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A STRATEGY TO PRESERVE BIOLOGICAL DIVERSITY: *MARBLE MOUNTAIN AUDUBON SOCIETY v. RICE*

Lucy T. Rudbach*

If present trends continue and our focus remains on the most critically endangered species, we will fight battle after battle to save individual species, winning very few of them, and additional species will decline to the point where they are endangered. It is a sad commentary that the current widespread practice of "Emergency Room Conservation" channels most of the economic and emotional support for the protection of biological diversity into the few species that are least likely to benefit from it. We need to act now to develop a strategy to insure that the greatest number of species possible will survive.¹

INTRODUCTION

Biodiversity² is the most popular buzzword today in conservation.³ The term refers to the full range of variety within and among living organisms and their interrelationships.⁴ Scientists recognize that preserving species is inextricably tied to protecting biodiversity.⁵

Although the court in *Marble Mountain Audubon Society v Rice*⁶ did not explicitly mention the term, that case marks the Ninth Circuit's first pronouncement on the importance of conserving biological diversity. The court specifically recognized the value of preserving a biological corridor.

The limited yet precedential nature of the court's holding provokes analysis of the extent to which existing environmental laws promote the conservation of biological diversity. In addition to explaining the concept of

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1. H.R. Rep. No. 259, 102d Cong., 1st Sess., pt. 1, at 17 (1991) [hereinafter H.R. Rep. No. 259] (quoting The National Biological Diversity Conservation and Environmental Research Act: Hearings on H.R. 4335 before the Subcommittee on Natural Resources, Agriculture Research, and Environment of the House Committee on Science, Space, and Technology, 100th Cong., 2d Sess. 342 (June 9 and 30, 1988) (No. 143) at 297-302 (testimony of Michael Scott, University of Idaho)).

2. This term is used interchangeably with Biological Diversity.

3. Reed Noss, *From Endangered Species to Biodiversity*, in *BALANCING ON THE BRINK OF EXTINCTION* 230, 230-46 (Kathryn Kohm, ed., 1991).

4. *Id.* 230-31.

5. Larry D. Harris, *The Fragmented Forest*, 93 (1984). Harris postulates that a process of continuing evolution is necessary to ensure long term conservation and that the natural evolutionary processes cannot proceed once a species is almost extinct because it has already lost much of its genetic variation.

6. *Marble Mountain Audubon Soc'y v. Rice*, 914 F.2d 179 (9th Cir. 1990).

biodiversity, this comment will examine *Marble Mountain's* precedential value for using biological corridors to protect biodiversity. It will then discuss the direct implications of the holding and the limitations of biodiversity provisions in existing statutory law. Finally it will focus on current legislative proposals to more effectively conserve biodiversity.

BIODIVERSITY CONCEPT

Biodiversity is a resource that must be preserved.⁷ As humans continue to change the environment, biodiversity is essential to allow us to adapt to those changes.⁸ Managing wildlands for biodiversity involves viewing forests from an evolutionary perspective and preserving "naturally occurring combinations of biological structure."⁹ Biological diversity is typically divided into three interrelated categories: genetic diversity, species diversity, and ecosystem diversity.¹⁰

In order to proliferate, populations of plants and animals need a sufficient number of interbreeding individuals to maintain genetic viability. A dramatic, but realistic example of the need to preserve genetic diversity occurred in 1970 when a blight wiped out substantial portions of the United States corn crop. Over ten percent of the entire crop was destroyed because farmers had planted the same genetic strain which was particularly susceptible to the blight.¹¹ Disaster was averted by importing disease resistant strains from Mexico.¹² In addition to maintaining a sufficiently varied gene pool to avoid such disasters, insufficient genetic diversity results in inbreeding which weakens populations.¹³ It also hinders the natural evolutionary processes of enabling species to adapt to environmental changes.¹⁴

Species diversity refers not only to the large plant and mammal species. It is equally important to preserve the less conspicuous insects, bacteria, mosses and algae species.¹⁵ Different species depend on one another as predators and prey, as carriers of seeds and pollen, and in so

7. Holly Doremus, *Patching the Ark: Improving Legal Protection of Biological Diversity*, 18 Ecology L.Q. 265, 269 (1991) (discussing three categories of reasons to preserve biological diversity: utilitarian, aesthetic, and moral).

8. Peter H. Raven, *The Politics of Preserving Biodiversity*, BIOSCIENCE, Nov. 1990, at 769-70.

9. Larry Harris & Peter Gallagher, *New Initiatives for Wildlife Conservation: The Need for Movement Corridors*, In *Defense of Wildlife: Preserving Communities & Corridors* 11, 13 (Gay Mackintosh eds. 1989).

10. Council on Environmental Quality, *Environmental Quality 21st Annual Report*, 146-187 (1990) [hereinafter CEQ Report].

11. H.R. Rep. No. 259, *supra* note 1, at 14.

12. *Id.*

13. CEQ Report, *supra* note 10, at 149.

14. *Id.*

15. *Id.*

many other ways that scientists cannot fully predict and document all of them.¹⁶ One estimate indicates that “for every known species that is lost, tens of unknown species may be lost because of the complex relationships.”¹⁷

Long term preservation of species is a function of the biological diversity of an area.¹⁸ Scientists recognize that a link between the loss of biodiversity leads to an increase in species extinctions. They attribute the impending biodiversity crisis¹⁹ to humans whose increasing demands on a limited amount of land has “accelerated environmental change and upset longstanding evolutionary patterns.”²⁰ Ideally sufficient habitat would be set aside to maintain the ecological, genetic, behavioral, evolutionary and physical processes of all species in order to reverse the trend of accelerating species’ extinction. However, it is impossible to determine the ideal or even the minimum amount of habitat needed to maintain the biodiversity necessary to support each particular species.²¹ Thus, we must err on the side of prudence and “save all the cogs and wheels” to prevent premature extinctions and insure a naturally continuing evolutionary process.²² Lack of determinative scientific data should not prevent efforts to conserve biological diversity.²³ Ecosystem diversity is the third level of biodiversity

16. Lecture by Larry Harris, Professor at the University of Florida at Gainesville and noted expert on biological corridors, Multiple Resource Siviculture Seminar Series, University of Montana (October 12, 1991).

17. H.R. Rep. No. 259, *supra* note 1, at 9 (citing U.S. General Accounting Office 1989. P 10. “Endangered Species: Management Improvements Could Enhance Recovery Program.” GAO/RCED-89-5. Washington, D.C.).

18. Harold James Salwasser, *An Ecosystem Approach to Endangered Species Conservation*, in *Balancing On The Brink Of Extinction*, *supra* note 3, at 249.

19. The Scientific Advisory Board of the Environmental Protection Agency ranked the loss of biological diversity as one of the four greatest environmental problems. (The other three were habitat destruction, stratospheric ozone depletion, and global climate change.) H.R. Rep. No. 259, *supra* note 1, at 7 (citing Scientific Advisory Board. September 1991. P 13. “Setting Priorities and Strategies for Environmental Protection.” SAB-EC-90-021. Environmental Protection Agency, Washington, D.C.).

20. Robert B. Keiter, *Taking Account of the Ecosystem on the Public Domain: Law and Ecology in the Greater Yellowstone Region*, 60 U. Colo. L. Rev. 923, 930 (1989).

21. Charles F Wilkinson & H. Michael Anderson, *Land and Resource Planning in the National Forests*, 64 Or. L. Rev. 1, 299 (1985).

22. Salwasser, *supra* note 18, at 250-51. *See also* Cynthia Carlson, *NEPA and the Conservation of Biological Diversity*, 19 *Envtl. Law* 15 (1988), for an excellent discussion of the need to preserve biodiversity.

23. In *Palila v. Hawaii Dept. of Land & Natural Resources*, 649 F. Supp. 1070, 1082 (D.Hawaii 1986), *aff’d*, 852 F.2d 1106 (9th Cir. 1988), the district court was faced with indeterminate scientific data as to how many mouflon sheep could be permitted to remain on the island of Mauna Kea for the benefit of sport hunters without negatively impacting the endangered Palila bird. The court erred on the side of prudence, reasoning that by the time an accurate scientific analysis of species interaction was complete, the Palila might already be extinct. *But see* *Enos v. Marsh*, 769 F.2d 1363, 1370-71 (1985), where the Secretary of the Interior did not have adequate information about the critical habitat of an endangered plant species and therefore did not abuse his discretion by not designating critical habitat under 16 U.S.C. § 1533(a)(3) (1988).

Both species and genetic diversity are a significant part of protecting a healthy and properly functioning ecosystem. At the ecosystem level, scientists examine interrelated systems such as nutrient cycling, degradation of wastes, hydrological cycles, pest management, erosion control, and other processes involving plants, microorganisms, and animals.²⁴ Studying migratory patterns, nesting habits, range needs and other peculiarities of particular species plays into an ecosystem analysis.²⁵

The National Forest System is potentially the best protectorate of biological diversity in the United States. Large tracts of contiguous national forests allow many different plant and animal species to proliferate.²⁶ Maintaining biological diversity depends on the ability of species to move without absolute barriers.²⁷ Many national parks, however, are too small to maintain minimum viable populations of species.²⁸ In fact, forty-two populations of species have become extinct in fourteen parks since the parks were established.²⁹

Scientists attribute the present extinction crisis to habitat fragmentation.³⁰ They contend that fragmentation is the most serious threat to biological diversity.³¹ Forest fragmentation causes species to become isolated which substantially reduces or eliminates the gene flow between

24. CEQ Report, *supra* note 10, at 150-51.

25. A classic example of this approach involves the antbird in Brazil's tropical Amazon Forest. The antbird species requires a large habitat. In 1983 ecologist Lee Harper regularly netted and released these birds in an isolated tract of forest surrounded by cattle pasture. He noted that none of the antbirds ever survived. The antbirds would not cross an open space, even if a green oasis was in plain sight. However, a 300-meter corridor was cut and when the new trees matured to establish a connecting corridor between the isolated tract and desirable antbird habitat, the antbird survived. The corridor had effectively enlarged their habitat and enabled them to live on the "forest island." This example demonstrates the appeal of an approach to forest management which "looks to the natural restorative powers of the land, protects the diversity of natural communities, and provides resilience in the face of external forces." Salwasser, *supra* note 16, at 252.

26. Declaration of Harold James Salwasser at 6, *Marble Mountain Audubon Society v. Rice*, 914 F.2d 179 (9th Cir. 1990) (No. S-89-1701-EJG). [hereinafter Salwasser Dec.].

27. *Id.* at 6-7

28. William D. Newmark, *A Land Bridge Island Perspective On Mammalian Extinctions In Western North American Parks*, *NATURE*, Jan. 29, 1987, at 430-32.

29. *Id.* at 432. Newmark studied the larger mammals (orders Lagomorpha, Carnivora & Artiodactyla) in 14 Western North American National Parks located within the Rocky Mountains, Sierra-Cascades, and Colorado Plateau. He found that the total numbers of extinctions exceeded the total number of populations within a reserve. The number of extinctions were inversely related to reserve size, and the number of extinctions were related to reserve age. He attributed species loss to "short term insularization effects." Smaller parks had smaller populations which had higher rates of extinction. Furthermore, isolating a species reduced the potential for colonization on adjacent lands. Newmark stated that "openings as narrow as a road, open field, or clearcut have been shown to inhibit the movement of both large and small mammals." *Id.* at 430-31.

30. Bruce A. Wilcox & Dennis D. Murphy, *Conservation Strategy: The Effects of Fragmentation on Extinction*, 125 *AMERICAN NATURALIST* 879-87 (1985).

31. *Id.*

them.³² No small population can remain genetically viable if isolated from other populations.³³ Many forest fragments are too small to sustain a population,³⁴ and preventing species from moving between habitats can be as destructive in the long run as destroying the habitat itself; the species will not remain viable and will eventually become extinct.³⁵

BIOLOGICAL CORRIDORS

Noted expert on biological corridors, Larry Harris³⁶, postulates that the most effective strategy to combat forest fragmentation is through the use of natural biological corridors.³⁷ Biological corridors have several advantages for preserving biological diversity. They allow species to breed with other populations and thereby maintain their genetic viability.³⁸ If a species does become extinct in an area, a corridor will accelerate reimmigration.³⁹ Corridors also allow particularly large mammals a wider range in which to gather food.⁴⁰ Finally, a corridor might function as habitat in itself depending on the particular species and surrounding habitat.⁴¹

Notwithstanding the notable advantages of biological corridors, in some circumstances corridors might negatively impact biological diversity. Individual species and the overall biodiversity of an area could be detrimentally affected if corridors transmit fire, disease, or a previously unknown predator.⁴² Predators and hunters might also discover that staking out strategic locations along the corridors provides a sure way of catching their prey.⁴³ Furthermore, species immigration can sometimes destroy habitat. "Weedy and opportunistic" species might invade a forested habitat that is otherwise closed to them.⁴⁴

32. Declaration of Larry D. Harris, PH.D, In Support of Plaintiffs' Motion For Preliminary Injunction, *Marble Mountain Audubon Soc'y v. Rice*, 914 F.2d 179 (9th Cir. 1990) (No. S-89-1701-EJG) [hereinafter Harris Dec.].

33. *Id.* at 3.

34. A substantial portion of the large-mammal faunas of comparatively large intact reserves may be at risk even without further fragmentation. Wilcox & Murphy, *supra* note 31, at 884.

35. Harris Dec., *supra* note 32, at 3.

36. *See supra* note 16.

37. Harris Dec., *supra* note 32, at 4.

38. *Id.*

39. Daniel Simberloff & James Cox, *Consequences and Costs of Conservation Corridors*, CONSERVATION BIOLOGY, May 1987, at 63-71.

40. *Id.* at 64-65.

41. *Id.* at 65.

42. *Id.* at 66-67.

43. *Id.* at 67.

44. *Id.*

ECOSYSTEM MANAGEMENT

Scientists agree that biological corridors are not always the key to preserving biological diversity⁴⁵ “[E]ach potential corridor must be considered on its own merits.”⁴⁶ Effective and efficient preservation of biodiversity can be accomplished only by using an ecosystem approach to manage forests.⁴⁷ Ecosystem management differs from traditional land resource management; it “incorporates a wider breadth of ecological and social concerns as well as a longer time scale for productivity and renewability.”⁴⁸ The geographic scale varies widely with the specific concern at stake.⁴⁹ Boundaries are not clear cut as they are in traditional management approaches, but vary depending on the particular management goal. While it is impossible to analyze and plan for the thousands of different species and communities, forest managers can target specific elements of the biota which need protection.⁵⁰ Management at the ecosystem level focuses on the structure, functional processes and composition of species and biological communities.⁵¹

MARBLE MOUNTAIN AUDUBON SOCIETY V RICE

In *Marble Mountain Audubon Society v Rice*,⁵² the Forest Service analyzed the potential impacts that harvesting timber would have on certain aspects of the biodiversity in the project area.⁵³ It failed, however, to look beyond the confines of the specific geographic area of the project and analyze the effects from a broader regional perspective. In holding that the Forest Service’s Environmental Impact Statement did not adequately analyze the project’s impact on a biological corridor,⁵⁴ the court endorsed an ecosystem approach to managing wilderness.

STATEMENT OF FACTS

In the summer of 1987, lightning-caused forest fires swept through approximately 260,000 acres of California’s Klamath National Forest

45. See Simberloff & Cox, *supra* note 39. See also Harris, *supra* note 16.

46. Simberloff & Cox, *supra* note 39, at 69.

47. See CEQ Report, *supra* note 10, at 162-63.

48. Salwasser, *supra* note 18, at 252.

49. *Id.* at 252-53.

50. *Id.*

51. *Id.* at 252-53.

52. *Marble Mountain Audubon Soc’y v. Rice*, 914 F.2d 179 (9th Cir. 1990).

53. USDA Forest Service, Final Environmental Impact Statement, Grider Fire Recovery Project, Klamath National Forest, I-6 to I-9 (April 1, 1989) [hereinafter FEIS]. The Forest Service identified preserving wildlife populations and species diversity as a major issue in the FEIS.

54. *Marble Mountain*, 914 F.2d at 182.

burning almost 15,000 acres of the Grider Creek Drainage.⁵⁵ In order to salvage the remaining value of standing fire killed or dying timber, and to rehabilitate the damaged area, the Forest Service (FS) implemented the "Grider Fire Recovery Project"⁵⁶ The "Grider Recovery Area" consisted of the 7,283 acres of unroaded wilderness habitat which had burned.⁵⁷ The project involved developing roads into previously roadless areas in order to salvage fire-killed timber. The FS also proposed to salvage timber by other methods including helicopters and clearcutting.⁵⁸

Public concern about the potential impacts of the recovery project on wildlife habitat, the natural environment, and the local timber industry prompted the Forest Service to prepare a Draft Environmental Impact Statement (DEIS).⁵⁹ The DEIS analyzed the impacts the project would have on the entire 27,730 acres of the Grider Creek Drainage.⁶⁰ This was the second EIS the Forest Service had prepared on the area. It had previously prepared an EIS in 1967 when it developed the Multiple Use Plan (MUP) to serve as its guide in managing the area. It tiered this second EIS to the guidelines and legal standards already contained in the MUP and the Klamath Forest Timber Management Plan of 1974 (TMP).⁶¹

After receiving approximately 195 public comments and collecting its own data, the FS drafted eight alternatives to consider as potential management plans for the Grider Fire Recovery Project.⁶² More public comment and FS evaluation ensued.⁶³ After two years of planning, Forest Supervisor Rice adopted a version of one of the alternatives which would

55. The Grider Creek Drainage is located in Siskiyou County of northwestern California. It connects the Marble Mountain Wilderness to the Wild and Scenic Klamath River. FEIS, *supra* note 56, at ii. "[It] represents a corridor of relatively uninterrupted forest habitat." *Id.* at III-33.

56. *Marble Mountain*, 914 F.2d at 180.

57. FEIS, *supra* note 56, at I-1.

58. *Id.* at II-17.

59. *Id.* at I-5. The National Environmental Policy Act (NEPA) requires that an EIS be prepared "for all major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(c) (1988). 40 C.F.R. § 1502.9 (1991) provides that FEISs should be prepared in two stages. The first is the Draft EIS followed by public comment and then the Final EIS. The FS determined that "management activities in the drainage would constitute a significant Federal action in view of the long-standing controversy over development of the unroaded area and concern over fire impacts and recovery projects on water quality and fisheries habitat." *Id.* at 1.

60. *Id.* at ii.

61. *Id.* at I-5. The MUP had already sought to balance environmental and productivity interests. The area was considered for wilderness status in the Original Roadless Area Review and Evaluation (RARE I) in 1972 and in RARE II in 1979. It was eventually released for multiple-use management by the California Wilderness Act in 1984. "California Wilderness Act" 98 Stat. 1628 Sec. 111(b)(4). Because the area was not designated as wilderness under RARE II, it is to be managed for multiple-use in accordance with National Forest Management Act (NFMA) of 1976, 16 U.S.C. § 1600-1614 (1988). 98 Stat. 1628 Sec. 111(b)(4). The Grider Drainage, however, remains unroaded. *Id.* at iii.

62. *Id.* at iii-v.

63. *See id.* at I-6.

permit logging of 3,235 acres of the Grider Creek Drainage and add approximately twelve miles of road to the area.⁶⁴

Among the public comments to the DEIS was the assertion that the "DEIS does not discuss the importance of corridors in maintaining populations of species which need ancient forests and undisturbed landscapes."⁶⁵ The FS responded that such discussion was a forest planning matter and therefore beyond the scope of the FEIS. It further asserted that a half-mile wide link between the Marble Mountain Wilderness and the Klamath River provided an adequate corridor⁶⁶

In response to the selected management plan, a group of local and national non-profit environmental organizations⁶⁷ (Plaintiffs) filed suit against Klamath National Forest Supervisor, Robert L. Rice and the United States Forest Service. Plaintiffs claimed that the FS had violated the National Environmental Policy Act (NEPA) by not adequately considering the unique value of the Grider Creek Drainage as the only significant biological corridor between the Marble Mountain and the Red Butte Wilderness areas.⁶⁸ They did not contest the FS's analysis of the project's impact on biodiversity⁶⁹ They also claimed that the FS had violated California water quality standards requirements, and thus violated the Clean Water Act.⁷⁰ Soon after filing suit, Plaintiffs filed a motion for a preliminary injunction to stop the FS from proceeding with the Grider Fire Recovery Project. The FS cross-moved for summary judgment on all counts.

DISTRICT COURT

The FS prevailed on its summary judgment motion in the United States District Court for the Eastern District of California. The district court held that it lacked jurisdiction to review Plaintiffs' NEPA claim

64. *Id.* at II-17 to II-22.

65. *Id.* at V-16.

66. *Id.* at V-16. The FS also states that under its Alternative H-Modified, the proposed road construction or timber harvest would not negatively affect the corridor. *Id.* at IV-92.

67. Natural Resources Defense Council; Klamath Forest Alliance; Klamath River Concerned Citizens; Salmon River Concerned Citizens; and Defenders of Wildlife.

68. *Marble Mountain*, 914 F.2d at 180-81.

69. The survival of wildlife populations and species diversity was identified as a major issue in the FEIS. FEIS, *supra* note 56 at I-6 to I-9.

70. *Marble Mountain*, 914 F.2d at 181. The Clean Water Act, 33 U.S.C. § 1323(a) (1988), requires federal agencies to comply with state water pollution laws. The California North Coast Water Quality Control Board (Board) requires, in its Basin Plan, that water turbidity cannot exceed 20% above naturally occurring background levels. Plaintiffs argued that the effects of the forest fires figured into the increased turbidity calculation because "naturally occurring background levels" included the effects of the forest fires. Thus they argued that the Recovery Project violated the Basin Plan's 20% limit.

based on section 312 of the Forest Service annual appropriations bill.⁷¹ It held, alternatively, that the FEIS adequately addressed the biological corridor issue. The court also held that the Recovery Project did not violate the Clean Water Act.⁷²

NINTH CIRCUIT COURT

Plaintiffs appealed to the United States Court of Appeals for the Ninth Circuit. The court remanded the case to the district court and enjoined the FS from proceeding with the Recovery Project pending the district court's disposition of the case. The Ninth Circuit Panel overcame the threshold issue by holding that Plaintiffs set forth a site-specific challenge rather than a challenge of the FS's entire management plan. The action, therefore, was not barred by section 312 of the appropriations bill.⁷³ It also held that Plaintiffs did raise a triable issue of fact on their Clean Water Act claim.⁷⁴ The significant holding for purposes of this comment is the court's decision that the FS violated NEPA by not adequately assessing the effects of the planned timber sale on the Grider Creek Drainage's value as a unique biological corridor.

71. "Pub. L. No. 101-121, Sec. 312, 103 Stat. 743 (1989) (formerly § 314 of Pub. L. No. 100-446, 102 Stat. 1825) bars challenges to a FS or a Bureau of Land Management (BLM) plan "on the sole basis that the plan in its entirety is outdated," but it permits challenges to "any and all particular activities to be carried out under existing [forest management] plans." In enacting § 314, Congress intended to expedite completion of the comprehensive forest plans required by the National Forest Management Act. 16 U.S.C. § 1600-1614 (1988). The rationale was that if a plan could be challenged on the basis that it was "outdated" it would cease to be valid and thus "no timber sales or other activities could be tiered to the plan EIS, and the management scheme would collapse in chaos." *Portland Audubon Society v. Lujan*, 884 F.2d 1233, 1238 (9th Cir. 1989) (interpreting § 314).

72. *Marble Mountain*, 914 F.2d at 181. The district court found that it was not necessary to interpret the Basin Plan in order to grant summary judgment for the FS. The district court held that 1) because the Board did not explicitly criticize the DEIS for violating state water quality standards and 2) because plaintiffs did not challenge the FS's interpretation of the Basin Plan, summary judgment was proper in favor of the FS.

73. The legislative history indicates that Congress did not intend to preclude judicial review of case-by-case timber sale appeals in site-specific instances and other particular FS and BLM activities. H.R. Conf. Rep. No. 862, 100th Cong., 2d Sess. 76 (1988). The court distinguished *Oregon Natural Resources Council v. Mohla*, 895 F.2d 627 (9th Cir. 1990), where the same 9th Circuit panel had held that ONRC's challenge of a FS plan to sell 240 acres of primarily old growth forest in Mt. Hood National Forest in Oregon was barred by § 314. It reasoned that the challenge was not site-specific because if the suit was successful, it would enable plaintiffs to challenge the entire TMP. *Id.* at 630. The *Marble Mountain* court recognized that, unlike the situation in *Mohla*, success in their suit would not enable plaintiffs to challenge the entire timber management plan. *Id.* The *Marble Mountain* court recognized the unique nature of biological corridors; they only exist in parts of the forest as "uninterrupted forest habitat linking two wilderness areas." *Marble Mountain*, 914 F.2d at 181-82.

74. In overruling the district court on this issue, the Ninth Circuit court held that plaintiffs can still challenge that the FS's Recovery Project violated state water quality control standards, even if the Board itself did not find a violation. The court relied on *Oregon Natural Resources Council v. United States Forest Service*, 834 F.2d 842, 851 (9th Cir. 1987), which gave private citizens the right to challenge violations of state water quality standards under the Administrative Procedures Act.

NEPA CLAIM

The court held that the FS did not take the requisite "hard look" at the impact of the fire recovery project on the Grider Creek Drainage biological corridor.⁷⁵ The FS maintained that simply leaving a link less than a mile wide was adequate to maintain a corridor.⁷⁶ The court reasoned that NEPA required more analysis and supporting documentation than the FS's cursory conclusion.⁷⁷ *Marble Mountain* is the only case to date which enjoins an agency action to protect a biological corridor.⁷⁸ The practical effect of the court's holding is that the FS must amend its FEIS to adequately consider how the project would effect the corridor. If it were not for the existence of a biological corridor in the Grider Creek Drainage, Plaintiffs probably would have been powerless to stop the project, despite the potential environmental damage it might cause the biodiversity of the area.⁷⁹ Even if subsequent to this decision, the FS determines that the project would destroy the corridor, NEPA contains no substantive measures which could preserve the corridor.⁸⁰ Plaintiffs can use NEPA only to ensure that agencies follow statutory procedures.⁸¹

Although the holding in *Marble Mountain* does not alter the procedural nature of NEPA, nor does it ensure preservation of the corridor, it still might positively impact future efforts to preserve biological

75. *Marble Mountain*, 914 F.2d at 182. A court will use the Administrative Procedure Act standard of review at 5 U.S.C. § 706(2)(D) (1988) to ensure that an agency has taken the required "hard look" at the environmental consequences of its decision. *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976). See *supra* notes 64 and 65 and accompanying text for discussion of the FS's response to public comments on the corridor issue.

76. *Marble Mountain*, 914 F.2d at 182.

77. *Id.* NEPA requires that an EIS be prepared for all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(c) (1988).

78. A preliminary injunction has been issued in *Friends of the Bitterroot v. Prichard*. Plaintiffs relied on *Marble Mountain* as precedent to enjoin the FS from harvesting timber and cutting roads in the Beaverhead National Forest in southwestern Montana without first analyzing, in an EIS, the impact the project would have on a biological corridor in the area. Motion For Preliminary Injunction, *Friends of the Bitterroot v. Prichard*, In the United States District Court For The District of Montana, Butte Division (No. CV-90-76-BU).

79. 40 C.F.R. § 1502.1 (1991) states that the EIS should be used to force agencies to ensure that the policies and goals defined in NEPA are infused in ongoing programs and actions of the federal government, and that federal officials use it in conjunction with other relevant materials in making decisions. However, under NEPA an agency has plenary discretion to place little weight on environmental values as long as it has adequately analyzed them.

80. See *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council*, 435 U.S. 519, 558 (1978) (holding that while NEPA sets forth significant substantive goals for the Nation, its mandate to the agencies is essentially procedural).

81. The Supreme Court has noted that "NEPA itself does not mandate particular results, but simply prescribes the process. In *Robertson v. Methow Valley Citizens Council*, 104 S. Ct. 351, 370 (1989), the Court held that "[i]f the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs."

diversity Agencies might now include more comprehensive analyses of the effects of their activities on biological corridors. While more analysis will not prevent destructive activities, it will at least inform other government agencies, Congress, and the public of the environmental effects of a project so they may exert some other form of pressure to preserve biological diversity.⁸² More importantly, the case serves as a signal that agencies should consider the effects of their projects with the welfare of the broader ecosystem in mind.

Professor Robert Keiter⁸³ has suggested that NEPA does promote ecosystem management.⁸⁴ Several NEPA regulations require federal land managers to transcend traditional boundary lines and assess impacts of proposed actions on shared ecosystems.⁸⁵ Furthermore, NEPA provisions requiring agencies to coordinate their activities encourage viewing forest management from an ecosystem perspective.⁸⁶ Finally, NEPA is used to enforce certain substantive environmental laws which are not geographically limited.⁸⁷

The Ninth Circuit's holding in *Marble Mountain* is consistent with the notion that NEPA can be used to conserve biodiversity. The holding is encouraging because the court recognized that NEPA requires agencies to evaluate the environmental impacts of their activities from a broader ecosystem perspective. However, challenges to specific projects such as that in *Marble Mountain* are possibly the most inefficient way to preserve biodiversity. Resources and time spent analyzing case-by-case challenges would be much better spent inventorying species, studying migratory patterns and interrelationships between species, all of which enable forest managers to make decisions based on knowledge and with a long term ecosystem perspective.⁸⁸

82. The problem, however, with more analyses in EISs is that the documents become so voluminous that it becomes a major undertaking to sort through them to extract specific information.

83. Professor Keiter is a professor of law at the University of Wyoming College of Law. He is a noted scholar on ecosystem management.

84. See Robert B. Keiter, *Ecosystem Management on Public Lands*, 25 Land & Water L. Rev. 43-60 (1990).

85. *Id.*

86. *Id.*

87. *Id.*

88. The author does not suggest that the ability to challenge agency actions should be eliminated. Challenges serve the important function of ensuring that agencies are not unduly influenced by special interest groups. Because biodiversity involves the complex interrelationships of a virtually infinite number of species and interrelated systems, it is very difficult to ascertain the precise impact of a specific agency activity on the biodiversity of a region. The more cognizant forest managers are of the biodiversity interests, however, the better able they will be to avoid interfering with them.

BIODIVERSITY PROVISIONS IN THE ENDANGERED SPECIES ACT

Congress explicitly recognized the value of conserving ecosystems when it passed the Endangered Species Act (ESA).⁸⁹ The ESA directs the Secretary of Interior to identify critical habitat for listed, threatened, and endangered species. The Secretary must designate the amount of habitat necessary for the particular listed species to recover and to eventually exist without the protections of the Act.⁹⁰ This may include not only existing habitat range, but also additional areas into which the species may expand.⁹¹ Simply setting aside a species' range is not adequate under the ESA.⁹²

A potential barrier to ensuring critical habitat designation is that the Secretary may weigh economic and other "benefits" against the benefits of preserving critical habitat when making his or her designation.⁹³ This problem, however, might be nullified by the Section 7 jeopardy provision. Section 7 requires that agency actions shall not "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species."⁹⁴ Prohibiting activities which jeopardize listed and endangered species arguably prohibits agencies from favoring economic interests over preservation concerns.⁹⁵

A more significant problem with the ESA is that sometimes critical habitat is not designated. The Secretary has sole discretion to determine the boundaries of the critical habitat and even to determine whether any should be designated in the first place.⁹⁶ An example of the inadequacies of the critical habitat provision concerns the endangered grizzly bear. Given the wide range needs of the large animal, ten million acres were proposed

89. One of the purposes of the ESA is to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." 16 U.S.C. § 1531(b) (1988).

90. 16 U.S.C. § 1533(a)(3) (1988) requires the Secretary of the Interior to designate "critical habitat" concurrently with the listing of a species. "Critical habitat" includes the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features essential to the conservation of the species, which may require special management considerations or protections. 16 U.S.C. § 1532(5)(A)(i). It also might include areas outside the geographical area occupied by the species if the Secretary so determines. 16 U.S.C. § 1532(5)(A)(ii). Conserving the species means using all methods and procedures which are necessary to bring any threatened or endangered species to the point at which it can exist without the protections of the ESA. 16 U.S.C. § 1532(3).

91. 16 U.S.C. § 1532(5)(A)(ii) (1988).

92. Michael J. Bean, *THE EVOLUTION OF NATIONAL WILDLIFE LAW: CONSERVATION OF ENDANGERED SPECIES*, 334. Bean reasons that any adverse impacts on critical habitat will almost always, by definition, jeopardize the continued existence of the species.

93. 16 U.S.C. § 1533(b)(2) (1988).

94. 16 U.S.C. § 1536(a)(2) (1988).

95. Bean, *supra* note 92, at 359.

96. 16 U.S.C. s 1533 (1988).

for designation as critical habitat.⁹⁷ Even though the Act's purpose is to "conserve" a listed species, which includes providing areas for expansion, the proposal was withdrawn because the ten million acres was thought to be unnecessary for the continued survival of the bear.⁹⁸

Although the ESA's critical habitat provisions preserve aspects of biodiversity, there are two main reasons why the ESA is inadequate to conserve biological diversity and ultimately the long term preservation of species. First, in order to implement the ESA requirements, a species must be designated as threatened or endangered. The listing process itself can prove an insurmountable hurdle. The Fish and Wildlife Service has indicated that fifty to sixty species are listed each year out of approximately one thousand candidate species.⁹⁹

The second problem with relying solely on the ESA is that it is an indirect approach to the main problem. One reason species become endangered or threatened is because of the pervasive human interference with biodiversity.¹⁰⁰ The ESA approaches the problem by trying to undo the damage by restoring the losses in individual cases. It is more efficient and ultimately more effective to prevent species from ever getting to the point where they need the Act's protections. A national policy aimed specifically at preserving biodiversity is more likely than the ESA to reverse the trend of increasing species extinction.¹⁰¹

BIODIVERSITY PROVISIONS IN THE NATIONAL FOREST MANAGEMENT ACT

In *Marble Mountain*, the Grider Recovery Area was managed according to the provisions of the National Forest Management Act (NFMA).¹⁰² NFMA does contain biological diversity provisions. It requires the Secretary of the Interior to promulgate regulations requiring land management plans to consider the diversity of plant and animal

97. Daniel J. Rohlf, *THE ENDANGERED SPECIES ACT, A GUIDE TO ITS PROTECTIONS AND IMPLEMENTATION*, 55 (1989).

98. *Id.* at 55-56.

99. H.R. Rep. No. 259, *supra* note 1, at 14 n.41, (citing The National Biological Diversity Conservation and Research Act: Hearings on H.R. 4335 before the Subcommittee on Natural Resources, Agriculture Research, and Environment of the House Committee on Science, Space, and Technology, 100th Cong., 2d Sess. 342 (June 9 and 30, 1988) (No. 143) (testimony of John Buffington, U.S. Fish and Wildlife Service. at 251)).

100. *See supra* note 19.

101. It is estimated that nearly 9,000 species of plants and animals may be at risk of extinction in the United States. H.R. 585 Report, *supra* note 1, at 13 (citing National Biological Diversity Conservation: Hearings on H.R. 2082 before the Subcommittee on Environment of the House Committee on Science, Space, and Technology, 102d Cong., 1st Sess. 141 (May 23, 1991)(testimony of Michael Deland, Chairman, Council on Environmental Quality)).

102. 16 U.S.C. §§ 1600-87 (1988); *see supra* note 61.

communities.¹⁰³ The regulations provide that fish and wildlife habitat be managed to maintain viable populations of species.¹⁰⁴ It also compels agencies, to the extent practicable, to consider management alternatives that seek to preserve and enhance the diversity of endemic and desirable naturalized plant and animal species.¹⁰⁵ The biodiversity provisions in NFMA, however, are undermined by the requirement that all management prescriptions must meet overall multiple-use objectives.¹⁰⁶

BIOLOGICAL DIVERSITY LEGISLATIVE PROPOSALS

The data concerning the increasing rates of species extinctions¹⁰⁷ and the predictions that humans will continue to encroach on native habitats¹⁰⁸ underscores the necessity for stronger laws to conserve biodiversity. Perhaps the best way to conquer the problem is with a law that specifically provides substantive measures to conserve biological diversity.

It is difficult to legislate for the conservation of biodiversity because it demands looking beyond specific regions and species to broad interrelationships within ecosystems which do not have boundaries. A further difficulty is the lack of scientific consensus establishing a precise definition of biodiversity.

The proposed National Biological Diversity Conservation and Environmental Research Act addresses these difficulties.¹⁰⁹ The Act provides for the coordination of agencies and the formulation of a strategy to look beyond specific regions and species. It would establish a national policy for the conservation of biological diversity. In recommending the Act, the Committee on Science, Space, and Technology recognized that "[c]urrent law and policies addressing the loss of biological diversity in the United States are largely piecemeal and uncoordinated."¹¹⁰ The Act seeks to solve this problem by directing the Council on Environmental Quality (CEQ)¹¹¹

103. 16 U.S.C. § 1604(g)(3)(B) (1988).

104. 40 C.F.R. § 219.19 (1991). It does this by targeting indicator species. § 219.19(1).

105. 40 C.F.R. § 219.27(g) (1991).

106. 16 U.S.C. § 1604(g)(3)(B) (1988); 40 C.F.R. § 219.27(5) (1991).

107. See H.R. Rep. No. 259, *supra* note 1, at 8 ("Scientists estimate that one plant or animal species worldwide is lost per day and that by the end of the decade, the extinction rate may rise to one species per hour." Other estimates indicate that "10% of the earth's species may become extinct before the turn of the century, and more than 25% of all living species will be extinct 'within the next couple of decades. ")

108. *Id.* at 8-12.

109. H.R. 585, 102d Cong., 1st Sess. (1991). (Related to H.R. 2082, 102d Cong.; formerly H.R. 1268, 101st Cong., and H.R. 4335, 100th Cong.). As of 10/21/91 it was reported favorably with an amendment and recommended for enactment by the Committee on Science, Space, and Technology. [hereinafter H.R. 585].

110. H.R. Rep. No.259, *supra* note 1, at 16.

111. To carry out the NEPA mandate, NEPA provides for a Council on Environmental Quality (CEQ). 42 U.S.C. § 4342 (1988). This is an executive council whose three members are appointed by

to develop a coordinated Federal strategy to conserve biological diversity¹¹² It grants the CEQ authority to guide agencies in preparing EISs consistent with the strategy¹¹³ Agencies themselves must review their programs every two years to ensure that they are consistent with the strategy¹¹⁴ Such a provision would have provided a useful tool for the *Marble Mountain* plaintiffs to ensure that the biodiversity of the area would be protected.

The Act would also establish a National Center for Biological Diversity and Conservation Research.¹¹⁵ The Center would fund projects and provide a clearinghouse of information about biological diversity It would facilitate the study and gathering of information to increase understanding about biological diversity including taxonomy, ecology of and threats to species. It would provide the CEQ, agencies and the public with the information necessary to implement the most effective coordinated effort to conserve biological diversity¹¹⁶ The Act would also require that species and native natural communities which are insufficiently protected be identified and that steps be taken to ensure their survival.¹¹⁷

Although establishing a national center will not yield immediate short term results, it is perhaps the best method to conserve biodiversity in the long run. It is much more effective to spend money on a national biological inventory to understand ecological systems than to try and assess the ecological impacts of projects absent scientific knowledge of the underlying ecology¹¹⁸

CONCLUSION

If we are to reverse the trend of increasing species extinctions and ensure a healthy environment for future generations, we must embrace an ecosystem management approach to preserve biological diversity While *Marble Mountain* might be used as precedent to require agencies to analyze the environmental impacts of proposed actions on a larger ecosystem, challenging individual actions will not achieve that goal. Clearly, preservation of biological diversity is better achieved by using a comprehensive strategy such as that provided in H.R. 585. Only by

the President. The CEQ must actively research and consult with state and local governments as well as public and private agencies about environmental issues. 42 U.S.C. § 4345.

112. H.R. 585, *supra* note 109, at Section 5.

113. *Id.* at Section 6.

114. *Id.*

115. *Id.* at Section 7.

116. *Id.*

117. *Id.* at Sections 8 and 10.

118. Raven, *supra* note 8, at 772.

declaring the preservation of biodiversity a national priority and learning more about it will we save this essential resource.