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Jon A. Souder

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JON A. SOUDER*

Chasing Armadillos Down Yellow Lines: Economics in the Endangered Species Act

ABSTRACT

This article traces the use of economics in the endangered species protection process. The first section traces how economics was incorporated into the Endangered Species Act during the 1978 Amendments. The second section focuses on criticisms of the Act related to economic effects and identifies four themes of the Act's opponents: (1) the increasing protection of sub-species and populations; (2) taking of private property through the Act's protections; (3) balancing economic effects with protective measures; and (4) requiring the preparation of environmental impact documents as a way to identify social and economic effects. The third section reviews these themes using two methods. The first is a discussion of the United States Fish and Wildlife Service's implementation of the Act, oriented primarily to its rules and internal guidance. The second method is a study of how economics was used in the case of the northern spotted owl. The article concludes with recommendations for modification of the Act and its implementation based on the analyses presented.

MR. DINGELL. I am sympathetic with your goal of preserving the species from not only the actual, direct taking, but also from habitat change.

MR. GARRETT. Yes, sir. This bill is, in fact, a very good vehicle to employ to broaden this definition. You might get a strong definition in here and then use the bill effectively, whereas a separate legislation which was designed to halt industrial expansion and so on from destroying habitat might be a lot more difficult to pass.¹

*Assistant Professor of Forest Policy, Northern Arizona University, Flagstaff, AZ. This article was written while the author was S.V. Ciriacy-Wantrup Fellow in Natural Resource Economics, Haas School of Business, University of California, Berkeley, CA. Ph.D. 1990, M.S. 1987, University of California, Berkeley; B.S. 1973, Marlboro College.

1. Colloquy between Representative John D. Dingell (D-MI) and Mr. Garnett, Wildlife Director, Friends of the Earth during hearings on the Endangered Species Act of 1973. *Endangered Species: Hearings on H.R. 37 and seven identical bills, H.R. 1461 and identical H.R. 4755, H.R. 2735, and the Administration bill H.R. 4758 Before the Subcommittee on Fisheries and Wildlife Conservation and the Environment of the House Committee on Merchant Marine and Fisheries, 93rd Cong., 1st Sess. 305, 306 (1973) [hereinafter 1973 House Hearings].*

From the very beginning conflict between preserving endangered species and economic activities was foreseen, if generally understated in original legislation and overstated in subsequent attempts to overrule it. Conflict between preservation and development has escalated throughout the last twenty years, starting in 1973 with passage of the Endangered Species Act ("ESA").² Unfortunately, debates have frequently emphasized antithetical positions without examining the costs of protecting endangered and threatened species³ within the larger framework of governmental regulation.⁴

Discussion of economics in relation to endangered species has been polarized in both public discussions and in the literature.⁵ There are two schools of thought. One side says that the existence of any particular species is beyond value.⁶ The other says that the extinction of species is an ongoing process, and that if a particular species cannot adapt to changing conditions, particularly if it has no commercial value, then efforts to conserve the species should not come at extravagant cost.⁷ This line of reasoning postulates that species, and their associated habitats, that have commercial value will be protected by private industry.⁸ This fundamental question of the value of an endangered species colors debate over the role of economics in the ESA.

This article will trace how economics has been used in the Endangered Species Act, its amendments,⁹ and proposed legislation over the past twenty years. Primary focus will be placed on the costs of en-

2. Endangered Species Act of 1973, as amended, Pub. L. No. 93-205, 87 Stat. 884 (1973), 16 U.S.C. §§ 1531-1544 (1988), 50 C.F.R. § 402-453 (1992).

3. Herein, endangered species referred to will include threatened species protected under the Act as well as species proposed for listing under both categories unless otherwise noted.

4. See J. Dingell, *The Endangered Species Act: Legislative Perspectives on a Living Law, in Balancing on the Brink of Extinction: The Endangered Species Act and Lessons for the Future* 25, 28 (K. Kohm ed., 1991).

5. See generally *The Preservation of Species: The Value of Biological Diversity* (B. Norton ed., 1986). In particular compare R. Carlton, *Property Rights and Incentives in the Preservation of Species*, *id.* at 255 with B. Norton, *On the Inherent Danger of Undervaluing Species*, *id.* at 110.

6. R. Bishop, *Option Value: An Exposition and Extension*, 58 *Land Econ.* 1 (1982).

7. See T. Sansonetti, *Remarks at the Institute on Public Land Law, Economic Impacts of the Endangered Species Act* (1992), in *Mineral Law Series*, Sept. 24, 1992, at 10(1), 10(2)-10(5). Mr. Sansonetti was the Department of Interior Solicitor during the Endangered Species Committee hearings on exempting BLM timber sales in Oregon from Section 7 requirements. See *infra* text accompanying notes 245-47.

8. *Id.* at 10(3).

9. Amendments to the 1973 Act have occurred frequently, in 1976 (Pub. L. No. 94-325, 90 Stat. 724), in 1977 (Pub. L. No. 95-212, 91 Stat. 1493), in 1978 (Pub. L. No. 95-632, 92 Stat. 3751), in 1979 (Pub. L. No. 96-159, 93 Stat. 1225), in 1980 (Pub. L. No. 96-246, 94 Stat. 348), in 1982 (Pub. L. No. 97-304, 96 Stat. 1411), in 1984 (Pub. L. No. 98-327, 98 Stat. 270), and in 1988 (Pub. L. No. 100-478, 102 Stat. 2314). The majority of the amendments have been to extend funding authorizations; only in 1978 did the meaning of critical parts of the Act change.

dangered species protection;¹⁰ where it relates to the use of economics, the legislative history of the Act will be discussed.¹¹ Costs of protecting endangered species will be differentiated according to where in the protection process economic effects are likely to occur. The identification of the stage where economic effects occur is crucial because it determines whether they are considered in the endangered species process. This differentiation is frequently lost in debates over the effects of the Act.

Examination of the role of economics in the Endangered Species Act will proceed in four sections. First, the evolution of current provisions for economic effects in the listing and consultation process will be traced throughout the history of the Act. The second section will examine countervailing arguments as they have been embodied in proposed legislation to amend the act, particularly in the last five years. Debates on these issues will be cross-referenced to the effects of court cases where they have influenced legislation. The third section will review the implementation process used by the U.S. Fish and Wildlife Service ("FWS"),¹² then will look at a particular example of endangered species protection—the northern spotted owl—since its protection has gained notoriety in traversing the entire range of actions under the Act. This example will be used to make the case that when approached in the context of the Act as only one of a number of Federal environmental laws, the specific effects of endangered species protection are usually subsumed by other laws' effects. The fourth section will conclude the article by proposing areas where economic effects can be better integrated into the endangered species protection process.

I. History and Current Use of Economics in the Endangered Species Act

Economics is currently considered in only two areas in the Act: first, in the determination of critical habitat for endangered and threatened species; and second, in the criteria that the Endangered Species Committee ("ESC") uses to exempt actions from compliance. Each of these two areas will be discussed in detail.¹³ Then we will trace how

10. Benefits of, or valuation methods for, endangered species, are covered elsewhere. See generally, Norton, *supra* note 5, D. Rohlf, *The Endangered Species Act: A Guide to Its Protections and Implementation* 718 (1989) and E. Smith, *The Endangered Species Act and Biological Conservation*, 57 S. Cal. L. Rev. 361 (1984).

11. For a legislative history through the 1980 amendments, see Comm. on Env't. & Pub. Works, 97th Cong., 2d Sess., *A Legislative History of the Endangered Species Act of 1973, As Amended in 1976, 1977, 1978, and 1980* (Comm. Print 1982) [hereinafter *CRS Legislative History*].

12. Both "FWS" and "Service" as used herein refer to the U.S. Fish and Wildlife Service.

13. Economics also plays a small role in the recovery process. See *infra* text accompanying notes 130 and 238.

these features came to be incorporated in the Act as responses to various effects from implementing the ESA, both administratively and as a result of case law. What we will see is that the focus in the debates surrounding the original act was primarily on what are called "charismatic megafauna," i.e., the spotted cats of Africa and Latin America, elephants, grizzly bears, whales, condors and bald eagles, and even then was oriented primarily towards overseas rather than domestic actions. Once the ESA passed, however, the majority of conflicts due to its provisions in the early years involved "uncharismatic microfauna" such as minnows, mussels, and louseworts that were stopping large federal construction projects, "pork barrels" as well as interstate highways.¹⁴ These conflicts precipitated heated Congressional debates that culminated in major modifications to the Act in 1978. The amendments of 1978 called for the use of economic criteria for the first time, while at the same time creating a process to exempt certain types of actions from compliance with the Act if specific conditions were met. Debates and calls for amendment of the Act did not stop in 1978; however, the basic structure of the Act has remained the same since that time even though it has been frequently amended.

Current Use of Economics in the Act

Two sections of the ESA have the potential to cause economic effects, while another two sections incorporate economics as a balancing mechanism. Section 7 of the Act requires that federal agencies consult with the Secretary¹⁵ to "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary . . . to be critical . . ." ¹⁶ Section 9 of the Act ¹⁷ regulates the "taking", or harm, to individual endan-

14. Major federal projects, and species of concern, that were brought up in the 1978 *House Oversight Hearings*, *infra* note 50, were an interstate highway project in Mississippi (Mississippi sandhill crane), Tellico Dam in Tennessee (snail darter), Meramec Dam in Missouri (Indiana bat), the Dickey-Lincoln project in Maine (furbish lousewort), and the Tennessee-Tombigbee waterway (seven species of darters). *See infra* note 51 for the cases that resulted from these projects.

15. Secretary of Interior, through the U.S. Fish and Wildlife Service, for terrestrial and freshwater species, and the Secretary of Commerce, through the National Marine Fisheries Service, for marine species. 16 U.S.C. §1532(15).

16. 16 U.S.C. §1536(a)(2). Blanket exemptions to this section can be made for national security reasons, 16 U.S.C. §1536(j), and in Presidentially-declared disaster areas, 16 U.S.C. §1536(p), for replacement of preexisting structures. All other exemptions are made only on a case-by-case basis after convening the Endangered Species Committee, *see infra* text accompanying note 123. For a discussion of Section 7, *see* G. Coggins and I. Russell, *Beyond Shooting Snail Darters in Pork Barrels: Endangered Species and Land Use in America*, 70 *Geo. L.J.* 1433, 1461-69 (1982).

17. 16 U.S.C. §1538(a)(1)(A).

gered species or actions that may cause harm to their habitat. Take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."¹⁸ The provisions of Section 9 effect all persons, whether or not Federal actions are involved.¹⁹

Congress made it clear that economic criteria are not to be considered in either the listing or the designation of *proposed* critical habitat.²⁰ Economic considerations may be used to balance the Act's provisions in only two places. The first is when critical habitat is *determined* under Section 4.²¹ The second is during the deliberations of the ESC when exemptions to Section 7 (and Section 9) are requested.²²

When designating critical habitat under Section 4 of the Act for a threatened or endangered species, the Secretary may

"tak[e] into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. The Secretary may exclude any area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned."²³

The FWS has not specified through rule-making relevant economic criteria to use in excluding areas from critical habitat.²⁴ The prin-

18. *Id.* §1532(19). See also Coggins and Russell, *supra* note 16, at 1469-76 (interpretation of Section 9, particularly with reference to habitat alterations).

19. ESA, *id.* §§ 1531-1544, §9(a)(1).

20. "The Committee strongly believes that economic considerations have no relevance to determinations regarding the status of species and intends that the economic analysis requirements of Executive Order 12291, and such statutes as the Regulatory Flexibility Act and the Paperwork Reduction Act not apply . . . Applying economic criteria to the analysis of these alternatives and to any phase of the species listing process is applying economics to the determinations made under Section 4 of the Act and is specifically rejected by the inclusion of the word "solely" in this legislation." H.R. Rep. No. 567, 97th Cong., 2d Sess. 20, reprinted in 1982 U.S.C.C.A.N. 2,807, 2,820. See *infra* text accompanying notes 72-87.

21. 16 U.S.C. §1533(a)(3).

22. *Id.* §1536(g).

23. *Id.* §1533(b)(2).

24. "The Secretary shall identify any significant activities that would either affect an area considered for designation as critical habitat or be likely to be affected by the designation, and shall, after proposing designation of such an area, consider the probable economic and other impacts of the designation upon proposed or ongoing activities. The Secretary may exclude any portion of such an area from the critical habitat if the benefits of such exclusion outweigh the benefits of specifying the area as part of the critical habitat. The Secretary shall not exclude any such area if, based on the best scientific and commercial data available, he determines that the failure to designate that area as critical habitat will result in the extinction of the species concerned." 50 C.F.R. § 424.19 (1992). See *infra* text accompanying notes 109-18 for discussion of FWS procedures.

cial case where economics ostensibly caused critical habitat adjustment was for the northern spotted owl in Washington, Oregon, and northern California.²⁵

The other area where economics plays a role in the Act is Section 7 interagency consultations, both during the original consultation²⁶ as well as during the exemption process if agreement cannot be reached.²⁷ A biological opinion is provided by the FWS to the project proponent during the consultation process.²⁸ If the FWS determines that a proposed action has the potential to jeopardize the continued existence of a listed species, or adversely modify its critical habitat, the biological opinion must offer "reasonable and prudent" alternatives to prevent jeopardy or adverse modification if possible.²⁹ The criteria to determine what is economically feasible is left to the Secretary's discretion.³⁰

Should the Service issue a jeopardy or adverse modification of critical habitat opinion, and if either there are no reasonable and prudent alternatives or the Service and the project proponent cannot agree on them, then an appeal to exempt the action from the Act may be made to the ESC.³¹ If the Committee approves, the exemption is permanent and covers all species, regardless of whether they were covered in the biological assessment, unless the Secretary determines that the action would cause the extinction of a species not considered in the original biological opinion, or if the Committee states that the exemption is not permanent.³²

Legislative History Leading to the Current Language

The ESA was not an isolated statement of federal concern for endangered species, but was instead one of a number of environmental protection laws passed during the 1960s and early 1970s that forever changed the way both government and private industry conducted their activities.³³ Prominent examples of this legislation are the National Environmental Policy Act of 1969,³⁴ the Clean Water Act Amendments of 1972 (also known as the Federal Water Pollution Control Act Amendments of 1972),³⁵ the Clean Air Amendments of 1970,³⁶ and the

25. See discussion *infra* text accompanying notes 184-229.

26. 16 U.S.C. § 1536(a).

27. *Id.* § 1536(g)(1).

28. *Id.* § 1536(b).

29. *Id.*; see also 50 C.F.R. § 402.14(h) (1992). See *infra* text accompanying notes 120-22.

30. 50 C.F.R. § 402.14(h).

31. 16 U.S.C. § 1536(g)(1). See *infra* text accompanying notes 123-29.

32. *Id.* § 1536(h)(2)(B). Actions of the Committee are subject to judicial review. *Id.* § 1536(n).

33. J. Whitaker, *Striking a Balance: Environment and Natural Resources Policy in the Nixon-Ford Years 27-42* (American Enterprise Inst. for Public Pol'y Res. ed., 1976).

34. Pub. L. No. 91-190, 83 Stat. 852 (1970), 42 U.S.C. § 4321 (1988).

35. Pub. L. No. 92-500, 86 Stat. 816 (1972), 33 U.S.C. § 1251 (1988).

36. Pub. L. No. 91-604, 84 Stat. 1676 (1970), 42 U.S.C. § 7401 (1988).

Occupational Safety and Health Act of 1970³⁷ to name but a few major laws passed just prior to the ESA.

Potential economic impacts of endangered species protection received little notice in the House hearings on the original ESA.³⁸ Of the list of witnesses at the hearings, no representatives of trade groups testified, with the exception of fur producers and wildlife groups.³⁹ There was also no testimony from representatives of the Corps of Engineers, the Bureau of Reclamation, or other Federal departments such as Transportation or Agriculture.⁴⁰ The focus in the House hearings was only on individual taking of members of a species, the listing process, and state sovereignty (i.e. who could best protect species).⁴¹ Protection of habitat for endangered species was conceived to involve purchasing lands, if in private ownership, or if Federally-owned, setting them aside.⁴²

A similar situation occurred in the Senate hearings on the original bill.⁴³ The main issues covered were the effects of the Act on the Marine Mammal Protection Act,⁴⁴ the rights of Alaska natives to subsistence hunting, criteria for designating endangered species and, again, the relationship between the Federal government and the states, particularly with respect to enforcement of game laws. In only two instances in the Senate hearings were Federal projects discussed: (1) a Corps of Engineer's reservoir in Kentucky where a road was to be constructed through a primitive area used for wild turkey hunting,⁴⁵ and (2) effects of the Act on caribou in relation to the Alaskan pipeline.⁴⁶ There was, however, in the Senate hearings a recognition that the Act could affect future economic development.⁴⁷ But the emphasis was on balancing

37. Pub. L. No. 91-596, 84 Stat. 1590 (1970), 29 U.S.C. § 651 (1988).

38. 1973 *House Hearings*, *supra* note 1.

39. *Id.* at iii-vi.

40. *Id.*

41. *Id. passim*. See also H.R. Rep. No. 412, 93d Cong., 1st Sess. (1973), reprinted in *CRS Legislative History*, *supra* note 11, at 140, 144-47.

42. 1973 *House Hearings*, *supra* note 1, at 272.

43. *Endangered Species Act of 1973. Hearings Before the Subcommittee on Environment of the Senate Committee on Commerce*, 93rd. Cong., 1st Sess. 93-67 (1973) [hereinafter 1973 *Senate Hearings*]. Even the National Rifle Association ("NRA") was in "full accord with the purpose of the act and our only interest is to add our comments as a constructive means of strengthening and improving national concern for endangered species of wildlife." *Id.* at 123 (statement of Maxwell E. Rich, Exec. Vice President of the NRA).

44. Marine Mammal Protection Act of 1972, 16 U.S.C. §§ 1361-1407 (1988).

45. 1973 *Senate Hearings*, *supra* note 43, at 67-68.

46. *Id.* at 69

47. "Senator Moss. Do you feel that your bill's provision for preservation of habitat is a threat to the future development of our economy and, if not, what benefits do you think society gains from positive efforts to protect the species and their habitats?

"Senator Williams . . . We are now putting development in balance with nature to a greater extent than we did maybe 10 or 15 years ago. It is a limiting factor on development. We are just going to have to find a method to preserve as much balance as we can in development and move into areas where we are not destroying natural

economic development with endangered species protection.⁴⁸

What resulted from passage of the Endangered Species Act in 1973 went far beyond the expectations of many members of Congress.⁴⁹ Problems resulted both from the FWS's implementation of the ESA,⁵⁰ as well as from court challenges.⁵¹ The Tellico Dam project in Tennessee provided the lightning rod that attracted attention to the uncompromising nature of the Act's requirements,⁵² but was only one of a number of projects threatened with compliance.⁵³ Problems in many members' districts lead to efforts to amend and exempt ongoing Federal projects from compliance with the Act.⁵⁴ Instead of protecting highly visible species of wildlife, the Act was stopping Federal projects as a result of species termed "insignificant."⁵⁵

habitat as much as we can . . .

"Senator Moss. Do you think, then, that by long-range and more detailed planning we can find the balance where we can do the preservation and still provide for our economy?"

"Senator Williams. I certainly do." *Id.* at 117.

48. *Id.*

49. "I feel a great deal of emotion about this and a lot of anger. I was a member of this committee when the endangered species act was first passed. I wish I had known then what I know now. I would have made an effort to prevent a lot of the problems." *Amendment to the Endangered Species Act: Oversight Hearings Before the Subcommittee on Fisheries and Wildlife Conservation and the Environment of the House Committee on Merchant Marine and Fisheries*, 95th Cong., 2d Sess. 95-39 (Part I) and 95-40 (Part II) (1978) [hereinafter *1978 House Oversight Hearings*] (statement of Rep. Trent Lott (R-MS), Part I, at 59).

50. Parallel to the 1978 *House Oversight Hearings* was a study of the U.S. Fish and Wildlife Service's implementation of Section 7 of the Act (consultation requirements with Federal agencies) by the General Accounting Office. General Acct. Off., CED 79-65, *Endangered Species—A Controversial Issue Needing Resolution* (1979) [hereinafter *1979 GAO Report*]. See *infra* text accompanying notes 56-58.

51. See, for I-10 in Mississippi, *National Wildlife Fed'n. v. Coleman*, 529 F.2d 359 (5th Cir.), *cert. denied*, 429 U.S. 979 (1976); for Tellico Dam, *Hill v. TVA*, 419 F. Supp. 753 (E.D. Tenn. 1976) and *TVA v. Hill*, 437 U.S. 153 (1978); and for Meramec Dam, *Sierra Club v. Froehke*, 534 F.2d 1289 (8th Cir. 1976). See *infra* note 53.

52. Opponents of the dam sued the Tennessee Valley Authority to prevent completion because of effects on the snail darter. The case made its way to the Supreme Court, "which held that '[i]t may seem curious' to some that the survival of a relatively small number of three-inch fish . . . would require the permanent halting of a virtually completed dam We conclude, however, that the explicit provisions of the Endangered Species Act require precisely that result." *TVA v. Hill*, 437 U.S. at 172-173.

53. Major federal projects, and the species of concern, that were brought up in the 1978 *House Oversight Hearings*, *supra* note 50, were interstate highway projects in Mississippi (Mississippi sandhill crane), Tellico Dam in Tennessee (snail darter), Meramec Dam in Missouri (Indiana bat), the Dickey-Lincoln project in Maine (furbish lousewort), and the Tennessee-Tombigbee waterway (seven species of darters). See *supra* note 51 for resulting legal cases.

54. See 1978 *House Oversight Hearings*, *supra* note 49, at 59-63 (statement of Rep. Trent Lott).

55. "However, species deemed by some as 'insignificant' have a very direct importance as warning signals to humans—ecological barometers which relay the potential demise of entire ecosystems—like the canaries that coalminers carried into the mines to give advance warning of poisoned air for humans." *Id.* at 107 (statement of Rep. John Dingell).

Criticism of the Service for lack of implementing regulations arose out of the first GAO study of the endangered species program. The GAO specifically identified the lack of regulations to guide Section 7 consultations and Section 4 listing and critical habitat determination as a major failing.⁵⁶ Although the Act was passed in 1973, the FWS did not propose Section 7 implementing regulations until 1976,⁵⁷ and these were not finalized until 1978.⁵⁸

Court cases at the same time clearly set the limits to using economic effects to balance endangered species protection with other agency goals. The Supreme Court in *TVA v. Hill* held, "it is clear from the Act's legislative history that Congress intended to halt and reverse the trend toward species extinction—whatever the cost."⁵⁹ The Court's finding in *TVA* sent shock waves across other federal agencies and the Congress, and led to the first efforts to exempt individual projects from the Act's provisions, which were ultimately successful.⁶⁰ The success of this legislative solution set the stage for subsequent attempts to weaken and/or amend the ESA.

56. 1979 GAO Report, *supra* note 50, at 11, 28-30.

57. 43 Fed. Reg. 870-71 (1978).

58. 50 C.F.R. § 402 (1992) [hereinafter 1978 Rule]. Revisions of Section 7 rules were also delayed after the 1978 and 1982 Amendments. Subsequent to the 1978 and 1982 ESA Amendments, the Section 7 interagency consultation rules were proposed for revision on June 29, 1983 (48 Fed. Reg. 29,990-30,004 (1983)), but were not finalized until June 3, 1986 (51 Fed. Reg. 19,926 (1986)). The same lack of timeliness existed for regulations governing listing procedures and critical habitat determinations under Section 4. Critical habitat was first defined in the 1978 Amendments, but the first rules for either listing or determination of critical habitat were not finalized until 1980 (45 Fed. Reg. 13,022 (1980)). Rules to adjust the listing and critical habitat procedures as a result of the 1982 Amendments were proposed in 1983 (48 Fed. Reg. 36,062 (1983)), and finalized in 1984 (49 Fed. Reg. 38,899 (1984)).

Official rule-making activities subsequent to 1986 have been entirely absent. One example of this is the Section 7 implementing guidelines. Revisions were proposed in draft form within the Service on February 27, 1992 (copy in possession of the author), which stated that the guidance would be finalized and published in the Federal Register after submission to the Department of Interior as part of the President's Regulatory Review. On March 11, 1992, Interim Endangered Species Act Section 7 Policy and Guidance were provided to the FWS Regional Offices (copy in possession of author). In the cover letter, the Service's Deputy Director acknowledged that there was considerable concern at the field levels with the guidance, and stated that these would be addressed in a second part of the guidance that would be developed later. However, on March 31, 1992 the interim guidance was rescinded. Whether the February 23, 1992, guidance, or the previous 1986 Federal Register rules are to be used is currently subject to different interpretations within the Service. This lack of regulations has resulted, or accompanied, what one FWS employee called "ghost policies" coming out of Washington. Interview with Phillip Dietrich, Supervisory Fish & Wildlife Biologist, Office of Endangered Species, U.S. Fish & Wildlife Service, in Sacramento, Cal. (Mar. 4, 1993).

59. 437 U.S. at 154. The Court went on to say, "the pointed omission of the type of qualified language previously included in endangered species legislation reveals a conscious congressional design to give endangered species priority over the 'primary missions' of federal agencies." *Id.*

60. Although only successful for Tellico Dam. See Dingell, *supra* note 4, at 26-27.

The result of the Oversight Hearings, the GAO Report, and the cases litigated under the Act were amendments in 1978 that for the first time specified how critical habitat would be determined—including for the first time an economic balancing mechanism. The 1978 Amendment also allowed exemptions from the Section 7 prohibition of Federal actions that would jeopardize or adversely modify critical habitat. The exemption process was to be conducted by an Endangered Species Committee comprised of seven cabinet-level officials that came to be known as the “God Squad.”⁶¹

Amendments to the Act in 1979 changed the standard for Section 7 from Federal agencies being required to “insure that actions taken by [them] do not jeopardize”⁶² to the current language that requires that an action “is not likely to jeopardize”⁶³ or adversely modify critical habitat. Other changes specified in greater detail how critical habitat was to be designated under Section 4 of the Act, and required that a listing priority system be established.⁶⁴ The ESA Amendments of 1982 spelled out in greater detail how the Secretary and the ESC were to conduct their reviews.⁶⁵ The threshold process was changed so that the Secretary—not a sub-committee of the full ESC—made the determination that the conditions allowing for an exemption from the ESA were met.⁶⁶ The other major change in 1982 was to allow preparation of habitat conservation plans to overcome prohibitions against the “incidental take” provisions of Section 9.⁶⁷

61. The composition of this committee changed during the House and Senate conference on the bill so that instead of the EPA Administrator being a member, the chairman of the Council of Environmental Quality was substituted. The original House bill had six members (by eliminating the EPA Administrator), with a vote of four required for exemption. H.R. Rep. No. 1625, 95th Cong., 1st Sess. 14-15, 23-24, 68 (1978), *reprinted in* 1978 U.S.C.C.A.N. 9453, 9464-65, 9473-74, 9483. The number of members was increased back to seven by the Conference Committee by including the Chairman of the Council of Environmental Quality, with five votes required for exemption. H.R. Conf. Rep. No. 1804, 95th Cong., 1st Sess. 21 (1978), *reprinted in* 1978 U.S.C.C.A.N. 9484, 9489. This switch is important because an exemption to the Act requires an affirmative vote of five of the seven members of the Committee. *See infra* text accompanying notes 123-130 for discussion of the exemption process.

62. Pub. L. No. 93-205 § 7, 87 Stat. 884 (1973), *reprinted in CRS Legislative History*, *supra* note 11, at 32.

63. Pub. L. No. 96-159 § 4(2), 93 Stat. 1226 (1979), *reprinted in CRS Legislative History*, *supra* note 11, at 1305 (codified at 16 U.S.C. § 1536(a)(2)).

64. *Id.* § 3. The priority system was defined in 48 Fed. Reg. 43,098 (1983).

65. Pub. L. No. 97-304 § 4(a)(4)-(6), 96 Stat. 1411 (1982). *See* P. Eaton, *ESA Amendments: The Good, The Bad, and the Unnecessary*, 9 *ESA Update* 9 (1992).

66. Pub. L. No. 97-304 § 4(a)(5)(B), 96 Stat. 1411 (1982), substituted the Secretary for the threshold review board, thus consolidating more control of the process in the Interior Department; *see also* 16 U.S.C. § 1536, at 324 (historical note).

67. *Id.* § 6(1) (codified at 16 U.S.C. § 1539(a)(2)(A),(B)). For extensive discussion of habitat conservation plans, *see* M. Bean, *Reconciling Conflicts Under the Endangered Species Act: The Habitat Conservation Planning Process* (1991).

Amendments to the ESA in 1988⁶⁸ altered language so that no priority in developing species recovery plans was to be given based on taxonomic classification (i.e. whether species, sub-species, or population). The amendments also required additional information in recovery plans so that they were more comprehensive, i.e., "a description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species." This has been identified by the FWS to include: (1) the number and distribution of recovery units; (2) the basic life history of the species and its relationship to its supporting habitat; (3) natural features and human-related factors operating on the species or its habitat; (4) any distinction in species' attributes or essential habitat elements if the species has a different core area or need for another life cycle period; and (5) tolerance of the species or essential elements of its habitat to human activities.⁶⁹ However, even by broadening the scope of its recovery plans, the Service still contends that recovery plans are not "action" documents.⁷⁰

Modifying Legislation and Executive Orders

Implementation of the Act's provisions occurs within the larger political context. Major federal policy thrusts during the mid-to late-1970s dealt with the effect of government regulation on business, particularly with how regulation increased costs with concomitant inflationary effects. Even though Congress has made it plain that these laws do not affect the listing of endangered species,⁷¹ these modifying acts and executive orders have, and do, affect the designation of critical habitat and the recovery plans.⁷²

68. Pub. L. No. 100-478 § 1003, 102 Stat. 2314 (1988).

69. Memorandum from Richard N. Smith, Deputy Director, Fish and Wildlife Service to Regional Directors 13 (Mar. 11, 1992) (on file with author) (subject: Interim Endangered Species Act Section 7 Policy and Guidance. National Policy Issuance No. 91-[blank]) [hereinafter *National Policy Issuance No. 91*]. See *infra* text accompanying notes 140-42 for a discussion of this guidance.

70. This appears to be an attempt by the Service to avoid preparing environmental impact documentation for the plans. For example, the title page to the draft northern spotted owl recovery plan states: "This recovery plan is not intended to provide precise details on all aspects of northern spotted owl management. The recovery plan outlines steps necessary to bring about recovery of the species. The recovery plan is not a 'decision document' as defined by the National Environmental Policy Act (NEPA). It does not allocate resources on public lands. The implementation of the recovery plan is the responsibility of federal and state management agencies in areas where the species occurs. Implementation is done through incorporation of appropriate portions of the recovery plan in agency decision documents such as forest plans, park management plans, and state game management plans. Such documents are then subject to the NEPA process of public review and selection of alternatives." Department of the Interior, Recovery Plan for the Northern Spotted Owl—Draft Title Page (Apr. 1992) [hereinafter *Draft Recovery Plan*].

71. H.R. Rep. No. 567, 97th Cong., 1st Sess. 18 (1982), reprinted in 1982 U.S.C.C.A.N. 2807, 2818-20. See *supra* note 20.

72. *Id.* at 2820-21.

First, President Gerald Ford promulgated Executive Order 11,821 requiring government agencies to evaluate the inflationary impact of their regulations.⁷³ The evaluation was to be conducted according to criteria developed by the Office of Management and Budget ("OMB").⁷⁴ The following categories were identified in the Executive Order as requiring assessment: "(1) cost impact on consumers, businesses, markets, or Federal, State or local government; (2) effect on productivity of wage earners, businesses or government at any level; (3) effect on competition; and (4) effect on supplies of important products or services."⁷⁵ These general categories of economic impact analysis have been carried forward into current use.⁷⁶

The onset of the 1980s brought with it the anti-government attitudes of the Reagan Administration which placed emphasis on the costs of rule-making and the importance of private property rights.⁷⁷ The Regulatory Flexibility Act of 1981,⁷⁸ passed early in the Reagan Administration, required federal agencies to analyze the effect of proposed rules on small entities. A Regulatory Flexibility Analysis was required if there was to be a substantial effect.⁷⁹ President Reagan also promulgated two executive orders effecting the Service's endangered species program. The first was in 1981, Executive Order 12291, "Determination of Effect of Rules,"⁸⁰ which requires the agency proposing a rule to determine whether it is "major." A major rule is one with an annual effect on the economy of greater than \$100 million or a major increase in costs to consumers.⁸¹ The issuing department must certify

73. Exec. Order No. 11,821, 39 Fed. Reg. 41,501 (1974); 10 Weekly Comp. Pres. Doc. 1504 (Dec. 2, 1974). Exec. Order No. 11,821 expired on Dec. 31, 1976, *id.*; however, it was extended through 1977 by Exec. Order No. 11,949, 42 Fed. Reg. 1017 (1977).

74. Office of Mgmt. & Budget, OMB Circular A-107.

75. Exec. Order No. 11,821, 39 Fed. Reg. 41,501 (1974).

76. See *infra* text accompanying notes 112-17.

77. This is epitomized in the Sagebrush Rebellion of the late 1970s and early 1980s. See C. Short, *Ronald Reagan and the Public Lands: America's Conservation Debate, 1979 - 1984* (1989).

78. Regulatory Flexibility Act of 1980, Pub. L. No. 96-354, 94 Stat. 1165 (1980), 5 U.S.C. § 601 (1993).

79. *Id.* Small entities are defined by the Small Business Administration as small businesses, local governments of less than 50,000 population, or non-profit organizations. Small businesses are defined under Section 3 of the Small Business Act on the basis of their sales or number of employees. The definition of small business varies according to its industrial sector. Basically, if the company is not dominant in its field on a national basis it is considered small. Rough guidelines are that the company employs fewer than 500 people and has less than \$2 million in annual sales.

80. Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (1981) and 5 U.S.C. § 601. Guidelines for the Determination of Effect of Rules are found in Department of the Interior, Departmental Manual 318 (1992).

81. It is difficult to determine what is "major." The Service's Determination of Effects of Rules for the northern spotted owl states that it is not a major rule. U.S. Fish & Wildlife Serv., *Determination of Effect of Rules to Designate Critical Habitat for the Northern Spotted Owl* 9 (1992).

that the rule will not have a significant economic effect upon a substantial number of small entities.⁸²

The second executive order, E.O. 12,630, "Governmental Actions and Interference With Constitutionally Protected Property Rights,"⁸³ requires government agencies to prepare a "Takings Implication Assessment" for their actions.⁸⁴ The Service is required to prepare these assessments for ESA Section 7 consultation jeopardy opinions as well as for listing and critical habitat determinations.⁸⁵ Attempts to minimize the protections afforded by the ESA continued throughout George Bush's presidency. Bush's "Council on Competitiveness" and a succession of court cases appeared to limit the ability of government to regulate private property under the "takings" clause of the Fifth Amendment.⁸⁶ The Service, as an agency within the executive branch, was buffeted about by these larger political currents in the Administration.⁸⁷

II. Criticisms and Proposals to Further Incorporate Economics in Endangered Species Protection

The previous section discussed the ESA's implementation and identified successful attempts to amend and modify it. But throughout the last fifteen years there have been vigorous attempts to either repeal the Act altogether or to significantly remove the protections provided. The broad themes of the Act's opponents will be identified based on an analysis of their proposed amendments.⁸⁸ As always, debates over

82. See, e.g., U.S. Fish & Wildlife Serv., *Determination of Effect of Rules for Six Forest Species on Guam* (1991).

83. Exec. Order No. 12,630, 53 Fed. Reg. 8859 (1988), 5 U.S.C. § 601. Administrative guidelines are provided to agencies in U.S. Dep't of Justice, Attorney General's Guidelines for the Evaluation of Risk and Avoidance of Unanticipated Takings (June 30, 1988) and Attorney General's Supplemental Guidelines to Evaluate the Risk and Avoid Unanticipated Takings for the U.S. Department of the Interior (Mar. 29, 1989). Implementation of these guidelines "was required by the Memorandum from the Secretary of Interior, Implementation of Executive Order No. 12,630" (Nov. 8, 1988).

84. Takings in this case is not the ESA Section 9 prohibition, but rather [those described by] the Fifth Amendment to the Constitution that "propose or implement licensing, permitting, or other condition requirements or limitations on private property use, or that require dedications or exactions from owners of private property. *Id.* 53 Fed. Reg. 8859 (1988).

85. Memorandum from the Secretary of Interior, *supra* note 83.

86. The three principal private property takings court cases are *Nollan v. California Coastal Comm'n*, 483 U.S. 825 (1987), *First Evangelical Lutheran Church of Glendale v. County of Los Angeles*, 482 U.S. 304 (1987), and *Lucas v. South Carolina Coastal Council*, 112 S.Ct. 2886 (1992). For a review of the takings issue as applied to endangered species, see J. Burling, *Property Rights, Endangered Species, Wetlands, and Other Critters—Is it Against Nature to Pay for a Taking?*, 27 Land & Water L. Rev. 309, 321 (1992).

87. See, for instance, M. Bean, *Looking Back Over the Last Fifteen Years, in Balancing on the Brink of Extinction: the Endangered Species Act and Lessons for the Future* 37, 41-42 (K. Kohm ed., 1991).

88. Review of proposed amendments to the ESA is restricted to the 100th Congress (1987-88), 101st Congress (1989-90), and the 102nd Congress (1991-92). Proposed legislation used to develop the themes are:

the Act have been polarized, with very little common ground between the development interests and their allies on the one hand, and preservationists and their allies on the other. This section will examine common themes in the criticism of the ESA so that attempts at resolving differences can be focused.

Over the past five years, the ESA's opponents incorporated their criticisms into proposed amendments that would revise the Act's provisions that conflict with their constituent's interests. Four general approaches have been used by opponents in their proposed revisions. First, opponents attempted to write overriding provisions similar to those successful in the Tellico Dam scenario to overcome problems with individual actions or species.⁸⁹ Second, they attempted to incorporate economic balancing mechanisms at either the listing, critical habitat or recovery plan stage.⁹⁰ Third, if they could not override or balance the

In the 100th Congress: S. 1844, 100th Cong., 1st Sess. (1987) (Protecting Endangered Species from Farm Pesticides, Provision) (Karnes, R-NE); and two identical House bills introduced by Pat Roberts (R-KS): H.R. 3477, 100th Cong., 1st Sess. (1987) (Implementation of Pesticide Regulations, Provisions) and H.R. 3489, 100th Cong., 1st Sess. (1987) (Orderly Implementation of Environmental Protection Agency Programs, Provisions).

In the 101st Congress: H.R. 3753, 101st Cong., 1st Sess. (1989) (Endangered Species Act, Amendment (Public Participation)) (Craig, R-ID).

In the 102nd Congress: H.R. 1478, 102nd Cong., 1st Sess. (1991) (Trawlers Relief and Working Livelihood Act of 1991) (Laughlin, D-TX) and the companion bill in the Senate, S. 47 (Johnston, D-LA); H.R. 3092, 102d Cong., 1st Sess. (1991) (Human Protection Act of 1991) (Hansen, R-UT); H.R. 4058, 102d Cong., 1st Sess. (1991) (Balanced Economic and Environmental Priorities Act of 1991) (Dannemeyer, R-CA); H.R. 5105, 102d Cong., 2d Sess. (1992) (Environment and Economic Stability Act of 1992) (Chandler, R-WA); H.R. 6123, 102d Cong., 2d Sess. (1992) (Endangered Species Act of 1973, Amendment) (Thomas, R-CA); H.R. 6134, 102d Cong., 2d Sess. (1992) (Endangered Species Act Reform Amendments of 1992) (Tauzin, D-LA); S. 3159, 102d Cong., 2d Sess. (1992) (Progressive Endangered Species Act of 1992) (Symms, R-ID); S. 2491, 102d Cong., 2d Sess. (1992) (Endangered Species Employment Transition Assistance Act of 1992) (Hatfield, R-OR); H.R. 4045, 102d Cong., 1st Sess. (1991) (Endangered Species Act Amendments of 1992) (Studds, D-MA); and S. 2953, 102d Cong., 2d Sess. (1992) (Endangered Species Act Amendments of 1992) (Metzenbaum, D-OH).

89. S. 3159, 102d Cong., 2d Sess. (1992). "The term 'endangered species' means any species that is in danger of extinction, or any mammal, bird (except the Northern Spotted Owl), reptile, amphibian, or true species of fish, invertebrate, or plant that was listed as an endangered species or a threatened species prior to the date of enactment of the Progressive Endangered Species Act of 1992, other than a species of the Class Insecta determined by the Secretary to constitute a pest whose protection under this Act would present an overwhelming and overriding risk to man." *Id.* at § 3(6).

90. S. 1844, H.R. 3477, and H.R. 3489, three bills presented in the 100th Cong., 1st Sess. (1987), would require that the EPA continue registration of pesticides pending an economic analysis. These bills are a result of a suit brought by the Defenders of Wildlife against the EPA. *Defenders of Wildlife v. Administrator, EPA*, 688 F.Supp. 1334 (D. Minn. 1988) (incidental take as a result of pesticides and rodenticides registration prior to approval from USFWS), *aff'd*, *Defenders of Wildlife v. Administrator, EPA*, 882 F.2d. 1294 (8th Cir. 1989) (Environmental Protection Agency was "taking" endangered species as a result of continued registration of strychnine pesticides and rodenticides). Economic balancing and/or benefit: cost analyses were a primary balancing tool in the revisions incorporated into H.R. 3092 and H.R. 4058, 102d Cong., 1st Sess. (1991) and H.R. 5105 and H.R. 6123,

listing process with economic concerns, opponents wanted to lessen the role of the Service⁹¹ while speeding up and integrating the listing and recovery components.⁹² The fourth approach to amending the Act would require the Service to conduct a NEPA or NEPA-like disclosure process incorporating economic and social impact analyses and following the provisions of the Administrative Procedures Act ("APA").⁹³

Four general themes in the arguments of the opponents can be identified, starting with the initial listing process and going through the Services' implementation of the Act. The first theme is that the Act has been broadened from its original focus on species to include subspecies and distinct populations, which in turn raises the potential for conflict between the Act and other parties' interests. Second, because economic effects result from the Act, private individuals, their property and their actual and perceived property interests are threatened,

102d Cong., 2d Sess. (1992). H.R. 4058 provided that criteria to estimate the economic benefits and costs would be:

(i) The economic consequences of implementing and enforcing the designation, regulation, or recovery plan, including the aggregate statistical data which indicate—

(I) identifiable and potential job losses or diminishment resulting from that implementation and enforcement,

(II) identifiable losses or diminishment in the value of real property resulting from that implementation and enforcement, and

(III) losses or diminishment in the value of business enterprises resulting from that implementation and enforcement.

(ii) The effect that implementing and enforcing the designation, regulation, or recovery plan will have on tax revenues received by the Federal Government or by State and local governments, including any revenue losses attributable to losses or diminishment in value describe in clause (i).

(iii) The effect that implementing and enforcing the designation, regulation, or recovery plan will have on outlays by Federal, State, and local governments, including—

(I) effects on payments made pursuant to subsection (1), and

(II) effects on expenditures required for unemployment compensation, aid to families with dependent children under part A of title IV of the Social Security Act, Medicaid under title XIX of the Social Security Act, and other Federal, State, and local government programs.

(iv) The effect that implementing and enforcing the designation, regulation, or recovery plan will have on the competitive position of any individual business enterprise or aggregate industry affected by that action, determined jointly with the Secretary of Commerce.

(v) The ecological and economic impacts of the extinction of any species that implementation and enforcement is intended to prevent.

(vi) Any other potential economic, budgetary, or ecological effects that the Secretary considers appropriate. H.R. 4058, § 2, 102d Cong., 1st Sess. (1991).

The bill also required that the Secretary compensate any person who suffered as a result of species or critical habitat listed after Jan. 1, 1986. *Id.* § 3. Compensable losses are defined to include: "(A) any diminishment in the value of tangible or intangible property, and (B) any loss resulting from the loss or diminishment of a job," but excluding de minimis or wholly speculative losses. *Id.*

91. Blind peer review of listing proposals is required in H.R. 6134, 102d Cong., 2d Sess. § 102 (1992). Blind peer review is also in H.R. 5105, 102d Cong., 2d Sess. (1992).

92. H.R. 3753, 101st Cong., 1st Sess. (1989) and H.R. 6134, 102d Cong., 2d Sess. (1992).

93. H.R. 6134, 102d Cong., 2d Sess. §201(4) (1992).

which leads opponents to contend that their property is being taken in violation of the Fifth Amendment. The third theme is that the Act provides no balancing between protection of the species and economic effects. Lastly, the FWS has been criticized for not "playing by the rules" in their listing and recovery process. The majority of the remaining conflicts regarding the ESA's implementation would be satisfied if consensus is reached on the fundamental questions, or barring that, at least a recognition of the critic's themes.

Criticism of listing of subspecies and species populations usually arises as a result of conflicts between protections under Section 7 of the Act and development projects. The basic argument becomes one of the value of a particular species, subspecies or population. Because there is commonly no consensus on the value of a particular species, much less the value of protecting species, subspecies and populations in general, considerable effort has gone into modifying legislation to limit and define exactly what is protected under the Act.⁹⁴ Proponents of limiting the ESA's coverage would allow subspecies to go extinct if other subspecies or populations were sufficiently protected. This would be particularly true for Alaskan species such as the marbled murrelet, grizzly bear and wolves where large populations exist, or where subspecies are in danger but there are larger overall populations.⁹⁵ Until there is consensus on the value of particular species, much less subspecies and distinct populations, little resolution of the criticisms of the listing process will occur.

The second values-related theme is that because the ESA applies broadly to both private, state and local, as well as federal actions, it affects private individuals, their property, and their real and perceived property rights. This problem arises in the context of both Section 7 and Section 9 of the Act. Section 7's prohibition of federally funded or permitted actions that jeopardize or adversely modify critical habitat affects private property because—theoretically at least—the federal government is inextricably involved in almost all private actions. Federal involvement can be direct, or it can be indirect and diffuse, whether through direct financing, permitting actions, or by insurance mechanisms. For federally-financed projects there is little question of the Act's applicability; in the other cases there is little guidance. Flood in-

94. *Id.*

95. This has been proposed for the spotted owl's three sub-species: the northern, California and Mexican (or southern) spotted owl. The species exist over a wide range, but each sub-species individually is in danger. In addition to the discussion of the northern spotted owl's plight herein, the California spotted owl is the subject of protection guidelines. Pacific Southwest Region, U.S.D.A. Forest Service, California Spotted Owl Sierran Province Interim Guidelines Environmental Assessment (Jan. 1993), while the Mexican spotted owl has been proposed for listing as a threatened species by the U.S. Fish and Wildlife Service, 58 Fed. Reg. 14,248 (1993), (to be codified at 50 C.F.R. § 17).

insurance programs are a relatively direct and broadly used example of federal involvement that affects private individuals and their property. A more diffuse example could be federally-insured banks whose deposits are used to make loans for private developments that jeopardize or adversely modify critical habitat. Lack of regulations regarding Section 7's limits increases anxiety on the part of potentially affected interests, which leads to charges that the Service's implementation is arbitrary and capricious.

The rise in takings cases and criticism of government regulation occurred with increasing frequency subsequent to passage of strong environmental protection laws in the late 1960s, and will continue until consensus is reached regarding the relationship between an individual's private property and larger societal rights. The Act's Section 9 constraints on the "taking" of individual endangered species or their habitat—with the exception of plants—directly affects activities on private as well as public property. Broadening the Section 9 definition of "take" to involve not only direct harm to individuals, but also to actions that has expanded considerably its potential for economic effects.⁹⁶ A recent series of Supreme Court cases, *Lucas*,⁹⁷ *Nollan*,⁹⁸ and *First Lutheran*,⁹⁹ all have dealt with Fifth Amendment takings. Government regulation is permitted up to the point where the majority of the economic viable use of the property is prevented, if the government can show that its actions substantially advance a legitimate state interest.¹⁰⁰ But until there is a larger societal as well as legal consensus on this fundamental issue, which is basically about values, conflict over the specifics of individual laws and rules will continue.

Disagreement over the values embodied in endangered species protection often manifests itself in complaints over implementation of the Act—focusing on the implementation symptoms—rather than on the underlying values-related problem. Disagreement about species' values is seen in the third theme promoted by ESA opponents: that the Act does not allow a balancing mechanism between protection of the species and resulting economic costs. There are balancing mechanisms,

96. See *Palila v. Hawaii Dep't Land and Nat. Resources*, 471 F. Supp. 985 (D. Haw. 1979), *aff'd*, 639 F.2d 495 (9th Cir. 1981). After the Department of Interior attempted to narrowly define taking, another case involving the Palila again defined habitat destruction as taking under Section 9 of the Act, *Palila v. Hawaii Dep't Land and Nat. Resources*, 649 F. Supp. 1070 (D. Haw. 1986), *aff'd*, 852 F.2d 1106 (9th Cir. 1988). For additional discussion, see Rohlfs, *supra* note 10, at 62-70.

97. *Lucas v. South Carolina Coastal Council*, 404 S.E.2d 895 (S.C. 1991), *cert. granted*, 112 S. Ct. 436 (1991), *rev'd*, 112 S.Ct. 2886 (1992).

98. *Nollan v. California Coastal Comm'n*, 483 U.S. 825 (1987).

99. *First English Evangelical Lutheran Church of Glendale v. County of Los Angeles*, 482 U.S. 304 (1987).

100. See *Burling*, *supra* note 85, at 334-46 (citing *Agins v. City of Tiburon*, 598 P.2d 25 (Cal. 1979), *aff'd*, 447 U.S. 255 (1980) as the threshold test for regulatory takings).

both in the provisions in Section 7 that require the FWS to provide reasonable and prudent alternatives, and in Section 4 designation of critical habitat.¹⁰¹ But in the vast majority of cases, the major economic effects result from listing the species, not from designation of critical habitat. And while the Service may be required to provide "reasonable and prudent alternatives" to actions that may jeopardize species or adversely affect its critical habitat, its staff frequently does not have the expertise required to develop such alternatives. This lack of expertise in engineering and planning frequently causes irreconcilable conflicts between the Service's recommended alternatives and the developer's proposals, ultimately benefiting neither party.

The fourth theme opponents promote is that the FWS does not play by the rules in its implementation of the Act. A primary criticism is that the Act is being used to stop development, without regard to whether species are truly at risk. The strong legal status the ESA provides makes the Act a useful tool to protect other related environmental values that do not have the same level of protection afforded endangered species. Additional criticism is that once species are listed, recovery plans and recovery efforts are not working. The teams and their plans are criticized for not being timely, for not representing affected states and local interests, and for not being interdisciplinary. Opponents of the Act want instantaneous results: typically they would prefer ex-situ protection in zoos or hatcheries. Captive propagation is fine, but releases of experimental populations would be restricted to national parks and wildlife refuges, or to private lands with the approval of the landowner.¹⁰²

Opponents have recently focused their attention on the Administrative Procedures Act ("APA") and National Environmental Policy Act ("NEPA") requirements as a mechanism to influence the Service's implementation of the ESA. They see these acts' procedural requirements as a way to force the Service to incorporate social and economic concerns into the designation of critical habitat and preparation of recovery plans. The Service considers the listing and designation of critical habitat not to be major federal actions,¹⁰³ that such actions are not discretionary,¹⁰⁴ and that the analyses conducted for the determination of critical habitat are functionally equivalent to NEPA documentation.¹⁰⁵ However in a recent case, *Douglas Co. v. Lujan*,¹⁰⁶ the plaintiffs were successful in obtaining a restraining order requiring the FWS to

101. See *infra* text accompanying notes 109 and 119.

102. See H.R. 6134, 102d Cong., 2d Sess. § 404 (1992).

103. 50 C.F.R. §§ 17.22, 17.23, 17.32 (1992).

104. *Douglas County v. Lujan*, 810 F.Supp. 1470, 1479 (D.Or. 1992).

105. *Id.* at 1480 n.4.

106. *Id.* at 1484-85.

prepare environmental documentation prior to designating critical habitat.

Criticisms of the ESA by both its proponents and opponents have tended to focus on highly visible conflicts. The snail darter of Tellico Dam fame was the first, but the ongoing controversy over protecting the northern spotted owl is the latest. The northern spotted owl situation will be described in the following section as a case study of the Service's implementation of economic analyses, but will also demonstrate how the events that have occurred over the duration of the controversy have, and continue to be, played out in Congress through amendments offered by supporters and opponents.

III. The Northern Spotted Owl As a Case Study of the Use of Economic Effects in the Endangered Species Act

This section examines the FWS' implementation of economic analyses, both in theory and practice. The legal basis for using economics in the ESA was explained in section one. Criticisms of the ESA and proposals to incorporate additional economic analyses and balancing were identified in the second section. This section will initially examine the criteria the Service uses to identify economic effects. The northern spotted owl's story will then be chronicled to illustrate the use and abuse of economics in practice. This will provide a foundation for incorporating economics into the endangered species protection process.

How the U.S. Fish & Wildlife Service Uses Economics

The FWS implements endangered species protection through three relatively discrete sets of procedures. The first procedure is the listing process under Section 4(a) of the ESA. The second is the inter-agency consultation process through which listed—and in some cases candidate—species are protected from federal actions. The third set of procedures describe the recovery process that is used to bring species back from the brink of extinction. Component parts for each of these three procedures are displayed in Table 1. Specific areas where economics is incorporated, or where the public can provide comments on the economic effects of agency actions, are discussed below. In the following section, key criteria are identified which affect how economic concerns are incorporated into the ESA's implementation.

Table 1. Sequence of USFWS actions to implement the Endangered Species Act.

Action	Time to Conduct	Citation
Section 4(a) Listing Process^a		
• Petition to List, Delist, or Reclassify Received	Initiates Action	§424.14(a)
• Sec. DoI Finding that Petition action is warranted, unwarranted or unknown	90 Days	§424.14(b)(1)
• Conduct Status Review	9 Months	§424.14
• Decision to List, Not List, or Delay	Annually	§424.14(b)(3)
Warranted, but insufficient information	12 Months	§424.15(a)
If delayed due to other listing actions		§424.14(b)(3)
• Propose Listing Rule	Initiates Action	§424.16
Public Comment Period	60 Days	§424.16(2)
• Finalize Listing Rule & Designate Critical Habitat if determinable and prudent	12 Months	§424.17(a)(1)
Additional Critical Habitat Review	12 Months	§424.17(b)(2)
Publish Final Rule		§424.18
• Final Rule Effective	30 Days	§424.18(b)(1)
• Annual Report to Congress on Status of Candidate Species	Yearly	ESA §4(f)(3)
• Periodic Review to Delist or Reclassify Listed Species	Every 5 Years	§424.21
Section 7 Consultation Process^b		
• Applicant Notifies USFWS of Project and Requests Species List	Initiates Action	§402.12(c)
USFWS Provides Species List to Applicant	30 Days	§402.12(d)
Applicant Prepares Biological Assessment		§402.12(f)
• Informal Consultation Process		§402.13
If no effects, Section 7(b) Concludes	Concludes	§402.13(a)
If effects formal consultation required		§402.14(a)
• USFWS Receives Formal Consultation Request	Initiates Action	§402.14(c)
Initial Consultation Period	90 Days	§402.14(e)
Allowable Consultation Period Extension	60 - 90 Days	§402.14(e)
• USFWS Provides Biological Opinion	45 Days	§402.14(e)
• Applicant Accepts Biological Opinion or		§402.15
Applicant Submits Request for Exemption	90 Days	§451.02(d)
Sec. DoI May Reject Application Based on insufficient information provided	10 Days	§451.03(f)
• Sec. DoI Makes Threshold Qualification Determination	20 Days	§452.03(a)
• Endangered Species Committee Holds Hearings		§452.05(a)
Public Notice for Hearings	15 Days	§452.05(c)
Sec. DoI submits Hearing Report to Committee	140 Days	§452.08
• Endangered Species Committee Exemption Determination	30 Days	§453.03(a)
Committee Publishes Decision and Report	ASAP	§453.03(b)
Committee Determines if Exemption is Permanent	60 Days	§453.03(c)
Section 4(f) Recovery Plan Process^c		
• Establish Recover Team	Initiates Action	
• Draft Recovery Plan		
Submit Draft Plan for public review and comment		§1533(f)(4)
• Finalize Recovery Plan		
• Report to Congress on Status of Species' Recovery	2 Years	§1533(h)(4)
a. Citations 50 CFR 424 (10-1-92). b. Citations 50 CFR 424 (10-1-92). c. Citations based on 16 U.S.C.A. §1533 (West, 1984 and 1992 Supp.).		

How is Economics Applied in Practice?

As has been frequently stated, economics allegedly plays no role in the initial listing decision for species and in proposals for critical habitat designation.¹⁰⁷ Economic effects are considered during the analyses of critical habitat to modify the area boundaries if the costs of designating critical habitat outweigh the benefits of retaining a specific area of critical habitat, as long as the species' continued existence is not jeopardized by eliminating a specific area(s).¹⁰⁸

The economic balancing in critical habitat designation is documented in an economic analysis conducted prior to the final decision.¹⁰⁹ The process starts with notification to the public (including the affected states and counties) that the species has been proposed for listing and identification of proposed critical habitat areas.¹¹⁰ Affected interests are requested to provide comments on the economic effects that they think would result from designating an area as critical habitat.¹¹¹ The economic analysis subsequently conducted is similar to a benefit: cost calculation; however, because the benefits of preservation of endangered species are often difficult to quantify, descriptions of benefits are kept fairly general.¹¹² As a result, the emphasis of the economic analysis falls primarily on the costs of designating particular areas as critical habitat.¹¹³ A series of screens are used to filter out economic effects resulting from other protections prior to determination of the effects resulting solely from critical habitat designation. First, protection afforded to the species from enforcement of other federal laws is excluded.¹¹⁴ Second, a baseline is established between the future condition that would exist without consideration of the protections afforded to the species by the ESA alone, compared with the future condition with incorporation of protection of the species.¹¹⁵ Finally, economic effects oc-

107. See *supra* text accompanying notes 20 and 90.

108. ESA §4, 16 U.S.C. § 1533(b)(2).

109. Economic analyses are conducted following procedures described in USFWS, *Draft Interim Guidance on the Development of Economic Analyses for Critical Habitat Designations* (June 9, 1992), in *Economic Analysis Handbook* (1985) [hereinafter *Draft Interim Guidance*] and *Draft Interim Report Format and Guidance for Economic Analysis of Proposed Critical Habitat* (June 9, 1992), in *Economic Analysis Handbook* (1985) [hereinafter *Draft Interim Report*] (both documents on file with author).

110. Public notification is specified in 50 C.F.R. § 424.16(c)(2). See Table 1 for sequence where public comment occurs.

111. *Id.*

112. "In general, benefits can be categorized as (1) use benefits which include both consumptive and non-consumptive uses, (2) intrinsic or non-use benefits, and (3) conservation benefits to the listed or other species. Both use and intrinsic benefits are potentially measurable in dollar terms, whereas conservation benefits are not." *Draft Interim Report, supra* note 109, at 5.

113. *Id.* at 2-3.

114. See, e.g., Section 404 of the Clean Water Act, Pub. L. 92-500, 86 Stat. 816 (1972), and the National Forest Management Act, Pub. L. No. 94-588, 90 Stat. 2949 (1976).

115. *Draft Interim Guidance, supra* note 109, at 2.

curring from protection due to listing (which are not taken into consideration) are excluded. The economic effects remaining after these three screenings are those considered to result from the protections afforded by critical habitat.¹¹⁶ Once these are identified, they are divided between national and regional effects.¹¹⁷ The economic analysis considers the economic effects of each individual critical habitat area. An "exclusion report" is prepared by the Service if any proposed critical habitat areas are removed or their boundaries modified, for economic or other reasons, in the final rule.¹¹⁸

The second area in which economics plays a role is in the implementation of Section 7's consultation requirements (see Table 1 for the sequence of these actions).¹¹⁹ When the Service issues a jeopardy or adverse modification of critical habitat biological opinion during a Section 7 inter-agency consultation, it must provide the applicant with reasonable and prudent alternatives—if they exist—to the applicant's proposal.¹²⁰ Reasonable and prudent alternatives are defined as "alternative actions . . . that can be implemented in a manner consistent with the intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that is [sic] economically and technologically feasible."¹²¹ Reasonable and prudent alternatives are allowed to significantly change the applicant's proposal.¹²²

116. *Id.*

117. "The focus of the national economic benefit/cost (efficiency) analysis should be on national benefits and costs, and the focus on economic impacts (which may simply represent a redistribution of resource use) should be at the regional level." *Id.*

118. *Id.*

119. ESA § 7(a), 16 U.S.C. § 1536(a).

120. 50 C.F.R. § 402.4(g)(8), (h). Note that if the Service does not issue a "jeopardy" opinion, then to minimize any incidental take of the species during the action, reasonable and prudent measures are limited to those which "cannot alter the basic design, location, scope, duration, or timing of the action and may involve only minor changes." *Id.* § 402.14(i)(2).

121. *Id.* § 402.02. The final rule was amended to incorporate the "economically and technologically feasible" criteria. 51 Fed. Reg. 19,926, 19,937 (1986).

122. "The Service agrees that reasonable and prudent alternatives should be consistent with the intended purpose of the action and should therefore be economically and technologically feasible, but the Service cannot limit its range of choices . . . Reasonable and prudent alternatives must cover the full gamut of design changes that are economically and technologically feasible for an action, independent of who is sponsoring the action." 50 C.F.R. § 402.02. The extent of reasonable and prudent alternatives differs between Section 7 for the overall project and incidental take permit (allowed under 16 U.S.C. § 1536(b)(4); 51 Fed. Reg. 19,926) compared to the alternatives considered under Section 9 where "[r]easonable and prudent measures, along with the terms and conditions that implement them, cannot alter the basic design, location, scope, duration, or timing of the action and may involve only minor changes." 50 C.F.R. § 402.14(i)(2). This differentiation occurred between the proposed and final rule making. "Reasonable and prudent measures were intended to minimize the level of incidental taking, but Congress also intended that the action go forward essentially as planned [in Section 9 takings permits]." 51 Fed. Reg. 19,926, 19,937.

If the applicant and the Service cannot agree on reasonable and prudent alternatives, or if there are no alternatives that would not jeopardize the species or adversely modify critical habitat, the applicant can request an exemption to Section 7 of the ESA by the Endangered Species Committee.¹²³ An application for exemption is first considered by the Secretary to see if it meets the threshold conditions before the review by the Committee.¹²⁴ Once the application for exemption is accepted, an administrative law judge holds evidentiary hearings.¹²⁵ The Secretary compiles the material from the applicants, the Service, and the hearings into a report that is submitted to the Committee.¹²⁶ The Committee, to grant an exemption, must conclude that: (1) the proposed action has no reasonable and prudent alternatives; (2) that the benefits clearly outweigh alternative courses of action and that the project is in the "best public interest"; (3) that the action is of "national or regional significance"; and (4) that the applicant has made no irreversible or irretrievable commitments of resources.¹²⁷ Economics affect the second and third criteria, as will be discussed *infra*. The Committee's implementing regulations set forth how the exemption criteria are to be applied. Benefits are considered to be "both tangible and intangible, including but not limited to economic, environmental and cultural benefits."¹²⁸ If five of the seven members of the Committee agree, they can either temporarily or permanently exempt the action from the ESA.¹²⁹

Economics is incorporated less explicitly in developing recovery plans in two places.¹³⁰ First, Congress prescribed a system that gives priority in preparation of recovery plans to species that have the po-

123. Rules governing appeals to the Endangered Species Committee are found in 50 C.F.R. § 451 (1992). Three parties are eligible to appeal the results of the biological opinion: the federal agency involved in the permit or license; the governor of the state where the action would occur; or the permit or license applicant. *Id.* § 451.02(c).

124. Threshold criteria are: "(1) [w]hether any required biological assessment was conducted; (2) [t]o the extent determinable within the time period provided, whether the Federal agency and permit or license applicant, if any, have refrained from making any irreversible or irretrievable commitment of resources, and (3) [w]hether the Federal agency and permit or license applicant, if any, have carried out consultation responsibilities in good faith and have made a reasonable and responsible effort to develop and fairly consider modifications or reasonable and prudent alternatives to the proposed action which would not violate Section 7(a)(2) of the Act." *Id.* § 452.03(a). All threshold criteria must be met before the application for exemption is considered by the Committee.

125. 16 U.S.C. § 1536(g)(4) and 50 C.F.R. § 452.05.

126. 50 C.F.R. § 452.08.

127. 16 U.S.C. § 1536(h)(1)(A) and 50 CFR § 453.03(1) (1992). Alternative courses of action are broadened at this stage to include both no action, and to extend beyond the original scope of the project and agency jurisdiction. 50 C.F.R. § 453.01. Other key terms such as public interest, regional and national significance are not defined, and are as yet unlitigated.

128. 50 C.F.R. § 450.01.

129. 16 U.S.C. § 1536(h)(1).

130. ESA §4(f)(1), 16 U.S.C. § 1533(f)(1).

tential to conflict with economic or development activities.¹³¹ The other use of economics in recovery plans arises because the measures proposed in the plans must include cost and time estimates.¹³²

Critical Economic Issues

Four issues affect the ability of the Service to effectively incorporate economic analyses into the ESA's implementation. They are directly related, and complimentary to, the screens used to filter economic effects in the critical habitat analyses. First, a determination of baseline conditions is needed to begin estimating economic effects. At issue is what can be reasonably certain to occur in the future, with and without consideration of the endangered species. Second, how any one specific potential action is compared to the cumulative effects of many previously existing or potential actions must be determined. Third, distinguishing the economic effects of listing compared to the effects of critical habitat is difficult, but is required by statute and regulation. Fourth, for the determination of regional effects, what is a "region"? These four areas largely determine the extent and magnitude of economic effects for activities affected by the Act's implementation.

Biological opinions issued by the Service in Section 7 consultations require a determination of the "effects of the action."¹³³ A similar "reasonably certain to occur" criterion is used in the economic analysis to estimate the direct and indirect impacts resulting from critical habitat.¹³⁴ When the Service proposed regulations after the 1982 ESA Amendments there was extensive discussion of what "reasonably certain to occur" means.¹³⁵ The resulting definition of "reasonably certain to occur" is those "actions that are likely to occur, bearing in mind

131. "The Secretary, in developing and implementing recovery plans shall, to the maximum extent practicable—(A) give priority to those endangered species or threatened species most likely to benefit from such plans, particularly those species that are, or may be, in conflict with construction or other development projects or other forms of economic activity." *Id.* § 1533(f)(1)(A) (citing Pub. L. No. 100-478 § 1003, 102 Stat 2306 (1988)).

132. "[The Secretary shall] incorporate in each plan . . . (iii) estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal." *Id.* § 1533(f)(1)(B). Public comments must be solicited on the draft plan and considered in the final plan and implementation. *Id.* § 1533(f)(4),(5).

133. 50 C.F.R. § 402.14(h)(2). Determination must include both direct and indirect effects. 51 Fed. Reg. 19,926, 19,932 (1986) (citing *National Wildlife Fed'n v. Coleman*, 529 F.2d 359 (5th Cir. 1976)).

134. *Draft Interim Guidance*, *supra* note 109, at 2.

135. 51 Fed. Reg. 19,926, 19,932-33 (1986). "Effects of the action also include direct and indirect effects of actions that are interrelated or interdependent with the proposal under consideration. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification; interdependent actions are those that have no significant independent utility apart from the action that is under consideration." *Id.* at 19,932.

the economic, administrative, or legal hurdles which remain to be cleared."¹³⁶

The "reasonably certain to occur" criterion is crucial to resolving the second critical issue: determination of the cumulative effects of the proposed action. The likelihood of other potential actions "reasonably certain to occur" sets the bounds for determining the cumulative effects of a proposed action in its Section 7 consultation.¹³⁷ The limitation on how far to go in determining "cumulative impacts" is defined by regulation¹³⁸ to require consideration of non-federal projects or activities that are unrelated to the one under consultation.¹³⁹

Standards for distinguishing between "jeopardy" and "destruction or adverse modification of critical habitat" are important because they divide the apportionment of impacts in the economic analyses for critical habitat determinations. The Service, in a since-withdrawn National Policy Issuance, described the differentiation as "one of the scope of analysis."¹⁴⁰ Adverse modification of critical habitat is determined by an activity's effects on the elements identified as essential for the conservation of species that are listed in the critical habitat rule.¹⁴¹ In contrast, jeopardizing the continued existence of a species requires a comparatively greater degree of effect on the habitat, except when critical habitat occupies the entire range of the species and all constituent elements are identified.¹⁴²

The fourth critical economic issue is determining the national or regional significance of an activity. The differentiation between national and regional is used both in the economic analysis for determination of critical habitat as well as by the ESC in determining whether an exemption to Section 7 is justified.¹⁴³ The definition of "region" was extremely important and very controversial in the Committee's hearing on the Bureau of Land Management's ("BLM") request for an exemption for its timber sales in Oregon.¹⁴⁴ There is no hard and fast definition of "region" for the purposes of analysis and exemption.¹⁴⁵

136. *Id.* at 19,933.

137. 50 C.F.R. §§ 402.02, 402.14(g).

138. Considerable controversy arose over an Associate Solicitor's opinion on the matter. Dep't of the Interior, 88 I.D. 903, Associate Solicitor Opinion on Cumulative Effects (1981). The results of this opinion were deleted in the Section 7 rules. 51 Fed. Reg. 19,926, 19,933.

139. *Id.* at 19,932. Other Federal actions would come under their own Section 7 consultation. *Id.* at 19,933.

140. See *National Policy Issuance No. 91*, *supra* note 69, at 7.

141. *Id.*

142. In which case an effect on any element of any critical habitat area is considered to jeopardize the species. *Id.* at 7-8. However, activities can be found to jeopardize the species in areas that were removed from proposed critical habitat as a result of the economic balancing process. *Id.* at 8.

143. See *supra* text accompanying note 127.

144. See *infra* text accompanying notes 252-56.

145. In the legislative history of the 1978 amendments, it is clear that the cumulative effects that removal of individual timber areas would have on the overall allowable sale

There is indeed no regulatory definition of "region."¹⁴⁶ The question of whether a regional impact can result from effects in a single county (or even a single timber sale) were compared to whether effects had to be "regional" in a multi-state context during the debates over the 1978 ESA Amendments.¹⁴⁷

Case Study in the Application of Economics in the Act: the Northern Spotted Owl

The northern spotted owl has generated more controversy than any other species, surpassing even the snail darter of Tellico Dam fame. The controversies swirling around the spotted owl issue are covered elsewhere.¹⁴⁸ This discussion will be confined to summarizing the sequence of actions over the past twelve years, which are outlined in Table 2. The focus will then turn to areas where economics ostensibly played a role, either overtly or covertly, in how decisions were made. As part of the analysis, economic criteria will be examined as they were applied to agency actions.¹⁴⁹

Overview

Starting in 1982, the northern spotted owl was reviewed for listing three times,¹⁵⁰ before finally being designated as a threatened species in 1990 as a result of court decision.¹⁵¹ Designation of critical

quantity was considered to have regional impacts. 124 Cong. Rec. 38,126 (daily ed. Oct. 14, 1978) (statement of Rep. AuCoin), *reprinted in* CRS Legislative History, *supra* note 11, at 807-08. Beyond this, there were differing interpretations used by the Endangered Species Committee in their decision (57 Fed. Reg. 23,405, 23,406-07 (1992)) compared to the testimony of the FWS' expert witness. See Testimony of W. Ed Whitelaw on Behalf of The USFWS, Endangered Species Committee, U.S. Department of the Interior, Office of Hearings and Appeals In the Matter of Bureau of Land Management's Request for Exemption under the Endangered Species Act for 44 FY 1991 Timber Sales, ESA 91-1 (1991), at 11-12 (on file with author). The Endangered Species Committee ultimately used a county as its unit for a region. 57 Fed. Reg. 23,405, 23,407 (1992).

146. 50 C.F.R. § 450.01 provides definitions for all C.F.R. sections dealing with the Endangered Species Exemption Process.

147. 57 Fed. Reg. 23,405, 23,407. See also H.R. Rep. No. 1625, 95th Cong., 1st Sess. 23 (1978), *reprinted in* 1978 U.S.C.C.A.N. 9453, 9473; H.R. Conf. Rep. No. 1804, 95th Cong., 1st Sess. 20 (1978), *reprinted in* 1978 U.S.C.C.A.N. 9488.

148. M. Bonnett & K. Zimmerman, *Politics and Preservation: The Endangered Species Act and the Northern Spotted Owl*, 18 *Ecology L. Q.* 105 (1991).

149. One should not imagine that the economic effects as identified in agency documents provide the rationale for decision-making. Clearly the overriding issue in the spotted owl controversy was between the environmentalists who were using it as a proxy for old-growth protection and anti-timber harvest strategies, and high officials in the Executive Branch who were looking for an opportunity to overturn the ESA.

150. Interagency Scientific Committee, *A Conservation Strategy for the Northern Spotted Owl 10* (1990) [hereinafter *ISC Report*].

151. *Northern Spotted Owl v. Hodel*, 716 F.Supp. 479 (W.D. Wash. 1988).

habitat was "deferred" in the original listing.¹⁵² As the result of another court decision,¹⁵³ critical habitat was initially proposed a year later, but the boundaries were modified twice before being finally designated in 1992.¹⁵⁴ Subsequent to the final rule designating critical habitat, three affected Oregon counties successfully sued to prevent implementation because the Service did not conduct a NEPA analysis.¹⁵⁵

Court suits involving the northern spotted owl were not limited to those directed at the FWS. Both the U.S. Forest Service ("USFS") and the BLM were successfully sued over the effects on the owl of their timber management programs. These suits occurred prior to the listing of the spotted owl as a threatened species, and were based on the agencies' own land management regulations.¹⁵⁶ As a result of these suits the agencies' timber sales programs in northern California, Oregon and Washington were considerably reduced. Congress, upset about these delays, conducted a reprise of Tellico Dam by passing the Hatfield-Adams Act.¹⁵⁷ The Hatfield-Adams Act required the USFS and BLM to sell specified quantities of timber during FY1989 - FY1991.¹⁵⁸ To prevent the timber sales from being stalled, the Hatfield-Adams Act also specifically prevented judicial review of agency decisions.¹⁵⁹ Environmentalists sued the USFS over implementation of the Hatfield-Adams Act stating that it violated the separation of powers between the branches of government.¹⁶⁰ The Ninth Circuit ultimately found for the plaintiffs, and those parts of the Hatfield-Adams Act pertaining to judicial oversight were ruled unconstitutional.¹⁶¹

152. 54 Fed. Reg. 26,666, 26,675 (1989).

153. Northern Spotted Owl v. Lujan, 758 F.Supp. 621 (W.D. Wash. 1991).

154. Critical habitat was deferred in the original listing proposal, 54 Fed. Reg. 26,675 (1989), then first proposed in 56 Fed. Reg. 20,816, 20,819-20 (1991). The first modification is in 56 Fed. Reg. 40,002, 40,006-12 (1991), and the second modification in the final rule, 57 Fed. Reg. 1796, 1809-11 (1992).

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

156. The Forest Service suit was Seattle Audubon Soc'y v. Robertson, No. C89-160WD, 1991 WL 180099 (W.D. Wash. Mar. 7, 1991). The Bureau of Land Management suit was Portland Audubon Soc'y v. Hodel, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21,210 (D.Or. 1988), *aff'd*, 866 F.2d 302 (9th Cir.), *on remand*, Portland Audubon Soc'y v. Lujan, 712 F. Supp. 1456 (D. Or.), *aff'd in part, rev'd in part*, 884 F.2d 1233 (9th Cir. 1989), *cert. denied*, 494 U.S. 1026 (1990). In neither case was the issue the ESA as such, but rather the agencies' procedural process. See discussion in Bonnet and Zimmerman, *supra* note 148, at 133-35.

157. Department of the Interior and Related Agencies Appropriations Act, 1990, Pub. L. No. 101-121, § 318, 103 Stat. 701, 745 (1989) [hereinafter *Hatfield-Adams Act*]. See also V. Sher, *Ancient Forests, Spotted Owls, and the Demise of Federal Environmental Law*, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 10,469 (1990).

158. *Hatfield-Adams Act* § 318(a), 103 Stat at 747.

159. *Id.* §§ 318(b)(6)(A) & (g)(1), 103 Stat at 747.

160. Seattle Audubon Soc'y v. Robertson, 914 F.2d 1311, 1313 (9th Cir. 1990).

161. *Id.* at 1316-17.

Table 2. Chronology of northern spotted owl (NSO) endangered species actions.^a
 (Note that actions in *italics* are where economic criteria were used to justify decisions).

Action	Date	Initiating Event/Reference
First USF&WS Status Review of NSO. Declines to List ^b	1982	Status Report
USFS Uses NSO as Indicator Species in Forest Plans ^c	1984	NFMA. 36 CFR §21.919 (1990)
USF&WS Petitioned to List NSO as Endangered Species	January, 1987	Green World Petition
USF&WS Accepts NSO Petition	July, 1987	54 Fed. Reg. 26.669 (1989)
USF&WS Initiates NSO Status Review	September, 1987	52 Fed. Reg. 34.396 (1987)
BLM Sued Over Its Timber Management Program	October, 1987	<i>Portland Audubon v. Hodel</i> ^d
USF&WS Declines to List Species	December, 1987	52 Fed. Reg. 48.552 (1987)
Court Rules USF&WS Refusal to List NSO is "Arbitrary"	November, 1988	<i>Northern Spotted Owl v. Hodel</i> ^e
<i>Congress Requires Forest Service & BLM to Sell Timber</i>	October, 1988	Hatfield-Adams Act ^f
USF&WS Re-opens NSO Status Review	January, 1989	54 Fed. Reg. 4049 (1989)
Court Rules Parts of Hatfield-Adams Act Unconstitutional	February, 1989	<i>Seattle Audubon v. Robertson</i> ^g
USF&WS Proposes Listing as Threatened Species	June, 1989	54 Fed. Reg. 26.666 (1989)
Interagency Scientific Committee (ISC) Report ^h	April, 1990	Hatfield-Adams Act §318
<i>Final Rule Designating NSO as Threatened Species</i>	June, 1990	55 Fed. Reg. 26.114 (1990)
<i>Dol Five Point Plan to Continue BLM Timber Sales</i> ⁱ	June, 1990	
<i>BLM Releases "Jamison Plan" Modifying ISC Strategy</i>	August, 1990	
USF&WS Begins DEIS on §10 Take Permit for northern CA Private Timber Harvets	September, 1990	55 Fed. Reg. 39.071 (1990)
USFS Adopts ISC Strategy of HICAs for its Timber Sales	October, 1990	55 Fed. Reg. 40.412 (1990)
Court Suit Forces Critical Habitat Listing	February, 1991	<i>Northern Spotted Owl v. Lujan</i> ^j
Secretary of Interior Forms NSO Recovery Team	February, 1991	
<i>USF&WS Proposes 11.6 Million Acre Critical Habitat</i>	May, 1991	56 Fed. Reg. 20.816 (5/6/91)
USF&WS Declares ISC Strategy Acceptable	May, 1991	56 Fed. Reg. 20.816 (5/5/91)
Court Prevents USFS from Implementing ISC Strategy	May, 1991	<i>Seattle Audubon v. Evans</i> ^k
USF&WS Issues Jeopardy Biological Opinion on 50 BLM Timber Sales for FY 1991 in Oregon ^l	June, 1991	ESA §7(a)(2) (6/17/91)
<i>USF&WS Drops Private Lands from Critical Habitat</i>	August, 1991	56 Fed. Reg. 40.002 (8/13/91)
BLM Requests §7 Exemption on 44 Timber Sales	September, 1991	56 Fed. Reg. 48.546 (9/25/91)
<i>Final Critical Habitat Designated on 6.9 Million Acres</i>	January, 1992	57 Fed. Reg. 1796 (1/15/92)
Endangered Species Committee (ESC) Holds Evidentiary and Public Hearings on BLM Exemption Request	January, 1992	56 Fed. Reg. 57.633 (1/13/91)
	February, 1992	57 Fed. Reg. 40.10 (2/3/92)
USFS Completes EIS on ISC Strategy	March, 1992	57 Fed. Reg. 8621 (3/11/92)
<i>Draft Recovery Plan Completed</i>	May, 1992	57 Fed. Reg. 20.847 (5/15/92)
<i>Endangered Species Committee Exempts 13 BLM Sales</i>	May, 1992	57 Fed. Reg. 23.405 (6/3/92)
USFS EIS Overturned as Inadequate by Judge Dwyer	July, 1992	<i>Seattle Audubon v. Moseley</i> ^m
USFS Begins Supplemental EIS on ISC Strategy	October, 1992	57 Fed. Reg. 48.200 (10/22/92)
<i>Ninth Circuit Requires NEPA Process on Critical Habitat</i>	December, 1992	<i>Douglas County v. Lujan</i> ⁿ
Ninth Circuit Stays ESC BLM Timber Sales Exemption	February, 1993	<i>Portland Audubon v. ESC</i> ^o
President Clinton Convenes "Forest Summit"	April, 1992	

a. For a detailed discussion up to 1990 see M. Bonnett and K. Zimmerman, Politics and Preservation: The Endangered Species Act and the Northern Spotted Owl. 18 Ecology L. Q. 105 (1991). See also P.J. Detrick et al., Status of Spotted Owl Populations and Management Efforts in California (forthcoming J. Wildlife Mgmt. 1993).

b. U.S. Fish and Wildlife Serv., The northern spotted owl: a status review. (1982).

c. U.S. Forest Service, Record of Decision 2 (Dec. 8, 1988). Cited in Bonnett and Zimmerman, *supra* note a at 131-32 & n. 12.

d. *Portland Audubon Soc'y v. Hodel*, 19 Env'tl. L. Rep. 21.210 (D. Or. 1988), *aff'd*, 866 F.2d 302 (9th Cir., on remand *sub nom.* *Portland Audubon Soc'y v. Lujan*, 712 F. Supp. 1456 (D. Or.), *aff'd in part, rev'd in part*, 884 F.2d 1233 (9th Cir. 1989), *cert. denied*, 494 U.S. 1026 (1990).

e. *Northern Spotted Owl v. Hodel*, 716 F. Supp. 479 (W.D. Wash. 1988).

f. Department of the Interior and Related Agencies Appropriations Act, 1990, Pub. L. No. 101-121, §318, 103 Stat. 701, 745 (1989), [hereinafter *Hatfield-Adams Act*].

g. *Seattle Audubon Soc'y et al. v. Robertson*, 914 F.2d 1311 (9th Cir. 1990), on remand *sub nom.* *Portland Audubon Soc'y v. Lujan*, No. 87-1160-FR, 1990 WL 169703 (D.Or. Oct. 30, 1990), *subsequent appeal*, 931 F.2d 590 (9th Cir. 1991), *cert. granted*, 111 S.Ct. 2886 (1991), *rev'd*, 112 S.Ct. 1407 (1992).

h. Interagency Scientific Committee, A Conservation Strategy for the Northern Spotted Owl (1990).

i. Bonnett and Zimmerman, *supra* note a, at 168-69 & note 18 (citing Department of Interior, News Release June 26, 1990).

j. *Northern Spotted Owl v. Lujan*, 758 F.Supp. 621 (W.D. Wash. 1991). Decided Feb. 26, 1991.

k. *Seattle Audubon Soc'y v. Evans*, 771 F.Supp. 1081 (W.D. Wash. 1991), *aff'd*, 952 F.2d 297 (9th Cir. 1991).

l. U.S. Fish & Wildlife Serv., Formal Section 7 Consultation, § 174 Bureau of Land Management Fiscal Year 1991 Timber Sales (1991).

m. *Seattle Audubon Soc'y v. Moseley*, 798 F.Supp.1494 (W.D. Wash. 1992).

n. *Douglas County v. Lujan*, 810 F.Supp. 1470 (D. Ore. 1992) (Order, Dec. 22, 1992).

o. *Portland Audubon Soc'y v. Endangered Species Committee*, 984 F.2d 1534 (9th Cir. 1993).

However, more significant to future events, another section of the Hatfield-Adams Act set up a four agency committee (the Intera-gency Scientific Committee or "ISC") to establish a "scientifically valid" strategy to continue timber harvests while conserving the spotted owl.¹⁶² The Committee's report recommended that a network of habitat conservation areas ("HCA") surrounding existing spotted owl nests be established,¹⁶³ with timber harvesting restricted in areas connecting the HCAs.¹⁶⁴ The Forest Service attempted to follow the ISC strategy,¹⁶⁵ but the BLM stated that it would balance the ISC guidance with its other agency responsibilities.¹⁶⁶ When the FWS issued a Section 7 jeopardy opinion on fifty of its proposed FY1991 timber sales, the BLM requested an exemption to the Endangered Species Committee.¹⁶⁷ In its first meeting since 1979,¹⁶⁸ the Committee conducted evidentiary and public hearings, the Secretary compiled his required report, and the Committee exempted thirteen of the timber sales from compliance with Section 7 of the Act.¹⁶⁹ The Ninth Circuit subsequently stayed implementation of the Committee's exemption because of "ex parte" communications between the Office of the President and the Committee.¹⁷⁰

162. *Hatfield-Adams Act* § 318, 103 Stat. at 747.

163. Habitat Conservation Areas replaced the previous Spotted Owl Habitat Areas ("SOHAs"). The SOHAs encompassed one to three owl pairs, while the HCAs were established to contain a minimum of twenty pairs of owls, with a maximum spacing of twelve miles between HCAs. See *ISC Report*, *supra* note 150, at 3-4.

164. To facilitate interbreeding between owl groups, dispersion between the HCAs was assumed to occur as long as the residual timber stands after any harvest met what came to be called the "50-11-40 Rule": 50 percent of the land base outside of HCAs is in trees with a diameter (d.b.h.) of 11 inches or greater, and at least 40 percent of the area is covered by tree canopy. *ISC Report*, *supra* note 150, at 4.

165. 55 Fed. Reg. 40,412 (1990).

166. Chief among these was the Oregon and California Sustained Yield Act, Pub. L. No. 50-405, 50 Stat 874 (1937), which the BLM interpreted as giving very little flexibility in whether to harvest or reserve areas. The BLM's strategy, called the "Jamison Plan," would follow the ISC recommendations on about 80 percent of the HCAs. BLM's guidance is found in, Report of the Secretary of the Interior to the Endangered Species Committee Related to the Application by the Bureau of Land Management for Exemption from the Requirements of Section 7(a)(2) of the Endangered Species Act In Order to Hold Timber Sales on 44 Tracts Remaining in the Bureau's 1991 Program in Oregon 1-7 to 1-8 (Apr. 29, 1992) (on file with author) [hereinafter *Report of the Secretary*]. The case law is undeniably clear that this strategy is contrary to the ESA. See *TVA v. Hill*, 437 U.S. 153, 181-82 (1978) and *Sierra Club v. Lyng*, 694 F.Supp. 1260, 1269-70 (E.D. Tex. 1988).

167. The ESC hearings process for the Oregon BLM timber sales can be traced in the federal register: (1) Notice of receipt of application from BLM for exemption from Section 7 of Endangered Species Act, 56 Fed. Reg. 48,546 (1991); (2) Secretary of Interior notice of threshold determination of qualification for exemption consideration, 56 Fed. Reg. 54,562 (1991); (3) Endangered Species Committee, Establishment of Date and Location for Public Hearing, 57 Fed. Reg. 4010 (1992); (4) Notice of appointment of Administrative Law Judge to conduct public hearings, 56 Fed. Reg. 57,633 (1991); (5) Endangered Species Committee, Notice of Meeting, 57 Fed. Reg. 19,299 (1992); and (6) Endangered Species Committee, Decision, 57 Fed. Reg. 23,405 (1992).

168. Coggins and Russell, *supra* note 16, at 1494-95.

169. 57 Fed. Reg. 23,405.

170. *Portland Audubon Soc'y v. Endangered Species*, 984 F.2d 1534, 1550 (9th Cir. 1993).

In 1993 the Department of Interior announced that it would not hold the exempted sales.

Presently, neither the Forest Service nor the BLM has satisfied the courts that they have established a suitable program that would allow continued timber harvests in spotted owl habitat. One observer noted, "[t]he litigation, congressional intervention, and administrative proceedings have not resolved the ultimate question of how to manage federal lands consistently with the policies expressed in the Act and related laws."¹⁷¹ Newly-elected President Clinton, in an attempt to break the log jam, convened a "Forest Summit" in Portland, Oregon on April, 1993 and committed to release a plan to resolve the issue within ninety days.¹⁷² The draft plan¹⁷³ was sent to Judge Dwyer on July 16, 1993 in an attempt to release the injunction on some proposed timber sales.¹⁷⁴

Use of Economic Criteria

Conclusively estimating the economic costs of spotted owl listing, designation of critical habitat, and recovery operations is difficult, if not impossible.¹⁷⁵ The reason is that different people use different methods, different starting baselines, and different future scenarios to establish costs with and without the Act's protections. The end result is that there is a broad range of costs bandished about that only serve to obfuscate rather than elucidate the discussion. The task is to identify specific economic criteria used to justify decisions and to analyze their use in the process.

It is unclear from the official record what role economic costs played in the Service's decision not to list the northern spotted owl under the Act during the period leading up to the original 1988 listing case, *Northern Spotted Owl v. Hodel*,¹⁷⁶ [hereinafter "NSO I"]. The court in *NSO I* found that the Service's refusal to list the species after the 1987 status review was "arbitrary and capricious" under the Ad-

171. G. Achterman, *Reflections on Owls, Salmon, and Suckers: Current Developments Under the Endangered Species Act*, 38 Rocky Mtn. Min. L. Inst. 5-1, 5-4 (1992).

172. U.S. Forest Service et al., *Forest Ecosystem Management: An Ecological, Economic, and Social Assessment* (1993), at i.-iv (Report of the Forest Ecosystem Mgmt. Assessment Team).

173. Interagency SEIS Team, *Draft Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl* (July 27, 1983).

174. Transmittal to Judge Dwyer, Testimony of Jim Lyons, Ass't Sec'y of Agriculture (July 16, 1993) (on file with author).

175. *Report of the Secretary*, *supra* note 166, at 2-30, mentions a range of \$33-78 billion, but this is disputed. Other testimony gave a benefit:cost ratio of 5.85 to 14.14 for protecting the northern spotted owl. This range is based on a contingent valuation estimate of the public's willingness to pay to protect the owl. These figures were also disputed. *Id.*

176. 716 F. Supp. 479 (W.D. Wash 1988).

ministrative Procedures Act.¹⁷⁷ However, nowhere in that decision is the implication that the overriding concern of the Service was the cost of the action.

In the original northern spotted owl listing proposal, critical habitat was not designated because "information sufficient to perform required analyses of the impacts of the designation [was] lacking" ¹⁷⁸ Nor had any analyses been conducted at the time of the proposal in June of 1989.¹⁷⁹ After passage of one year since the proposal—the statutory limit—the Service published the final rule designated the northern spotted owl as a threatened species, but delayed designation of critical habitat for another year using the rationale that it was not presently "determinable."¹⁸⁰ Subsequently, the same twenty-two environmental groups that had successfully sued to compel the Service to list the owl sued to compel it to designate critical habitat. Based upon a reading of the legislative history of the 1982 ESA Amendments,¹⁸¹ the court ruled in the plaintiff's favor, finding that the Service had abused its discretion by not stating justifiable reasons for not designating critical habitat in the final rule.¹⁸² Judge Zilly then ordered the Service to prepare a plan for listing critical habitat by March 15, 1991 and to propose critical habitat within forty-five additional days (i.e., May 1, 1991).¹⁸³

Initial Designation of Critical Habitat

The Service's first proposal for critical habitat in May, 1991 used the ISC strategy with four significant modifications.¹⁸⁴ The first modification was that the proposed critical habitat included spotted owl sites on state, Indian and private, as well as Federal lands, while the ISC report emphasized only management on federal lands.¹⁸⁵ Secondly, due to legal constraints to adequately identify the areas, section boundaries were used that expanded areas identified in the ISC HCAs.¹⁸⁶ The Ser-

177. *Id.* at 483. Administrative Procedures Act decisionmaking requirements are codified at 5 U.S.C. § 557(c)(3)(A) (1988).

178. 54 Fed. Reg. 26,666, 26,675 (1989).

179. *Id.*

180. 55 Fed. Reg. 26,114, 26,192 (1990) (codified at 50 C.F.R. § 17.11(h)). *See also* Northern Spotted Owl v. Lujan, 758 F. Supp. 621, 623 (W.D. Wash. 1991)

181. Northern Spotted Owl v. Lujan, 758 F.Supp. at 625-267. *See also supra* note 9 and accompanying text.

182. *Id.* at 624, 628, 629.

183. *Id.* at 629.

184. Proposed Determination of Critical Habitat for the Northern Spotted Owl, 56 Fed. Reg. 20,816 (1991).

185. *Id.* at 20,819.

186. *Id.* at 20,819-20. The Service anticipated the difficulty raised by designating critical habitat in areas that did not have, and were not expected to ever have, the constituent elements required by the owls: "[A]n activity cannot cause adverse modification in an area within designated critical habitat that does not contain such elements. Some such areas were incidentally included in the proposed designation to facilitate the process of completing legal descriptions." *Id.* For discussion of HCAs, *see ISC Report, supra* note 150, at 23-31.

vice rationalized that the expanded areas would provide buffer zones and future dispersal habitat.¹⁸⁷ Third, the proposed critical habitat did not include approximately two million acres of HCAs that were considered to be adequately protected in National Parks and wilderness.¹⁸⁸ Lastly, the Service focused critical habitat in four areas of checkerboarded land ownership in Washington and Oregon due to risks that spotted owls would be isolated within specific physiographic provinces.¹⁸⁹ The amount of proposed critical habitat in the initial proposal by land ownership category is shown in Table 3.

The Service did not exclude any areas based on economic criteria at the time of the original proposal,¹⁹⁰ delaying that step for the revised and final critical habitat proposals. Criteria to be used to exclude areas from critical habitat as a result of economic effects was not defined in the initial proposal either,¹⁹¹ other than to request public assistance concerning "the methodology the Service might use . . . in determining whether the benefits of excluding an area from critical habitat outweigh the benefits of specifying the area as critical habitat."¹⁹² The proposal went into somewhat greater detail in describing what the Service considered the "baseline" condition resulting from existing plans¹⁹³ and the types of actions that would probably be allowed under the jeopardy standard.¹⁹⁴

Table 3. Approximate acreage of initial proposed critical habitat areas (CHAs).^a

Ownership	Oregon	California	Washington	Total	Percent
U.S. Forest Service	2,654,791	1,491,175	2,319,070	6,465,036	55.5%
U.S. Bureau of Land Management	1,099,685	286,275	320	1,386,280	11.9%
Tribal Lands	6,970	5,100	62,260	74,330	0.6%
State Lands	164,850	101,155	344,620	610,625	5.2%
U.S. Army Corps of Engineers	3,020	0	0	3,020	<0.1%
Military Reservations	0	240	78,135	78,375	0.7%
Private Lands	1,169,864	1,374,000	476,665	3,020,529	26.0%
Total	5,099,180	3,257,945	3,281,070	11,639,195	
No. of CHAs	66	78	46	190	

a. Modified from Table 1, 50 Fed. Reg. 20,820.

187. 50 Fed. Reg. 20,819.

188. *Id.*

189. *Id.* at 20,820-21.

190. *Id.* at 20,821.

191. *Id.* at 20,822.

192. *Id.* at 20,823.

193. Essentially the baseline condition is defined as the Forest Service adhering entirely to the ISC strategy and the BLM using the Jamison report which estimates that 80 percent of their timber sales would adhere to the ISC strategy. *Id.* at 20,822.

194. "Assumptions relating to probable allowable activities within the proposed critical habitat areas include the following: (1) That up to 50 percent of the timber could be removed from areas that are additions to HCAs for the purpose of simplifying the definition of legal boundaries (line additions), (2) that as little as no timber harvesting

Revised Critical Habitat Proposal

The initial May 6, 1991 Federal Register proposal stated that the boundaries of the critical habitat would be revised based on the results of the public hearings and comments on the original proposal.¹⁹⁵ The resulting August 13, 1991 revision¹⁹⁶ for the first time explicitly excluded critical habitat areas¹⁹⁷ due to economic costs.¹⁹⁸ The Service's critical habitat philosophy also changed in two aspects between the May 6th and August 13th proposals: first, connectivity between physiographic provinces was de-emphasized; and secondly, the overall orientation was altered from emphasizing future potential habitat to protecting present habitat.¹⁹⁹

The de-emphasis on connectivity was due to the large amount of non-federal lands affected. In revising its proposed critical habitat, "[t]he Service also considered the role of different land ownership [categories], the amount of habitat on those ownerships, and the relative role of those areas contributing to owl conservation."²⁰⁰ Private lands were categorically excluded from the revised proposal using the rationale that "[t]he available information suggests that the private lands in these areas [physiographic province linkages] generally lack large amounts of suitable nesting, roosting, and foraging habitat and that most remaining large tracts of suitable habitat are on Federal lands . . . [T]he Service believes it should concentrate on the near-term linkage problem in these areas."²⁰¹

For the first time, the Service distinguished between the economic effects from listing compared to those from critical habitat.²⁰² Seventy percent of the economic effects were assumed to result from a combination of listing under Section 7 consultations and incidental take under Section 9.²⁰³ Thirty percent of the economic costs were assumed

would be allowed on proposed critical habitat areas that are essential additions to the HCAs, and (3) that proposed critical habitat in areas of concern could be subject to timber harvesting and would conform only to the 50-11-40 rule." *Id.*

195. *Id.* at 20,816.

196. *Id.* at 40,002.

197. In the original proposal the critical habitat areas were called CHAs. These were changed to critical habitat units (CHUs) in the revised proposal, probably to avoid confusion with the ISC's Habitat Conservation Areas (HCAs).

198. *Id.* at 40,019. In addition, areas that were obviously outside of potential spotted owl habitat, such as cities and highways—but that had been included in the original proposal to square off legal descriptions—were also removed from the revised proposal. *Id.* at 40,010.

199. "The ISC Plan emphasizes the future potential of areas, whereas critical habitat primarily emphasizes current habitat conditions and provides near-term protection for these areas until long-term plans are implemented." *Id.* at 40,011.

200. Revised Proposed Determination of Critical Habitat for the Northern Spotted Owl, *Id.* at 40,009.

201. *Id.*

202. *Id.* at 40,017-18.

203. *Id.* at 40,018 (1991)

to result from designation of critical habitat.²⁰⁴ Specifically, "[t]he Service believes that jeopardy will be reached before adverse modification in the preponderance of consultations."²⁰⁵ Although it is not clear from the Federal Register notice, the Service, giving them the benefit of the doubt, may have been looking at the total potential Section 7 consultations, not just those involving proposed critical habitat, when it devised the 70 - 30 percent split.²⁰⁶

The Service also revised its assumptions about future conditions. Based on the Forest Service's and BLM's policies at the time of the revision, the Service estimated that the Forest Service would follow the ISC strategy, while BLM would follow the guidelines on 80 percent of their timber sales in HCAs. In addition, the Service assumed that 80 percent of 1991 planned harvests in areas adjacent to identified HCAs above the limits allowed by the 50-11-40 rule would be restricted, while 20 percent would proceed.²⁰⁷

The assumptions on future condition affected the assessment of impacts, but did not affect the balancing process. However, another Service decision, the choice of the unit of analysis for impacts and screening, affected both. The Act states that areas of critical habitat can be excluded if the costs outweigh the benefits.²⁰⁸ If the preponderance of costs of designating critical habitat occur at the local level, while the majority of benefits are of national concern—particularly if they are non-monetary—then the unit of analysis used to balance benefits and costs is critical to the outcome. The Service looked at both efficiency criteria on a national basis, and equity criteria based on regional impacts, with "region" defined as a county. It then proceeded to do all economic balancing based on the regional, i.e. county, effects.²⁰⁹ Table 4 shows the acreage by ownership category resulting from the initial balancing process.

204. *Id.*

205. *Id.* A jeopardy opinion could result if areas deleted from critical habitat designation for economic reasons are affected by an activity.

206. "The above assumptions resulted in part from an evaluation of section 7 consultations issued to the Forest Service and Bureau in 1990 and 1991. Each critical habitat unit was evaluated in relation to existing suitable habitat quantities, number of known owl pair sites, and distribution of suitable habitat within the unit. Actual expected impacts will vary by area and will be reviewed on a case-by-case basis. The above should be used for discussion purposes associated only with this analysis." *Id.* Cites omitted.

207. *Id.* at 40,017.

208. ESA, 16 U.S.C. § 1531 4((b)(2).

209. The balancing process ostensibly used to screen the economic effects was based on a two-tier approach to characterize the vulnerability of each county to the effects of proposed critical habitat. *Id.* at 40,019. The first tier involved determining county vulnerability using six variables:

- (1) The 1990 county unemployment rate;
- (2) County per capita income;
- (3) Percent dependency on federal timber;

Table 4. Approximate acreage of revised proposed critical habitat units (CHU).^a

Ownership	Oregon	California	Washington	Total	Percent
U.S. Forest Service	2,510,000	1,570,000	2,370,000	6,450,000	78.3%
U.S. Bureau of Land Management	1,130,000	160,000	160	1,290,160	15.7%
Tribal Lands	0	0	0	0	0%
State Lands	130,000	60,000	250,000	440,000	5.3%
U.S. Army Corps of Engineers	0	0	0	0	0%
Military Reservations	0	0	60,000	60,000	0.7%
Private Lands	0	0	0	0	0%
Total	3,770,000	1,790,000	2,680,160	8,240,160	
No. of CHUs	77	61	43	181	

a. Modified from Table 1, 56 Fed. Reg. 40,011. Acreages rounded to the nearest thousand acres. Note that the Proposed Rule warns against directly comparing acreages in the initial and the revised proposals due to differences in how they were calculated and other errors. *Id.* For our purposes, the key comparison is between the two proposals' acreage of private and state lands.

Even though the Service allegedly used an economic balancing criteria, the vast majority of the areas removed from the original May 6 proposal—all of the private lands—were excluded, not based on a detailed analysis of the benefits and costs in each area, but rather that “[a]lthough the Service did not apply the formal economic analysis/balancing process to the approximately 3 million acres of private lands included in the May 6 proposal, the decision not to include private lands in the revised proposal is partially attributable to a judgment that the costs of including these areas as critical habitat outweigh the few benefits.”²¹⁰

Final Critical Habitat Designation

Three types of economic impacts are used to characterize economic efficiency and distributional effects in the designation of critical habitat. These are only descriptions of economic impacts—similar to what would be used in a NEPA analysis—and are not the criteria used to exclude potential critical habitat areas. The economic impacts are characterized as (1) national economic costs, termed “efficiency”;

- (4) Population per square mile;
- (5) Percent of timber processed that is over 100 years old; and
- (6) The relative size of the timber industry in the county.

For counties that met the above criteria for vulnerability (the threshold was not specified in the federal register notice), a second level of analysis was done using the following indices:

- (1) Industry trends in the county from 1980-1990, including whether or not the county is becoming more or less dependent on the timber industry for employment;
- (2) Human migration into or out of the county;
- (3) Log flows into and out of the county; and
- (4) Total log supply as compared to dependency on Federal timber supplies. *Id.* at 40,020.

210. *Id.*

(2) regional, or distributive, economic impacts; and (3) other costs that are not national or regional.²¹¹ Efficiency effects are measured as the change in economic rents and consumer surpluses attributable to the designated areas,²¹² with and without critical habitat; and the change in capital asset values²¹³ and wages lost by displaced workers who remain unemployed or who are re-employed at lower wages.²¹⁴ Regional, or distributional, impacts are reductions in county revenue sharing from federal timber sales,²¹⁵ the social costs to individuals and communities caused by a slowdown in timber dependent economies,²¹⁶ and changes in state and county property and severance tax revenue.²¹⁷ Two other effects that the Service identified but chose not to include in its analysis are the increases in profits that producers (including the federal government) would receive from higher prices for timber, and the effects of a decrease in real estate values that would be expected as a result of high unemployment.

The scaling process that FWS used to exclude additional critical habitat areas between the August 13 revised proposal and the January 15th final rule consisted of a two-pronged approach. First the Service used information at the county level to develop an index representing the vulnerability of an individual county to changes in timber harvests.²¹⁸ From the 57 counties with critical habitat in the three-state region, an average vulnerability was calculated, along with the standard deviation from this average. Counties with index ranks higher

211. Determination of Critical Habitat for the Northern Spotted Owl, Final rule. 57 Fed. Reg. 1796, 1812 (1992) (to be codified at 50 C.F.R. § 17).

212. "The reduction in Federal revenues from foregone timber sales is the primary component. In addition, there is a loss of consumer surplus caused by the rise in stumpage price." *Id.*

213. "Decreases in the value of formerly productive but now idle sawmills and processing plants represent a loss of national economic income. The change in asset value is measured as the asset's value before critical habitat designation less its scrap value when it is no longer in use." *Id.*

214. "The loss is measured as the difference between earnings in the timber industry and labor's opportunity cost." *Id.*

215. These are "partially offset by increased revenue sharing from those Federal sales that remain." *Id.*

216. Social costs are identified as "higher welfare, counseling, and other additional costs that counties will be faced with as unemployment increases." *Id.*

217. Tax revenue changes result from "lower property values for houses and mills, and higher values for private timber holdings." *Id.*

218. The nine variables used to describe a county's economy are those originally developed for the August 13th proposal: 1990 unemployment rate; 1989 per capita income; 1990 population per square mile; percent federally-owned land in the county; percent of 100 year or older timber processed; percent dependency on federal timber; and three measures of industry trends in the county from 1980 to 1989, i.e. the change in lumber as a percent of county manufacturing, the percent change in SIC 24 jobs [Lumber and Wood Products], and the percent change in manufacturing jobs. Table 2, The Economic Characteristics of Counties Affected by Critical Habitat Designation. U.S. Fish & Wildlife Serv., Exclusion Process: Critical Habitat and the Northern Spotted Owl 14-15 (1992) [hereinafter *Exclusion Report*].

than two standard deviations from the average (the top 15 percent) were characterized as "seriously" vulnerable.²¹⁹ For those counties, individual critical habitat area boundaries were adjusted based on balancing their biological value with the economic effects.²²⁰

Not entirely satisfied with this first approach, the Service used another method to identify counties with potentially severe economic effects. These counties, their economic balancing criteria, and the balancing process are shown in Table 5. This method set threshold limits in the county's potential unemployment *and* county revenue losses from timber harvest reductions that would result from critical habitat designation.²²¹ The threshold for revenue losses was set at five percent.²²² The threshold for county unemployment levels was 2 or 3 percent reduction in direct timber-based employment.²²³ In the end, it appeared

In developing the final vulnerability index, FWS used a statistical technique called principal component, or factor, analysis to adjust the "double counting"—or feedback—effects that one variable has on others. However, FWS calls it "[t]he characteristic vectors of the standardized matrix of the county's geographic and economic data were used as weights to construct an index." *Id.* at 13. This process transforms the original values to remove the multi-collinearity from the explanatory variables. The transformation is done using the characteristic vector, also called the "eigenvector", to multiply—or weight—the original values. G. Judge et al., *Introduction to the Theory and Practice of Econometrics* 614-15 (1982). See also S. Chatterjee and B. Price, *Regression Analysis by Example* 167-72 (1977). However in this case, the Service was not attempting to "explain" anything other than what are called "factor loadings" representing the relative importance of any one variable within the set of variables used to describe a county's vulnerability to changes in timber supply. J. Kim and C. Mueller, *Introduction to Factor Analysis* 17-23 (1978).

The statistical analysis results provided weights for the different variables that were used to calculate a specific county's vulnerability index. The weights and index calculation are: INDEX = (-0.485 * Unemployment Rate) + (0.408 * Per Capita Income) + (0.324 * Population/sq. mi.) + (0.183 * Change in Lumber as % of Manufacturing) + (0.255 * % Change in SIC24 Jobs) + (0.434 * % Change in Manufacturing Jobs) + (-0.195 * % Federally-owned Land) + (-0.381 * % >100 yr. old Timber Processed) + (-0.152 * % Dependence on Fed. Timber). *Exclusion Report*, at 23, Table 5, n. 1. However the Service cast this Index of Vulnerability aside and focused only on two criteria: jobs lost in the timber industry and changes in the level of revenues sharing payments to the county. *Exclusion Report*, at 21, 23.

219. *Exclusion Report*, *supra* note 219, at 16.

220. See generally *id.*, Appendix: Summary-Biological and Economic Information Considered in the Exclusion Process.

221. *Id.* at 20-23, discussion; *id.* at 21, policy criteria.

222. *Id.* at 20. No justification or citation was provided for use of 5 percent:

The Service modified some of the criteria to better reflect its concerns about which areas had a high level of impact. The Service accepted the percent of budget loss to county governments, set at 5 percent, as a threshold to determine severity of impact. The Service believes that, when losses in revenues reach as high as 5 percent or more of previous budget levels, significant reductions in county services may occur. The direct link between the loss of revenue to local governments and subsequent effects on school budgets, public health services, law enforcement, and social services provided to local residents, was the primary reason that the Service used the loss in county government revenue as an indicator of the severity of economic impact of critical habitat designation." *Id.*

223. *Id.* at 20-21. The Service justified their employment threshold by adjusting the criteria used in Water Resources Council, *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies* (Mar. 10, 1983) [hereinafter *Principles and Guidelines*] at 93. *Principles and Guidelines* allows National

that the employment and revenue loss criteria was the one that was used to determine which counties would have their critical habitat boundaries adjusted.²²⁴ Based on the application of these threshold criteria, 13 counties²²⁵ out of the 57-county total in spotted owl critical habitat areas were classified as areas sufficiently impacted by critical habitat to trigger the balancing process.

Economic Development (NED) benefits to be ascribed to projects that result in jobs in areas of chronic under-or unemployment. Substantial and persistent unemployment criteria are:

(1) the current rate of unemployment, as determined by appropriate annual statistics for the most recent 12 consecutive months, is 6 percent or more and has averaged at least 6 percent for the qualifying time periods specified in paragraph (2) and

(2) the annual average rate of unemployment has been at least: (i) 50 percent above the national average for three of the preceding four calendar years, or (ii) 75 percent above the national average for two of the preceding three calendar years, or (iii) 100 percent above the national average for one of the preceding two calendar years.

(3) Only the portion of project construction activity located in such an area is eligible for employment benefits as calculated in accord with the procedures specified below. Any benefit claimed should be clearly justifiable both in terms of availability of amounts of unemployed and/or under employed labor and their skills and occupations. *Id.*

The Service redefined this criteria to:

The county level unemployment rate was used in place of the national level rate, and the "50 percent above" criterion was defined as the future unemployment effects that would be created by critical habitat designation. This process resulted in a 3 percent unemployment threshold for timber related employment. In order to account for uncertainty and to develop a more conservative estimate, the Service reduced the unemployment threshold to 2 percent. *Exclusion Report, supra* note 219, at 21.

However, the Service did not average over the last four years, and did not take into account that the industry was in the midst of high unemployment as a result of court injunctions on timber sales. *See supra* text accompanying note 156. The Service does not provide information sufficient to calculate what unemployment rate would have been required to meet the criteria in paragraph (2) above. Requiring that employment fluctuate less than 2 percent in areas where demands for their products fluctuates rapidly on an annual basis does not provide a sound benchmark for determination of regional impacts.

224. "The index of county vulnerability to economic impacts showed that counties selected by either of the two threshold variables (a) 2 percent loss in timber industry jobs and a 5 percent loss in county government revenue were the same as the ones with the least cooperative ability to absorb economic effects. Therefore, this threshold criteria did not add significantly to the process and was not considered further." *Exclusion Report, supra* note 219, at 21.

225. These are: in California, Trinity county; in Oregon, Curry, Josephine, Jackson, Douglas, Lane, Hood River, Wasco, and Tillamook counties; and in Washington, Chelan, Clallam, Lewis, and Skamania counties. *Id.*

Table 5. County economic effect information used to trigger balancing.^a

State & County	Lost Timber Employment	Unemployment		Revenue Share Loss	Balancing Process (acres)	
		Current	Average		No Square	Adjust CHU
<i>California</i>						
Trinity	3.9%	9.3%	8.4%	1.7%	72,000	-0-
<i>Oregon</i>						
Curry	5.0%	8.3%	6.0%	6.5%	14,000	15,000
Douglas	5.3%	14.0%	13.3%	9.4%	25,000	101,000
Hood River	2.3%	2.8%	0.2%	2.8%	14,000	-0-
Jackson	1.9%	2.7%	1.8%	7.2%	11,000	24,000
Josephine	0.7%	0.9%	0.2%	6.1%	13,000	23,000
Lane	2.9%	3.2%	2.1%	2.7%	31,000	42,000
Tillamook	3.0%	3.2%	0.7%	2.2%	300	-0-
Wasco	2.8%	2.1%	-1.1%	1.2%	3,000	13,000
<i>Washington</i>						
Chelan	6.1%	1.5%	-1.7%	0.8%	23,000	-0-
Clallam	2.9%	3.8%	1.2%	0.5%	3,000	-0-
Lewis	2.7%	6.4%	5.3%	2.2%	10,000	8,000
Skamania	1.7%	9.3%	6.3%	13.9%	15,000	57,000

a. Table 5. *Exclusion Report*, *supra* note 219, at 22-23.

The process used in the final balancing of the economic impacts of designating critical habitat is contained in appendices to the FWS Economic Analysis.²²⁶ Note that they are not discussed at all in the Federal Register Final Rule notice even though another approximately two million acres were removed from critical habitat at this stage.²²⁷ The amounts and ownership of the designated critical habitat areas are shown in Table 6. The overwhelming majority of the lands remaining in critical habitat are federally-owned and managed by the Forest Service or BLM.²²⁸

Table 6. Approximate acreage of final critical habitat units (CHUs).^a

Ownership	Oregon	California	Washington	Total	Percent
U.S. Forest Service	2,211,000	1,301,000	2,163,000	5,675,000	82.4%
U.S. Bureau of Land Management	1,046,000	108,000	0	1,154,000	16.8%
Tribal Lands	0	0	0	0	0%
State Lands	0	0	0	0	0%
U.S. Army Corps of Engineers	0	0	0	0	0%
Military Reservations	0	0	58,000	58,000	0.8%
Private Lands	0	0	0	0	0%
Total	3,257,000	1,409,000	2,221,000	6,887,000	
No. of CHUs	76	61	53	190	

a. Modified from Table 2, 57 Fed. Reg. 1809 (1992). Areas rounded to nearest thousand acres.

226. Fish & Wildlife Serv., Dep't of the Interior, Economic Analysis of Critical Habitat Designation Effects for the Northern Spotted Owl (1992).

227. 57 Fed. Reg. 1796, 1809 (1992) (to be codified at 50 C.F.R. § 17).

228. Recall that National Park Service lands are considered adequately protected, see *supra* note 188 and accompanying text.

Draft Recovery Plan

The FWS—after listing and designation of critical habitat—focused on preparing the recovery plan for the northern spotted owl because it would provide guidance to the Forest Service and BLM on how to meet the conditions Judge Dwyer imposed so that his injunctions on their timber sales programs would be lifted.²²⁹ The draft recovery plan for the northern spotted owl was released in April, 1992.²³⁰ It departs from previous plans in two ways, first by considering economic effects in its formulation, and second, by the makeup of the recovery team that prepared the plan. Typically, recovery teams are composed of academics, the FWS and State Game and Fish biologists.²³¹ In this case, the recovery team included representatives from the Forest Service, BLM, and the Office of Management and Budget, and was directed out of the Secretary of Interior's office.²³² While biologists predominated on the Team, the presence of economists, silviculturalists, and policy analysts and representatives of affected agencies and state and local interests was a first, mirroring proposed legislative amendments to the Act in 1992.²³³

By incorporating economics into the formulation of the recovery plan, the Service attempted to "focus thinking on ways to achieve recovery at lower costs."²³⁴ In the recovery plan, designated conservation areas ("DCAs") are identified where management actions will focus on ensuring that the species recovers, in contrast to the critical habitat areas that were established to protect the species from extinction. This distinction allows the Service to propose management actions within the DCAs, such as silvicultural treatments—including timber harvests—beyond those that would otherwise be permitted in the CHUs, or by the 50-11-40 Rule.²³⁵ Finalization of the recovery plan was delayed until after President Clinton's forest summit.²³⁶

229. Lyon testimony, *see supra* note 174.

230. *See supra* note 70 and accompanying text. The final recovery plan was prepared prior to the President's Forest Summit in Portland, OR, on April 2, 1993 and is awaiting release until approved by the President. Telephone interview with Kay Ogden, Northern Spotted Owl Recovery Team Leader, USFWS (Apr. 9, 1993). Recovery Plans are required under § 4(f) of the ESA.

231. The Service is usually given wide discretion in the appointment of recovery teams. "The Secretary, in developing and implementing recovery plans, may procure the services of appropriate public and private agencies and institutions, and other qualified persons." 16 U.S.C. § 1533(f)(4).

232. *Draft Recovery Plan*, *supra* note 70, at 627-630.

233. *Id.* *See* H.R. 6134, 102d Cong., 2d Sess. § 201(4) (1992).

234. *Draft Recovery Plan*, *supra* note 70, at 532.

235. *See supra* note 164 and accompanying text for discussion of management criteria in HCAs and the 50-11-40 Rule.

236. *Supra* note 234.

The BLM 1991 Timber Sales Section 7 Exemption Process

While the Forest Service had largely shut down its timber sales program in spotted owl areas as a result of court suits, the BLM continued to go forward with its program based on the "Jamison Strategy"²³⁷ which implemented those facets of the ISC Report Standards and Guidelines that the BLM felt were consistent with its other mandates.²³⁸ When the BLM submitted its FY 1991 timber sale program to the FWS for Section 7 consultation, the FWS responded with a biological opinion that 55 of BLM's timber sales were likely to jeopardize the continued existence of the northern spotted owl.²³⁹ The BLM modified eight sales to remove the jeopardy opinion but requested an exemption from Section 7 for 44 of the sales.²⁴⁰ After following the process described *supra*,²⁴¹ the Endangered Species Committee exempted 13 of the 44 sales from compliance with Section 7 (and Section 9 incidental take).²⁴² Even though the exemption was stayed by court suit,²⁴³ and subsequently withdrawn by the Department of Interior, the process used by the Department and the Endangered Species Committee to analyze the effects of the sales highlights the critical role that economics plays in the exemption process.

Two of the four criteria the ESC used in their deliberations directly require economic analyses: (1) that the benefits of some or all of the timber sales outweigh the costs of alternative actions and are consistent with the public interest, and (2) that holding some or all of the sales is of regional or national significance.²⁴⁴ In estimating benefits and costs, the Secretary's Report to the Endangered Species Committee used benefit: cost methods.²⁴⁵ Other benefits²⁴⁶ and costs²⁴⁷ were

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

238. *Id.*

239. *Report of the Secretary, supra* note 166, at Intro-1.

240. *Id.* These 44 sales covered 4,418 acres. *Id.* at 4-2. The proposed harvest volume was 219 million board feet, short-log scale. *Id.* at 2-23. The sales were appraised at \$58 - 64 million. *Id.* at 2-12.

241. See *supra* text accompanying notes 203-05; Table 1.

242. 57 Fed. Reg. 23,405 (1992).

243. *Portland Audubon Soc'y v. Endangered Species*, 984 F.2d at 1550.

244. *Report of the Secretary, supra* note 166, at Intro-7.

245. Future values discounted to the present, where these values were able to be priced. However, the Report used varying interest rates to discount future benefits and costs to the present. Four percent and 8.5 percent were used to set a range of silvicultural benefits, *id.* at 2-18; and 3 percent for future recreational benefits foregone, *id.* at 2-29.

246. Benefits considered were (1) stumpage value, (2) silvicultural value, (3) employment benefits and asset values, and (4) sociological benefits. Stumpage value was defined as the net Federal returns from selling the timber. *Id.* at 2-14 to 2-18. Silvicultural benefits are the present value of the future returns from the accelerated growth of young tress compared less growth in the older trees. *Id.* at 2-18 to 2-19. Stumpage value refers to the price paid for the trees in the woods. Silviculture refers to growing young trees. *Id.* at 2-12. Employment benefits are calculated based on jobs per million board feet of harvested timber. *Id.* at 2-19 to 2-27. Asset value is the scrap price for the lumber mills shut down from lack of timber. *Id.* at 2-27 to 2-28. Sociological benefits, which are unpriced, are the desirable effects of maintaining timber harvests on individuals, families, and communities. *Id.* at 2-34 to 2-36.

247. Costs of allowing the timber sales to proceed were estimated in three categories:

identified from testimony at the hearings, but were not given monetary values. There was very little agreement during the evidentiary hearings on either the benefits or the costs—even those priced—so the Secretary's Report provides the Endangered Species Committee with ranges and countervailing arguments.

There was a similar difference of opinion over what constitutes a region for purposes of determining significant effects. The report of the Secretary is itself inconsistent. In various places region is defined as Oregon west of the Cascade Mountains,²⁴⁸ the 18 counties that receive revenues from timber sales on the BLM's Oregon and California lands,²⁴⁹ the six counties where the 44 timber sales were located, or the county where individual sale(s) would occur.²⁵⁰ Timber supply expert witnesses testified that the "Doug Fir Region" west of the Cascades in Oregon and Washington, and northern California should be defined as the area because timber is freely interchanged.²⁵¹ In contrast, another expert witness defined region as individual communities.²⁵²

IV. Is Economics Appropriate in Endangered Species Protection?

Envision the economist as standing in the middle of a crowded freeway, with 18-wheel trucks going at high speed in opposite directions a few feet away. One step in either direction and one is flattened, squished like an armadillo on a hot steamy southern rural highway. Imagine now that there are not even lines dividing the two directions of traffic, but that instead, the two lanes of traffic shifted back and forth. That is the present—shall we say "baseline"—use of economics in the ESA. The reason that the lines shift back and forth in endangered species protection is that there is no societal consensus on the fundamental question of the value of protecting endangered species.

Congress legislated that species should be protected irrespective of the associated costs. Economic balancing mechanisms come into play only with the additional protection offered by critical habitat—and this is loosely differentiated—and in extreme cases where there are not reasonable and prudent alternatives to an action jeopardizing the species or adversely modifying its critical habitat. The courts have

(1) recreation, (2) decreased existence values, and (3) other environmental costs. Recreation costs were projected based on the lost number of visitor days (10) per acre of forest lands harvested. *Id.* at 2-5, 2-28 to 2-29. The public's value for the existence of the northern spotted owl was estimated using a contingent valuation survey. Contingent valuation surveys describe the willingness-to-pay for non-market values. *Id.* at 2-5, 2-29 to 2-32. Other environmental costs, such as effects on air and water quality, were identified but not priced. *Id.* at 2-5, 2-32 to 2-34.

248. *Id.* at 2-11, 4-1.

249. *Id.* at 4-6 to 4-16.

250. *Id.* at 4-1.

251. Testimony of Richard Haynes and Ed Whitelaw, *id.* at 4-1.

252. Testimony of Robert Lee, *id.* at 2-11.

consistently upheld the protection standards of the ESA. But this clearness in legislative mandate and judicial construction has not been accompanied by broad public acceptance when the costs of protecting species affect either individuals or communities. Until values-related consensus is achieved, the efforts of economists to display the benefits and costs of endangered species protection will be one of standing in the middle of the road, with the lines constantly shifting according to political winds.

The problem is not whether economics should be used, but that when used, how and at what stage in the process should it be applied. At present, most of the costs of endangered species protection result from the initial listing of the species, where no economic balancing is applied, instead of at the critical habitat designation stage. Is this appropriate? It is if as a society we decide that each species is priceless, which is the current legislative mandate. A small escape exists with the Endangered Species Committee exemption process, but as in the case of the northern spotted owl, the process is unwieldy (by design) and responsive to political machinations.

There are two paths that would combine consensus within the goals of endangered species protection to accomplish balancing between protection and economic effects. The first path leads toward broadening the recovery process beyond the traditional constituency groups led by biologists. One idea from proposed legislation is to expand the recovery teams to include representatives from the affected states and localities, as well as planners and economists and sociologists. Endangered species would be adequately protected in this broadening as long as the current laws and their court interpretations are in effect. While expanding the teams would necessarily add complexity, it would at the same time enable the results to be better sold in the affected areas. The recovery process needs to have an extension component to sell its results to the affected publics.

Broadening the recovery team process could also effectively be used to plan at the multi-species, ecosystem level rather than on an individual species basis. One way to do this is to expand the use of Habitat Conservation Plans to include plants and Section 7 consultations, not just Section 9 takings.²⁵³ With HCPs there is a cooperative planning process, so that the Service is involved with potential applicants in trying to work out what is best for the species while the project proponents have constant feedback on what is acceptable. HCPs which include the entire spectrum of listed and proposed species, could segue nicely into ecosystem planning. Cooperative planning within the HCPs could also assist in overcoming the current Section 7 problem where

253. Bean, *supra* note 67.

the FWS is responsible for providing "reasonable and prudent alternatives," but since they are not planners or engineers, they neither have sufficient expertise nor resources to design creative solutions.

The other path to strengthening the endangered species process is to design a framework for analyzing the tradeoffs between protection benefits and costs. Having a better analytical process might reduce the level of rhetoric. A clearer set of regulations and procedures must be established for the balancing process. The present muddled set of rules and guidance leads to muddled analyses. Unfortunately, the wisdom and experience gained with the evaluation of other federal programs has not been used in designing evaluations for the endangered species program. Sixty years ago much of the same criticism heard today about the ESA was levied against federal water development projects: that they were too expensive, that they had the propensity to destroy the local communities, and that they were out of control.²⁵⁴ From these arguments grew the original use of benefit: cost methods,²⁵⁵ culminating in a set of standards that federal agencies are required to use when they design water projects.²⁵⁶ While these standards are not perfect, they at least form a consistent starting point from which to make arguments advocating or objecting to government actions. This consistency and precision is absolutely lacking in the economics as used in the ESA, as demonstrated in the case study of the northern spotted owl.

The FWS needs to promulgate rules on Section 4 critical habitat designation procedures so that methods for incorporating economic and social information and balancing mechanisms can be clearly set out. One way to accomplish this is to follow the procedures specified in the National Environmental Policy Act. The Service has been very disingenuous in stating that listing, designation of critical habitat, and the preparation of recovery plans in the endangered species program do not have major effects on the natural and human environment. While they may not in every—or even most—cases, the mechanisms under the NEPA process are set up to deal with this issue. Documents coming out of the northern spotted owl process show that it is possible, and useful, in decision-making to conduct these broad, interdisciplinary analyses. A commitment to the spirit of NEPA would assist in integrating critical habitat designations and recovery plan recommendations.

254. A. Morgan, *Dams and Other Disasters: A Century of the Army Corps of Engineers in Civil Works* (1971).

255. J. Krutilla & O. Eckstein, *Multiple Purpose River Development: Studies in Applied Economic Analysis* (1958).

256. Originally called *Principals and Standards*, now called *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*, see *supra* note 224.

There is a real opportunity coming out of the past ten years of conflict over endangered species protection to move to broad-based, creative solutions. What is needed is to go beyond the polarized positions that have satisfied both ends of the spectrum, toward cooperative, consensus-based landscape and ecosystem-level decisions. This will not necessarily be easy: it requires taking risks and accepting compromise. But it is more likely to occur today than it was in earlier years. Those on both sides of the issue should take advantage of this window of opportunity.