to continue the logging had won, their jobs would have been lost anyway as soon as the remaining 10 percent of the forest was cut. The only issue was whether they [timber workers] would shift to new employment before or after the last remnant of forest was gone.

2. Forestry Practices

Contemporary forest management policies involve cutting forest lands in cycles of 100 years or less.[53] Stands of trees do not begin to develop "old growth" characteristics until after approximately 150 years.[54] Industry practices favor monoculture plantations of even-age trees. Ancient forests are converted to managed timber lands by clear-cutting the site, felling all standing trees and removing most snags, down logs, and other coarse woody debris.[55] To speed the development of the commercially valuable softwood trees, stands are treated with herbicide to kill any remaining hardwood trees.[56] Federal and state laws[57] require that timber lands be replanted within a few years of being cut, but a Congressional study revealed that the success of replanting on federal lands had been greatly exaggerated.[58]

All but five percent of the native forest cover has been logged at least once.[59] Spotted owl habitat has shrunk in area by about sixty percent over the last two hundred years, with the most rapid losses occurring after 1960.[60] The remaining spotted owl habitat has been severely fragmented, divided into smaller parcels that are more likely to lose their structural integrity and the sustainability of the ecosystem func-

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SENATOR AL GORE, EARTH IN THE BALANCE: ECOLOGY AND THE HUMAN SPIRIT 121 (1992).

53. FROM THE FOREST TO THE SEA, *supra* note 22, at 18-23.

54. *Id.* at 8-9.

55. *Critical Habitat*, *supra* note 16, at 1799.

56. *Id.*

57. *See* 16 U.S.C. § 1601 (1988); CAL. PUB. RES. CODE § 4791 (West 1984 & Supp. 1992); OR. REV. STAT. § 527.710 (1991); WASH. REV. CODE ANN. § 43.30.135 (West 1983 & Supp. 1993).

58. *Study Says U.S. Fails to Replant Its Forests*, N.Y. TIMES, June 16, 1992, at A17. Scientists have also criticized the concept of a "sustainable yield" in forestry, arguing that an administratively determined yield does not fully take into account variations in yield due to ecological and environmental influences. William K. Stevens, *Biologists Fear Sustainable Yield is Unsustainable Idea*, N.Y. TIMES, Apr. 20, 1993, at C4.

59. *See When Chainsaws Pare the Hills of Ancient Trees*, N.Y. TIMES, Nov. 3, 1991, at § 4, p. 3.

60. *Critical Habitat*, *supra* note 16, at 1799.

tions.[61] "Current management practices, such as clearcutting, even-aged management, and short rotations preclude development of suitable [spotted owl] habitat."[62] Most "of the remaining unprotected spotted owl habitat could disappear within 20 to 30 years."[63] Reasons for maintaining ancient forest stands include the benefits of wildlife and plant habitat, ecosystem diversity, watershed protection, and the preservation of aesthetic qualities.[64] By not cutting the remaining ancient forest stands, options for the future can be maintained.[65]

In June of 1992, the Forest Service announced a new management policy under which clear-cutting of forests would be reduced by 70 percent.[66] The Forest Service Chief said that the forests would be managed under the "more ecologically sound approach" of a "new forestry."[67] Under the "new forestry," logging practices would be less intensive. Seed trees would be left behind to maintain the canopy structure and, dead and down trees and other coarse woody debris would not be removed from the site.[68] This policy will have a wide effect

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61. Portland Audubon Soc'y v. Lujan, 712 F. Supp. 1456, 1478 (D. Or.), *aff'd*, 884 F.2d 1233 (9th Cir. 1989), *cert. denied*, 494 U.S. 1026 (1990), *citing* testimony of Allan Franklin, a wildlife scientist with extensive familiarity and experience working with the spotted owl [hereinafter *Portland Audubon I*]. Satellite photos have shown that the Northwest's forest are more severely fragmented than the tropical rainforests of Brazil. Timothy Egan, *Citing Space Photos, Scientists Say Forests in the Northwest Are in Danger*, N.Y. TIMES, June 11, 1992, at A13.

62. *Portland Audubon I*, 712 F. Supp. at 1478; *but see infra* notes 66-69.

63. *Critical Habitat*, *supra* note 16, at 1800.

64. *Id.* at 1819-20; *Seattle Audubon III*, 771 F. Supp. 1081, 1088 (W.D. Wash.), *aff'd*, 952 F.2d 297 (9th Cir. 1991); *see Blue Mountains of Oregon: Biodiversity Loss Causes an Ecosystem to Unravel*, THE SEATTLE TIMES, July 29, 1992, at A10; Glenn Bohn, *Native Forest Birds Dying Out, Federal Biologist Warns Loggers*, THE VANCOUVER SUN, June 5, 1992, at B10.

65. FROM THE FOREST TO THE SEA, *supra* note 22, at 115.

66. *Forest Service Chief Announces New Ecosystem Management Policy for National Forests and Grasslands*, EPA NEWS-NOTES, June-July, 1992, at 8; Keith Schneider, *U.S. Forest Service Increases Protection of Public Timber*, N.Y. TIMES, June 4, 1992, at B10.

67. Schneider, *Protection of Public Timber*, *supra* note 66, at B10; *see* Jon R. Luoma, *New Government Plan for National Forests Generates Debate: Conservation Groups and Timber Industry Express Skepticism*, N.Y. TIMES, June 30, 1992, at C4.

68. Luoma, *New Government Plan*, *supra* note 67, at C4; Lecture by Dr. Jerry Franklin, Chief Plant Ecologist, U.S. Forest Service, and Bloedel Professor of Ecosystem Analysis, University of Washington, Address at Reed College, Portland, Oregon

on conserving habitat not only for the northern spotted owl but also for the 170 other species found on National Forest lands and listed as threatened or endangered.[69]

III. Legal Background

The northern spotted owl's dependence on ancient forest ecosystems was first noted in 1976, and in 1977 federal agencies first began to coordinate their efforts toward conservation of the owl and its habitat.[70] Litigation over the fate of the northern spotted owl has been going on for more than fifteen years.[71]

The National Forest Management Act (NFMA), requires that fish and wildlife be managed to maintain a viable population of vertebrate and invertebrate species.[72] A viable population requires numbers and a distribution of reproductive individuals to insure the species continued existence as well as habitat sufficient to support such a population.[73] A species whose population declines as the result of logging and other activities may be designated an indicator species and used as a measure of general wildlife viability.[74] The spotted owl is

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(Feb. 7, 1990); *see Critical Habitat*, *supra* note 16, at 1826; THOMAS REPORT, *supra* note 4, at 365-72.

69. *See* Hal Salwasser, *Roles and Approaches of the USDA Forest Service*, *in* LANDSCAPE LINKAGES AND BIODIVERSITY 61 (Wendy E. Hudson ed., 1991).

70. Eric D. Forsman, *A Preliminary Investigation of the Spotted Owl in Oregon*, masters thesis on file at Oregon State University, Corvallis, Oregon, 127; *see* O'TOOLE, *supra* note 33, at 77; THOMAS REPORT, *supra* note 4, at 9-10.

71. *See* Victor M. Sher, *Ancient Forests, Spotted Owls, and the Demise of Federal Environmental Law*, 20 Envtl. L. Rep. (Envtl. L. Inst.) 10,469 (Nov. 1990). The Forest Service has responded to the environmentalists' successful use of litigation by proposing a rule which would limit administrative appeals to challenges of forest management plans so that individual timber sales could proceed unchallenged. *See* Review of and Comment on National Forest Plans and Project Decisions, 57 Fed. Reg. 10,444 (1992); Keith Schneider, *Forest Service May Alter Rule Blocking Logging*, N.Y. TIMES, Apr. 28, 1992, at A12. The Senate also considered a bill that would have limited appeals but which would have been less restrictive than the Forest Service's proposed rule. *Environmentalists Lose on Logging Proposal*, S.F. CHRON., Aug. 7, 1992, at D6.

72. 16 U.S.C. § 1604(g)(3)(B) (1988). This clause has become known as NFMA's "diversity provision." *See* Wilkinson & Anderson, *supra*, note 35, at 290-96.

73. 36 C.F.R. § 219.19 (1992).

74. *Id.* § 219.19(a)(1).

such an indicator species.[75]

A. Litigation

Litigation over the spotted owl began to disrupt the Forest Service's timber sale programs in Washington and Oregon in the late 1980s.[76] In 1988, a federal district court found that the FWS had acted arbitrarily and capriciously and contrary to law in failing to list the northern spotted owl as endangered or threatened under the ESA.[77] In 1989, suits were brought challenging the Forest Services management of spotted owl habitat.[78] Specific timber sales were enjoined, and the entire federal timber management program in the Northwest began operating with uncertainty.[79]

Through a rider to the Department of the Interior and Related Agencies Appropriations Act of 1990 (Section 318) Congress intervened in the controversy.[80] Section 318 set specified harvest levels, gave directions for a new spotted owl management plan, and exempted forest management decisions from judicial review for the fiscal year.[81] Litigation in the interest of the spotted owl was all but halted until the Ninth Circuit struck down the bar to judicial review as unconstitutional under the separation of powers doctrine.[82]

In the spring of 1990, an interagency scientific committee formed to review the status of the northern spotted owl and

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75. *Seattle Audubon III*, 771 F. Supp. 1081, 1083 (W.D. Wash.), *aff'd*, 952 F.2d 297 (9th Cir. 1991).

76. *Id.*

77. Northern Spotted Owl v. Hodel, 716 F. Supp. 479 (W.D. Wash. 1988) [hereinafter *Spotted Owl I*]; 16 U.S.C. §§ 1531-1544 (1988).

78. *Seattle Audubon III*, 771 F. Supp. at 1083-84.

79. *Id.*

80. Department of the Interior and Related Agencies Appropriations Act, Pub. L. No. 101-121, § 318, 103 Stat. 701, 745-50 (1989); *see also* Elizabeth A. Foley, *The Tarnishing of an Environmental Jewel: the Endangered Species Act and the Northern Spotted Owl*, 8 J. LAND USE & ENVTL. LAW 253, 274-81 (1992).

81. Department of the Interior and Related Agencies Appropriations Act § 318 (a), (b).

82. Seattle Audubon Soc'y v. Robertson, 914 F.2d 1311 (9th Cir. 1990) [hereinafter *Seattle Audubon I*]. The Supreme Court reversed the decision, holding that Congress is able to amend organic statutes through the appropriations process. Robertson v. Seattle Audubon Soc'y, 112 S. Ct. 1407 (1992).

current land management practices issued a report presenting a conservation strategy for the owl.[83] The report was commonly known as the THOMAS REPORT for the Committee's chair, Jack Ward Thomas, a Forest Service biologist. The THOMAS REPORT formed a scientific and factual basis upon which the district courts would subsequently rely.[84] In addition to mapping out potential spotted owl habitat areas (SOHAs) for conservation, the Report also described the importance of maintaining large and contiguous areas of habitat so that the owl's numbers would not decline due to habitat fragmentation.[85] The Report also discussed the importance of maintaining connections between SOHAs to provide corridors for the successful dispersal of the owl population.[86]

In June of 1990, the FWS listed the northern spotted owl as a threatened species under the ESA.[87] However, neither a designation of critical habitat nor a recovery plan for the owl was issued. Thus, the federal timber management programs had no guidelines for managing spotted owl habitat. Environmentalists argued that the FWS abused its discretion by not designating critical habitat concurrently with the listing of the owl.[88] In March of 1991, the district court judge agreed.[89]

1. Litigation Under NFMA

In December of 1990, the Forest Service attempted to argue that its responsibilities under NFMA ended when the owl

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83. THOMAS REPORT, *supra* note 4, at 7-45.

84. *See Seattle Audubon III*, 771 F. Supp. 1081, 1092-93 (W.D. Wash.), *aff'd*, 952 F.2d 297 (9th Cir. 1991).

85. *Id.* at 1092-93; *see* RESEARCH PRIORITIES FOR CONSERVATION BIOLOGY 55-63 (Michael E. Soule & Kathryn A. Kohm eds., 1989) [hereinafter RESEARCH PRIORITIES]; THOMAS REPORT, *supra* note 4.

86. THOMAS REPORT, *supra* note 4, at 303-14; *see* RESEARCH PRIORITIES, *supra* note 85, at 31-45.

87. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Northern Spotted Owl, 55 Fed. Reg. 26,114 (1990)(codified at 50 C.F.R. § 17.11(H)(1992)).

88. Northern Spotted Owl v. Lujan, 758 F. Supp. 621, 629 (W.D. Wash. 1991) [hereinafter *Spotted Owl II*].

89. *Id.*; *see also infra* notes 122-34.

was listed under the ESA.[90] Thus, the Forest Service was then left in the position of arguing that its duties under NFMA were fulfilled by complying with the FWS's interim management directives, directives which had been held to be insufficient to meet the FWS's statutory duty.[91] Furthermore, the Forest Service's interpretation of its responsibilities as argued before the court was manifestly at odds with the Agency's regulations and manuals.[92] As the court noted, "[i]t is clear that the Forest Service has understood at all times that its duties under NFMA and EPA [sic] are concurrent."[93]

In a subsequent hearing to determine whether injunctive relief was appropriate, the district court noted that "[t]he most recent violations of NFMA exemplifies a deliberate and systematic refusal by the Forest Service and the FWS to comply with the laws protecting wildlife . . . it reflects decisions made by higher authorities in the executive branch of the government."[94] The court also noted that:

> [t]he loss of an additional 66,000 acres of spotted owl habitat, without a conservation plan being in place . . . would constitute irreparable harm, and would risk pushing the species beyond a threshold from which it could not recover. Any reduction in federal timber mills will have adverse effects on some timber industry farms and their employees . . . . But while the loss of old growth is permanent, the economic effects of an injunction are temporary and can be minimized in many ways. To bypass

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90. Seattle Audubon Soc'y v. Robertson, No. C89-160WD consolidated with No. C89-99(T)WD, 1991 U.S. Dist. LEXIS 10131 (March 7, 1991) [hereinafter *Seattle Audubon II*].

91. *Id.* at *19-20.

92. *Id.*

93. *Id.*

94. *Seattle Audubon III*, 771 F. Supp. 1081, 1090 (W.D. Wash.), *aff'd*, 952 F.2d 297 (9th Cir. 1991). After a regional forester in Montana was forced to resign because of political pressure from Western Republican senators and industry executives, the House Subcommittee on Civil Service opened an investigation into interference with professional land managers within the federal government. Timothy Egan, *Forest Supervisors Say Politicians Are Asking Them to Cut Too Much*, N.Y. TIMES, Sept. 16, 1991, at A1; *see* Carol Bradley, *Forest Whistleblowers Becoming More Vocal*, Gannett News Service, Mar. 31, 1992, *available* in LEXIS, Nexis library, Current file.

> the environmental laws, either briefly or permanently, would not fend off the changes transforming the timber industry. The argument, that the mightiest economy on earth cannot afford to preserve old growth forests for a short time, while it reaches an overdue decision on how to manage them, is not convincing today. It would be even less so a year or a century from now.[95]

The district court then ordered the Forest Service to comply with NFMA and enjoined all additional timber sales in spotted owl habitat areas.[96] The Forest Service was directed to prepare by March, 1992, a management plan with revised standards and guidelines to ensure the spotted owl's viability.[97]

2. Litigation Under NEPA

Litigation was also brought against the BLM for its timber management policies.[98] Between 1979 and 1983, the BLM adopted ten-year timber management plans for its districts in Western Oregon.[99] Environmental Impact Statements (EIS) were prepared for each plan in compliance with NEPA.[100] In the mid-1980s, environmental groups requested that the BLM prepare supplemental EISs for its management plans because of several new studies which questioned the viability of the spotted owl.[101] In 1987 and 1988 Congress attempted to limit the basis upon which management plans could be challenged.[102] Appearing before an Oregon district court in the

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95. *Seattle Audubon III*, 771 F. Supp. at 1096 (citations omitted).

96. *Id.*

97. *Id.*

98. Portland Audubon Soc'y v. Lujan, 712 F. Supp. 1456 (D. Or.), *aff'd*, 884 F.2d 1233 (9th Cir. 1989), *cert. denied*, 494 U.S. 1026 (1990) [hereinafter *Portland Audubon I*].

99. *Id.*

100. *Id.* at 1459; 42 U.S.C. § 4332 (1988).

101. *Portland Audubon I*, 712 F. Supp. at 1460-61; *see also* Headwaters, Inc. v. BLM, Medford Dist., 914 F.2d 1174 (9th Cir. 1990).

102. Pub. L. No. 100-446, § 314, 102 Stat. 1774, 1825 (1988). This was another example of Congress legislating by means of a rider to an appropriations bill. *See supra* text accompanying notes 80-82.

Spring of 1989, environmental groups challenged the BLM's decision of April 20, 1987, not to prepare a Supplemental Environmental Impact Statement (SEIS) for its timber sale program.[103] In reviewing the BLM's decision, the court found that "[i]n its analysis of the spotted owl . . . the BLM recognizes that the spotted owl population is declining at a rate between one percent and four percent per year and that the loss of old-growth trees and forest fragmentation are the major factors causing this decline."[104] The court went on to find that despite awareness of the owl's plight, the BLM failed to address the issues of adequate population size and habitat fragmentation in the Spotted Owl Environmental Assessment prepared in 1987.[105] The environmental assessment was used as the basis for the BLM's decision not to prepare a SEIS.[106] The court found that, because the Environmental Assessment had not addressed these critical issues, the BLM's decision "was arbitrary and capricious in light of the new, significant, and probably accurate information that the planned logging of spotted owl habitat raises uncertainty about the ability of the spotted owl to survive as a species."[107] However, the court went on to find that Congress had limited the basis for challenges to the BLM's timber program, effectively barring the court from enforcing its finding that the BLM's decision not to prepare a SEIS was "arbitrary and capricious."[108]

The Ninth Circuit reviewed the cases brought against the Forest Service and BLM's management policies in 1991 in consolidated appeals. The Ninth Circuit upheld the Washing-

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103. *Portland Audubon I*, 712 F. Supp. at 1482-83. The BLM had adopted a policy that all lands suitable for timber production be managed for timber and wood production to the extent possible under requirements of law. *Id.* at 1483. Environmentalists challenged this policy as violation of the multiple use mandates of the Federal Land Policy Management Act (FLPMA) and the Oregon and California Lands Act. *Id.* The District Court rejected their arguments since they were directed at a policy adopted in 1983, outside of the Administrative Procedure Act's five year limitation for review of administrative decisions. *Id.* at 1485.

104. *Id.*

105. *Id.*

106. *Id.*

107. *Id.*

108. 712 F. Supp. at 1485-89.

ton district court's ruling in the case against the Forest Service on the concurrent responsibilities of NFMA and ESA.[109] The Ninth Circuit also ruled that the Migratory Bird Treaty Act (MBTA)[110] did not prohibit habitat destruction.[111] Finally, the Ninth Circuit addressed the issue of NEPA claims previously barred under Section 314 of the Fiscal Year 1989 Appropriations Bill.[112] The operative language of Section 314 was first included in the fiscal year 1988 Appropriations Bill and was re-enacted in the appropriations bills for 1989 and 1990.[113] The court found that because the provision was not included in the Fiscal Year 1991 bill, the provision no longer acted to bar NEPA claims.[114]

Subsequently, the Oregon district court issued an injunction barring the BLM from issuing timber sales until the Agency drafted a supplemental EIS showing the effects of its timber sale program on the spotted owl.[115] Finally, three years after it had found that the BLM's decision not to prepare a supplemental EIS was "arbitrary and capricious," the Oregon district court was free to enforce its finding.[116]

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109. Seattle Audubon Soc'y v. Evans, 952 F.2d 297, 299-302 (9th Cir. 1991) [hereinafter *Seattle Audubon IV*].

110. 16 U.S.C. § 703-11 (1988).

111. *Seattle Audubon IV*, 952 F.2d at 302-03. The environmental groups had argued that owl habitat destroyed by timber sales was a "taking" under the MBTA. *Id.* at 303. However, the Ninth Circuit agreed with the Seattle District Court that habitat destruction did not constitute a taking under the MBTA, noting that there were "distinct and purposeful" differences between proscribed conduct under the ESA and the MBTA. *Id.* In conclusion, the Ninth Circuit noted that "[h]abitat destruction causes 'harm' to the owls under the ESA but does not 'take' them within the meaning of the MBTA." *Id.*

112. Pub. L. 100-446, § 314, 102 Stat. 1774, 1825 (1988).

113. *Seattle Audubon IV*, 952 F.2d at 303-04.

114. *Id.* at 303-05. This portion of the appeal was reversed and remanded with leave to file an amended complaint.

115. Portland Audubon Soc'y v. Lujan, 795 F. Supp. 1489 (D. Or. 1992) [hereinafter *Portland Audubon III*].

116. 795 F. Supp. at 1507.

B. Administrative Actions Mandated by the Endangered Species Act

1. Consultation

Section 7 of the ESA requires that all federal agencies must consult with the FWS so that the purposes of the ESA are furthered by programs administered by the agencies.[117] In early 1991, suit was brought to enjoin the BLM's timber sale program for fiscal year 1991.[118] An issue was the "Jamison Strategy" that had been developed to provide criteria for selecting timber sales on BLM lands in Oregon, Washington and California.[119] However, the BLM was enjoined from implementing the Jamison Strategy because the plan had been developed without consultation with the FWS as required by section 7 of the ESA.[120] The Ninth Circuit also found that the BLM could not reinstate the selection criteria under its ten-year management plans without consultation with the FWS.[121]

2. Critical Habitat

The ESA requires that the Secretary of the Interior designate critical habitat for a threatened or endangered species.[122] "Critical habitat" is defined as being areas occupied by the species "on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection."[123] Areas outside those presently occupied by the species may be designated as critical habitat at the Secretary's

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117. 16 U.S.C. § 1536.

118. Lane County Audubon Society v. Jamison, 958 F.2d 290 (9th Cir. 1992).

119. *Id.* at 291.

120. *Id.* at 294.

121. *Id.* at 294-95.

122. 16 U.S.C. § 1533(b)(2)(1988); *see* Katherine S. Yagerman, *Protecting Critical Habitat Under the Federal Endangered Species Act*, 20 ENVTL. L. 811 (1990); J.B. Ruhl, *Regional Habitat Conservation Planning Under the Endangered Species Act: Pushing the Legal and Practical Limits of Species Protection*, 44 SW. L.J. 1393 (1991); Comment, *ESA and the Spotted Owl*, 21 ENVTL. L. 1175 (1991); Daniel J. Rohlf, *Six Biological Reasons Why the Endangered Species Act Doesn't Work — and What to Do About It*, 5 CONSERVATION BIOLOGY 273 (1991).

123. 16 U.S.C. § 1532(5)(A)(i).

discretion.[124]

In January, 1992, the FWS issued its Determination of Critical Habitat for the Northern Spotted Owl.[125] A total of 6,887,000 acres in California, Oregon, and Washington were listed as critical habitat.[126] However, the designation contained nearly five million fewer acres than the draft proposal.[127] Most of the remaining spotted owl habitat is on federal land and, all of the areas designated as critical habitat are on federal land.[128]

The critical habitat designation was prepared in three steps. The first step determined the elements and the areas essential to the spotted owl's conservation.[129] The second step determined the potential costs of the proposed designation.[130] The final step decided which areas to exclude based on economic and other relevant impacts.[131] Economic impacts of the critical habitat designation were estimated as a loss of 1,420 total jobs (847 direct plus 573 indirect) and an overall reduction of County revenues by 5% due to a loss of revenue sharing.[132]

In December of 1992, an Oregon district court found that the FWS violated NEPA by designating critical habitat for the owl without preparing an EIS or an environmental assessment.[133] The court has been asked to set aside the designation of critical habitat, but the court had yet to act on the request as of the time of publication.[134]

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124. § 1532(5)(A)(ii).

125. *Critical Habitat*, *supra* note 16, at 1796.

126. *Id.* at 1809-11.

127. *Id.* at 1810.

128. *Id.* at 1801.

129. *Critical Habitat*, *supra* note 16, at 1797.

130. *Id.*

131. *Id.*

132. *Id.* at 1816-17.

133. Douglas County v. Lujan, 810 F. Supp. 1470 (D. Or. 1992).

134. *See Court Asked to Set Aside Critical Habitat Designation*, 23 Env't Rep. 2365 (BNA) (Jan. 15, 1993).

3. Recovery Plan

The ESA requires that the Secretary prepare a recovery plan for species listed as threatened or endangered.[135] The recovery plan must include "a description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species."[136] The recovery plan is especially important because it provides guidance to agencies managing public lands where the listed species is found.[137] In order to preserve a species, an effective population of 500 reproductive individuals must be maintained, and since general census counts are of a species total population, with effective reproductive individuals comprising only 25-50 percent of the total population, several thousand individuals must be preserved in order to maintain a species.[138]

As ordered by the Washington district court, the Forest Service issued a final EIS for its spotted owl management plan. In March of 1992, the Forest Service promulgated its management plan for the spotted owl.[139] The plan focused on the management of habitat conservation areas in which no timber activities would be allowed, but it also noted that preservation of the owl would be best furthered by a change in

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135. 16 U.S.C. § 1533(f). However, a general population census counts a total population, reproductive individuals as well as non-reproductive and older, non-breeding individuals. It is estimated that a total population count is two to four times the number of effective individuals in a population. Thus, to maintain an effective population of spotted owls, several thousand individuals must be preserved. GRUMBINE, *supra* note 2, at 34-35. *See* Jon R. Luoma, *Listing of Endangered Species Said to Come Too Late to Help*, N.Y. TIMES, Mar. 16, 1993, at C4.

136. 16 U.S.C. § 1533(f)(1)(B)(i).

137. *Id.* § 1536(a)(2); *see* 36 C.F.R. § 219.19(a)(7) (1992); *see also Seattle Audubon III*, 771 F. Supp. 1081, 1090-91, 1093-94 (W.D. Wash.), *aff'd*, 952 F.2d 297 (9th Cir. 1991); *Spotted Owl II*, 758 F. Supp. 621, 623 (W.D. Wash. 1991). For a critical review of FWS and National Marine Fisheries Service's administration of existing recovery plans, *see* UNITED STATES GENERAL ACCOUNTING OFFICE, RCED-89-5, ENDANGERED SPECIES: MANAGEMENT IMPROVEMENTS COULD ENHANCE RECOVERY PROGRAM (1988).

138. GRUMBINE, *supra* note 2, at 34-35. *See* Luoma, *Listing of Endangered Species*, *supra* note 135.

139. Management for the Northern Spotted Owl; National Forests in Washington, Oregon, and California, 57 Fed. Reg. 8621 (1992).

silviculture techniques throughout the National Forests involved.[140]

Later that month, environmentalists filed a suit against the Forest Service alleging that the management plan did not protect the spotted owl's habitat.[141] In July of 1992, the Washington district court issued an order preventing the Forest Service from awarding sales in spotted owl habitat areas until the agency prepared a supplemental EIS for each of its forest management plans.[142] In its decision the district court noted that "[t]he records of this and other reported cases show that management of the national forests in compliance with NFMA is vital because other measures are inadequate for many species. Parks and wilderness areas alone are too small to permit the spotted owl to survive."[143]

Although a recovery plan for the northern spotted owl was drafted in 1992, Interior Secretary Lujan deferred implementation of the plan so that the Clinton Administration and its Interior Secretary, Bruce Babbitt, could approve the plan.[144] In the Spring of 1993, the Forest Service announced that it would be unable to have a management plan developed by August, 1993, as required by Judge Dwyer of the Washington District Court.[145] Judge Dwyer responded by ordering the agency to provide him with an explanation as to why it was not able to comply with his deadline.[146]

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140. *Id.* at 8629; *see supra* text accompanying notes 66-69.

141. Seattle Audubon Soc'y v. Moseley, 798 F. Supp. 1473 (W.D. Wash. 1992) [hereinafter *Seattle Audubon V*].

142. Seattle Audubon Soc'y v. Moseley, 798 F. Supp. 1484 (W.D. Wash. 1992) [hereinafter *Seattle Audubon VI*].

143. *Id.* at 1490.

144. *Lujan Defers Spotted Owl Recovery Plan, Leaving Decision to New Administration*, Daily Rep. for Executives (BNA), Jan. 19, 1993, at 11.

145. *Forest Service Ordered to Explain Why Owl Management Plan Would Be Late*, Nat'l Env't Daily (BNA), Apr. 15, 1993. The Forest Service had attempted to explain to the court that it would not be able to meet the August deadline because of policy initiatives arising from President Clinton's forest conference. *Id.*

146. *Id.*

C. The Endangered Species Committee

The ESA provides for the establishment of a committee to review whether the actions required for saving a species are outweighed by the economic consequences of such actions.[147] On September 11, 1991, BLM director Cy Jamison asked the Secretary of the Interior to summon the Committee to exempt the BLM from participating in the spotted owl management plan.[148] Out of the 6.9 million acres designated, the BLM requested an exemption on 4,600 acres in Oregon.[149]

Before the first evidentiary hearing on behalf of the Committee a dispute arose between the federal agencies involved. A senior official with the Environmental Protection Agency (EPA) announced that the BLM had failed to comply with NEPA by not taking into account, "significant new information" on the environmental impacts of the proposed timber sales.[150] Then on the opening day of the hearing, the EPA

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147. 16 U.S.C. § 1536(e)(1988). The members of the committee are the Secretary of Agriculture, the Secretary of the Army, the Chair of the Council of Economic Advisors, the Administrator of the EPA, the Administrator of the National Oceanic and Atmospheric Administration, a representative appointed by the President from each affected state, and the Secretary of the Interior, who serves as Chair. *Id.* § 1536(e)(3). In considering an application for exemption, the Committee is to consider whether:

1. There are no reasonable and prudent alternatives . . . ;
2. The benefits of such action clearly outweigh the benefits of alternative courses of action consistent with conserving the species or its critical habitat, and such action is in the public interest;
3. The action is of regional or national significance . . . .

Id. § 1536(h)(1). An exemption can only be granted by a vote of five of the Committee's seven members. *Id.* This Committee is commonly known as the "God Squad" because it has the authority to determine if a species will be driven into extinction. *See* Jared des Rosiers, *The Exemption Process Under the Endangered Species Act: How the "God Squad" Works and Why*, 66 NOTRE DAME L. REV. 825 (1991).

148. *Spotted Owl: BLM Asks "God Committee" to Intervene*, Greenwire, Sept. 12, 1991, available in LEXIS, Nexis library, Currnt file. Director Jamison stated that "[t]he [FWS] rejection of our timber sales has severely affected our ability to sell timber. We estimate that the timber sale level by 1992 will be down 75% from what it was only a few years ago. We can't force timber dependent communities to absorb such a tremendous shock to their economies." *Id.*

149. *BLM calls Last of Witnesses in Hearing on Spotted Owl*, Daily Rep. for Executives (BNA), Jan. 13, 1992, *available in* LEXIS, Nexis library, Currnt file [hereinafter *Last of Witnesses*]. *See generally* REPORT OF THE SECRETARY OF THE INTERIOR TO THE ENDANGERED SPECIES COMMITTEE xiii-xiv (1992).

150. Tom Kenworthy, *EPA Weighs In on Oregon Timber Dispute; On Eve of*

withdrew from the proceedings, declining to offer evidence.[151] Critics charged that the EPA withdrew because of political pressure from parts of the Bush Administration.[152] During the hearings, two agencies within the Interior Department, the BLM and FWS, offered opposing testimony.[153] Testimony was also given by representatives of industry, local governments, and environmental groups.[154]

The hearings offered plenty of controversy. On the street outside, groups demonstrated for both sides of the issue.[155] Inside, a former BLM staffer revealed that the agency had been aware of the threat to the spotted owl in 1983 but had suppressed a plan to conserve the species.[156] The BLM veteran remarked that "[i]n preparing the 1980 [ten-year management] plans, it became clear that the end of the old growth was now predictable with relative certainty and that it was basically now or never if a representative sampling of functioning old-growth ecosystems was to be preserved."[157] Environmental groups also charged that the Interior Department had improperly manipulated the Committee.[158]

In May of 1992, the Committee voted to allow logging on thirteen timber sales involving 1,700 acres.[159] The Committee's decision was negated less than a month later when an Oregon district court held that the BLM must prepare a supplemental EIS for its timber sale program.[160] In August, 1992,

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Hearings, Opinion Could Complicate Spotted-Owl Issue, WASH. POST, Jan. 6, 1992, at A17.

151. Timothy Egan, *Politics Reign at Spotted Owl Hearing*, N.Y. TIMES, Jan. 9, 1992, at A14; Ethan Rarick, *Owl Versus Logging Hearing Opens*, UPI, Jan. 8, 1992, *available in* LEXIS, Nexis library, Currnt file.

152. Egan, *Politics Reign*, *supra* note 151, at A14.

153. *Last of Witnesses*, *supra* note 149.

154. *Id.*

155. Ethan Rarick, *Owl Versus Logging*, *supra* note 151.

156. *BLM Killed '83 Protection Plan, Ex-Staffer Says*, Greenwire, Jan. 23, 1992, *available in* LEXIS, Nexis library, Currnt file.

157. *Id.*

158. Tom Kenworthy, *Owl Supporters, Interior at Loggerheads Again; Review Process Said to Favor Timber Interests*, WASH. POST, Feb. 13, 1992, at A21.

159. 57 Fed. Reg. 23,405 (1992). *See* Keith Schneider, *Acting Grudgingly to Guard Owl, White House Backs New Logging*, N.Y. TIMES, May 15, 1992, at A1.

160. *Portland Audubon II*, 795 F. Supp. 1489, 1510 (D. Or. 1992).

the BLM promulgated ten-year forest plans for its Oregon districts that forecast a timber sale level half of the historic high volume cut during the 1980s.[161] These plans also expressed an intent to protect ancient forest ecosystems, wildlife corridors and biodiversity.[162]

In February of 1993, the Ninth Circuit reviewed the Endangered Species Committee's decision and ordered that an administrative law judge conduct an inquiry into whether President Bush and his staff engaged in improper ex parte communications with the Committee.[163] The court found that news reports and information gathered by Victor Sher, an attorney with the Sierra Club Legal Defense Fund, suggested that the White House had persuaded the Committee to grant an exemption for the owl.[164] As part of its decision, the Court found that the Administrative Procedure Act's prohibition on ex parte communications applied to the President and his staff.[165]

D. Legislative Proposals

As a background to the litigation and the activities of the Endangered Species Committee, Congress considered a variety of legislative proposals addressing the controversy.[166] The

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161. 57 Fed. Reg. 34,144 (1992) (Salem District); 57 Fed. Reg. 34,783 (1992) (Medford District); 57 Fed. Reg. 36,105 (1992) (Klamath Falls Resource Area); 57 Fed. Reg. 37,829 (1992) (Roseburg District); 57 Fed. Reg. 37,828 (1992) (Coos Bay District); 57 Fed. Reg. 38,853 (Eugene District). *See Timber: BLM Turns "New Leaf" on Old Growth; Is It Enough?*, Greenwire, Sept. 30, 1992, *available in* LEXIS, Nexis library, Currnt file.

162. *Timber: BLM Turns "New Leaf"*, *supra* note 161.

163. Portland Audubon Soc'y v. The Endangered Species Comm., No. 92-70436, 1993 WL 92575 (9th Cir. Apr. 1, 1993) [hereinafter *Portland Audubon IV*]; *see Inquiry Ordered in Owl Decision: Court Seeking to Determine if Bush Aides Broke Rules in Clearing Timber Sale*, N.Y. TIMES, Feb. 12, 1993, at A16.

As part of its decision, the Ninth Circuit found that the Administrative Procedure Act's prohibition on ex parte communications applied to the President and his staff. *Portland Audubon IV*, at *8-13; *see* 5 U.S.C. § 557(d)(1).

164. *Portland Audubon IV*, at *3.

165. *Portland Audubon IV*, at *8-13; *see* 5 U.S.C. § 557 (d)(1).

166. *See* H.R. 842, 102d Cong., 1st Sess. (1991) (Ancient Forest Protection Act of 1991); H.R. 1590, 102d Cong., 1st Sess. (1991) (Ancient Forest Act of 1991); H.R. 2463, 102d Cong., 1st Sess. (1991) (Forest and Families Protection Act of 1991); H.R.

various bills ranged from being very protective of ancient forest ecosystems (H.R. 842) to offering little protection of ancient forest, but producing extensive economic assistance to timber dependent communities (H.R. 3263). A broad coalition of environmental groups endorsed a bill (S. 2762) including economic relief measures.[167] In September of 1992, a group of 345 scientists urged Congress to pass an Ancient Forest bill based on science, not politics.[168] However, the 102d Congress closed without passing any legislation addressing the future of the Northwest forests.[169]

3263, 102d Cong., 1st Sess. (1991) (Northwest Forest Protection and Community Stability Act); H.R. 3432, 102d Cong., 1st Sess. (1991) (Pacific Northwest Forest Community Recovery and Ecosystem Conservation Act); H.R. 3931, 102d Cong., 1st Sess. (1991) (Timber Resource Employment Enhancement Act of 1991); H.R. 4899, 102d Cong., 2d Sess. (1992) (Old Growth Forest Reserve Act of 1992); S. 2762, 102d Cong., 2d Sess. (1992) (Northern Spotted Owl Preservation and Northwest Economic Stabilization Act of 1992) (to assure the preservation of the northern spotted owl and the stability of communities dependent on the resources of the public lands in Oregon, Washington, and Northern California); S. 2895, 102d Cong., 2d Sess. (1992) (Rural Development and Ancient Forest Ecosystem Conservation Act). *See generally* Greenwire, Oct. 19, 1991 *available in* LEXIS, Nexis library, Currnt file. For an overview of the legislation from an environmentalist perspective, *See 102nd Congress Ancient Forest Legislation Matrix*, WILD OREGON, Fall 1991 at 18; Chris Van Daalan, *To Break the Timber Industry's Death Grip*, WILD EARTH, Fall 1992, at 44.

Other bills addressing forest issues included H.R. 1969, 102d Cong. 1st Sess. (1991) (Forest Biodiversity and Clearcutting Prohibition Act of 1991) (would have banned even-age logging on all federal lands and mandated conservation of biodiversity and natural ecosystems) and H.R. 2501, 102d Cong. 1st Sess. (1991) (the National Forest Timber Sales Cost Recovery Act of 1991) (would have eliminated below-cost timber sales).

Representative Jim Jontz, Democrat of Indiana, was targeted by Timber Industry Political Action Committees during the 1992 campaign because of his leadership on forest issues. *See American Forest Resource Alliance Executive Director Comments on General Election Results*, PR Newswire, Nov. 4, 1992, *available in* LEXIS, Nexis library, Currnt File. Mr. Jontz was defeated by an opponent funded by the timber industry. *Id.*

167. *Environmental Groups Support Leahy Bill to Protect Ancient Forest, Spotted Owl*, Daily Rep. for Executives (BNA), July 29, 1992, at D14, *available in* LEXIS, Nexis library, Currnt file.

168. *U.S. Scientists Call for Spotted Owl Legislation*, Reuters, September 16, 1992, *available in* LEXIS, Nexis Library, Currnt file.

169. Carol Bradley, *Lack of Leadership Keeps Spotted Owl Crisis Unresolved*, Gannett News Service, Oct. 9, 1992, *available in* LEXIS, Nexis library, Currnt file.

IV. Protecting Ecosystems On The Public Lands

> "Conservation is a state of harmony between men and land."
>
> — Aldo Leopold[170]

One of NEPA's purposes is "to enrich the understanding of the ecological systems and natural resources important to the Nation."[171] Practically, though, how do NEPA and NFMA work to protect and preserve natural ecosystems? The spotted owl and the ancient forests of the Pacific Northwest have tested the extent to which these statutes are able to protect ecosystems. E.O. Wilson defines an ecosystem as "[t]he organisms living in a particular environment, such as a lake or a forest (or, in increasing scale, an ocean or the whole planet), and the physical part of the environment that impinges on them."[172] However, the legal treatment of ecosystems can be awkward because neither biological processes nor environmental phenomena respect jurisdictional boundaries.[173]

A. The National Environmental Policy Act

NEPA requires that an environmental impact statement (EIS) be prepared whenever "major Federal actions significantly affect . . . the quality of the human environment."[174]

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170. ALDO LEOPOLD, *The Land Ethic, in* A SAND COUNTY ALMANAC 243 (1966).

171. 42 U.S.C. § 4321 (1988).

172. EDWARD O. WILSON, THE DIVERSITY OF LIFE 396 (1992).

173. Robert B. Keiter, *NEPA and the Emerging Concept of Ecosystem Management on the Public Lands*, 25 LAND & WATER L. REV. 43 (1990) [hereinafter Keiter, *Ecosystem Management*].

174. 42 U.S.C. § 4332(C) (1988). The EIS must consider:

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Id. See, e.g., Conner v. Burford, 848 F.2d 1441 (9th Cir. 1988), *cert. denied* 109 S. Ct. 1121 (1989); California v. Block, 690 F.2d 753 (9th Cir. 1982). *See Generally* Phillip

The BLM prepares an EIS as part of the ten-year Timber Management Plan for each of its districts.[175] The Forest Service requires that an EIS be prepared as part of the resource management plan for each National Forest.[176] The Forest Service and BLM timber sale programs are administered annually by each Forest and District.[177] The sales are offered in groups and are usually geographically dispersed. Because of the piecemeal approach to these programs, each sale can constitute "major Federal action" and be challenged prior to logging.[178]

The Council on Environmental Quality (CEQ) has, however, defined "significantly" in terms of "context" and "intensity" with emphasis on impacts on the *human* environment.[179] In only three of the ten subparagraphs under "intensity" are environmental impacts on nature discussed.[180] One subparagraph concerns species listed under the ESA; one addresses "wetlands, wild and scenic rivers, and ecologically critical areas" at the end of a list of other concerns; the third deals with cumulative significant impacts on the environment.[181] None of these concerns directly addresses the interrelationships that are part of concerns for biodiversity and ecosystems. Because of this emphasis on the human environment and human concerns, an argument in favor of biodiversity must be tailored to fit one of the narrow natural concerns such as "ecologically critical areas."[182]

H. Meyers, Annotation, *Construction and Application of §§101-105 of National Environmental Policy Act of 1969 (42 U.S.C.S. §§ 4331-4335) Requiring All Federal Agencies To Consider Environmental Factors in Their Planning and Decisionmaking*, 17 A.L.R. Fed. 33 (1973 & Supp 1992).

175. 43 C.F.R. § 1610.5-1 (1992).

176. 36 C.F.R. § 219.12(a) (1992).

177. *See generally* 36 C.F.R. §§ 223.1 - 223.117 (1992)(Forest Service); 43 C.F.R. §§ 5400.0-3 - 5463.1 (1992)(BLM).

178. *See, e.g., Portland Audubon I*, 712 F. Supp. at 1488-89.

179. 40 C.F.R. § 1508.27 (1992).

180. *Id.* § 1508.27(b)(3), (7), (9).

181. *Id.* § 1508.27(b)(3), (7), (9).

182. It has been suggested that biodiversity may be made a concern under NEPA by amending either the statute or its regulations. Holly Doremus, *Patching the Ark: Improving Legal Protection of Biological Diversity*, 18 ECOLOGY L. Q. 265, 326-28 (1991).

In reviewing the scientific basis of an EIS, a court will generally look to see if the agency has acted in accordance with the procedure required by NEPA, the enabling statute and applicable regulations.[183] The court will apply the "hard look" doctrine to ensure that the environmental consequences of the action have been fully considered.[184] In applying the "hard look" doctrine, a court will look to see if the agency's record of decision states the factual assumptions or reveals the processes used in evaluating data explains the rejection of alternative theories and the abandonment of alternative courses, and clearly sets forth the rationale of the ultimate decision.[185] The record of decision must set forth these elements in a clear manner that facilitates public comment on the decision and review by the courts.[186] For issues related to conservation biology, the hard look doctrine is significant in that agencies must address concerns regarding biodiversity and ecosystems within the EIS process. Otherwise, the final EIS may be voided by a reviewing court, and the agency would be forced to refrain from its contemplated action while a new EIS is prepared.

In *Portland Audubon Society*, the Oregon district court reviewed the BLM's decision not to prepare a supplemental EIS to consider the status of the spotted owl and applied the "rule of reason"[187] set forth by the Supreme Court in *Marsh v. Oregon Natural Resources Council.*[188] In *Marsh*, the Court held that

> an agency need not supplement an EIS every time new information comes to light after the EIS is finalized. To

183. Administrative Procedure Act, 5 U.S.C. § 706(2)(D) (1988); *see, e.g.*, Marble Mountain Audubon Soc'y v. Rice, 914 F.2d 179 (9th Cir. 1990).

184. Kleppe v. Sierra Club, 427 U.S. 390, 410 n.21 (1976).

185. National Lime Assoc. v. EPA, 627 F.2d 416, 429-30 (D.C. Cir. 1980); *see* KENNETH C. DAVIS, ADMINISTRATIVE LAW TREATISE § 6:12 (2d ed. 1978 & Supp. 1984).

186. DAVIS, *supra* note 185, § 6:12.

187. 712 F. Supp. at 1456, 1458 (D. Or.), *aff'd* 884 F.2d 1233 (9th Cir. 1989), *cert. denied* 494 U.S. 1026 (1990).

188. 490 U.S. 360, 373-74 (1988). At issue in *Marsh* was whether a supplemental EIS was required for the third of three dams that was one-third completed but upon which construction had been halted. *Id.* at 364-67.

> require otherwise would render agency decisionmaking intractable, always awaiting updated information only to find the new information outdated by the time a decision is made, [however], NEPA does require that agencies take a "hard look" at the environmental effects of their planned activities, even after a proposal has received initial approval. Application of the "rule of reason" thus turns on the value of the new information to the still pending decisionmaking process . . . . If there remains "major Federal Actio[n]" to occur, and if the new information is sufficient to show that the remaining action will "affec[t] the quality of the human environment" in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared."[189]

The Court further held that an agency decision not to prepare a supplemental EIS should only be set aside if it was found to be "arbitrary or capricious."[190] The regulations for implementing NEPA prepared by the (CEQ) state that an agency must prepare a supplemental EIS if "substantial changes [are made] in the proposed action that are relevant to environmental concerns: or [t]here are significant new circumstances or information relevant to environmental concerns . . ."[191] or an agency "[m]ay also prepare supplements when the agency determines that the purposes of [NEPA] will be furthered by doing so."[192]

Then, *Marsh* emphasized that the opportunity for requiring a supplemental EIS could not be left open for the entire length of a project because NEPA would become inapplicable when an " 'agency would no longer have a meaningful opportunity to *weigh* the benefits of the project versus the detri-

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189. 490 U.S. at 373-74 (citations and footnotes omitted).

190. 490 U.S. at 376-77. In determining "whether an agency decision was 'arbitrary or capricious,' the reviewing court 'must consider whether the decision was based on a consideration of the relevant facts and whether there had been a clear error in judgement.' This inquiry must be 'searching and careful,' but 'the ultimate standard of review is a narrow one.' " *Id.* at 378 (quoting Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 416 (1971)).

191. 40 C.F.R. § 1502.9(c)(1)(i), (ii) (1992).

192. § 1502.9(c)(2).

mental effects on the environment'."[193] Applying *Marsh*, the Oregon district court found that the BLM, in determining whether a supplemental EIS need be prepared, had relied on an environmental assessment which did not fully address issues critical to the survival of the spotted owl.[194]

In *Marble Mountain Audubon Society v. Rice*, the Ninth Circuit overturned a Forest Service timber sale because the agency failed to take a "hard look" at an ecosystem concern.[195] The timber sale at issue was in the Grider Creek drainage within the Klamath National Forest.[196] The plaintiffs argued that the EIS failed to consider the Grider Creek drainage's value as a biological corridor between the Marble Mountain and Red Butte wilderness areas that would have allowed for the movement of species between these areas.[197] The court barred the timber sale because the Forest Service's EIS failed to consider the importance of the Grider drainage as a biological corridor.[198] The *Marble Mountain* decision was significant in that the Ninth Circuit recognized the ecological importance of biological corridors and required that the Forest Service consider the value of such areas when preparing management plans. *Marble Mountain* also illustrates how ecosystem concerns, such as biological corridors, can be included in the NEPA process.

B. The National Forest Management Act

NFMA requires the development of land and resource management plans for the National Forests.[199] The plans must comply with the mandates of the Multiple-Use, Sus-

193. 490 U.S. at 372 (quoting Tennessee Valley Authority v. Hill, 437 U.S. 153, 188 n. 34 (1978)).

194. 712 F. Supp. at 1485; *see supra* text accompanying notes 98-116.

195. 914 F.2d 179, 182 (9th Cir. 1990).

196. *Id.* at 180.

197. *Id.* at 180-81. The court noted that "[b]iological corridors provide avenues along which wide-ranging animals can travel, plants can propagate, genetic interchange can occur, [and] populations can move in response to environmental changes and natural disasters, and threated [sic] species can be replenished from other areas." *Id.* at 180 n.2.

198. *Id.* at 182.

199. 16 U.S.C. § 1604(a)(1988).

tained-Yield Act (MUYSA) which provides that the national forests are to be managed for a broad range of purposes besides timber.[200] The net-public benefits of a resource management plan are measured by both quantitative and qualitative criteria.[201] The resource management plan must be prepared in accordance with NEPA.[202] The plan is prepared by an inter-disciplinary team "intergrat[ing] knowledge of the physical, biological, economic, and social sciences, and the environmental design arts."[203] The plan must include a broad range of alternatives reflecting "the full range of major commodity and environmental resource uses."[204]

NFMA, then, offers a procedural framework within which principles of ecosystem management may be applied. The mandate for multiple-use combined with compliance with NEPA and an inter-disciplinary approach offer a means for considering and analyzing the impact of the management plan on ecosystems within each national forest. Also, the requirement for an inter-disciplinary analysis of the management plan is essential for an examination of the interrelationships between organisms, structures and media within ecosystems.

The management plans must also "provide for diversity of plant and animal communities."[205] Forest Service regula-

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200. 16 U.S.C. §§ 528-531 (1988). Multiple Use is defined as:

> The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources . . . over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some of land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses, that will give the greatest dollar return or the greatest unit output.

Id. § 531(a). *See* Intermountain Forest Indus. Ass'n v. Lyng, 683 F. Supp. 1330, 1337-39 (D. Wyo. 1988).

201. *Id.*

202. 16 U.S.C. § 1604(g)(1) (1988); *see, e.g.,* Sierra Club v. Marita, 769 F. Supp. 287 (E.D. Wis. 1991).

203. 36 C.F.R. § 219.5(a) (1992).

204. *Id.* § 219.12(f)(1).

205. *Id.* § 1604(g)(3)(B); *see* Wilkinson & Anderson, *supra* note 35, at 296-306;

tions describe as a principle of these plans that "the National Forests are ecosystems and their management for goods and services requires an awareness and consideration of the interrelationships among plants, animals, soil, water, air, and other environmental factors."[206] Diversity is defined as "[t]he distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan."[207]

NFMA's provisions for consideration of diversity represent a clear mandate for consideration of ecosystem concerns. However, involvement by scientists and environmentalists in the planning stage is crucial to ensure that concerns for biodiversity and ecosystems are fully developed within the administrative record of a forest plan.

NFMA also provides for the conservation of large and consolidated areas of undeveloped land within the national forests.[208] In evaluating such areas, a forest management plan must consider "[t]he anticipated long-term changes in plant and animal species diversity, including the diversity of natural plant and animal communities."[209] The conservation of large areas of unfragmented habitat is necessary for preserving ecosystems, watersheds and the large predators.

Wildlife conservation is also part of NFMA's management objectives. "Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area."[210] Note that the command does not extend to invertebrate species. A viable population is defined as "one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence [and that it be] well distributed

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Robert B. Keiter, *Taking Account of the Ecosystem on the Public Domain: Law and Ecology in the Greater Yellowstone Ecosystem*, 60 U. COLO. L. REV. 923, 963-67 (1989) [hereinafter Keiter, *Greater Yellowstone Ecosystem*].

206. 36 C.F.R. § 219.1(b)(3) (1992).

207. 36 C.F.R. § 219.3 (1992).

208. § 219.17(a). "[R]oadless areas within the National Forests shall be evaluated and considered as potential wilderness areas." *Id.*; *see, e.g.*, California v. Block, 690 F.2d 753 (9th Cir. 1982).

209. § 219.17(a)(2)(v).

210. § 219.19.

in the planning area."[211] The habitat required for a viable population must support "a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area."[212] Since the viability of each vertebrate species within the planning area cannot be monitored, indicator species are chosen "because their population changes are believed to indicate the effects of management activities."[213] The effects of management activities extend to impacts on major biological communities and water quality.[214] A weakness in this approach is the focus on the habitat needs of a single species and its particular biological requirements.[215] In the case of the spotted owl, this has resulted in the creation of dispersed and noncontiguous habitat areas.[216]

In the Department of Interior and Related Appropriations Act for 1990, Congress expanded the Forest Service's duty to preserve the forest ecosystems in exchange for a required record-setting timber harvest.[217] Congress provided that 1990 timber sales be planned so as to "minimize fragmentation of the most significant old growth stands."[218] This mandate attempted to preserve the largest and most ecologically sound areas of forest, protecting these areas from further reduction and fragmentation. Congress was attempting to preserve the value of these areas for biological dispersion. However, the Forest Service was granted the discretion to fragment large stands when necessary to meet the harvest goals

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211. *Id.*

212. *Id.*

213. § 219.19(a)(1).

214. *Id.*

215. For example, the habitat needs of the spotted owl are significantly different than those of the marbled murrelet, a threatened sea bird that nests in the coastal old growth forests of the Pacific Northwest. *See Marbled Murrelet*, *supra* note 18, at 45,328. Similarly, for a criticism of how the ESA primarily protects high-profile individual species rather than overall biodiversity, *see* Rohlf, *supra* note 122, at 275.

216. *Critical Habitat*, *supra* note 16, at 1804-11, 1835-37.

217. Department of the Interior and Related Agencies Appropriations Act, Pub. L. No. 101-121, § 318, 103 Stat. 701, 745-50 (1989); *see supra* notes 80-82.

218. Department of the Interior and Related Agencies Appropriations Act, § 318(b)(1).

set by Congress.[219]

Another problem encountered in recent efforts to protect ecosystems under NFMA has been that the provision for biological diversity is dependent on the scientists and administrators applying the regulations. With the spotted owl, scientific reports in favor of greater habitat protection were suppressed and disregarded by senior administrators in the Forest Service.[220] In a case from Wisconsin, a district court found that the administrative record supporting the management plan for the Nicolet National Forest indicated that the Forest Service's consideration of conservation biology issues had been sufficient to foreclose an appeal of the forest management plan.[221]

NEPA and NFMA offer procedural means through which conservation biology may be made a part of federal land management. The diversity provisions within NFMA, in particular, ensure that some consideration must be given to biodiversity. However, the provisions in NEPA and NFMA for protecting ecosystems are only as strong as the science upon which agency actions are based. Also, the procedural mechanisms of NEPA and NFMA can be implemented with a limited focus that excludes consideration of the interrelationships within larger ecosystems. The scientific values of ecosystems within the public lands must be included at the earliest stages of an agency's decision-making process so that those values can form the basis for future agency action or, in the event of litigation, arguments in favor of biodiversity.

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219. § 318(b)(2); *see also* Citizens Interested in Bull Run, Inc. v. Edrington, 781 F. Supp. 1502 (D. Or. 1991).

220. *Seattle Audubon III*, 771 F. Supp. 1081, 1090 (W.D. Wash.), *aff'd*, 952 F.2d 297 (9th Cir. 1991).

221. Sierra Club v. Marita, 769 F. Supp. 287, 292 (E.D. Wis. 1991). The court, confining itself to a review of the agency's administrative record, found that the Forest Service had substantially set forth its decision and reasoning on the issue of biodiversity and that the record contained adequate testimony on the principles of conservation biology underlying the plaintiff's claim. 769 F. Supp. at 291-92; *accord* Sierra Club v. Robertson, 784 F. Supp. 593, 611 (W.D. Ark. 1991) (upholding a timber sale because the environmental assessment concluded that diversity would be improved by even-aged management that benefitted deer and turkey); *see* Florida Power & Light Co. v. Lorion, 470 U.S. 729, 743 (1985); 5 U.S.C. § 706.

C. Ecosystem Management

Recently, Interior Secretary Babbitt has called for an ecosystem approach for land management so that the country does not become embroiled in other disputes as contentious as that over the ancient forests of the Pacific Northwest.[222] Ecosystem management treats public lands and resources as regional systems, regarding watersheds, airsheds, and wildlife habitat as the focus for decisionmaking.[223] Ecosystem management has as its goals:

> 1. The protection of sufficient habitat for the maintenance of viable populations of all native species in a given region;
> 2. Management at regional scales large enough to accommodate natural disturbances such as fire, wind, insects and climate change;
> 3. Planning over a period of centuries so that species and ecosystems may continue to evolve; and
> 4. Human use and occupancy at levels that do not result in significant ecological degradation.[224]

There are three principal characteristics of ecosystem-based planning and management. First, ecosystem management requires interagency cooperation between administrative agencies at both the state and federal levels.[225] Second, effective ecosystem management requires that programmatic and cumulative impacts be analyzed in order to minimize disrup-

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222. *Interior to Take Ecosystem Approach to Species Management, Babbitt Tells Panel*, 23 Env't Rep. (BNA) 2728 (Feb. 19, 1993).

223. Keiter, *Ecosystem Management*, *supra* note 173, at 45. Ecosystem management is a scientific planner's approach to the land. Bioregionalism is a philosophical movement that advocates a similar approach through individual understanding of the land as a network of natural systems. *See, e.g.*, GARY SNYDER, *The Place, the Region, and the Commons*, *in* THE PRACTICE OF THE WILD 25 (1990). The Deep Ecology movement builds upon the bioregional viewpoint by adding a spiritual element. *See, e.g.*, BILL DEVALL & GEORGE SESSIONS, DEEP ECOLOGY: LIVING AS IF NATURE MATTERED (1985).

224. GRUMBINE, *supra* note 2, at 184-86.

225. Keiter, *Ecosystem Management*, *supra* note 173, at 45; *see Agencies Back Ecosystem Approach for Dealing With Environmental Problems*, 23 Env't Rep. (BNA) 3062 (Mar. 26, 1993).

tion and fragmentation of ecosystem processes.[226] Finally, ecosystem management and the understanding of ecosystem processes are closely linked to the theories of conservation biology and the commitment to preserving biodiversity within a region's native flora and fauna.[227] Also, scientific and management personnel must be able to perform their responsibilities with little or no political oversight and interference.[228]

As a step toward advancing the practice of ecosystem management on the public lands, Secretary Babbitt has created a biological survey within the Interior Department.[229] The mission of this survey will be to map the biological diversity within the United States.[230] Presently, public discussion of biodiversity has been hampered by the lack of a full understanding of the nation's biological wealth. The mapping of the nation's flora and fauna will provide the necessary facts for a full consideration of program impacts and alternative actions.[231]

One method of ecosystem management that has been widely discussed is a system of land use planning built around "biosphere reserves."[232] A biosphere reserve would be organized into three zones: core area, buffer zone and transitional zone.[233] Each zone would offer a different balance between en-

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226. Keiter, *Ecosystem Management*, *supra* note 173, at 45.

227. *See Agencies Back Ecosystem Approach for Dealing With Environmental Problems*, 23 Env't Rep. (BNA) 3062 (Mar. 26, 1993); *see* RESEARCH PRIORITIES, *supra* note 85, at 13-19.

228. *See Public Employees Organize to Combat Agencies' Week Environmental Practices*, 23 Env't Rep. (BNA) 2954 (Mar. 12, 1993). In 1989, the Association for Forest Service Employees for Environmental Ethics (AFSEEE) was formed as the first group for dissident federal employees. *Id.* AFSEEE was formed in response to the Forest Service's failure to respond to reports from its own scientists on the worsening situation of the spotted owl.

229. William K. Stevens, *Babbitt to Map Ecosystems Under New Policy to Save Them*, N.Y. TIMES, March 14, 1993, at 29.

230. *Id.*

231. WILSON, *supra* note 172, at 312-19.

232. Jane Robertson Vernhes, *Biosphere Reserves: the Beginnings, the Present, and the Future Challenges*, *in* SYMPOSIUM ON BIOSPHERE RESERVES 7, 9-11 (William P. Gregg, Jr. et al. eds., 1987). The concept for biosphere reserves was developed as part of the United Nations' Man and the Biosphere program. *Id.* at 7-11.

233. *Id.* at 9.

vironmental protection and allowable uses.[234] The "core area" of a biosphere reserve would contain minimally disturbed examples of native ecosystems.[235] Such a core area would be protected as a strict nature reserve within which only non-destructive activities would be allowed so long as the activities did not adversely affect the natural ecosystem processes.[236] For the United States, the biosphere reserve concept could be incorporated into the existing system of public lands by utilizing wilderness areas and portions of the National Park system as core reserves.[237]

The second zone of a biosphere reserve would be a "buffer zone" surrounding the core area.[238] Within such a buffer zone, diverse activities would be allowed so long as those activities did not negatively impact ecosystems within the core area.[239] In the existing system of national parks, wildlife refugees, national forests and other federal and state lands, such public lands could serve as buffer zones.[240] Buffer zones may also serve as biological corridors so that species — particularly large predators such as bears and wolves — might move between the ecosystems preserved in core areas.[241]

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234. *Id.*

235. *Id.*

236. *Id.*

237. William P. Gregg, Jr., *On Wilderness, National Parks, and Biosphere Reserves, in* SYMPOSIUM ON BIOSPHERE RESERVES 33 (William P. Gregg, Jr. et. al. eds., 1987); *see* Keiter, *Greater Yellowstone Ecosystem, supra* note 205, at 991-1006.

238. Vernhes, *supra* note 232, at 9.

239. *Id.* Activities allowed within a buffer zone may include basic and applied research, environmental monitoring, traditional land use, recreation and tourism, general environmental education, and specialist training. *Id.*; *see* GRUMBINE, *supra* note 2, at 49-51.

240. *See* Keiter, *Greater Yellowstone Ecosystem, supra* note 205, at 991-1006. Biosphere reserves have an important role in commercial forestry. The intensive single-age practices of contemporary silviculture require the conservation of diversified and functioning native forest ecosystems. Stanley L. Krugman, *Biosphere Reserves and the Development of Sustainable Production Systems, in* SYMPOSIUM ON BIOSPHERE RESERVES 49, 51 (William P. Gregg, Jr. et al. eds., 1987).

241. *See* GRUMBINE, *supra* note 2, at 60. The importance of biological corridors for the dispersal of the spotted owl has been noted. THOMAS REPORT, *supra* note 4, at 303-14. *See* Felice Pace, *The Klamath Corridors: Preserving Biodiversity in the Klamath National Forest, in* LANDSCAPE LINKAGES AND BIODIVERSITY 105 (Wendy E. Hudson ed., 1991), for a plan of reserves and biological corridors in the Klamath region of Southern Oregon and Northern California.

Buffer zones may also be used to minimize the fragmentation of native ecosystems into the limited areas preserved within the core reserves.[242]

A limited example of how a biosphere core area and a buffer zone would interact may be seen in the critical habitat and recovery plans promulgated for endangered species such as the spotted owl. Under the ESA, the critical habitat acts as the "core area" within which the minimum habitat needs for a small segment of the species population is preserved.[243] A recovery plan effectively establishes a "buffer zone" around critical habitat areas by delineating management practices that balance land use and species preservation.[244] Core areas and buffer zones, however, would work on a larger scale than the habitat needs of a single species. Ideally, such areas would encompass a network of ecosystems across a geographic region.

The third zone of a biosphere reserve would be a "transition zone" within which the needs of local communities and the work of the biosphere reserve are balanced.[245] The boundaries of such transition zones would not be strictly fixed, but would instead be part of a dynamic and ever-expanding area of cooperation between economic needs and ecological conservation.[246] The comprehensive land use planning within a transitional zone would also allow for the management of ecosystems that extended beyond the legal and jurisdictional boundaries of the public lands.

Ecosystem management offers the promise of providing a more integrated and systematic approach for conservation and public land management. Under a system of ecosystem management, conflicts over the use of land would be arbitrated according to a range of uses established by balancing economic desires with ecological concerns.

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242. *See* GRUMBINE, *supra* note 2, at 47-52; RESEARCH PRIORITIES, *supra* note 85, at 55-63; *see also* THOMAS REPORT, *supra* note 4, at 22-23.

243. *See supra* text accompanying notes 122-28.

244. *See supra* text accompanying notes 135-43.

245. Vernhes, *supra* note 232, at 9.

246. *Id.* Uses allowed in transition zones would include settlements, fields, pastures, forestry and other commercial activities. *Id.*

IV. Conclusion

"The Way that can be told is not the eternal way."
— Lao Tsu[247]

An end to the Pacific Northwest's uncertainty may be at hand. Litigation and the ever-worsening state of the forests have brought the ESA into play, and once a recovery plan is issued, the region will have a uniform method for managing spotted owl habitat. The spotted owl has been used as a means for protecting the ancient forest ecosystems because the precarious viability of the owl invoked the jurisdiction of the ESA. Unfortunately, it was necessary to trigger the mandates of the ESA before the agencies concerned would act to protect the ancient forest ecosystems.

The ESA is up for reauthorization in 1993. Because of the spotted owl and other controversial species, there is a movement to weaken the act by requiring that the ESA consider the economic cost of preserving a species.[248] There is also a movement to amend the ESA so that it may better serve as a means for protecting entire ecosystems, removing the reliance upon the fate and habitat requirements of a single species.[249]

The ESA, however, is not a land management tool, nor should it be used as one. The ESA serves as a safety net to stop the fall of creatures harmed by our land use practices. The controversy over the northern spotted owl has offered a better example of administrative malfeasance than an example of the workings of land management statutes such as NEPA and NFMA. The Forest Service and the BLM are both required by their organic acts to conserve wildlife as part of their management practices. As land managers, the agencies

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247. *One*, Tao Te Ching 3 (Gia-Fu Feng & Jane English trans., 1989); *see, e.g.*, PLATO, *Republic* 514-19 (Paul Shorey trans.), *in* THE COLLECTED DIALOGUES OF PLATO 747-51 (Edith Hamilton & Huntington Cairns eds., 1961) (the parable of the cave).

248. Timothy Egan, *Strongest U.S. Environment Law May Become Endangered Species*, N.Y. TIMES, May 26, 1992, at A1.

249. Virginia S. Albrecht & Thomas C. Jackson, *Battle Heats Up as Congress Begins Review of Endangered Species Act*, NAT'L L.J., May 18, 1992, at S1; Rohlf, *supra* note 122, at 275-79.

were responsible for balancing between the conflicting demands of varying interest groups within society and the interests of the economy and ecology. The agencies neglected their duty to the land and then resisted requests that they comply with their wildlife management responsibilities.[250]

Recently, President Clinton and Interior Secretary Babbitt have attempted to resolve the impasse between the timber industry and application of the environmental statutes, but the conflict between conservation and profit will not easily be settled.[251] Before the end of his first one hundred days in office, President Clinton's honeymoon with environmentalists had already worn off.[252] A critical test of Clinton's ability to balance between jobs and the environment will be how effectively he and his senior environmental officials are able to make the various federal departments work together. Interagency cooperation will be essential, if the administration is to succeed in reducing environmental disputes through a method of ecosystem management.[253]

Presently, less than five percent of the native forests lands within the lower 48 states remain intact.[254] In Europe, the great forest that once stretched from the Acquitane to the Ukraine is present today only within a 12,000 acre preserve on

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250. Bill Clinton, at the time Democratic Party Presidential nominee, had attacked former President Bush over the Reagan and Bush Administrations' handling of the dispute over the spotted owl, charging that the economic hardships suffered by the Pacific Northwest are due in part to the irresponsible actions of the federal agencies. Samuel Perry, *Owls vs Jobs? Bush, Clinton Join Northwest Forests Debate*, Reuters, Aug. 4, 1992, *available in* LEXIS, Nexis library, Currnt file.

251. *See* Timothy Egan, *Clinton Under Crossfire at Logging Conference*, N.Y. TIMES, Apr. 3, 1993, at 6.

252. *Id.* Environmentalists were particularly angered by Clinton's withdrawal of reforms contained in his budget proposal that would have increased grazing and mining fees on federal lands. *Id.*

253. However, less than three months into his presidency, Clinton's ability to orchestrate a coherent policy for the public lands was already being called into doubt. Commenting on the Forest Service's requested delay in the development of a management plan for the spotted owl, Brock Evans of the Audubon Society observed that "[t]he Forest Service has cut the ground out from under the Clinton administration's efforts to 'speak with one voice'." *Forest Service Ordered to Explain Why Owl Management Plan Will Be Late*, Nat'l Env't Daily (BNA), Apr. 15, 1993.

254. *When Chainsaws Pare the Hills of Ancient Trees*, N.Y. TIMES, Nov. 3, 1991, at § 4, p.3.

Poland's eastern border.[255] In North America, we have an opportunity to approach the land in a new way.[256] The new forest management policies announced by the Forest Service are a step in the direction of bringing our industrial economy into terms with the natural economy.[257] The ancient forests of the Pacific Northwest are some of the last surviving examples of intact temperate forest ecosystems in the world. The United States did not sign the Biodiversity Convention at the United Nations Conference on Environment and Development in Rio de Janeiro, but we still retain the ability to conserve the biodiversity within our own nation.[258] The establishment of a biological survey within the Interior Department is an important step toward building a national consensus in favor of protecting native ecosystems.[259] Today we can decide whether the forests and other public lands are to be used for the benefit of this generation or allowed to continue benefiting the Earth and future generations for centuries to come.[260]

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255. Charles T. Powers, *A Tree Grows In Bialowieza*, L.A. TIMES, Nov. 16, 1991, at A1.

256. Wallace Stegner, *Land of Hope, Land of Ruin*, N.Y. TIMES, Mar. 29, 1992, at § 4, p. 17; *see* Wendell Berry, *Conservation is Good Work*, AMICUS J., Winter 1992, at 33, 36; Michael G. Renner, *Saving the Earth, Creating Jobs*, WORLD WATCH, Jan.-Feb. 1992, at 10.

257. *See supra* text accompanying notes 66-69.

258. In September of 1992, Bruce Babbitt, then president of the League of Conservation Voters, wrote on how the reauthorization of the Endangered Species Act during the 103d Congress would present an opportunity for the United States to redeem its failure to take a lead on biodiversity at the Rio Summit. Governor Bruce Babbitt, *Next Step for Environmentalists: Redeeming "Lost Opportunity" of this Year's Rio Summit*, ROLL CALL, Sept. 28, 1992. *See* Julie Bloch, *Preserving Biological Diversity in the United States: The Case for Moving to an Ecosystems Approach to Protect the Nation's Biological Wealth*, 10 PACE ENVTL. L. REV. 175 (1992). Interior Secretary Babbitt has advocated an ecosystem approach to saving species so as to avoid the "national train wrecks" as occurred over the northern spotted owl. William K. Stevens, *Interior Secretary is Pushing a New Way to Save Species*, N.Y. TIMES, Feb. 17, 1993, at A1.

259. William K. Stevens, *Babbitt to Map Ecosystems under New Policy to Save Them*, N.Y. TIMES, Mar. 14, 1993, at 29.

260. *See New Thinking on Old Growth*, 244 SCIENCE 14 (1989).