USING THE NATIONAL ENVIRONMENTAL POLICY ACT TO PROTECT BIOLOGICAL DIVERSITY

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> *"What Man would bring to nothing if he might*
> *A natural power or element? And who,*
> *If the ability were his, would dare*
> *To kill a species of insensate life,*
> *Or to the bird of meanest wing would say*
> *Thou and thy kind must perish?"*[1]

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1. WILLIAM WORDSWORTH, *The Tuft of the Primroses, in* William Wordsworth: The Poems 799, 813 (John O. Hayden ed., 1977).

I. INTRODUCTION

The National Environmental Policy Act of 1969[2] (NEPA) is an undervalued but significant legal tool for advancing federal protection of biological diversity. Though best known for its requirement that federal agencies prepare environmental impact statements (EISs) on "major federal actions significantly affecting the quality of the human environment,"[3] NEPA's purpose is not the production of lengthy documents, but rather the implementation of policies consistent with the protection of the diversity of life.

NEPA is the only federal law that requires all federal agencies to consider the reasonably foreseeable impacts of proposed federal actions on all plants and animals.[4] Other environmental laws either protect particular kinds of wildlife, such as threatened and endangered species or migratory birds, or specifically address resource management for one particular agency.

In current scientific literature, biological diversity is commonly evaluated in the context of communities organized within ecosystems.[5] For this and other reasons, federal land management agencies including the Bureau of Land Management and the Fish and Wildlife Service have adopted "ecosystem management" as a goal.[6] However, the jurisdictional framework of the current land management laws is

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2. 42 U.S.C. §§ 4321-4347 (1970).

3. *Id.* § 4332(2)(C).

4. NEPA applies to all federal agencies in the executive branch, as well as States and units of general local government and Indian tribes assuming NEPA responsibilities via delegated authority. 40 C.F.R. § 1507.1 (1993). The President and his or her immediate staff is not an "agency" for purposes of NEPA. *Id.* § 1508.12. "Actions" for purposes of NEPA include agency programs, policies, plans, rules, regulations and legislative proposals. Administrative or judicial enforcement proceedings, nondis-cretionary actions, and the Environmental Protection Agency's pollution control activities are not "actions" for purposes of NEPA. *Id.* 1508.18(a).

5. EDWARD O. WILSON, THE DIVERSITY OF LIFE 163-83 (Harvard University Press 1992).

6. General Accounting Office, *Ecosystem Management: Additional Actions Needed to Adequately Test a Promising Approach*, 38-39 (1994) [hereinafter, GAO report]. *See Council on Envt'l. Quality, Linking Ecosystems and Biodiversity*, Twenty-first Annual Report (1990) (discussing the relationship between the conservation of biodiversity and various land management strategies). *See infra* part III, § B.

commonly identified as a major barrier to ecosystem management.[7] In contrast to other land management and natural resources law, NEPA stands apart as the one legal tool which drives analysis towards, rather than against, an ecosystem model.[8] Nothing in NEPA or in the Council on Environmental Quality's (CEQ) implementing regulations[9] links the requirements for analysis of ecological impacts to artificial administrative boundaries.

NEPA's requirements are also well suited to the emerging and evolving state of conservation biology that is used to analyze the impacts of federal actions on biological diversity. First, NEPA provides a mandate for agencies to obtain needed ecological information on a proposed federal action.[10] However, rather than requiring absolute or even reasonable certainty prior to proceeding with action, NEPA only requires agencies to present and evaluate the existing credible scientific evidence.[11] Second, under NEPA, the CEQ regulations provide a procedural framework for keeping environmental analyses current as significant new information is identified.[12] Finally, once the analytical and public involvement process has been completed, the agency is free to proceed with the action proposed. NEPA does not prevent action from proceeding in the face of uncertainty;[13] it simply requires that the decision maker and the public be aware of that uncertainty.

Use of NEPA to conserve biological diversity, while increasing, is hindered by insufficient understanding of both biological diversity and NEPA, significant gaps in environmental baseline information and accessibility, controversy about NEPA's applicability to United States

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7. *See* GAO report, *supra* note 6, at 54-57. One of GAO's recommendations is that the Interagency Ecosystem Management Task Force identify specific statutory, regulatory, institutional, and procedural options for overcoming barriers to government wide implementation of ecosystem management. *Id.* at 65.

8. The only other legal mandate related to ecosystems is found in the Endangered Species Act, which includes as one of its purposes providing a means to conserve the ecosystems upon which endangered and threatened species are dependent. 16 U.S.C. § 1531(b) (1988).

9. CEQ promulgates regulations, binding on all federal agencies, that implement the procedural provisions of NEPA, and it is the final executive branch interpreter of NEPA law and policy. 40 C.F.R. §§ 1500-1508 (1993). *See* Andrus v. Sierra Club, 442 U.S. 347, 358 (1979) ("CEQ's interpretation of NEPA is entitled to substantial deference").

10. 42 U.S.C. § 4332(a) (1988).

11. *Id.* § 4331(a).

12. 40 C.F.R. § 1502.9(c) (1993).

13. *Id.* § 1502.22.

actions abroad, and, finally, tensions between the federal government's policy statements regarding the conservation of biological diversity and its position in current NEPA litigation.

II. HOW NEPA RELATES TO THE CONSERVATION OF BIOLOGICAL DIVERSITY

A. NEPA's Mandate to Protect Biological Diversity

Unlike other environmental statutes, NEPA encompasses virtually all environmental concerns that affect life on earth. The succinct but sweeping purposes of NEPA are:

> To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.[14]

Because the Supreme Court has consistently held that only NEPA's procedural requirements are enforceable,[15] the national environmental policy set forth in Section 101 of NEPA is largely forgotten and seldom invoked. Yet NEPA sets forth the only general national environmental policy ever passed by Congress, and it remains law that the President is sworn to uphold.[16]

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14. 42 U.S.C. § 4321 (1988).

15. In deciding 12 cases raising NEPA claims, the Supreme Court has always found for the government and has confined a court's role in reviewing agencies' NEPA compliance to that of overseeing procedural requirements. *See, e.g.*, Strycker's Bay Neighborhood Council v. Karlen, 444 U.S. 223 (1980); Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, 435 U.S. 519 (1978). For analysis and criticism of The Supreme Court's narrow interpretation of NEPA, *see* Philip Michael Ferester, *Revitalizing the National Environmental Policy Act: Substantive Law Adaptations from NEPA's Progeny*, 16 HARV. ENV. L. REV. 207 (1992); David C. Shilton, *Is the Supreme Court Hostile to NEPA? Some Possible Explanations for a 12-0 Record*, 20 ENVTL. L. 551 (1990); Nicholas C. Yost, *NEPA's Promise-Partially Fu*lfilled, 20 ENVTL. L. 533 (1990).

16. *See generally* DR. LYNTON K. CALDWELL, *Population and Environment: Inseparable Policy Issues,* THE ENVIRONMENTAL FUND (March 1985) (discussing the President's responsibilities and opportunities pursuant to NEPA). (Copy on file at the Tulane Environmental Law Journal offices.)

The complexity and future challenges of conserving biological resources were very much on Congress' mind when it deliberated the passage of NEPA.[17] Those concerns were woven into a policy that reflects uncharacteristic congressional humility in "recognizing the profound impact of man's activity on the interrelations of all components of the natural environment . . . ,"[18] and a prescient commitment to fulfilling "the responsibilities of each generation as trustee of the environment for succeeding generations . . . ."[19] Thus, NEPA declares that:

> [I]t is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony . . . .[20]

and to, "maintain, wherever possible, an environment which supports diversity . . . ."[21]

Clearly, those who drafted NEPA and who marshaled its passage in Congress, intended for the statute to encompass precisely the many types of biological processes and human impacts on those processes that the rubric of biological diversity has now come to signify. NEPA provides the policy underpinnings as well as the legal authority for

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17. The original drafting of the House version of NEPA would have established a Council of Ecological Advisers. The word environment was substituted because it was felt that the word ecology was too esoteric. Testimony regarding ecological matters was, however, prominent in hearings leading to the passage of NEPA. *See Environmental Quality: Hearings before the Subcommittee on Fisheries and Wildlife Conservation of the Committee on Merchant Marine and Fisheries*, 91st Cong., 1st Sess. (1969).

The term "biological diversity" was first defined in one of the President's annual environmental quality reports required by Section 201 of NEPA. Council on Envt'l. Quality Biological Diversity, Eleventh Annual Report (1980).

18. 42 U.S.C. § 4331(a) (1988).

19. *Id.* § 4331(b)(1).

20. *Id.* § 4331(a).

21. *Id.* § 4331(b)(4).

agencies to interpret "policies, regulations, and public laws" in a manner intended to support diversity of life on this planet.[22]

B. NEPA's Mandate to Acquire and Use Ecological Information

As ecological concerns continue to rise to the forefront of policy considerations and political controversy, the lack of adequate data has become an increasingly urgent problem.[23] In a recent report addressing the analysis of impacts on biological diversity under NEPA, the CEQ concluded that "major gaps in knowledge concerning the status and distribution of biota and ecosystems" as well as difficulties in accessing existing information, are a barrier to adequate analysis.[24]

Because the need to obtain better ecological data had been identified at the time of NEPA's passage, one of the three major purposes of the statute is "to enrich the understanding of the ecological systems and natural resources important to the Nation . . . ."[25] Section 102(2)(H) of NEPA specifically requires all federal agencies to "initiate and utilize ecological information in the planning and development of resource-oriented projects."[26] NEPA is seldom invoked as authority mandating ecological research, yet one early case implied that Section 102(2)(H) provides independent authority for federal agencies to undertake research of a broader scope than was traditionally within their jurisdiction,[27] and some courts have interpreted the provision as one means of judging the adequacy of agencies' efforts in evaluating proposed actions.[28]

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22. *Id*. § 4332(1).

23. *See*, Dr. E. Norse, Ed., Impediments to Marine Conservation *in* GLOBAL MARINE BIOLOGICAL DIVERSITY: A STRATEGY FOR BUILDING CONSERVATION INTO DECISION MAKING, 155-58 (Dr. E. Norse ed., 1993).

24. Council on Envtl. Quality, *Incorporating Biodiversity Considerations into Environmental Impact Analysis under the National Environmental Policy Act*, 22 (1993) (The report is available from CEQ).

25. 42 U.S.C. § 4321 (1988).

26. *Id*. § 4332(2)(H).

27. Environmental Defense Fund v. Hardin, 325 F. Supp. 1401, 1407 (D.D.C. 1971).

28. In Citizens Against Toxic Sprays, Inc. v. Bergland, 428 F. Supp. 908 (D. Or. 1977), the court used Section 102(2)(H) in part to uphold the adequacy of an EIS. In National Helium Corp. v. Morton, 361 F. Supp. 78, 95 (D. Kan. 1973), the court used it as one of several reasons to find Department of Interior's compliance with NEPA inadequate. (Among other things, Interior had declined to participate in a relevant National Science Foundation study for fear that it might jeopardize its litigation position.) *Id*. at 107. Prior to 1975, the provision was found at Section 102(2)(G).

C. *NEPA's Requirement to Analyze the Impacts of Proposed Federal Actions on Biological Diversity*

The environmental impact assessment process, or "NEPA process" as it is commonly called, is intended to provide the procedural framework for implementing the policies set forth in Title I of the Act.[29] NEPA and the CEQ's implementing regulations require agencies to engage in a level of environmental analysis commensurate with the significance of the foreseeable environmental effects of the proposed action. Proposed federal actions that meet the statutory threshold of "significantly affecting the quality of the human environment"[30] trigger the need to prepare an EIS. Actions that are designated by a federal agency in its NEPA implementing procedures[31] as generally not having significant environmental impacts, either individually or cumulatively, are categorically excluded from written documentation requirements.[32] The vast majority of federal actions fall in between these two categories and are addressed under NEPA through the use of environmental assessments (EAs).[33]

The effects to be considered in determining the environmental significance of the action and in developing the related analysis must include the reasonably foreseeable direct,[34] indirect,[35] and cumulative impacts[36] of a proposed action on the components, structures and

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29. For a concise description of the NEPA process, see Nicholas Yost, NEPA DESKBOOK (Environmental Law Institute, 1989).

30. 42 U.S.C. § 4332(2)(C) (1988).

31. Every federal agency is required to publish NEPA procedures in conformance with the CEQ NEPA regulations. 40 C.F.R. § 1507.3 (1993).

32. *Id.* § 1508.4.

33. According to a 1992 survey by the CEQ, agencies prepare approximately 50,000 EAs a year. In comparison, agencies prepared 456 EISs (draft, final and supplemental) for calendar year 1991. There are no statistics available on the number of actions categorically excluded from NEPA documentation. *Council on Envtl. Quality, National Environmental Policy Act,* Twenty-third Annual Environmental Quality Report 153, 172 (1993).

34. Direct effects are "caused by the action and occur at the same time and place." 40 C.F.R. § 1508.8(a) (1993).

35. Indirect effects "are caused by the action and are later in time or farther removed in distance" than direct effects. They "may include growth inducing effects, . . . changes in the pattern of land use, population density or growth rate, and related effects on . . . ecosystems." *Id.* § 1508.8(b).

36. Cumulative impacts are defined as the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable

functioning of affected ecosystems, including the biological communities within that ecosystem.[37] Some commentators have suggested that an amendment to NEPA or the implementing regulations is needed because the CEQ regulations define terms such as "significantly" in the context of the human environment.[38] In fact, several such amendments have been introduced in Congress.[39] However, the need for such legislation has not been established. To date, neither federal agencies nor courts have questioned the proposition that effects on biological diversity are required to be included in NEPA analyses. In fact, the term "human environment" has been broadly interpreted to cover virtually all types of ecological impacts. Thus, for example, in *Marble Mountain Audubon Society v. Rice,*[40] the Court of Appeals for the Ninth Circuit determined that the Forest Service's NEPA compliance for a timber sale was inadequate due to the agency's failure to consider the ecological value of a biological corridor between two wilderness areas.[41]

III. OPPORTUNITIES AND OBSTACLES

A. NEPA Provides a Reasonable Procedural Vehicle for Analyzing Impacts in the Face of Incomplete Information and Emerging Science

One of the difficulties agencies may face in analyzing the impacts of their actions on biological diversity is the relatively recent application of the science of conservation biology to site-specific actions in terrestrial

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future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions." *Id*. § 1508.7.

37. *Id*. §§ 1508.8, 1508.25(3)(c). Note that under the CEQ regulations, "impacts" and "effects" are synonymous. *Id*. § 1508.8.

38. 40 C.F.R. § 1508.27 (1993); Jeb Boyt, *Struggling to Protect Ecosystems and Biodiversity under NEPA and NFMA: The Ancient Forests of the Pacific Northwest and the Northern Spotted Owl*, 10 PACE ENVTL. L. REV. 1009, 1037 (1993).

39. For example, in the 101st Congress, both the House Merchant Marine and Fisheries Committee and Senate Environment and Public Works Committee introduced amendments that would have directed the CEQ to issue NEPA regulations requiring agencies to address the loss of biological diversity stemming from federal actions both within as well as beyond the jurisdiction of the United States. H.R. 1113, 101st Cong., 1st Sess. (1989) and S. 1089, 101st Cong., 1st Sess. (1989). The National Biological Diversity Conservation and Environmental Research Act, introduced in the 102nd Congress, would also have required each federal agency to assess the effects on biological diversity in all EISs and directed EPA to take such impacts into account when reviewing EISs. H.R. 1268, 102nd Cong., 1st Sess. (1989). For a number of reasons, none of the bills ultimately made it through Congress.

40. 914 F.2d 179 (9th Cir. 1990).

41. *Id*. at 182.

and marine ecosystems. Under the CEQ regulations, federal agencies are required to obtain missing information that is relevant to "reasonably foreseeable significant adverse impacts"[42] and that is "essential to a reasoned choice among alternatives . . . ."[43] If the information "cannot be obtained because the overall costs are exorbitant or the means to obtain it are not known,"[44] the agency must go through a process of explaining the significance of the missing information and evaluating the reasonably foreseeable impacts "based upon theoretical approaches or research methods generally accepted in the scientific community."[45] Additionally, an agency must prepare a supplement to the EIS if significant new information of relevance to the proposed action or its impacts is discovered.[46]

B. NEPA Requires Agencies to Analyze Impacts Regardless of Administrative and Political Boundaries

Ecosystem management has been adopted by the Forest Service, Bureau of Land Management, the National Park Service, the Fish and Wildlife Service and other agencies as a mechanism to both protect biological diversity and avoid the "train wrecks" exemplified by the spotted owl scenario in the Pacific Northwest. This adoption has highlighted the need to attempt to evaluate, plan, and manage within demarcations which reflect biological, not political or administrative, boundaries. However, current federal law requires agencies to undertake management activities within specific administrative units.[47]

In this respect, NEPA's requirement to analyze the cumulative environmental effects of federal and nonfederal actions, whether past, present or proposed, may necessarily require the analysis to leap physical

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42. 40 C.F.R. § 1502.22(b)(1) (1993).

43. *Id.* § 1502.22(a).

44. *Id.* § 1502.22(b).

45. This regulation, which was amended in 1986 to replace the earlier "worst case" regulation, defines "reasonably foreseeable" to "include[] impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason." *Id.* § 1502.22(b).

46. *Id.* § 1502.9(c).

47. *See*, *e.g.*, The Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1712, 1732 (1998).

and administrative boundaries.[48] For example, in *Resources Ltd., Inc. v. Robertson,*[49] concerns were raised about the impacts on grizzly bear habitat of nonfederal actions on 270,000 acres of state and private lands within the boundaries of the Flathead National Forest in Montana. The Forest Service contended that it was excused from analyzing the cumulative impacts from nonfederal actions because the federal government could not control them. The court pointed out that the regulation is not, "impossible to implement, unreasonable or oppressive: one does not need control over private land to be able to assess the impact that activities on private land may have in the Forest,"[50] and ruled that the Forest Service did have to take account impacts from actions in those areas in its NEPA analysis. The use of the NEPA process to assess impacts on biological diversity across international boundaries, is linked, in the global context, to the longstanding controversy about NEPA's applicability to actions and impacts outside of the borders of the United States.[51]

The Clinton administration chose not to appeal the decision in *Environmental Defense Fund v. Massey*,[52] thus confirming the applicability of NEPA to United States' actions in Antarctica. An interagency group chaired by the National Security Council is currently considering the status of NEPA in other areas outside of the United States.[53] Meanwhile, a weak executive order issued in 1979 to address the environmental impacts of some federal actions abroad remains in

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48. The requirement to analyze the cumulative effects of a proposed action and alternatives to the proposed action is by far the most difficult methodological issue in the environmental impact assessment profession today. In recognition of this problem, CEQ has had underway since late 1992 a cumulative effects initiative to identify the current state of the science, to recommend steps for improving such analyses in the NEPA process, and to make the best current thinking on this subject available to NEPA practitioners. CEQ plans to publish a handbook on cumulative effects analysis in late 1994.

49. 8 F.3d 1394 (9th Cir. 1993).

50. *Id*. at 1400. The Court also pointed out that the regulation does not specifically require that cumulative effects be addressed at the programmatic level, and thus left it to the Forest Service to determine whether cumulative effects would be analyzed in the forest plan EIS or in site-specific NEPA analysis. *Id*. At 1400-01.

51. Months after NEPA's passage, substantial controversy arose over whether NEPA requires agencies to analyze such impacts. *See* Nicholas Robinson, *Extraterritorial Environmental Protection Obligations of Foreign Affairs Agencies: the Unfulfilled Mandate of NEPA*, 7 N.Y.U. J. INT'L L. & POL. 157 (1974).

52. 986 F.2d 528 (D.C. Cir. 1993).

53. Bruce S. Manheim, Jr., *NEPA's Overseas Application: U.S. National Environmental Policy Act*, ENV'T, Apr. 1994, at 47.

place.[54] Decisions on the implementation of environmental impact assessment responsibilities under the Biological Diversity Convention,[55] and other relevant international agreements such as Law of the Sea,[56] and the Convention on Environmental Impact Assessment in a Transboundary Context[57] await resolution of this issue.[58]

C. Oversight of NEPA Implementation by CEQ and EPA Offer Opportunities to Emphasize the Linkages between NEPA and Biological Diversity

The CEQ's responsibility to oversee federal agencies' implementation of NEPA and the EPA's review of EISs provide mechanisms within the executive branch to ensure that agencies are adequately addressing their obligations in the environmental arena.[59] In 1991-92, the CEQ held a series of regional conferences intended to increase understanding of the scientific principles related to the conservation of biological diversity and to provide guidance for improving the analysis of impacts on biological diversity in the NEPA

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54. Executive Order 12114 was issued by President Carter on January 4, 1979, and requires environmental analysis of U.S. actions in "global commons" areas, such as the high seas, and in actions affecting "innocent bystander" countries. The order was written to "further the purposes" of NEPA, although it is not based on NEPA as a matter of law. Two major differences between the application of NEPA and EO 12114 are public involvement and judicial review. NEPA implementation includes both; the executive order involves neither. Exec. Order No. 12114, 3 C.F.R. 356 (1979), *reprinted in* 42 U.S.C. § 4332 (1988).

55. Convention on Biological Diversity, June 5, 1992 31 I.L.M. 818. Congress has not yet ratified the Convention. Article 14, "Impact Assessment and Minimizing Adverse Impacts," obligates each contracting party "as so far as possible and as appropriate" to "introduce appropriate environmental impact assessment procedures for proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures; [to] introduce appropriate arrangements to ensure that the environmental consequences" of programs and "policies that are likely to have significant adverse impacts on biological diversity are duly taken into account;" and to promote the exchange of information and consultation on activities which are likely to have a significant adverse effect on the biological diversity of areas beyond a party's control. *Id*. at 827-28.

56. United Nations Convention on the Law of the Sea, Dec. 10, 1982, 21 I.L.M. 1261.

57. Convention on Environmental Impact Assessment in a Transboundary Context, February 25, 1991, 30 I.L.M. 800.

58. Karen Anne Goldman, *Compensation for Use of Biological Resources Under the Convention on Biological Diversity: Computability of Conservation Measures and Competitiveness of the Biotechnology Industry*, LAW & POL'Y INT'L BUS., Jan. 1994, at 95.

59. Under section 309 of the Clean Air Act, EPA reviews individual EISs. 42 U.S.C. § 7609(b).

process.[60] The conferences were followed by the issuance of a CEQ report on NEPA and biodiversity in January, 1993. This report recommended increased agency training, initiation or participation in efforts to develop regional ecosystem plans, better use of existing data bases, and improved collaboration between and among governmental and nongovernmental entities.[61] The Office of Federal Activities (OFA) in EPA has issued several guidance documents, principally intended for use by EPA's regional and national headquarters staff in evaluating the adequacy of analysis in EISs.[62] One such guidance document is *Habitat Evaluation: Guidance for the Review of Environmental Impact Assessment Documents*, while other documents offer guidance specific to grazing management and highway development.[63]

IV. LITIGATION ISSUES

A. Justiciability of Programmatic EISs

To date, NEPA litigation raising concerns about biological diversity has focused principally on the land and resource management plans prepared pursuant to the National Forest Management Act (NFMA).[64] NFMA requires the preparation of land and resource management plans (forest plans) for every unit of the National Forest System. Each forest plan is to provide for timber (including the harvesting level and procedures to be used), outdoor recreation, range, watershed, wildlife and wilderness on the forest.[65] The statute specifically requires all site-specific plans, permits, contracts and other legal instruments for the use and occupancy of a forest to be consistent with the broader forest plans, and to be revised if they are not.[66] Further, NFMA specifically requires these forest plans to be prepared in accordance with NEPA.[67]

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60. The conferences were co-sponsored by EPA, with support from the Departments of Defense, Interior and Transportation.

61. *See* GAO Report, *supra* note 6. The report is prefaced by a statement that the report is not intended to be formal CEQ guidance.

62. 56 Fed. Reg. 19, 718 (1991); 45 Fed. Reg. 85, 548 (1980).

63. The guidance documents are available from the Office of Federal Activities, Washington, D.C.

64. 16 U.S.C. § 1604 et seq. (1988).

65. *Id.* § 1604(e)(1).

66. *Id.* § 1604(i).

67. *Id.* § 1604(g)(1).

However, in two cases challenging EISs for overall forest plans for failure to adequately analyze impacts on biological diversity, the Forest Service has argued that the EISs are not justiciable.[68] The Forest Service position is that judicial review of such programmatic EISs is not appropriate because there is no imminent, concrete injury until site-specific project decisions are made.[69]

Both cases are captioned *Sierra Club v. Marita*, where conservation groups opposed the Forest Service's national forest management plan. The cases were tried within a month of each other, and involved the management plans for two forests in Eastern Wisconsin, the Chequamageon National Forest and the Nicolet National Forest.

In both cases, plaintiffs challenged the forest plans as being inadequate for failing to consider principles of conservation biology in their diversity analyses. In the case involving the Nicolet Forest, the plaintiffs further argued that the management plan failed to consider a broad enough range of alternatives to the proposed plan. In both cases, defendant Forest Service countered that the plaintiffs lacked standing.

The same court heard both cases, and both times held that the plaintiffs did illustrate sufficient potential for imminent harm to establish standing. However, in both cases, the court found that the Forest Service

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68. The lower court opinion in the case challenging the Chequamegon National Forest can be found at Sierra Club v. Marita, 845 F. Supp. 1317 (E.D. Wis. 1994); the case involving the Nicolet National Forest is found at Sierra Club v. Marita, 843 F. Supp. 1526 (E.D. Wis. 1994). The Forest Service is not challenging the proposition that biological diversity is the type of injury sufficient to establish injury under NEPA: "The government is not claiming that the type of injury alleged (loss of recreational enjoyment because of diminishment of biodiversity) is insufficient to establish injury." Brief for the Federal Appellates at 22, Sierra Club v. Marita, Aug. 22, 1994 (citing Sierra Club v. Morton, 405 U.S. 727, 734 (1972)).

69. In its brief, the government relies heavily on the Eighth Circuit's recent determination in Sierra Club v. Robertson, 28 F.3d 753 (8th Cir. 1994), that there was no standing to challenge the Ouachita Forest Plan because the Plan is a "general planning tool" and the court failed to discern "a concrete and particularized" injury in fact as a result of the alleged deficiencies in the Plan. *Id.* at 758. The *Robertson* decision relied on its interpretations of the Supreme Court's view of standing in Lujan v. Defenders of Wildlife, 112 S. Ct. 2130 (1992) and in Lujan v. National Wildlife Fed'n, 497 U.S. 871 (1990). Brief for Appellate at 16-26. In contrast, the Ninth Circuit Court of Appeals has repeatedly distinguished the Supreme Court's *Lujan* opinions in cases challenging forest plans. *See, e.g.,* Seattle Audubon Soc'y v. Espy, 998 F.2D 699 (1993); Portland Audubon Soc'y v. Babitt, 998 F.2d 705 (1993); Resources Ltd., Inc. v. Robertson, 8 F.3d 1394 (1993). The Ninth Circuit points to the Supreme Court's acknowledgment that plaintiffs can enforce procedural rights if those rights are designed to protect concrete interests, *see, e.g.,* Lujan v. Defenders of Wildlife, 112 S. Ct. at 2143 n.8., and identifies an injury in the NEPA context as the risk that environmental impacts will be overlooked. *Resources Ltd., Inc.*, 8 F.3d at 1397 n.2.

had not acted unreasonably in its analysis and that the Service's methods had adequately satisfied the diversity requirements of NEPA. In the Nicolet case, the court found both the recreational opportunities and the EIS alternatives to be sufficient as well.

In both *Marita* decisions, the lower court held that the plaintiffs had standing to challenge the forest plans. The court stated that, "while the plan does not itself spell out the numerous site-specific projects necessary to its implementation, it clearly does require that such projects be undertaken and it dictates their cumulative effects, which, after all, is what plaintiffs are concerned about."[70] The court distinguished this situation from those in the two relevant Supreme Court *Lujan* decisions[71] by identifying plaintiff's imminent and redressable injury as the harm to the forests that the Forest Service might have sought to avoid or mitigate if the environmental analysis had been adequate.[72] The court also pointed out that unlike the actions challenged in *Lujan v. National Wildlife Federation,* the action at issue here—the forest plan—is treated as a single agency action by the agency in question.[73]

B. Incomplete and Unavailable Information

The *Marita* cases also highlight the importance of Section 1502.22 to the analysis of biological diversity impacts.[74] In both cases, plaintiffs argued that the Forest Service violated NEPA and the NFMA[75] by ignoring principles of "forest fragmentation."[76] Plaintiffs presented

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70. *Marita*, 845 F. Supp. at 1321.

71. Lujan v. Defenders of Wildlife, ___ U.S. ___, 112 S. Ct. 2130 (1992); Lujan v. National Wildlife Federation, 497 U.S. 871 (1990).

72. *Marita*, 843 F. Supp. at 1537; *Marita*, 845 F. Supp. at 1324.

73. *Id.*

74. In relevant part, the CEQ regulations state: "When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking." 40 C.F.R. § 1502.22 (1993).

75. NFMA requires that the guidelines for land management plans

> provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives, and within the multiple-use objectives of a land management plan adopted pursuant to this section, provide, where appropriate, to the degree practicable, for steps to be taken to preserve the diversity of tree species similar to that existing in the region controlled by the plan;

16 U.S.C. § 1604(g)(3)(B) (1988).

76. *Marita*, 843 F. Supp. at 1537; *Marita*, 845 F. Supp. at 1324.

evidence by thirteen conservation biologists to the effect that principles related to the size of undisturbed habitats, the "degree of accessibility between similar geographical habitats" (the island biogeography theory) and the "extent to which a habitat is penetrated by adverse outside forces or edge effects" had been overlooked in the Forest Service's NEPA analysis.[77]

The court determined that NEPA's requirement to take a "hard look" at the consequences of the proposed action was consistent with the analysis necessary to meet the NFMA requirement that forest plans "provide for the diversity of plant and animal communities."[78] For each statute, the court said, the ultimate question is the same: "What must the Service do to analyze properly the effects of its forest plans on biological diversity?"[79]

The court then delved into the state of conservation biology and forest fragmentation theory as it existed in the early 1980s (at the time the forest plan EIS was prepared). It observed that there was both considerable support for the principles propounded by plaintiffs, as well as uncertainty and information gaps associated with the application of those principles.[80] It also noted the different responses of the Forest Supervisor and the Regional Forester to the existence of this uncertainty. The Forest Supervisor had initially proposed setting aside fifteen to twenty-five percent of the forest to be managed in accordance with principles of island biogeography. The Regional Forester had acknowledged that the concept of island biogeography was legitimate, but in the face of scientific uncertainty the forester declined to set aside portions of the forest, and instead established a committee of experts to advise on ways to enhance diversity.[81]

The court concluded that while the principles of conservation biology espoused by the plaintiffs represented "sound ecological theory,"[82] plaintiffs had failed to prove that the Forest Service had acted arbitrarily or capriciously in failing to base its diversity analysis on these

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77. *Marita*, 845 F. Supp. at 1324.

78. 16 U.S.C. § 1604(f) (1988).

79. *Id.*

80. Indeed, the court stated that defendants "offered nothing that directly contradicted plaintiffs' scientific analysis." *Id.* at 1329.

81. *Id.* at 1326.

82. *Id.* at 1329.

principles.[83] The court was clearly influenced by the degree of scientific uncertainty it had found regarding the application of the scientific principles at issue to on-the-ground management decisions, as well as by the absence of any requirement in either NEPA or NFMA directing the use of particular scientific principles or methodologies.[84]

Clearly, the lower court was persuaded to rule for the Forest Service because of the high degree of deference given to the agency's technical judgment.[85] Unfortunately, the court never addressed the applicability of Section 1502.22 to this situation. The reasons for this omission are not clear. The requirement to analyze impacts even in the face of incomplete and unavailable information is based on well-reasoned NEPA case law that holds that an agency is not required to "gaze into a crystal ball" but that neither can it avoid NEPA's requirements on the ground that "describing the environmental effects of . . . alternatives to particular agency action involves some degree of forecasting."[86] In their appeal, plaintiffs argue that the Forest Service's major fault was its refusal to assess, or even acknowledge, the potential loss of biological diversity due to forest fragmentation inherent in the forest plan, and that the primary error of the district court decision was its mishandling of the requirements regarding scientific uncertainty.[87] Plaintiffs argue that the deference commonly shown to agencies by courts is "not automatic or absolute, but must be earned by a reasoned analysis and disclosure of responsible scientific opinion," which, plaintiffs aver, was fundamentally lacking in this case.[88]

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83. Both NEPA and NFMA claims are brought pursuant to the Administrative Procedures Act under which an agency action may be set aside if it shown to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A) (1988). There has long been a split among courts over use of an "arbitrary and capricious" standard versus a "reasonableness" standard in NEPA cases. The United States Supreme Court adopted the arbitrary and capricious standard in upholding the Corps of Engineers' decision not to supplement an EIS in Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 376 (1989), although it then suggested that the differences in the two standards were barely discernible, if at all.

84. *Marita*, 845 F. Supp. at 1328-31. The CEQ regulations require that agencies shall insure the scientific integrity of analyses and identify methodologies and sources relied upon in an EIS, but the choice of methodology is left up the agencies. 40 C.F.R. § 1502.24.

85. *See Marsh*, 490 U.S. at 378; Sierra Club v. U.S. Dep't of Transp., 753 F.2d 120, 129 (D.C. Cir. 1985).

86. Scientists' Institute for Public Information, Inc. v. AEC, 481 F.2d 1079, 1092 (D.C. 1973).

87. Brief for Appellant at 28, Sierra Club v. Marita (No. 94-1736).

88. *Id.* at 38-41.

In response, the Forest Service adopts the same reasoning used in its argument on justiciability, maintaining that specific actions are too speculative to analyze in any significant detail in the programmatic EIS and that the site-specific analysis accompanying each project proposal is the more appropriate time to take a "hard look" at the potential environmental impacts of fragmentation, including the cumulative impacts, as well as to address the requirements of Section 1502.22.[89] The Forest Service argues that Section 1502.22 applies only to "reasonably foreseeable" effects and thus is inapplicable in this case because the actions—and hence the impacts—are not reasonably foreseeable.

V. CONCLUSIONS AND RECOMMENDATIONS

NEPA should be fully recognized and embraced by federal agencies as a useful mechanism for acquiring ecological information and analyzing the impacts of proposed actions on biological diversity. NEPA needs no amendment to cover impacts on biological diversity; rather, efforts should be aimed at improved compliance. The fact that agency actions cannot be enjoined under NEPA for being the "wrong decisions" should encourage agencies to consider responsible opposing views, thus making the analysis complete and ensuring almost certain victory in the event of a legal challenge. The requirements of Section 1502.22, which have received little attention since the controversial "worst case" amendment of 1986,[90] should be used in the event of new and evolving scientific theories. Additionally, environmental assessment provisions in international agreements need to be implemented under NEPA.

The proposed abolition of the CEQ by the Clinton administration at the beginning of its term in 1993 delayed, at least temporarily, efforts to further strengthen the linkages between NEPA analysis and biological diversity conservation.[91] For example, some had anticipated that CEQ might follow its 1993 report with formal guidance to the agencies. The proposal to abolish the CEQ has since been reversed and the President

89. Brief for Appellee at 46-47, Sierra Club v. Marita (No. 94-1736).

90. 40 C.F.R. § 1502.22(b) (1993).

91. President Clinton announced an intent to seek legislation to abolish CEQ in the context of legislation to elevate EPA to a cabinet level department on February 8, 1993. Lawrence McQuillan, *Clinton Creates New Office of Environment*, REUTER NEWSWIRE, Feb. 8, 1993.

has announced his intent to nominate a Chair of the CEQ.[92] The Clinton administration should move decisively to give the CEQ the prestige, resources and support needed to effectively oversee the implementation of NEPA in close to 100 federal agencies, as well as maintain its stated policy of giving environmental considerations a seat at the table at the highest levels of White House debate.

The CEQ and EPA should give additional attention to ensuring that analysis related to biological diversity is appropriately carried out. The CEQ's forthcoming handbook on cumulative effects analysis should be helpful in this regard, and EPA should consider whether its review process could be used more effectively, perhaps in conjunction with a CEQ initiative, to identify generic problems in ecological analysis.[93]

Most of the attention given to the conservation of biological diversity and concepts related to ecosystem management has been centered in the major land management agencies. However, many other federal agencies take actions that have impacts on biological diversity, and these agencies could benefit from additional education and oversight efforts. For example, the Animal, Plant and Health Inspection Service (APHIS) recently issued a final EIS on the Animal Damage Control Program,[94] the federal program for control and removal of wildlife from federal and private lands.[95] APHIS defined biological diversity simply as the number of species in a specific area, and omitted any analysis of the impacts that substantially decreasing or removing a population, even temporarily, may have on a gene pool or on the relationship between species within a given ecosystem.[96]

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92. Chief of Staff Leon Panetta made this announcement in the context of a press conference outlining a restructuring of the White House staff on September 23, 1994. *Congressional and Presidential Activity*, 1994 D.E.R. (BNA) 184 (Sept. 26, 1994).

93. A subcommittee on implementation tools for ecosystem management, EPA's National Advisory Council for Environmental Policy And Technology recently considered this issue. *Regulation, Economics and Law*, 1994 D.E.R. (BNA) 182 (Sept. 22, 1994).

94. U.S. DEP'T OF AGRICULTURE, Animal Damage Control Program: Final Environmental Impact Statement (Apr., 1994) [hereinafter ADC EIS].

95. Authorized by the Animal Damage Control Act of 1931, 7 U.S.C. §§ 426-426c (1988), the mission of the ADC program as articulated in the EIS is "to provide leadership in wildlife damage control to protect America's agricultural, industrial, and natural resources and to safeguard public health and safety." ADC EIS, *supra* note 94, at 1-7. According to the EIS, the ADC program killed an estimated 4,960,745 mammals, birds and reptiles in fiscal year 1988. *Id.* at 4-61 to 4-63.

96. *Id.* at 4-9.

Finally, the administration needs to harmonize its environmental policies with its litigation strategy. The Clinton administration has expended considerable effort to promote ecosystem management, including the initiation of several pilot ecosystem management projects. Yet, at the same time, it is taking a litigation posture that, if successful, will undermine the reviewability of many programmatic EISs prepared for decision making that takes place at an ecosystem level. The USFS has already indicated that it intends to continue use of the "tiering" concept set forth in the CEQ regulations, so that site-specific NEPA analyses will focus only on specific actions and the total impacts of the overall forest plan will not be re-analyzed.[97] If USFS's position in the *Marita* cases is ultimately successful, forest plans will likely never be subject to judicial review, thus eliminating the most effective means of assuring the analysis of cumulative impacts, including those on biological diversity, on an ecosystem scale.[98] Thus, it appears that the government position could preclude judicial review of virtually all forest-wide impacts. At the other end of the spectrum, another unattractive possibility is a proliferation of litigation raising the cumulative effects of forest plans in the context of numerous site-specific decisions. The government's litigation posture appears to be totally at odds with its policy rhetoric. A holding for the USFS may also have a profound negative effect on other federal agencies' motivation to engage in sufficient NEPA analysis prior to a proposal for a site-specific action.

NEPA is by no means the only vehicle for protecting biological diversity, but it is one of the better ones available today. While ecosystem management may have promise as a better method of resource

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97. "Tiering" refers to the coverage of general matters in broader EISs, with subsequent narrower NEPA analyses incorporating by reference the earlier analyses. Tiering is commonly used by the Forest Service to go from the forest plan EIS to a site-specific EIS or EA for a site-specific action. The whole point of Tiering is to avoid repetition and exclude from consideration issues already decided. 40 C.F.R. § 1508.28 (1993).

98. In fact, the Record of Decision for the Chequamegon National Forest states that the decision "narrows the scope of future environmental analyses and that future analyses will be tiered to the Forest Plan EIS." Further, in the course of discovery proceedings in the *Marita* litigation, the Forest Service stated that it did *not* contend that the environmental concerns raised by plaintiffs could be fully addressed at the site-specific level without reference to the Forest Plan goals because, "[a]ll decisions at the project level would be guided by the Plan." Reply Brief of Appellants at 14-15, Sierra Club v. Marita (No. 94-1736). Finally, in Cronin v. USDA, 919 F.2d 439, 447 (7th Cir. 1990), the Forest Service won a challenge to the adequacy of NEPA compliance for a particular timber sale because the court found that the decision was consistent with the Forest Plan.

management, development and protection in the future, it seems probable that serious work will need to be undertaken to reconcile natural resource law with its approaches to boundaries based on ecological principles. Given the complex policy issues and difficult political implications of significant revisions of natural resources law, it is likely that any such changes will be undertaken slowly. Meanwhile, NEPA provides a rational process for addressing these impacts under current law, thus promoting the conservation of biological diversity.