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Threatened Owls and Endangered Salmon: Implementing the Consultation Requirements of the Endangered Species Act

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COMMENTS

THREATENED OWLS AND ENDANGERED SALMON: IMPLEMENTING THE CONSULTATION REQUIREMENTS OF THE ENDANGERED SPECIES ACT

Steven A. Daugherty*

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I. INTRODUCTION

Section 7 of the Endangered Species Act (ESA)¹ requires federal agencies to undergo consultation with either the Fish & Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS) to insure that agency actions are not likely to jeopardize the continued existence of any endangered or threatened species or to result in adverse modification of designated critical habitat.² This seemingly simple statutory instruction has raised a storm of political controversy in the Pacific Northwest and has resulted in attempts by both federal action agencies and the consulting Services to avoid or circumvent the ESA's mandate.³

1. 16 U.S.C. § 1536 (1988).

2. *Id.* § 1536(a)(2). Consultation is required with the "Secretary" referring to the Secretary of the Interior or the Secretary of Commerce; however, the Secretaries have delegated their responsibilities to the FWS and NMFS and this paper will refer to "the Services" where the statute refers to the Secretaries. *See also id.* § 1532(15) (definition of Secretary); 50 C.F.R. § 402.01(b) (1991) (Joint Regulations on Endangered Species).

3. *See, e.g.,* Seattle Audubon Soc'y v. Evans, 952 F.2d 297, 301 (9th Cir. 1992) (U.S. Forest Service (FS) attempted to argue that ESA listing relieved it of the duty to manage for spotted owl viability under the National Forest Management Act (NFMA)). *See also infra* notes 184, 219 and accompanying text (BLM attempts to reduce scope of consultation). The FWS was reluctant to list the

In *Tennessee Valley Authority v. Hill*, the Supreme Court stated that the intent of Congress in enacting the ESA "was to halt and reverse the trend toward species extinction, whatever the cost,"⁴ and concluded that the legislative history of section 7 revealed "a conscious decision by Congress to give endangered species priority over the 'primary missions' of federal agencies."⁵ Justice Powell criticized the Court's interpretation:

Under the Court's reasoning, the Act covers every existing federal installation, including great hydroelectric projects and reservoirs, every river and harbor project, and every national defense installation—however essential to the Nation's economic health and safety. The "actions" that an agency would be prohibited from "carrying out" would include the continued operation of such projects or any change necessary to preserve their continued usefulness.⁶

Fifteen years later, the protection of the Snake River salmon looms over "great hydroelectric projects," while the protection of the spotted owl threatens to disrupt a large portion of the nation's timber supply, and the mandate of the ESA remains essentially unchanged.⁷

spotted owl, despite expert opinion that listing was warranted. It did so only after a court held that the FWS decision not to list was "arbitrary and capricious and contrary to law" and ordered reconsideration of the decision. *Northern Spotted Owl v. Hodel*, 716 F. Supp. 479, 483 (W.D. Wash. 1988). See also U.S. GENERAL ACCOUNTING OFFICE, *ENDANGERED SPECIES: SPOTTED OWL PETITION EVALUATION BESET BY PROBLEMS* (Feb. 21, 1989). When the FWS listed the owl, it did not designate critical habitat and did not explain the basis for its decision not to do so, resulting in another finding of arbitrary and capricious behavior. *Northern Spotted Owl v. Lujan*, 758 F. Supp. 621, 629 (W.D. Wash. 1991).

4. 437 U.S. 153, 184 (1978) (preventing the impoundment of water behind the Tellico Dam in order to protect the snail darter). Over \$ 100 million had been invested in Tellico and the project was virtually completed. See H.R. REP. NO. 1625, 95th Cong., 2d Sess. 10 (1978), reprinted in 1978 U.S.C.C.A.N. 9460. The Tellico Dam was eventually filled because of an appropriations bill rider which overrode the ESA's protection and ordered the reservoir's completion. See Zygmunt J.B. Plater, *In the Wake of the Snail Darter: An Environmental Law Paradigm and Its Consequences*, 19 U. MICH. J.L. REF. 805, 813 (1986).

5. *TVA v. Hill*, 437 U.S. at 185.

6. *Id.* at 203 (Powell, J., dissenting).

7. Section 7 was significantly amended after the Tellico controversy. Congress laid out explicit procedures for consultation in attempt to avoid conflicts and require exploration of reasonable and prudent alternatives, and in an attempt to introduce flexibility into the act, made provisions for exemption from section 7's requirements under limited circumstances where the balance of benefits favored an agency action over species protection. See *Endangered Species Act Amendments of 1978*, Pub. L. No. 95-632, 92 Stat. 3751, 3752-60 (1978). See also H.R. REP. NO. 1625, *infra* note 8. However, the basic mandate of Section 7 remained unchanged, even after a 1979 amendment reduced the burden on federal agencies from a requirement that they "insure" that their actions not jeopardize a listed species or its habitat to a requirement that they "insure" that the action "is not likely" to have such effect. See, e.g., H.R. CONF. REP. NO. 697, 96th Cong., 1st Sess. 12 (1979), reprinted in 1979 U.S.C.C.A.N. 2572, 2576; *Roosevelt Campobello Int'l Park Comm'n v. United States EPA*, 684 F.2d 1041, 1048 (1982) (interpreting amended statute to still require agencies to prevent species loss by any method, regardless of cost).

Despite its clear mandate, the ESA does not present an automatic bar to federal actions harmful to listed species. A widespread misconception exists that in the absence of an exemption from the ESA's requirements,⁸ section 7 of the ESA prevents all federal actions which are harmful to a listed species. However, section 7 blocks only actions likely to "jeopardize" a listed species or its designated critical habitat.⁹ The Services have primary responsibility for determining whether an action will create jeopardy,¹⁰ so the effect of the "jeopardy" standard is to transfer a considerable amount of decision-making authority from federal action agencies to the consulting Services.

The limits of Service discretion, and the nature of the requirements that are imposed through consultation, are subjects in which the public often lacks knowledge and information. Consultation is not a public process, and the Services normally do not have clearly defined or publicly available standards for ESA compliance.¹¹ As a result, examination of the contents of biological opinions, which are themselves not widely available,¹² is essential to an understanding of the extent of Service discretion and

8. As a result of the 1978 amendments, the Endangered Species Committee (popularly known as the "God Squad") may grant an exemption under Section 7(h) of the ESA, but the exemption process is considered cumbersome because it is a public process requiring a good faith attempt to comply with section 7, as well as findings of: necessity, a clear balance of benefits, and national or regional significance. See 16 U.S.C. § 1536(e)-1 (1988). See also H.R. REP. NO. 1625, 95th Cong., 2d Sess. 14 (1978), reprinted in 1978 U.S.C.C.A.N. 9453, 9464.

9. Section 7 requires that agencies "insure" that agency action "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 U.S.C. § 1536(a)(2) (1988). The implementing regulations, in contrast to the statutory language and legislative history, appear to place the burden on the Services. See H.R. CONF. REP. NO. 697, *supra* note 7, at 12 (indicating that endangered species are to be given the benefit of the doubt and that the burden is on the action agency to demonstrate compliance). The regulations define "jeopardize the continued existence" of a listed species, to mean that the action must reasonably be expected "directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02 (1992).

10. See *supra* note 2. The Service determination is only advisory, see *infra* note 166, but it is usually given great weight, see *infra* note 255.

11. Even when standards exist, as in the case of the owl, see *infra* section III.A., the closed door nature of consultation lends itself to inconsistency. See *infra* note 213 and accompanying text (BLM allowed to violate FWS guidelines).

12. Biological Opinions are not published documents and are not easily obtained. Some sources require formal Freedom of Information Act (FOIA) requests; others do not require a FOIA request but still charge thirteen cents per page; and yet some do provide free copies without hassles. However, the major obstacle to obtaining opinions is that it is difficult to discover what opinions have been issued because consultations are spread out through a number of offices in both the action agency and the consulting Service. Even within individual offices, current lists of consultations which have been conducted are often unavailable. In 1986, when amending the section 7 regulations, the Services rejected a request to require publication of availability notices for biological opinions. See Interagency Cooperation-Endangered Species Act of 1973, 51 Fed. Reg. 19,926, 19,952 (1986) (as amended Final

the nature of the requirements that are imposed through consultation. This paper explores ways in which Service discretion is being exercised, as reflected in biological opinions resulting from formal consultations concerning the spotted owl and Snake River salmon.

Considering the economic stakes and high-level political opposition to the ESA,¹³ it would not be surprising if the Services were reluctant to find that a federal action would "jeopardize" the owl or the salmon. Such reluctance would represent an effort to avoid political backlash against both the ESA and the individuals who carried out its mandate. An initial appraisal of some of the biological opinions which have been issued on the owl and the salmon indicates that the consultation requirement has indeed been ineffective. In the case of the owl, despite annual consultations on hundreds of timber sales, and despite the fact that formal biological opinions have been issued for over 1,650 sales,¹⁴ FWS has issued jeopardy opinions for only 52 individual timber sales, and has given numerous "no jeopardy" opinions to sales which are in direct violation of accepted conservation principles.¹⁵ In the case of the salmon, NMFS ignored the biological needs of the salmon by setting up an artificial "baseline" of mortality that would occur if past operations were continued without change, and accepting any decrease from that baseline as satisfying a 1992 "interim goal."¹⁶ Thus, without any assurances of increased numerical survival, NMFS issued "no jeopardy" opinions on the salmon, despite anticipating juvenile salmon mortality rates of as high as 82 percent,¹⁷ and flows on the Snake river at only 24 to 46 percent of the levels recommended by fishery agencies and tribes.¹⁸ In fact, in the case of the owl, the courts

Rule) [hereinafter Interagency Cooperation Final Rule].

13. Before the owl was listed, Northwest politicians attempted to use appropriations riders to relieve the FS and the BLM from responsibilities under other statutes to protect the owl. *See, e.g.*, Department of the Interior and Related Agencies Appropriations Act, 1990 § 318, Pub. L. No. 101-121, 103 Stat. 710 (1989) [hereinafter Section 318] (stating that management according to terms of rider was sufficient to meet statutory requirements). Former Secretary of the Interior, Manuel Lujan, has been a consistent advocate of weakening the ESA. *See* Ted Gup, *The Stealth Secretary*, TIME, May 25, 1992, at 57. *See also* Art Pine, *Logging Curbs to Protect Owl Ordered*, L.A. TIMES, May 15, 1992, at A16 (Administration proposal for alternative to owl recovery plan leading to extinction after 100 years). President Bush expressed opposition to reauthorization of the ESA stating that "[i]t is time to make people more important than owls." Bill Dietrich, *Political War of Words on the Woods: Bush Calls for Jobs over Owls*, SEATTLE TIMES, Sept. 15, 1992, at D1.

14. Biological Opinions only result from formal consultations, and formal consultations are often not conducted either because the action agency determines that an action is not discretionary, *see infra* note 162 and accompanying text, or because after informal correspondence and communication, the Service gives a written concurrence to an action agency determination that an action is not likely to adversely affect a listed species or critical habitat. *See* 50 C.F.R. § 402.14(b)(1) (1992).

15. *See, e.g., infra* notes 221, 251 and accompanying text.

16. *See infra* section IV.A.

17. *See infra* note 314 and accompanying text.

18. *See infra* note 303 and accompanying text.

have played a larger role in enforcing the ESA than have the Services; courts have enjoined all timber sales of spotted owl habitat on Forest Service (FS) and Bureau of Land Management (BLM) lands¹⁹ and pending legal challenges may result in similar court enforcement of the ESA in the case of the salmon.²⁰

Nevertheless, a close analysis of the biological opinions reveals that the Services have used consultation to impose a patchwork of protective measures, primarily through "incidental take" statements.²¹ Thus, instead of blocking federal actions, the Services have attempted to strike a compromise, accommodating federal actions involving severe harm to listed species, but providing some species protection through imposition of conditions requiring modification of the action to reduce the amount of harm.²² However, the Services have recognized these conditions as insufficient for long-term species protection, and the Services have consistently used biological opinions to warn action agencies that more severe measures will be necessary in the future if current management practices continue.²³ Nevertheless, the conditions imposed by FWS have served as significant roadblocks to individual actions, and have contributed to a public perception that the ESA does not allow adequate consideration of economic factors.

Section II of this paper introduces the background of the controversy by introducing the ESA listings, the reasons for the listings, and the implications of the salmon and the owl listings. Section III examines FWS' approach to spotted owl consultations, and analyzes a sampling of biological opinions issued by FWS to the FS and the BLM on timber sales. Section IV examines the biological opinions issued by NMFS on the operation of the Federal Columbia River Power System (FCRPS) and on

19. See, e.g., *Lane County Audubon Soc'y v. Jamison*, 958 F.2d 290 (9th Cir. 1992) (enjoining BLM sales); *Seattle Audubon Soc'y v. Moseley*, 798 F. Supp. 1484 (9th Cir. 1992) (enjoining FS sales).

20. See *infra* note 269 and accompanying text.

21. "Incidental take" occurs when "takings" result from, "but are not the purpose of, an otherwise lawful activity." 50 C.F.R. § 402.02 (1992). "Take" means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. § 1532(19) (1988). Whenever jeopardy is not found but incidental take is involved, the Service is required to issue an incidental take statement which specifies (1) the impact of the taking, (2) "reasonable and prudent measures" necessary or appropriate to minimize the impact of the taking, and (3) "terms and conditions" with which a federal agency or other applicant must comply to implement these measures." *Id.* § 1536(b)(4). Adherence to these measures and conditions allows "take" which would otherwise be prohibited under section 9 of the ESA. See *id.* § 1536(o). Reasonable and prudent measures and the terms and conditions implementing them are limited by the regulations and "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) (1992) [hereinafter minor change rule].

22. See, e.g., *infra* notes 228, 326 and accompanying text.

23. See, e.g., *infra* notes 157, 323 and accompanying text.

harvest of salmon. Section V concludes with some suggestions for improving the efficiency and effectiveness of consultation without revision of the ESA by simply prodding the Services and action agencies into accepting their statutory responsibilities.

II. ENDANGERED SPECIES ON STAGE, THE BACKGROUND OF THE NORTHWEST'S ESA CONTROVERSY

The FWS listed the northern spotted owl as a threatened species on June 22, 1990.²⁴ The NMFS listed the Snake River sockeye salmon as an endangered species on November 20, 1991,²⁵ and, on April 22, 1992, listed the Snake River spring/summer chinook and Snake River fall chinook as threatened.²⁶ Thirty days after listing, each of these species became subject to the protection of the ESA, and most significantly, to the protection afforded by section 7 of the ESA.

A. *Species Status of the Spotted Owl*

1. *The Spotted Owl and the Old Growth Ecosystem*

When the spotted owl was listed under the ESA as a threatened species its precarious status was attributed to only one cause; the loss and adverse modification of habitat.²⁷ The spotted owl, which is found in northern California, Oregon, Washington, and British Columbia, depends on habitat with unique characteristics.

Habitats selected by northern spotted owls typically exhibit moderate to high canopy closure; a multilayered, multispecies canopy dominated by large overstory trees; a high incidence of large trees with large cavities, broken tops, and other indications of decadence; numerous large snags; heavy accumulations of logs and other woody debris on the forest floor; and considerable open space within and beneath the canopy.²⁸

These are primarily characteristics of old growth forests at least 150 to 200 years old, but may exist in younger forests, particularly where there are

24. Endangered & Threatened Wildlife and Plants; Determination of Threatened Status for the Northern Spotted Owl, 55 Fed. Reg. 26,114 (1990) (final rule) (codified at 50 C.F.R. § 17) [hereinafter Owl Listing].

25. Endangered and Threatened Species; Endangered Status for Snake River Sockeye Salmon, 56 Fed. Reg. 58,619 (1991) (final rule) [hereinafter Sockeye Listing].

26. Endangered and Threatened Species; Threatened Status for Snake River Spring/Summer Chinook Salmon, Threatened Status for Snake River Fall Chinook Salmon, 57 Fed. Reg. 14,653 (1992) (final rule) [hereinafter Chinook Listing].

27. Owl Listing, *supra* note 24, at 26,114.

28. INTERAGENCY SCIENTIFIC COMMITTEE, A CONSERVATION STRATEGY FOR THE NORTHERN SPOTTED OWL I (1990) [hereinafter ISC REPORT].

significant remnants of earlier stands.²⁹ Old-growth is itself a threatened resource; over 80 percent of it had been logged by the early 1980's, and most of what remains is on federal lands.³⁰ Of the estimated 7.1 million acres of owl habitat remaining, approximately 94 percent is on federal lands under the supervision of the FS, BLM and National Park Service (NPS).³¹ The Draft Recovery Plan for the spotted owl indicates that suitable owl habitat on national forests is declining at an annual rate of one to two percent, and that much of what remains is of lower quality than the habitat which has been harvested.³² Spotted owl pairs have large median home ranges, varying by physiographic province from a low of 1,411 acres to a high of 14,271 acres; the median amounts of old-growth and mature forest within these home ranges vary from 615 acres to 4,579 acres.³³ The survival of the owl depends on the preservation of chunks of old growth characteristic forest large enough to support sustainable populations of owls. Thus, the spotted owl issue is really an old growth ecosystem issue because preservation of the owl will require preservation of ancient forests of the Northwest.³⁴

2. *Spotted Owl Conservation, Past and Future*

The U.S. Department of the Interior included the spotted owl in a list of potential candidates for ESA protection in 1973.³⁵ Prior to its listing in 1990, the spotted owl was subject to a number of spotted owl management plans which protected small islands of habitat.³⁶ The Interagency Scientific Committee (ISC) and the FWS determined that the policy of providing Spotted Owl Habitat Areas (SOHAs), habitat areas for single pairs of owls, was ineffective due to inadequate size, low residency rates, isolation, disturbances from adjacent logging activities, fragmentation within SOHAs, and lack of contiguity with other suitable habitat.³⁷ In

29. *Id.* at 19. The California coastal redwoods are the exception to this rule, there rapid regrowth and abundant prey can produce suitable habitat in 40 to 60 years. *Id.*

30. MANUEL LUJAN JR. ET AL., U.S. DEP'T OF THE INTERIOR, RECOVERY PLAN FOR THE NORTHERN SPOTTED OWL-DRAFT 31 (1992) [hereinafter DRAFT RECOVERY PLAN].

31. *Id.* at 14-15.

32. *Id.*

33. *Id.* at 23-24.

34. The owl is an "indicator species" for the old growth ecosystem, and the effects of its protection extend to other species of birds, mammals, invertebrates, and plants that are also dependent on this ecosystem. See 36 C.F.R. § 219.19 (1992) (FS criteria for selecting indicator species under the National Forest Management Act, 16 U.S.C. §§ 1600-87 (1988)).

35. See ISC REPORT, *supra* note 28, at 51, 58.

36. See generally *id.* at 17, 51-57 (protected areas were called SOHAs by the FS and BLM/ODFW Agreement areas by the BLM, hereinafter both will be referred to as SOHAs).

37. DAVID. R. ANDERSON ET AL., FWS, 1990 STATUS REVIEW, NORTHERN SPOTTED OWL *Strix Occidentalis Caurina* 54-55 (Apr. 30, 1990).

addition, the ISC noted that habitat designated as suitable was often less than 100 years old and thus could only be considered marginal habitat.³⁸ The ISC deemed the SOHA strategy to be a "prescription for the extinction of spotted owls, at least in a large proportion of the owl's range."³⁹ Recent figures indicate that although there are still approximately 3,500 owl pairs, the population is declining more rapidly than previously thought, and the rate of decline may be accelerating.⁴⁰

In May 1990, the ISC published a document establishing guidelines for management of federal lands, as well as making recommendations for private and state lands.⁴¹ The ISC strategy recognized that suitable habitat was declining, and called for the creation of a network of Habitat Conservation Areas (HCAs) ranging in size from areas large enough to support over fifty pairs of owls to areas only large enough to support a single pair. The ISC called for these HCAs to be spaced within seven to twelve miles of each other and connected by a forest matrix managed in such a way as to provide adequate dispersal habitat between the areas.⁴² The designated HCAs under the ISC strategy would contain approximately 7.7 million acres, 5.8 million of which would be outside of areas previously protected from timber harvest because of wilderness or park designation.⁴³ However, federal adoption of the ISC strategy would create new protection on less than 2.4 million acres of currently suitable owl habitat.⁴⁴ Under the ISC strategy, owl habitat would continue to decline in the short-term, but would eventually stabilize as currently unsuitable habitat within HCAs and the forest matrix matured; the ISC estimated that if its strategy was adopted, the owl population would not fall to below 40 percent of the current level, even in a worst case analysis.⁴⁵

Specifically, the ISC strategy called for creation of four types of

38. ISC REPORT, *supra* note 28, at 18.

39. *Id.* at 39.

40. DRAFT RECOVERY PLAN, *supra* note 30, at 34-35, 328 (estimated rates of decline varying from 7 to 16 percent with average annual decline of 7.5 percent).

41. ISC REPORT, *supra* note 28. The ISC urged participation by state and local landowners, but the strategy only depended on compliance by federal landowners. U.S. FOREST SERVICE, QUESTIONS AND ANSWERS ON A CONSERVATION STRATEGY FOR THE NORTHERN SPOTTED OWL 27, 39 (Feb. 1991)[hereinafter ISC Q&A].

42. ISC REPORT, *supra* note 28, at 23-27.

43. *Id.* at 343.

44. Of the 5.8 million acres of new protection, 0.6 million acres would be on state land where protection is discretionary, and the protected acreage included lakes, streams, roads, and meadows which might never be suitable owl habitat. *Id.* Further, the ISC estimated that 40 percent (2.8 million acres) of the federal lands within the HCA's was cut over or in immature second-growth. See ISC Q&A, *supra* note 41, at 15.

45. ISC REPORT, *supra* note 28, at 34-36. Even with these losses, the ISC expected the owl population to stabilize at above 1200 pairs, a figure accepted as "marginally comfortable" in 1986 by an Audubon Society panel. See *id.* at 31.

HCA's: Category 1 HCA's, which would be capable of supporting 20 or more pairs; Category 2 HCA's, which would be capable of supporting 2-19 pairs; Category 3 HCA's, which would be capable of supporting only one pair; and Category 4 HCA's, which would aid dispersal and serve as possible future nest sites.⁴⁶ The ISC goal was to support a minimum of 20 pairs wherever possible because modeling indicated that, even if isolated, a population of 15 to 20 pairs would have a moderate to high likelihood of persistence for 50 years and a moderate likelihood of persistence for 100 years.⁴⁷ Likelihood of persistence would be improved under the ISC plan by increasing the chances for successful dispersal; thus, the maximum distance between Category 1 HCA's was set at twelve miles and the maximum distance between the smaller and more vulnerable HCA's was set at seven miles.⁴⁸

Successful dispersal is an important part of the ISC plan. Under the plan, dispersal is dependent upon the management of the general forest matrix between HCA's to a "50-11-40" rule, which requires 50 percent of the forest matrix to be maintained in stands with a mean diameter breast height (d.b.h.) of 11 inches or greater and with at least a 40 percent canopy closure.⁴⁹ In addition, 80 acre cores (Category 4 HCA's) would be established within ¼ mile of up to seven known owl pairs per township.⁵⁰ In some areas of concern,⁵¹ additional Category 3 HCA's would be established outside of Category 1 and 2 HCA's which failed to meet target occupancy.⁵²

In April 1992, the Department of the Interior released a draft recovery plan for the spotted owl, based largely upon the ISC strategy.⁵³ The draft recovery plan called for a network of Designated Conservation Areas (DCAs) connected by a forest matrix managed to the 50-11-40 rule, supplemented with additional protection for pairs and territorial singles in some areas through provision of residual habitat areas.⁵⁴ On the issue of

46. *Id.* at 315.

47. *Id.* at 24.

48. *Id.* at 26. Dispersal is usually in the form of movement of juveniles from their natal area; the twelve and seven mile distances represent figures within the known dispersal ranges of 66 percent and 75 percent, respectively, of observed owls. *Id.* at 25.

49. *Id.* at 310.

50. *Id.*

51. The ISC recognized ten areas of special concern: North Cascades, North Cascades East, Olympic Peninsula, Southwestern Washington, Columbia River, Oregon Coast Range, Southern Deschutes, Shasta McCloud Area, North Coastal California, and Mendocino National Forest. Special concern was warranted in these areas either because the ability to support owls was limited or because the area served as a dispersal link between other regions. Important factors included low owl density, scarce owl habitat, isolation due to geological and manmade factors, and poor habitat quality. *Id.* at 66-68.

52. *Id.* at 323.

53. DRAFT RECOVERY PLAN, *supra* note 30, at 107, 120-25.

54. *Id.*

section 7 consultation, the draft recovery plan called for programmatic consultations on issues related to implementation of the recovery plan, combined with an intensive monitoring program.⁵⁵ The draft recovery plan would thus eliminate the need to conduct site-specific consultations and obtain site-specific incidental take permits, so long as significant new information is not discovered.⁵⁶ Like the ISC strategy, the success of the draft recovery plan depends on rapid adoption by federal agencies.⁵⁷

3. *Potential Costs of Owl Protection*

Estimates of the costs of implementing a strategy for conservation of the spotted owl vary dramatically with timber interests predicting economic disaster, while others argue that economic impacts will be minor and that much of the decline in timber industry employment is a result of automation and raw log exports as well as past mismanagement.⁵⁸ Most timber industry and federal timber management agency studies predict that an owl conservation plan could be expected to reduce federal timber harvests by about 1.7 billion board feet per year and result in annual income losses of around \$500 million.⁵⁹ These figures are based on implementation of a strategy which does not involve preserving all remaining old-growth, and which could result in a 50 to 60 percent reduction in the owl population.⁶⁰

Nationwide, the economic effects of even radical protection would be small. According to a FS study, protection of all remaining owl habitat on FS lands would be expected to add only \$630 to the cost of building a

55. *Id.* at 128.

56. *Id.*

57. *Id.* at 127, 137.

58. See Ted Gup, *Owl vs Man*, TIME, June 25, 1990, at 56; Bill Dietrich, *Study: State Can Protect Owl and Keep Logging*, SEATTLE TIMES, Aug. 25, 1992, at B2. See also JEFFERY T. OLSON, WILDERNESS SOC'Y & NAT'L WILDLIFE ASS'N, NATIONAL FORESTS POLICES FOR THE FUTURE VOL. 4: PACIFIC NORTHWEST LUMBER AND WOOD PRODUCTS: AN INDUSTRY IN TRANSITION (1988) (predicting large declines in timber related employment even in the absence of ancient forest preservation and indicating that preservation could be accomplished with minimal impacts on employment); Testimony of W. Ed Whitelaw, U.S. Senate Subcommittee on Environmental Protection, Committee on Environment & Public Works (May 13, 1992).

59. See DRAFT RECOVERY PLAN, *supra* note 30, at 544-46; see also Edward Madigan, U.S. Dep't of Agriculture, *Final Environmental Impact Statement on Management for the Northern Spotted Owl in the National Forests* §§ 3-4, at 186 (1992) [hereinafter FS FEIS] (estimating reduction of income of \$926 million from baseline of projected harvest under previous management plan).

60. ISC REPORT, *supra* note 28, at 34. The ISC Strategy did call for 7.7 million acres within Habitat Conservation Areas (HCAs), but much of this was not suitable habitat. See *supra* note 44 and accompanying text. The adequacy of the ISC strategy has also been brought into question by new information discovered after the release of the ISC Report which indicates that the spotted owl population is declining more rapidly than previously thought and that the rate of decline may be accelerating. DRAFT RECOVERY PLAN, *supra* note 30, at 328.

\$100,000 home.⁶¹ However, many people are afraid that the economic effects would be concentrated and devastating to many of the small timber-dependent communities of the Northwest, where timber interests have attempted to characterize the issue as "jobs vs. owls."⁶²

B. *Species Status of the Snake River Salmon*

The Snake River salmon are dependent on the Columbia and Snake River ecosystems for transportation to and from the ocean and on the Snake River ecosystem for spawning and juvenile development habitat.⁶³ Unfortunately, the natural ecosystems of the Columbia Basin have been replaced by an artificial "multiple use" managed system of dams and reservoirs.⁶⁴ Many of these dams, including the eight through which the Snake River salmon must pass,⁶⁵ are federally owned and operated, and are thus directly accountable under section 7 of the ESA.⁶⁶

1. *Snowy Plover*

The Snowy Plover, listed as endangered on November 20, 1991, once spawned plentifully in five or more lakes, but its spawning is

61. FS FEIS, *supra* note 59, §§ 3-4, at 175.

62. See, e.g., Margaret E. Kriz, *Jobs v. Owls*, 23 NAT'L J. 2913 (Nov. 30, 1991); Ted Gup, *Owl vs Man*, TIME, June 25, 1990, at 56. However, the owl controversy can be seen as merely hastening an inevitable change in the timber industry because, at current rates of exploitation, the last of the old-growth forests outside of designated wilderness areas would be harvested within 30 years. *Id.* at 58. Further, federal harvest reductions would lead to increased private harvest and reductions in raw log exports which would partially offset job losses due to federal reductions. See Bill Dietrich, *Study: State Can Protect Owl and Keep Logging*, SEATTLE TIMES, Aug. 25, 1992, at B2. Although sacrificing the owl would result in a "small short-run increase in timber jobs," it would also result in a "large long-run decrease in non-timber jobs." Testimony of W. Ed. Whitelaw, *supra* note 58, at 1.

63. See Sockeye Listing, *supra* note 25, at 58,619-20; NMFS, FACTORS FOR DECLINE: A SUPPLEMENT TO THE NOTICE OF DETERMINATION FOR SNAKE RIVER SPRING/SUMMER CHINOOK SALMON UNDER THE ENDANGERED SPECIES ACT 4-17 (1991); NMFS, FACTORS FOR DECLINE: A SUPPLEMENT TO THE NOTICE OF DETERMINATION FOR SNAKE RIVER FALL CHINOOK SALMON UNDER THE ENDANGERED SPECIES ACT 3-12 (1991).

64. See U.S. DEP'T OF ENERGY ET AL., THE COLUMBIA RIVER SYSTEM: THE INSIDE STORY 2-8 (1991) [hereinafter INSIDE STORY]. The system supplies over 75 percent of the Northwest's electrical generation and produces an annual average of 18,500 megawatts of electricity, but it is used for a number of other purposes as well, including the diversion of six percent of the basin's water for irrigation. *Id.* at 2-6.

65. Bonneville, The Dalles, John Day, McNary, Ice Harbor, Lower Monumental, Little Goose, and Lower Granite. See NMFS, ENDANGERED SPECIES ACT SECTION 7 CONSULTATION/CONFERENCE BIOLOGICAL OPINION: 1992 OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM figures 1, 2 (Apr. 10, 1992) [hereinafter FCRPS OPINION]. See also INSIDE STORY, *supra* note 64, at 11 (listing dams and management agencies).

66. Even non-federal hydroelectric projects can be affected by section 7 because they are subject to licensing provisions of the Federal Energy Regulatory Commission (FERC). See, e.g., Sockeye Listing, *supra* note 25, at 58,623.

now limited to Redfish Lake,⁶⁷ and its returns have been dismal in recent years. The Snake River sockeye enter the Columbia River during June and July, arrive at Redfish Lake primarily in August, and spawn in October.⁶⁸ The eggs hatch in the spring and juveniles remain in the lake for one to three years before starting the 900-mile migration to the sea which begins in late April or May.⁶⁹ The Idaho Department of Fish and Game (IDFG) counted only twelve returning adult sockeye in 1985, twenty-nine in 1986, sixteen in 1987, four in 1988, one in 1989, and none at all in 1990. When three males and one female returned in 1991, they were captured for an emergency captive breeding program.⁷⁰

2. Snake River Spring/Summer Chinook

The Snake River spring/summer⁷¹ chinook, listed as threatened on April 22, 1992, historically returned in runs consisting of over 1.5 million fish.⁷² However, by the 1950s, the total run had decreased to an average of 125,000 per year, and the 1991 total count was 17,149, with the "wild" return estimated at only 8,457.⁷³ Current abundance of Snake River spring/summer chinook is at 0.5 percent of its historical level,⁷⁴ and the NMFS has estimated that the population is declining at a rate of five to six percent per year, or approximately 25 percent per generation.⁷⁵ Spring/summer chinook migrate upriver past Bonneville Dam from March through July, after spending two or three years in the ocean. Juvenile yearling smolts begin their migration to the sea from April through June.⁷⁶ Although still counted in the thousands, these stocks are dispersed over a wide geographic area and are further separated by run time differences, which may result in localized risk of inbreeding, difficulty of finding spawning mates, and susceptibility to other random factors.⁷⁷

67. Sockeye Listing, *supra* note 25, at 58,622.

68. FCRPS Opinion, *supra* note 65, at 11, 12.

69. *Id.* at 12.

70. *Id.* Some of the outmigrating juveniles were also captured in 1991 and are being reared to provide broodstock for future sockeye production. Sockeye Listing, *supra* note 25, at 58,622.

71. The spring and summer chinook are treated as separate stocks for management purposes due to differences in life histories and run timing, but NMFS decided to treat them as a single Evolutionarily Significant Unit (ESU) because of genetic similarities and uncertainty in distinguishing between the stocks. Chinook Listing, *supra* note 26, at 14,654.

72. *Id.* at 14,659.

73. *Id.* The total count includes both hatchery produced and "wild" or "natural" salmon, but only the natural stocks have been listed under the ESA. *See id.* at 14,662-63.

74. FCRPS OPINION, *supra* note 65, at 13.

75. NMFS, AD HOC COMMITTEE REPORT ON EFFORTS TO QUANTIFY DECREASES IN MORTALITIES NECESSARY TO STABILIZE SNAKE RIVER CHINOOK SALMON POPULATIONS 3 (Apr. 2, 1992) [hereinafter STABILIZATION REPORT], reprinted in FCRPS OPINION, *supra* note 65, at app. 1.

76. FCRPS OPINION, *supra* note 65, at 12-13.

77. Chinook Listing, *supra* note 26, at 14,659.

3. Snake River Fall Chinook

NMFS also listed the Snake River fall chinook as threatened on April 22, 1992.⁷⁸ Historically, the fall chinook were widely distributed throughout the Snake River and many of its tributaries, and were found as far upstream as Shoshone Falls, Idaho, 615 miles from the Snake River's confluence with the Columbia River.⁷⁹ The fall chinook were obstructed from a significant portion of their spawning grounds as early as 1901, but the chinook population stabilized at around 72,000 between 1928 and 1949.⁸⁰ However, during the 1950s the fall chinook return fell to 29,000 and continued to fall as new dams inundated their spawning areas and further obstructed fish passage.⁸¹ Only 102 miles of the Snake River are now available to the fall chinook, and wild escapement has fallen to 295 in 1989, 78 in 1990, and 318 in 1991.⁸² Like the spring/summer chinook, the population of fall chinook is declining at approximately 25 percent per generation.⁸³ Snake River fall chinook begin their migration upriver past Bonneville Dam during August and October and spawn during October and November.⁸⁴ Spawning occurs along the mainstem of the Snake River from the Lower Granite Dam to Hells Canyon Dam, and also in the lower reaches of the Imnaha, Grande Ronde, Clearwater, and Tucannon Rivers.⁸⁵ Juveniles emerge from the gravel in March and April, and downstream migration begins within several weeks. But the seaward movement is slow. Juveniles may be found behind Lower Granite Dam through June and in the lower Columbia River from June to October.⁸⁶ Adults return to spawn between the ages of two and five, but four is the most common age.⁸⁷

78. *Id.* at 14,654. Only natural stocks are protected. *Id.* at 14,663.

79. *Id.* at 14,659.

80. *Id.* at 14,654-60.

81. FCRPS OPINION, *supra* note 65, at 14. The construction of Brownlee Dam, Oxbow Dam, and Hells Canyon Dam during the period between 1958 and 1967 eliminated access to the middle Snake Basin which contained its primary production areas, and habitat was further reduced by construction of Ice Harbor Dam, Lower Monumental Dam, Little Goose Dam, and Lower Granite Dam. *Id.*

82. Chinook Listing, *supra* note 26, at 14,660.

83. STABILIZATION REPORT, *supra* note 75, at 3.

84. FCRPS OPINION, *supra* note 65, at 14.

85. *Id.*

86. ROBIN S. WAPLES ET AL., NMFS, STATUS REVIEW FOR SNAKE RIVER FALL CHINOOK SALMON 10-11 (1991).

87. *Id.* at 11.

4. *Historical Decline of Columbia River Basin Anadromous Fish*

a. *ESA Listings: A New Approach to an Old Problem*

The listing of the Snake River sockeye salmon in 1991 and the Snake River spring/summer and fall chinook in 1992 did not signal recognition of a new problem; the listings resulted from Columbia River Basin problems that have been recognized for decades. Historically, the anadromous fish runs⁸⁸ of the basin numbered up to 16 million fish, but by the 1970s the runs decreased to around 2.5 million fish.⁸⁹ The anadromous fish of the Columbia Basin have varying life cycles and are in varying states of depression, but their condition is attributable to a number of common factors. Most notably, the dramatic declines in anadromous fish returns is due to the development and operation of hydropower on the Columbia and Snake Rivers.⁹⁰ Hydropower-related losses have been estimated at five to eleven million fish annually.⁹¹

Recognition of depleted and declining returns led the NMFS and the FWS to initiate a status review of upriver Columbia Basin salmon in 1978.⁹² However, the Services suspended the status review in the wake of the passage of the Northwest Electric Power Planning and Conservation Act (NWPAA),⁹³ which was intended to result in the treatment of fish and wildlife as "co-equal" with hydropower.⁹⁴ Unfortunately, the NWPAA failed to reverse or even halt the decline of most salmon stocks, leading the NMFS to conclude that "the NWPAA has not achieved positive results for

88. "Anadromous fish" are species of fish, including salmon and steelhead trout, which hatch in freshwater, migrate to saltwater as juveniles, reach adulthood at sea, and return to freshwater to reproduce. "Fish Runs" consist of returning adult fish, including those which are harvested before reaching the river. U.S. GENERAL ACCOUNTING OFFICE, HYDROELECTRIC DAMS: ISSUES SURROUNDING COLUMBIA RIVER BASIN JUVENILE FISH BYPASSES 8 (1990) [hereinafter JUVENILE BYPASSES].

89. COLUMBIA BASIN FISH AND WILDLIFE AUTH., INTEGRATED SYSTEM PLAN FOR SALMON AND STEELHEAD PRODUCTION IN THE COLUMBIA RIVER BASIN 11 (1991) [hereinafter SYSTEM PLAN].

90. *Id.* See also Michael C. Blumm, *Hydropower vs. Salmon: The Struggle of the Pacific Northwest's Anadromous Fish for a Peaceful Coexistence With the Columbia River Power System*, 11 ENVTL. L. 211 (1981).

91. See SYSTEM PLAN, *supra* note 89, at 11. See also JUVENILE BYPASSES, *supra* note 88, at 8-10 (estimating 80 percent decline since the 1930s with hydropower alone responsible for a 60 percent decline and other factors such as irrigation, flood control, logging, and farming responsible for a 20 percent decline).

92. NMFS & FWS, Upper Columbia River Basin Populations of Salmon (*Oncorhynchus* Spp.) and Steelhead (*Salmo Gairdneri*) Biological Status Review, 43 Fed. Reg. 45,628 (1978) (Notice of Review).

93. Pacific Northwest Electric Power Planning and Conservation Act, Pub. L. No. 96-501, 94 Stat. 2697 (Dec. 5, 1980) (codified at 16 U.S.C. §§ 839-839h (1988)).

94. See H.R. REP. NO. 976, 96th Cong., 2d Sess. 49 (1980), reprinted in 1980 U.S.C.A.N. 5989, 6015. See also Michael C. Blumm & Andy Simrin, *The Unraveling of the Parity Promise: Hydropower, Salmon, and Endangered Species in the Columbia Basin*, 21 ENVTL. L. 657, 660 (1991).

the survival of anadromous fish."⁹⁵ NMFS attributed this failure to a lack of specificity in NWPA measures which lead to disagreements over their implementation, and to the fact that compliance with the NWPA's Fish and Wildlife Program (FWP) measures was not mandatory.⁹⁶

Listing of the Snake River salmon thus follows more than a decade of conservation efforts and indicates that enforceable measures and more rigorous efforts are needed. New measures improving flow and passage conditions will benefit not only the three species that have been listed, but other anadromous fish stocks which, although depressed, have not yet qualified for ESA listing, or are considered ineligible for listing due to mixed stock or non-native origins.⁹⁷ Thus, the listed salmon may act as indicator species for the Columbia River Basin ecosystem, just as the spotted owl does for old growth forests.

b. *Past Recognition of Needed Enhancement Measures*

NMFS is a member of the Columbia Basin Fish and Wildlife Authority (CBFWA) which has repeatedly stressed the importance of increased flows, installation of effective bypass facilities for both migrating juveniles and adults, and management of the hydropower system to reflect fishery needs.⁹⁸ In its listing decisions on the Snake River salmon, NMFS cited a number of common factors contributing to the decline and representing a continuing threat to the existence of the salmon, including hydropower development, water withdrawal and diversions, water storage, disease and predation, harvest, and inadequate regulatory mechanisms.⁹⁹ Most of these factors fall under the broad sweep of section 7's definition of federal action and thus must be considered in NMFS consultations.¹⁰⁰

95. Endangered and Threatened Species; Proposed Endangered Status for Snake River Sockeye Salmon; 56 Fed. Reg. 14,055, 14,061 (1991) (proposed Apr. 5, 1991) [hereinafter Sockeye Proposal].

96. *Id.* See also Blumm & Simrin, *supra* note 94 (discussing the NWPA, the program promulgated under it, and the failure of that program).

97. The NMFS does not consider a salmon stock to be a "species" under the ESA unless it represents an evolutionarily significant unit (ESU). To be considered an ESU the stock must be 1) "substantially reproductively isolated," and 2) "an important component of the evolutionary legacy of the species." Policy on Applying the Definition of Species Under the Endangered Species Act, 56 Fed. Reg. 58,612, 58,612 (1991) (Notice of Policy). This definition resulted in a determination not to list the Lower Columbia River coho salmon due to transfers of other coho stocks into the region for hatchery purposes. See Endangered and Threatened Species, Lower Columbia River Coho Salmon, 56 Fed. Reg. 29,553 (1991) (Notice of Determination).

98. See, e.g., NMFS ET AL., EXECUTIVE SUMMARY: INITIAL RECOMMENDATIONS FOR THE PROTECTION, MITIGATION, AND ENHANCEMENT OF ANADROMOUS FISH IN THE COLUMBIA RIVER BASIN (1981); COLUMBIA BASIN FISH & WILDLIFE AUTH., PROPOSED MAINSTEM FLOWS FOR COLUMBIA BASIN ANADROMOUS FISH (1990) [hereinafter PROPOSED FLOWS].

99. Sockeye Listing, *supra* note 25, at 58,622; Chinook Listing, *supra* note 26, at 14,660.

100. Section 7 applies to "any action authorized, funded, or carried out" by a federal agency. 16 U.S.C. § 1536(a)(2) (1988). See also 50 C.F.R. § 402.02 (1992).

Hydropower plays an important part in most of the adverse conditions faced by the salmon. Hydropower disrupts the natural flow conditions under which the salmon evolved, imposes migration barriers, and creates ideal conditions for predator species. Other than direct flooding and obstruction of habitat, the most significant effect of the dams may be the disruption of natural flow patterns. The salmon evolved under conditions of high spring flows which would flush juvenile salmon (smolts) downriver to the ocean, and the dams have resulted in a series of reservoirs which have a high cross-sectional area resulting in low water velocities.¹⁰¹ Water velocity is further reduced by the storage of spring and summer runoff in upper river storage reservoirs for release during the fall and winter months.¹⁰² Because of the dams, a migration that once took 22 days can now take over 50 days.¹⁰³

Smolt migration is largely passive and thus dependent on water velocity.¹⁰⁴ Any delay in migration exposes the smolts to escalating predation due to continued exposure to predator species which become more voracious as summer temperatures increase.¹⁰⁵ Further, delays may result in arrival at the rivers estuary outside of the "biological window" in which smolt survival and adaptation to salt water is likely.¹⁰⁶ The CBFWA has proposed minimum average flows as high as 140 kcfs (thousand cubic feet per second) on the Snake River and 300 kcfs on the lower Columbia during peak periods of juvenile migration.¹⁰⁷ NMFS has determined that "there is a relationship between increased flows, decreased fish travel time, and increased survival,"¹⁰⁸ and has cited as a factor in the failure of the NWPFA the fact that the Northwest Power Planning Council (NWPPC) has provided inadequate flows "well below the flow levels identified by the fishery agencies and tribes as needed for passage."¹⁰⁹

Dam passage is another major factor impacting juvenile salmon mortality. There are several ways in which juveniles can pass through dams; they can pass over a spillway, through a trash sluiceway, through a juvenile bypass system, or through the turbines of the dam. NMFS

101. COLUMBIA BASIN FISH AND WILDLIFE AUTH., THE BIOLOGICAL AND TECHNICAL JUSTIFICATION FOR THE FLOW PROPOSAL OF THE COLUMBIA BASIN FISH AND WILDLIFE AUTH. 1 (1991) [HEREINAFTER FLOW PROPOSAL JUSTIFICATION].

102. *Id.*

103. *Id.*

104. *Id.* at 9-10.

105. *Id.* at 12-20.

106. *Id.* at 15-20.

107. *Id.* at 44 (comprehensive table of annual fish flow recommendations).

108. Chinook Listing, *supra* note 26, at 14,655.

109. Sockeye Proposal, *supra* note 95, at 14,062. *See also id.* at 14,058. However, NMFS later stated that it did not intend the cite to imply that "a specific flow level is required to meet a future recovery standard." Sockeye Listing, *supra* note 25, at 58,619.

estimates that turbine mortality is approximately ten to nineteen percent and that the other paths result in mortality of one to three percent.¹¹⁰ Spill can be used to reduce the number of fish passing through the turbines, but this results in lost power production opportunity, and the proportion of fish that pass over spillways is directly related to the volume of water that is spilled.¹¹¹ Bypass systems are nonexistent or ineffective at some of the dams.¹¹² As a result, since 1988 varying amounts of spill have been provided through a Fish Spill Memorandum of Agreement (MOA) between the Bonneville Power Administration (BPA) and the fishery agencies and tribes.¹¹³

In the past, juvenile mortality problems have been addressed by collecting juveniles at the upriver dams and trucking or barging them to the lower river in an attempt to reduce both indirect travel-related losses and direct dam passage losses.¹¹⁴ In its document listing the Snake River chinook, NMFS indicated a belief that there is substantial benefit in transporting chinook salmon instead of allowing them to migrate "through adverse in-river conditions."¹¹⁵ However, studies have not been conducted on Snake River sockeye, and NMFS has acknowledged that for some species the benefit of transportation is unclear.¹¹⁶

Hydropower has also had adverse effects on returning adult salmon, primarily due to migration delay and to fallback through turbines.¹¹⁷ The

110. FCRPS OPINION, *supra* note 65, at 31. Mortality varies by species and these figures are based on incomplete data. *Id.* Other sources indicate that turbine mortality may vary from ten to thirty percent. JUVENILE BYPASSES, *supra* note 88, at 18.

111. NMFS, FACTORS FOR DECLINE: A SUPPLEMENT TO THE NOTICE OF DETERMINATION FOR SNAKE RIVER SPRING/SUMMER CHINOOK SALMON UNDER THE ENDANGERED SPECIES ACT 47 (June 1991).

112. *Id.* at 46-47.

113. *Id.* The U.S. Army Corps of Engineers (COE) was opposed to and did not sign the MOA but did agree to implement the program "as long as there are no unacceptable impacts." See JUVENILE BYPASSES, *supra* note 88, at 19 (discussing delays in installation of fish bypasses due to COE opposition to the projects).

114. See, e.g., Chinook Listing, *supra* note 26, at 14,657. However, only 50-70 percent of the fish are collected at each collector dam, and in years where flows have exceeded 100 kcfs, juveniles collected below Lower Granite Dam have been allowed to migrate naturally. *Id.*

115. Chinook Listing, *supra* note 26, at 14,657. NMFS has limited transportation programs in years in which Snake River flows have exceeded 100 kcfs and has acknowledged that "transportation is not to be considered an exclusive long-term solution and should not be viewed as a replacement for healthy in-river migratory conditions." FCRPS OPINION, *supra* note 65, at 25.

116. Sockeye Proposal, *supra* note 95, at 14,058.

117. Migration is delayed at each dam because the salmon must find the fish ladder. When good passage conditions exist, average per-project delays are one to three days on the lower Columbia River and one to two days on the lower Snake River. During periods of high spill, delays on the Snake River can be as high as five to seven days per project. These delays can be fatal because migrational delays of as little as three to four days have been associated with prespawning mortality in sockeye. Fallback of adults also results in mortality; where adults pass through a dam's turbines mortality is estimated at 22 to 41 percent. FCRPS OPINION, *supra* note 65, at 34.

NMFS has estimated that within the FCRPS, cumulative total adult passage losses, from all causes except legal harvest, are 18.5 percent for sockeye, 65.8 percent for fall chinook, and 35 percent for spring/summer chinook.¹¹⁸

Historic levels of harvest have also been recognized as factors behind the decline of the species. NMFS has estimated that harvest rates of spring/summer chinook have exceeded 80 percent of the run in the past, and that the current harvest rate for fall chinook is 69 percent.¹¹⁹ Harvests of sockeye and spring/summer chinook have been greatly reduced in recent years in attempts to protect these runs, and the NMFS believes that the primary area of concern for these species is the Lower Columbia River net fisheries.¹²⁰ Fall chinook have still been subject to significant ocean and in-river harvests in recent years; an estimated 48 percent are harvested at sea, and 55 percent of those that return are harvested in-river in commercial, recreational, and tribal fisheries.¹²¹

5. *Potential Costs of Salmon Protection*

Although there are no official proposals to eliminate the mainstem dams, drastic changes in operations such as reservoir drawdowns, flow augmentation, and implementation of fish flows as hard constraints on system operations are being considered.¹²² A 1992 environmental impact statement prepared by the Core of Engineers (COE) indicates that drawdowns and flow augmentation could result in agricultural damage and lost electrical power at a cost of approximately \$500 million in the first year of implementation.¹²³ Losses would be almost entirely regional, but could be devastating to many in agriculture and in power-intensive industries such as aluminum production.

118. *Id.* at 29.

119. Chinook Listing, *supra* note 26, at 14,660.

120. See Chinook listing, *supra* note 26, at 14,660; Sockeye Proposal, *supra* note 95, at 14,059.

121. NMFS, FACTORS FOR DECLINE: A SUPPLEMENT TO THE NOTICE OF DETERMINATION FOR SNAKE RIVER FALL CHINOOK SALMON UNDER THE ENDANGERED SPECIES ACT 15-17 (June 1991).

122. See U.S. ARMY CORPS OF ENGINEERS ET AL., 1992 COLUMBIA RIVER SALMON FLOW MEASURES OPTIONS ANALYSIS/EIS (1992) [hereinafter FLOW MEASURES]. See also PROPOSED FLOWS, *supra* note 98 (flow recommendations with peak flows during juvenile migration).

123. See FLOW MEASURES, *supra* note 122, § 4. These figures are for one year only. Agricultural losses in subsequent years could be greatly reduced by pump modifications. *Id.* at 142. Similarly, costs associated with electrical generation are due primarily to power production during non-peak demand times, and these costs could be reduced through power exchanges and through marketing strategy changes to reshape demand. See Blumm & Simrin, *supra* note 94, at 729.

III. CONSULTATIONS ON THE NORTHERN SPOTTED OWL

A. FWS Guidelines for ESA Compliance

Shortly after listing the spotted owl, the FWS published guidelines to aid federal, state, and private entities in achieving ESA compliance.¹²⁴ These guidelines were in effect until October of 1991 and should have been reflected in biological opinions issued before that date. The guidelines accepted the ISC Conservation Strategy¹²⁵ as "a conservation goal against which all future actions will need to be measured," and noted that a new strategy might be required if the ISC strategy was not "implemented in full prior to contracting 1991 sales."¹²⁶

The guidelines established a standard for federal agencies to use in determining whether actions required consultation and whether an action would involve incidental take of listed species.¹²⁷ The FWS believed that timber harvest activities within suitable owl habitat or within a half mile radius of any known nest site or pair activity center triggered the "may affect" standard of the ESA section 7 regulations,¹²⁸ and that federal agencies should initiate formal consultation for any such action.¹²⁹ The FWS noted that incidental take due to harm and harassment from habitat removal was difficult to assess, and recommended case by case determinations through dialogue with the Service.¹³⁰ However, the FWS did issue guidelines for avoiding take, and stated that if the guidelines were followed, the FWS would not seek prosecution for incidental take.¹³¹ These guidelines for avoiding incidental take called for (1) conducting owl surveys during the breeding season and prior to harvest; (2) avoiding harvest activity which would result in less than seventy acres of the best available owl habitat surrounding the nest site and/or activity center of a

124. FWS, PROCEDURES LEADING TO ENDANGERED SPECIES ACT COMPLIANCE FOR THE NORTHERN SPOTTED OWL (July 1990) [hereinafter PROCEDURES FOR COMPLIANCE]. These guidelines were primarily interpretive, explaining duties and procedures required under the ESA, but the FWS also presented detailed "take" guidelines and stated that it intended to use the guidelines' standards as the basis for enforcement decisions. *Id.* at 9.

125. *See supra* section II.A.2.

126. PROCEDURES FOR COMPLIANCE, *supra* note 124, at 5.

127. For an explanation of "incidental take" *see supra* note 21.

128. The "may affect standard" refers to the regulatory requirement that "each federal agency shall review its actions at the earliest possible time to determine whether any action may affect listed species or critical habitat." 50 C.F.R. § 402.14(a) (1992). Consultation is necessary whenever it is determined that there is a possible effect. *Id.* However, under the regulations, only actions where federal involvement or control is "discretionary" is subject to the requirements of section 7, *id.* § 402.03, and formal consultation which results in a biological opinion is not required if the Service concurs with an action agency determination that the action is not likely to adversely affect a listed species or critical habitat. *Id.* § 402.14(b)(1).

129. PROCEDURES FOR COMPLIANCE, *supra* note 124, at 3.

130. *Id.* at 9.

131. *Id.*

spotted owl pair; (3) avoiding harvest which would result in less than 500 acres of suitable habitat within a 0.7 mile radius (1000 acres) of a nest site and/or activity center; and (4) avoiding harvest activity which would result in less than forty percent coverage of suitable owl habitat within an owl's median home range radius.¹³²

These "Procedures for Compliance" guidelines were rescinded without explanation on October 2, 1991.¹³³ However, they are still important because they have not yet been replaced. In addition, they were in effect during the great majority of the consultations which have occurred to date and should have been reflected in those consultations.

B. *Early Owl Opinions*

Four major consultations resulted in "no jeopardy" biological opinions shortly after the designation of the Northern Spotted Owl as threatened. These opinions covered timber sales by the FS and the BLM that were undertaken under the auspices of Section 318 of the 1990 Department of the Interior and Related Agencies Appropriations Act¹³⁴ (318 sales), and timber sales made prior to Section 318 which were under contract but unharvested (pre-318 sales). Each of the opinions involved a number of separate timber sales, but the consultations were conducted on a programmatic basis. The four opinions covered a total of 1,075 individual sales. Although FWS gave somewhat different reasons in each case, all four opinions reached the conclusion that "timber sales subject to this consultation will adversely affect the northern spotted owl through loss and increased fragmentation of habitat, but are not likely to jeopardize the continued existence of the subspecies."¹³⁵ These opinions, and the reasoning behind them are discussed below.

1. *The Pre-318 Opinions*

The FWS issued the biological opinion on the FS pre-318 sales on July 23, 1990. Almost three months later, on October 5, 1990, it issued the

132. *Id.* at 10-11.

133. Memorandum from H. Dale Hall, Assistant Regional Director-Fish and Wildlife Enhancement, FWS, to Field Supervisors (Oct. 2, 1991).

134. *See supra* note 13.

135. FWS, FORMAL CONSULTATION ON BUREAU OF LAND MANAGEMENT TIMBER SALES AWARDED PRIOR TO THE SECTION 318 TIMBER SALE PROGRAM 2 (Oct. 5, 1990) [hereinafter BLM PRE-318 OPINION]. *See also* FWS, FORMAL CONSULTATION ON BUREAU OF LAND MANAGEMENT SECTION 318 TIMBER SALES 2 (Nov. 23, 1990) [hereinafter BLM 318 OPINION]; FWS, FORMAL CONSULTATION ON U.S. FOREST SERVICE TIMBER SALES AWARDED PRIOR TO THE SECTION 318 TIMBER SALE PROGRAM 2 (July 23, 1990) [hereinafter FS PRE-318 OPINION]; FWS, FORMAL CONSULTATION ON THE U.S. FOREST SERVICE SECTION 318 TIMBER SALE PROGRAM (July 23, 1990) [hereinafter FS 318 OPINION].

opinion on the BLM pre-318 sales. The opinions closely resemble each other. Both opinions concerned unharvested sales which the agencies had awarded before the owl's listing became effective. FWS' reasoning for the "no jeopardy" decisions was similar, and the incidental take restrictions were very limited. Both opinions stated that their goal was to "assist in preserving management options based on conservation biology."¹³⁶

The only real difference between the opinions issued by the FWS was that the opinion issued to the FS concerned 203 timber sales, while the opinion issued to the BLM considered only six timber sales and thus removed a much smaller amount of suitable owl habitat. Common factors which led FWS to conclude that the sales would not jeopardize the continued existence of the spotted owl included (1) little incidental take was expected; (2) the sales were not expected to isolate provinces or subpopulations within provinces; (3) areas of concern such as the Oregon Coast Ranges Province¹³⁷ (where habitat is extremely fragmented) and the Olympic Peninsula (which is demographically isolated) were not significantly affected; and (4) options for long term conservation planning would remain after the harvest of the sales.¹³⁸ The FWS made it clear that the existing FS and BLM SOHA-based strategies had been discredited by the ISC Report and were inadequate because of high probabilities of local extinctions.¹³⁹ However, the FWS stated that the ISC's plan had assumed that the pre-318 timber sales would be harvested and that therefore "implementation of the pre-318 sales should not impact the options for long-term conservation" under the ISC strategy.¹⁴⁰

The FWS expected that the pre-318 sales would result in "take" of spotted owls through harm and harassment.¹⁴¹ "Harm" occurs where an action actually kills or injures wildlife and includes "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."¹⁴² "Harassment" occurs where "an intentional or negligent act or omission . . . creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral

136. FS PRE-318 OPINION, *supra* note 135, at 27; BLM PRE-318 OPINION, *supra* note 135, at 26.

137. The Oregon Coast Ranges Province includes, but also extends beyond, the coast ranges area of concern, *see* FWS, FORMAL CONSULTATION ON 174 BUREAU OF LAND MANAGEMENT FISCAL YEAR 1991 TIMBER SALES app. 1 (June 17, 1991) (as amended July 3, 1991) [hereinafter BLM 1991 OPINION].

138. BLM PRE-318 OPINION, *supra* note 135, at 2; FS PRE-318 OPINION, *supra* note 135, at 2.

139. *See, e.g.*, BLM 1991 OPINION, *supra* note 137, at 20.

140. FS PRE-318 OPINION, *supra* note 135, at 17; BLM PRE-318 OPINION, *supra* note 135, at 16.

141. FS PRE-318 OPINION, *supra* note 135, at 23.

142. 50 C.F.R. § 17.3 (1992).

patterns which include, but are not limited to, breeding, feeding, or sheltering.”¹⁴³ The FWS anticipated “take” of 190 owl pairs as a result of “harm” or “harassment” from the FS pre-318 sales;¹⁴⁴ the Service expected similar “take” of at least nine owl pairs due to the BLM pre-318 sales.¹⁴⁵

The FWS can authorize “take” under section 7(o) if the take is incidental to a legitimate federal action which does not violate section 7(a)(2), but the action agency must adopt “reasonable and prudent measures” and implement “terms and conditions” imposed by the FWS in an incidental take statement.¹⁴⁶ The FWS’ incidental take requirements in the pre-318 opinions were limited to a single reasonable and prudent measure, instructing the FS and BLM to “[p]revent disturbances to owl pairs and their progeny during the breeding season.”¹⁴⁷ This measure was implemented through a single “term and condition” imposing an activity restriction between March 1 and September 30. The term and condition in the FS opinion prohibited timber harvest activities within a half mile radius of spotted owl nest sites and activity centers unless the FS could show that the area was unoccupied, or that seventy acres of the best available owl habitat would remain around the site and five hundred acres of suitable habitat would remain within a 0.7 mile radius after harvest.¹⁴⁸ The term and condition in the BLM opinion was similar, but it only prohibited the felling of trees, and it allowed harvest of an area to proceed if BLM could show that nesting and/or fledgling activities were not occurring.¹⁴⁹

The pre-318 opinions are the least restrictive opinions that have been issued by the FWS, but they provided clear warning that future opinions might be more restrictive.¹⁵⁰ In addition to encouraging additional owl

143. *Id.* Definitions of take by harm and harassment were eventually challenged by timber interests, but were upheld. *See Sweet Home Chapter of Communities for a Great Oregon v. Interior Dep’t*, No. 91-1468, 1992 U.S. Dist. LEXIS 8045 (D. D.C. May 29, 1992).

144. FS PRE-318 OPINION, *supra* note 135, at 27. The FWS applied the standard for take presented in its guidelines. *See supra* text accompanying note 132.

145. BLM PRE-318 OPINION, *supra* note 135, at 26.

146. *See supra* note 21 and accompanying text.

147. FS PRE-318 OPINION, *supra* note 135, at 24; BLM PRE-318 OPINION, *supra* note 135, at 23.

148. FS PRE-318 OPINION, *supra* note 135, at 24. This term and condition essentially required the FS to show that “take,” within the definition of the FWS guidelines, would not occur. *See supra* text accompanying note 132.

149. BLM PRE-318 OPINION, *supra* note 135, at 23. This term was slightly less restrictive than the condition imposed on FS sales, but it would essentially accomplish the same purpose.

150. *See, e.g.*, FS PRE-318 OPINION, *supra* note 135, at 27-28 (calling for implementation of a long term conservation strategy, and warning that continuation of the type of planning used in the Pre-318 sales might lead to future findings of jeopardy).

research and monitoring, the "conservation recommendations"¹⁵¹ in both opinions urged the harvest management agencies to adopt the ISC conservation strategy, to minimize impacts of harvest, and to create or restore habitat through implementation and testing of new timber harvest prescriptions.¹⁵² These prescriptions include leaving snags and woody material, eliminating burning of post harvest fuels where possible, treatment of young stands to facilitate rapid growth and production of multi-storied stands, creation of decadent tree components through topping or girdling large trees, selective harvest, and leaving trees after harvest to serve as a future upper canopy layer.¹⁵³ FWS also suggested that the agencies make adjustments in their timber bases and allowable sale quantities and further, either relocate or eliminate sales that fall within the guidelines' definition of "take,"¹⁵⁴ within HCAs, near nest sites, and in some areas of concern.¹⁵⁵ In addition, the FWS suggested that the BLM add language in its sale contracts to allow greater agency discretion to impose contract modifications to protect listed species.¹⁵⁶ The FWS concluded both pre-318 opinions with warnings that if timber sale planning continued to result in "spatially random reduction of habitat," it would "increase the likelihood of localized extirpations," and might "lead to a finding of jeopardy" on future federal actions.¹⁵⁷

151. "Conservation recommendations" are "suggestions of the Service regarding discretionary measures to minimize or avoid adverse effects . . . or regarding the development of information." 50 C.F.R. § 402.02 (1992). Conservation recommendations are "advisory and are not intended to carry any binding legal force." *Id.* § 402.14(j). Thus, conservation recommendations are often ignored by the action agencies, even when they would be easily achievable. Conservation recommendations are not mentioned in the statute, and the idea of completely discretionary recommendations conflicts with the language of section 7(a)(1) which requires federal agencies, through consultation, to use their authority to carry out programs for the conservation of listed species. See 16 U.S.C. § 1536(a)(1) (1988). However the current regulations do not include provisions for the Services to impose binding conditions unless "take" is involved, in which case the Services can require "reasonable and prudent measures," or "jeopardy" is found, in which case the Services can present "reasonable and prudent alternatives." See 50 C.F.R. § 402.14(g)-(j) (1992).

152. FS PRE-318 OPINION, *supra* note 135, at 25-26; BLM PRE-318 OPINION, *supra* note 135, at 24-25.

153. FS PRE-318 OPINION, *supra* note 135, at 25-26; BLM PRE-318 OPINION, *supra* note 135, at 24-25.

154. See *supra* text accompanying note 132.

155. FS PRE-318 OPINION, *supra* note 135, at 25-26; BLM PRE-318 OPINION, *supra* note 135, at 24-25.

156. BLM PRE-318 OPINION, *supra* note 135, at 24. The BLM interpreted its existing contracts as preventing the BLM from renegotiating or interfering with harvest after a sale had been awarded unless listed species were physically located within the sale boundaries. See *infra* note 162 and accompanying text.

157. FS PRE-318 OPINION, *supra* note 135, at 27; BLM PRE-318 OPINION, *supra* note 135, at 26.

2. *The Section 318 Opinions*

The FWS issued the opinion on FS Section 318 sales (318 sales) on July 23, 1990 at the same time as it issued the opinion on FS pre-318 sales. The FWS issued the opinion on BLM 318 sales on November 23, less than two months after issuing its opinion on BLM pre-318 sales. As with the pre-318 sales, the ISC strategy assumed that the 318 sales would be harvested, and that long-term conservation would nevertheless still be possible. However, despite their close relationship in time and similar position under the ISC strategy, the results of consultation on the 318 sales were somewhat different. Differences in treatment resulted primarily from the fact that the FS and the BLM had not yet awarded contracts for harvest on some of the 318 sales, while the pre-318 sales had been awarded, although not yet harvested. The FWS considered unawarded sales to be subject to greater action agency discretion and thus felt free to impose more stringent conditions on these sales than it had on the awarded pre-318 sales.

Although the FWS separated the sales into only two categories, awarded and unawarded, there was also another important group of sales: sales which the action agencies did not submit for consultation. The FS utilized a "may affect" standard in accordance with FWS guidelines,¹⁵⁸ and initiated consultation whenever a sale involved harvest of suitable owl habitat or harvest within one-half mile of an owl pair's nest site or activity center.¹⁵⁹ This resulted in FS consultation on 185 awarded timber sales and 524 unawarded sales, representing slightly over 63 percent of its 1,123 unharvested sales.¹⁶⁰ The BLM acknowledged that contemplated sales within owl habitat or within one-half mile of a nest site were likely to adversely affect the spotted owl; nevertheless, it did not initiate consultation for many of these sales.¹⁶¹ The BLM claimed that under its timber sale contracts, the agency lacked discretion to interfere with awarded sales unless a listed species is known to occur in the contract area; furthermore, the BLM argued that "presence" had to be established through location of a nest site or pair activity center within the boundaries of the harvest area.¹⁶² This contract interpretation allowed the BLM to restrict consultation to less than 35 percent of its 453 sales.¹⁶³ BLM consulted on only 30 of 302 awarded sales, but consultation was required for 127 of 151 sales

158. See *supra* note 128 and accompanying text.

159. FS 318 OPINION, *supra* note 135, at 3.

160. *Id.*

161. BLM 318 OPINION, *supra* note 135, at 3-4.

162. BLM 318 OPINION, *supra* note 135, at 3-4. The regulations limit the application of section 7 to actions "in which there is discretionary Federal involvement or control." 50 C.F.R. § 402.03 (1992).

163. BLM 318 OPINION, *supra* note 135, at 3.

which were not awarded.¹⁶⁴ FWS argued that "presence" would be likely whenever a contract area fell within the home range of spotted owl pairs,¹⁶⁵ but because the ultimate responsibility to comply with the mandate of section 7(a)(2) is on the federal action agency, the Service did not have authority to require consultation.¹⁶⁶

The FWS determined that the 318 sales would not jeopardize the continued existence of the spotted owl. The FWS stated that options for long-term conservation planning would remain after the 318 sales, and that the sales would not lead to the isolation of provinces and subpopulations.¹⁶⁷ In addition, in the opinion on the FS sales, FWS stated that areas of concern would not be significantly impacted.¹⁶⁸ In the opinion on the BLM sales, FWS stated that only a small amount of take would result from harvest of the 318 sales,¹⁶⁹ however the expected take of approximately 150 owl pairs appears small only when compared to the take of 353 owl pairs by the FS 318 sales.¹⁷⁰

The FWS did not consider requiring relocation or elimination of awarded timber sales to be within its authority,¹⁷¹ but it did consider relocation or elimination of unawarded sales to be "minor changes" within its authority.¹⁷² Because of this perceived difference in authority, awarded timber sales were allowed to proceed merely with nesting season restrictions like those imposed on pre-318 sales, regardless of the location of the sale. However, FWS attempted to use the "reasonable and prudent

164. *Id.*

165. *Id.* at 4.

166. The mandate of section 7(a)(2) is on "[e]ach federal agency," 16 U.S.C. § 1536 (a)(2) (1988), and thus the biological opinion is advisory; once the opinion has been issued the regulations leave the final decision on "whether and in what manner to proceed with the action," to the action agency. *See* 50 C.F.R. § 402.15(a) (1992). The courts do not even consider a "no jeopardy" biological opinion to conclusively establish compliance with the substantive requirements of section 7. *See* Pyramid Lake Paiute Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1415 (9th Cir. 1990) (stating that a "federal agency cannot abrogate its responsibility to ensure that its actions will not jeopardize a listed species," and stating that reliance on a FWS opinion must not be arbitrary or capricious). The regulations allow the Services to request consultation, *see* 50 C.F.R. § 402.14(a) (1992), but they make no provision for sanctions for failure to consult upon request.

167. FS 318 OPINION, *supra* note 135, at 2; BLM 318 OPINION, *supra* note 135, at 2.

168. FS 318 OPINION, *supra* note 135, at 2.

169. BLM 318 OPINION, *supra* note 135, at 2.

170. The total take from the BLM 318 sales was estimated at between 149 pairs and 167 pairs, but the FWS minimized the importance of the take because 148 pairs were considered to have already been reproductively impaired by reduction of suitable habitat to less than 40 percent within their home ranges. *Id.* at 18, 23. The FWS estimated that the FS 318 sales affected 667 spotted owl pairs and resulted in take of 353 pairs. FS 318 OPINION, *supra* note 135, at 25.

171. *See, e.g.*, BLM 318 OPINION, *supra* note 135, at 19. FWS felt that a change outside the scope of existing contract language would not be "reasonable and prudent" and would be more than a "minor modification." *Id.*

172. *See, e.g., id.* at 19-20. *See also supra* note 21 (explaining the "minor change rule" which limits the authority of the Services to require modification of an action to reduce harm to listed species).

measures" to extend substantial protection to owls affected by unawarded sales involving "take" in proposed HCAs and areas of concern. These sales were placed under a second FWS "reasonable and prudent measure": to "[m]aintain essential habitat within close proximity of spotted owl nest sites or activity centers and maintain adequate breeding, foraging, and sheltering habitat within the home range of owls. . . ."¹⁷³ The FWS implemented this measure through stringent "terms and conditions" calling for the elimination or relocation of sales: (1) within 0.5 miles of a nest site or owl activity center, unless the best 70 acres of contiguous core habitat would remain after harvest, and, in addition, 500 acres of suitable habitat would still remain within 0.7 miles; and (2) within areas of concern where the sale would reduce the suitable habitat within the median home range of an owl pair to an amount less than forty percent, unless the area already contained less than twenty percent suitable habitat.¹⁷⁴ FWS believed that these terms and conditions fell within the "minor change" limitation imposed by the regulations,¹⁷⁵ because the conditions directly affected less than three percent of the total FS 318 sale volume,¹⁷⁶ and less than seven percent of BLM 318 sale volume.¹⁷⁷ Further FWS stated that the effects of the conditions could be reduced through relocation of sales.¹⁷⁸

The discretionary "conservation recommendations"¹⁷⁹ suggested by the FWS in the section 318 opinions stressed the importance of rapid adoption of the ISC conservation strategy by federal land management agencies. The recommendations stated that increased protection of all remaining pairs would be necessary if the ISC was not adopted quickly.¹⁸⁰ The opinions also repeated most of the pre-318 recommendations, including recommending that timber sale units in areas of concern be eliminated or relocated unless the land management agencies adopted the 50-11-40 rule, and suggesting that the timber base be adjusted and allowable sale quantities reduced.¹⁸¹

173. FS 318 OPINION, *supra* note 135, at 21; BLM 318 OPINION, *supra* note 135, at 19.

174. FS 318 OPINION, *supra* note 135, at 21. Areas of concern to which the conditions applied included: "the Olympic Peninsula and Oregon Coast Ranges Provinces, the Southern Deschutes and Northern Washington Cascades Areas of Concern; and the Columbia River, I-90, I-5, and Santiam Pass corridors." *Id.* See also BLM 318 OPINION, *supra* note 135, at 19-20.

175. 50 C.F.R. § 402.14(i)(2) (1992). See also *supra* note 21.

176. FS 318 OPINION, *supra* note 135, at 22.

177. BLM 318 OPINION, *supra* note 135, at 20. BLM claimed that 22 percent of its sale volume was affected, but despite objecting that FWS had violated the "minor change rule," see *supra* note 21, BLM requested issuance of a final biological opinion including the condition because it felt that the impacts of holding up the other sales would be unacceptable. Memorandum from Dean Bibles, State Director, BLM, to Marvin Plenert, Regional Director, FWS 1 (Nov. 19, 1990).

178. FS 318 OPINION, *supra* note 135, at 22.

179. "Conservation recommendations" are explained *supra* at note 151.

180. FS 318 OPINION, *supra* note 135, at 22; BLM 318 OPINION, *supra* note 135, at 21.

181. FS 318 OPINION, *supra* note 135, at 23-24; BLM 318 OPINION, *supra* note 135, at 21-23.

3. Agency Response to Early Opinions

Both the FS and the BLM attempted to avert ESA conflicts by adopting interim timber management standards which would provide greater protection for the spotted owl than their past management guidelines.¹⁸² The BLM also attempted to focus consultation on individual sales instead of sale programs.¹⁸³ This was a transparent attempt to reduce the scope of consultation in order to invoke the "minor change rule"¹⁸⁴ to prevent the FWS from imposing "reasonable and prudent measures," like those imposed on the 318 sales which required the elimination or relocation of sales.¹⁸⁵

On October 3, 1990 the FS published a notice vacating its existing plans for management of spotted owl habitat and announced that, as an interim measure, it would "conduct timber management activities in a manner not inconsistent with the ISC recommendations."¹⁸⁶ The BLM developed its own owl plan, commonly known as the "Jamison Strategy," and on September 24, 1990, published management guidelines for fiscal years 1991 and 1992 pursuant to this strategy.¹⁸⁷ The Jamison Strategy protected ISC HCAs and 110 SOHAs, but it fell short of the ISC plan by protecting HCAs from "regular green timber sales" but not from salvage sales or commercial thinning.¹⁸⁸ Further, the Jamison Strategy did not fully implement the 50-11-40 rule, instead it encouraged management of dispersal habitat to the 50-11-40 rule only "where possible."¹⁸⁹

Courts eventually enjoined the interim management guidelines of both the FS and the BLM for violations of the National Environmental

182. See Dep't of Agriculture, Vacation of Northern Spotted Owl Guidance, 55 Fed. Reg. 40,412 (1990) (Notice) [hereinafter FS Interim Measure]; BUREAU OF LAND MANAGEMENT, MANAGEMENT GUIDELINES FOR THE CONSERVATION OF THE NORTHERN SPOTTED OWL FY 1991 THROUGH FY 1992 (Sept. 24, 1990) [hereinafter BLM GUIDELINES].

183. See 1991 BLM OPINION, *supra* note 137, at 40.

184. For an explanation of the "minor change rule" see *supra* note 21.

185. If the FWS required the elimination of 70 acres of owl habitat from a sale it would undoubtedly be a minor change if the "action" were considered to be the BLM's entire timber sale program, but if the "action" were considered in terms of a single sale, 70 acres could be the majority of the sale.

186. FS Interim Measure, *supra* note 182, at 40,412. See also FWS, FORMAL SECTION 7 CONSULTATION ON THE U.S. FOREST SERVICE REGION 6 FISCAL YEAR 1991 TIMBER SALE PROGRAM (SPECIFICALLY ADDRESSING 171 TIMBER SALES) 6 (Apr. 10, 1991) [hereinafter FS 1991 BATCH 1 OPINION].

187. BLM GUIDELINES, *supra* note 182.

188. "Regular green sales" involve high volume harvest prescriptions such as clearcutting; a prohibition on green sales does not prevent salvage sales, commercial thinning, or other lower volume harvest prescriptions. See BLM 318 OPINION, *supra* note 135, at 12.

189. BLM 1991 OPINION, *supra* note 137, at 18. See also BLM, NORTHERN SPOTTED OWL: THE JAMISON PLAN DETAILED MANAGEMENT STRATEGY, reprinted in BLM GUIDELINES, *supra* note 182, at app. A.

Policy Act (NEPA),¹⁹⁰ the National Forest Management Act (NFMA),¹⁹¹ and the ESA,¹⁹² but not before being evaluated in several FWS opinions on timber harvest. The FWS recognized the FS adoption of the ISC on an interim basis as a positive step, and in April of 1991, based a no jeopardy decision largely upon the fact that the timber sale program was consistent with the ISC strategy and involved less timber harvest than the estimated sustainable annual maximum under the ISC strategy.¹⁹³ However, at the time, FWS also stated that management consistent with the ISC strategy was not enough to assure ESA compliance, because the ISC strategy only attempts to ensure the survival of the spotted owl for 100 years while the ESA requires the survival and recovery of the species.¹⁹⁴ The FWS also observed that proceeding under the ISC strategy would eliminate future management options which should be preserved because assumptions behind the ISC strategy were untested.¹⁹⁵ Despite the fact that the FS received a "no jeopardy" opinion for all its sales, 57 of the sales were found to involve incidental take and were thus subjected to terms and conditions which, in addition to imposing nesting season restrictions, also required the deferral of harvest and sales around HCAs and in the Oregon Coast Ranges Province until additional owl surveys had been conducted and additional owls protected.¹⁹⁶ BLM failed to consult with FWS on the Jamison Strategy.¹⁹⁷ In its biological opinions on timber sales, FWS did not give much attention to the Jamison Strategy, but simply warned that the plan was inadequate, and that BLM's failure to comply threatened the success of the ISC strategy.¹⁹⁸

C. The BLM Jeopardy Opinions

1. The Jeopardy Determinations

The BLM's failure to adopt the ISC strategy led the FWS to make a "jeopardy" determination on 52 of the BLM's proposed 174 fiscal year

190. 42 U.S.C. §§ 4321-4370 (1988).

191. 16 U.S.C. §§ 1600-1687 (1988).

192. *Id.* §§ 1531-1544. See, e.g., *Seattle Audubon Soc'y v. Evans*, 771 F.Supp 1081 (W.D. Wash. 1991) *aff'd* 952 F.2d 297 (9th Cir. 1991); *Lane County Audubon Soc'y v. Jamison*, No. 91-6123-JO, 1991 WL 354,885 (D. Or. Sept. 11, 1991) *aff'd in part*, 958 F.2d 290 (9th Cir. 1992).

193. FS 1991 BATCH 1 OPINION, *supra* note 186, at 2.

194. *Id.* at 13.

195. *Id.* at 14-15.

196. *Id.* at 23-25.

197. *Lane County Audubon Soc'y v. Jamison*, No. 91-6123-JO, 1991 WL 354,885 (D. Or. Sept. 11, 1991) *aff'd in part*, 958 F.2d 290 (9th Cir. 1992).

198. See, e.g., BLM 1991 OPINION, *supra* note 137, at 18.

1991 sales.¹⁹⁹ However, FWS issued jeopardy opinions only for sales within the Oregon Coast Ranges, where it considered the amount of owl habitat to be dangerously low, and within the Rogue-Umpqua and Willamette/North Umpqua areas of concern, which FWS deemed to provide vital linkage between the Coast Ranges and Cascades Provinces.²⁰⁰ Even within these areas of concern, the FWS did not find jeopardy for every violation of the 50-11-40 rule. Outside these areas of concern, the FWS found no jeopardy despite the BLM's widespread violation of the 50-11-40 rule.²⁰¹

Within the coast ranges, FWS made "jeopardy" determinations for all sales which involved "take" of known owl singles or pairs,²⁰² and for most sales which reduced dispersal habitat in violation of the 50-11-40 rule.²⁰³ These determinations did not coincide with the requirements of the ISC strategy which called for the management of the entire forest matrix outside of HCAs according to 50-11-40 rule,²⁰⁴ and also called for category 3 HCAs around owl pairs in the Oregon Coast Ranges area of concern.²⁰⁵ In addition, the ISC strategy prescribed up to seven 80-acre "retention areas" (Category 4 HCAs) per township around known owl pairs.²⁰⁶ While the ISC strategy called for HCAs only around pairs, not singles, that strategy would have provided considerably more protection for these pairs than that offered by the FWS take prohibition because a category 3 HCA would require protection of owls mean range, a 1.5 mile radius in the coast ranges.²⁰⁷ The FWS gave jeopardy opinions to most of the sales violating the 50-11-40 rule in the coast ranges area of concern, but during consultation it determined that six sales within this area were unimportant for maintaining dispersal due to factors such as the general area exceeding 50-11-40 condition, isolation from other habitat, questionable suitability as dispersal habitat, and low concentrations of federal ownership in the area.²⁰⁸ Despite these departures from the ISC strategy, the FWS

199. *Id.* at 2.

200. *Id.* at 2-3, 22.

201. *See id.* at 3, 40. *See also id.* at app. 1 (table lists proposed sales and their effects; when the "jeopardy" sales are eliminated 45 sales which violate the 50-11-40 rule remain).

202. *See id.* at 2-4, app. 1.

203. *Id.*

204. ISC REPORT, *supra* note 28, at 29.

205. *Id.* at 323.

206. ISC REPORT, *supra* note 28, at 324, 326.

207. *See id.* at 324. Compare BLM 1991 OPINION, *supra* note 137, at 22-23 (FWS take definition) and ISC REPORT, *supra* note 28, at 323-324 (HCA guidelines). While a Category 3 HCA would protect a 1.5 mile radius around the owls' nest or activity center, *id.* at 324, the FWS "take" definition only protects a 70 acre core, requires the maintenance of 500 acres of suitable habitat within a 0.7 mile radius, and requires the maintenance of 40 percent suitable habitat within the owls' mean home range. BLM 1991 OPINION, *supra* note 137, at 22-23.

208. BLM 1991 OPINION, *supra* note 137, at 3, 9. The FWS used low concentrations of federal ownership or isolation from other federal land as one of the justifications for six of the seven exceptions,

determined that forty of the sixty-one proposed sales within the coast range area of concern were likely to create jeopardy for the spotted owl.²⁰⁹

Outside the coast range area of concern, the FWS extended even less protection to the owl. Except in areas of concern which were designated for linkage between physiographic provinces, the FWS did not deem violation of the 50-11-40 rule to create jeopardy. Even in linkage areas, FWS did not deem spotted owl "take" to create jeopardy.²¹⁰ The FWS determined that only ten sales outside the coast ranges would result in jeopardy. All of these were within the Rouge-Umpqua and South Willamette/North Umpqua areas of concern.²¹¹ In these areas, dispersal was already impaired by the fact that 37 percent of the quarter townships with BLM ownership were below 50-11-40 condition.²¹² The FWS determined that no sales outside these areas of concern would produce jeopardy, despite widespread "takes" and violation of the 50-11-40 rule.²¹³

2. Reasonable and Prudent Alternatives

If consultation results in a "jeopardy" opinion, the biological opinion produced by the Services must include a statement of any "reasonable and prudent alternatives" which would avoid violation of section 7(a)(2).²¹⁴ These "reasonable and prudent alternatives" must be "economically and technologically feasible," consistent with the purpose of the action, and within the authority and jurisdiction of the action agency.²¹⁵ In the case of the BLM 1991 jeopardy opinions, the FWS issued reasonable and prudent alternatives which required deferring sales until they could be determined to be consistent with a long-term conservation strategy or recovery plan.²¹⁶

In the coast ranges area of concern, the FWS "reasonable and prudent alternative" required deferral of timber sales, or portions of timber sales, which either fell within the home range of an owl or involved violation of the

but did not explain the relevance of this factor. Low federal ownership could be a logical factor because most private land is managed for timber harvest and generally does not contain suitable habitat; however, in three of the six low federal ownership sales, FWS also relied on the fact that the general area was in greater than 50-11-40 condition. *See id.*

209. *Compare id.* tbl. 1, at 4 and app. 1.

210. *Id.* at 2, 5, app. 1. There were twelve "no jeopardy" sales in the Rouge-Umpqua and South Willamette/North Umpqua areas of concern, and five of these involved "take." *See id.*

211. *Id.* at 2.

212. *Id.* at 22.

213. *Compare id.* tbl. 3, at 6-8 and app. 1 (Altogether, over one third of the 122 "no jeopardy" sales were expected to result in violation of the 50-11-40 rule, over one forth involved take, and approximately ten percent involved both take and violation of the 50-11-40 rule).

214. *See* 16 U.S.C. § 1536(b)(3)(A) (1988); 50 C.F.R. § 402.14(h)(3) (1992).

215. 50 C.F.R. § 402.02 (1992).

216. BLM 1991 OPINION, *supra* note 137, at 33.

50-11-40 rule.²¹⁷ For the "jeopardy" sales outside the coast ranges area of concern, the alternative required deferral only for the sales or portions of sales that violated the 50-11-40 rule.²¹⁸ The FWS considered these alternatives to be within the BLM's authority because the BLM had previously deferred sales subjected to terms and conditions in "no jeopardy" opinions.²¹⁹ The FWS claimed that these alternatives were consistent with the intended purpose of the action and were economically and technologically feasible because they allowed the sales to be offered in the future, involved no technological changes in the action, and required no resource loss since the value of the harvestable timber was likely to increase, "resulting in higher economic return in future years."²²⁰

The "reasonable and prudent alternatives" to the "jeopardy" sales promised to delay the sales for some time if the BLM decided to adopt them. The FWS required the sales to be consistent with a "long-term conservation strategy or recovery plan" before being implemented, but the sales were inconsistent with the ISC strategy which the FWS had recognized as "the only scientifically credible conservation strategy existing for the spotted owl."²²¹ As a result of the FWS "jeopardy" determinations, the BLM sought an exemption through the Endangered Species Committee for forty-four of the fifty-two sales.²²² The Committee granted BLM exemptions for thirteen sales. But even this partial victory was hollow for BLM because the exemptions were conditioned on BLM adoption of FWS's final recovery plan for the owl,²²³ use of the recovery plan as the basis for its annual and decadal plans, and suspension of sales until the decadal plan has been approved through programmatic consultation with FWS.²²⁴ Thus, if BLM conducted timber sales on the thirteen exemptions the agency would have to conform its entire timber program to a FWS recovery plan, or if the recovery plan was unacceptable to the BLM,

217. *Id.*

218. *Id.*

219. *Id.* at 34. The BLM had sought to avoid "terms and conditions" imposed on a number of sales through programmatic consultation on 318 sales by resubmitting them for consultation on an individual basis, apparently hoping that application of the "minor change" rule, *see supra* note 21, to individual actions would result in less stringent restrictions. *See* FWS, FORMAL SECTION 7 CONSULTATION ON 8 BUREAU OF LAND MANAGEMENT FISCAL YEAR 1990 TIMBER SALES 4 (Sept. 19, 1991); Memorandum from Dean Bibbes, State Director, BLM, to Marvin Plenert, Regional Director, FWS 1 (Nov. 19, 1990) (requesting final biological opinion on section 318 sales but objecting to drop recommendations as beyond the "minor change" rule); *see also supra* note 185 and accompanying text.

220. BLM 1991 OPINION, *supra* note 137, at 34.

221. *Id.* at 38.

222. *See* Endangered Species Committee, Notice of Decision, 57 Fed. Reg. 23,405 (1992) [hereinafter BLM Exemption].

223. Implementation of recovery plans is required under section 4(f) unless the Services determine that such a plan will not benefit the species. *See* 16 U.S.C. § 1533(f) (1988).

224. BLM Exemption, *supra* note 222, at 23,408.

to a future Endangered Species Committee determination.

3. *Incidental Take Statements*

FWS allowed sales to proceed despite "take" of owls, but used "reasonable and prudent measures" to extend additional protection to owls affected by sales involving "take." FWS prepared incidental take statements for thirty-seven "no jeopardy" sales involving a total "take" of up to sixty-two owl pairs or resident singles,²²⁵ and also for thirty-one of the fifty-two "jeopardy" sales where the FWS expected eventual harvest under the "reasonable and prudent alternatives" to result in a total "take" of thirty-nine owl pairs or resident singles.²²⁶ FWS also required reinitiation of consultation if other owls were discovered whose provincial home ranges would be affected.²²⁷ The "reasonable and prudent measures" included protection of (1) owl pairs and progeny during the nesting season; (2) pairs and resident singles around HCAs with less than 75 percent of target occupancy; and, (3) pairs and resident singles in the coast ranges.²²⁸ The terms and conditions imposed presented both substantive and procedural barriers to harvest, promising temporary delay on many sales and indefinite delay of "take" in some areas, making some of the "take" allowances essentially illusional.

The terms and conditions preventing nesting season disturbances protected a minimum radius of 0.25 miles around nest sites or activity centers from potential disturbances, with additional protection dependent on the discretion of BLM biologists.²²⁹ In addition, the FWS required surveys of harvest sites before harvest and, if previously located owls could not be found, surveys of all areas within 0.25 miles of the harvest unit. However, since the purpose of the restriction was to encourage reproductive success and juvenile survival, the BLM was allowed to drop nesting season restrictions if nesting or reproductive success surveys revealed "that spotted owls are non-nesting or that no young were produced during the year of harvest."²³⁰

Within the Oregon Coast Ranges Province, the terms and conditions protecting all pairs and resident singles required the deferral of all timber sales until after the BLM had conducted surveys according to FWS guidelines.²³¹ In addition, the FWS required three survey visits during the

225. BLM 1991 OPINION, *supra* note 137, at 40.

226. *Id.* at 34.

227. *Id.* at 31, 34.

228. *Id.* at 35.

229. *Id.* at 31-32.

230. *Id.* at 31-32.

231. *Id.* at 32. The FWS allowed the BLM to count pre-1991 surveys which did not conform to 1991 FWS guidelines. *Id.* Surveying under FWS guidelines is a complicated process which requires a

year of harvest, with all spotted owl habitat within 1.5 miles of the harvest activity included in the surveys.²³² The FWS required reinitiation of consultation whenever new pairs or resident singles which would be "taken" by the timber sales were located.²³³

Outside the Oregon Coast Ranges Province, the terms and conditions required the deferral of timber sales within a radius of up to six miles around a category 1 HCA with an occupancy of less than fifteen pairs and singles, or a category 2 HCA with less than 75 percent of target occupancy.²³⁴ If the HCA target occupancy could not be confirmed through surveys, the BLM was to protect additional owls outside the HCA to make up the difference between target and actual occupancy of the HCA. Those owls with the highest quality habitat were to be prioritized for protection.²³⁵ However, where an HCA was managed by more than one federal agency, each was required only to protect its pro-rata share of owls.²³⁶

4. *Conservation Recommendations*

FWS also included "conservation recommendations"²³⁷ in its biological opinion on the BLM sales. For the most part, the recommendations echoed previous recommendations by calling for adoption of the ISC strategy, changes in harvest prescriptions, and a reduction in allowable sale quantities.²³⁸ However, FWS also added several new recommendations, encouraging BLM to make more drastic changes, such as exceeding the 50-11-40 rule on BLM land to compensate for unsuitable conditions on adjacent land and protecting large contiguous blocks of habitat outside of HCAs.²³⁹

minimum of six visits to the area between March 15 and August 31 over a two-year period. See FWS, GUIDELINES FOR SURVEYING PROPOSED MANAGEMENT ACTIVITIES THAT MAY IMPACT NORTHERN SPOTTED OWLS, (Mar. 7, 1991), reprinted in BLM 1991 OPINION, *supra* note 137, at attachment 1.

232. BLM 1991 OPINION, *supra* note 137, at 32.

233. *Id.* Since jeopardy opinions were issued on all sales which involved "take" in the coast ranges (although there were no proposed sales within the coast range but outside the coast range area of concern which involved "take"), reinitiation of consultation because of a "take" could result in further jeopardy opinions in these areas.

234. *Id.* The actual radius required was the lesser of six miles or half the distance to the nearest HCA (owls are associated with the HCA to which they are nearest). *Id.*

235. *Id.*

236. *Id.* Thus two additional owls would need to be protected from "take" if there were an HCA managed 50 percent by the FS and 50 percent by the BLM with a target occupancy of 20 and an actual occupancy of thirteen. However, the BLM would only have to protect one owl and then could proceed with harvest even if the FS had not yet protected an additional owl.

237. See *supra* note 151.

238. BLM 1991 OPINION, *supra* note 137, at 37-39.

239. *Id.*

D. Recent Owl Opinions

Following the issuance of the BLM jeopardy opinions, the FWS issued a number of "no jeopardy" decisions to both the BLM and the FS.²⁴⁰ The types of requirements and the recommendations made in these opinions did not appear to vary substantially from the standards outlined in the BLM jeopardy opinions.²⁴¹ The FWS has not issued any further "jeopardy" opinions, despite the fact that the BLM has continued to violate the 50-11-40 rule.²⁴²

The FWS also consulted on the FS adoption of the ISC strategy as its official management policy.²⁴³ Although that consultation resulted in a "no jeopardy" opinion, the FWS did not issue a blanket "incidental take statement." Thus, the adoption of the strategy did not eliminate the requirement for future consultations on individual actions which involve potential owl "take."²⁴⁴ Despite the "no jeopardy" opinion, the FS has been enjoined by the courts from conducting sales under the ISC strategy because the FS violated NEPA²⁴⁵ by failing to consider significant new evidence in its EIS.²⁴⁶

E. Implications of the Owl Opinions

The biological opinions which have been issued by the FWS on the spotted owl make it clear that consultation is having significant effects on the action agencies and is resulting in some protection for the spotted owl. The FWS has used "take" restrictions to reduce threats to reproductive success and to protect owls in and around HCAs, and in areas of concern. By using an appropriate "take" restriction such as those protecting owls

240. See, e.g., FWS, BIOLOGICAL OPINIONS ON 82 BUREAU OF LAND MANAGEMENT FISCAL YEAR 1992 TIMBER SALES, (Feb. 4, 1992, amended Mar. 11, 1992) [hereinafter BLM 82 FY 1992 SALES OPINION]; U.S. FWS, BIOLOGICAL OPINION ON FOREST SERVICE THIRD BATCH OF TIMBER SALES (Mar. 3, 1992) [hereinafter FS 1991 THIRD BATCH OPINION].

241. However, because the FS adopted the ISC Strategy, the effect was that the FS was held to a higher standard than the BLM and was required to manage to the 50-11-40 rule as well as being subject to the same types of reasonable and prudent measures where "take" was involved. See, e.g., FS 1991 THIRD BATCH OPINION, *supra* note 240, at 14, 18.

242. See, e.g., BLM 82 FY 1992 SALES OPINION, *supra* note 240, at 25-31 (27 of 82 sales in violation of the 50-11-40 rule).

243. U.S. FWS, BIOLOGICAL OPINION ON THE PREFERRED ALTERNATIVE IN THE FOREST SERVICE'S DEIS ON MANAGEMENT FOR THE NORTHERN SPOTTED OWL (Dec. 18, 1991) [hereinafter FS DEIS OPINION], *reprinted in* FS FEIS, *supra* note 59, at app. M.

244. See *id.* at 7-8.

245. 42 U.S.C. §§ 4321-4370 (1988).

246. See *Seattle Audubon Soc'y v. Moseley*, 798 F.Supp. 1473, 1479-82 (W.D. Wash. 1992). One of the factors undermining FS adoption of the ISC strategy was the exemption granted to the BLM, since both the FS FEIS and the FWS "no jeopardy" opinion stated that the strategy would need reconsideration if exemptions were granted. *Id.* at 1480; FS DEIS OPINION, *supra* note 243, at 6.

around HCAs which are below 75 percent of target occupancy,²⁴⁷ FWS protects additional owls and habitat and increases the likelihood of eventual success of conservation efforts without making a politically perilous "jeopardy" decision. Further, the FWS has issued "jeopardy" opinions when agency actions were proposed in some areas which the FWS considered critical. The FWS has also issued "conservation recommendations" which, although purely discretionary, could result in improved present and future conditions if followed by the action agencies. However, just as clearly, the FWS has allowed actions to proceed despite harm to the owl; often these actions violate FWS's own standards.²⁴⁸ Most striking is the fact that FWS has continually allowed the BLM to violate the ISC's 50-11-40 rule even after (1) accepting the ISC strategy as a conservation goal against which future actions need to be measured;²⁴⁹ (2) acknowledging that the ISC goal of survival for 100 years might be inadequate to meet the requirements of the ESA;²⁵⁰ and (3) noting that management of BLM lands was a critical part of the ISC strategy.²⁵¹

A "jeopardy" determination allows the FWS to exercise a great deal of power, but the FWS appears reluctant to exercise this power. Despite continually repeating the importance of action agency adoption of the ISC strategy, the FWS has not required agency actions to conform to the ISC strategy, nor has it required the agencies to prove that their actions are consistent with any management strategy providing for the long-term survival of the owl. Although the Services may lack the authority to require action agencies to consult on existing management strategies,²⁵² FWS would have the authority to determine that actions inconsistent with the ISC strategy jeopardize the owl.²⁵³ Any new management strategies designed to avoid jeopardy decisions would be subject to consultation under section 7.²⁵⁴ Thus, the FWS could utilize "jeopardy" determinations

247. See, e.g., *supra* note 242 and accompanying text.

248. See PROCEDURES FOR COMPLIANCE, *supra* note 124, at 5.

249. PROCEDURES FOR COMPLIANCE *supra* note 124, at 5.

250. See, e.g., FS 1991 BATCH 1 OPINION, *supra* note 186, at 13.

251. BLM 1991 OPINION, *supra* note 137, at 19.

252. Compliance with the terms of section 7 is the responsibility of the action agency, and although the regulations allow the services to request consultation for agency actions that may affect listed species, no provision is made for action agency refusal to consult. See 50 C.F.R. § 402.14(a) (1992). Further, the Services do not have express authority to define the scope of an action, and where an "agency action" of plan adoption has been completed, an agency may be able to proceed with consultation limited to individual actions under the plan while evading consultation on the underlying management strategy.

253. Under the statute, the burden is on the action agencies to "insure" that their actions will not jeopardize a listed species, using the best scientific data available, 16 U.S.C. § 1536(a)(2) (1988), and FWS has recognized the ISC strategy as the only existing "scientifically credible conservation strategy" for the owl. See BLM 1991 OPINION, *supra* note 137, at 38.

254. See, e.g., FS DEIS OPINION, *supra* note 243 (consultation on FS adoption of ISC strategy).

to effectively force the action agencies to choose between abandoning potential actions or adopting new management strategies consistent with long-term conservation,²⁵⁵ but FWS appears reluctant to exercise its discretion in this manner, preferring instead to rely on a patchwork of incidental take restrictions for species protection.²⁵⁶

Although Service discretion is greatest where a "jeopardy" determination is reached, the power of the FWS to affect the actions of harvest management agencies does not always depend on such a determination. Where "incidental take" is involved, the FWS can impose restrictions to minimize the impact of the take.²⁵⁷ In order to avoid issuing jeopardy opinions, the FWS appears to have relied on this authority, issuing restrictive incidental take conditions which afford significant protection to the spotted owl. These conditions are often restrictive enough to delay or even prevent harvest despite a "no jeopardy" opinion. By using such conditions, FWS avoids making politically onerous "jeopardy" decisions while still providing some protection for the owl, but as a result, protection is erratic and inefficient and harvest activities are subject to constant uncertainty. Some of the conditions used by FWS may be in violation of the "minor change" rule,²⁵⁸ particularly where they require long-term deferral, elimination, or relocation of sales.²⁵⁹ However, the action agencies appear to prefer these restrictive conditions and the delay and uncertainty that accompanies them to a "jeopardy" opinion, and thus are willing to accept extremely restrictive conditions.²⁶⁰

See also Lane County Audubon Soc'y v. Jamison, 958 F.2d 290, 293 (9th Cir. 1992) (holding that Jamison Strategy was "agency action" requiring consultation).

255. Although a FWS "jeopardy" determination would not be binding on the action agency, *see supra* note 166, the courts ordinarily give great weight to biological opinions of the Services, and "agencies proceeding with an action in the face of an adverse biological opinion will be doing so at their peril." H.R. REP. NO. 1625, *supra* note 8, at 12.

256. FWS reluctance to dictate agency policy is not unique to the case of the owl. The comments accompanying the 1986 amendments to the section 7 regulations stated, "[i]n no way does the Service intend to use the consultation procedures of section 7 to establish substantive policy for Federal agencies." *See* Interagency Cooperation Final Rule, *supra* note 12, at 19,928.

257. *See* 50 C.F.R. § 402.14(i) (1992).

258. *See supra* note 21.

259. *See, e.g.*, FS 318 OPINION, *supra* note 135, at 21; BLM 1991 OPINION, *supra* note 137, at 35-36. Requirements of long-term deferral, elimination, or relocation seem to involve basic changes in design, location, scope, and timing, in direct contradiction of the limitations imposed by the regulations. *See* 50 C.F.R. § 402.14 (1992).

260. *See, e.g.*, Memorandum from Dean Bibles, State Director, BLM to Marvin Pfenert Regional Director, FWS I (Nov. 19, 1990) (requesting issuance of final biological opinion after review of draft opinion; despite contention that conditions imposed in it would reduce unawarded "may affect" timber sales by 22 percent). Violations of the "minor change rule" will probably go unchallenged if the action agencies do not challenge them because a biological opinion is considered advisory. *See supra* note 166. Thus, third party challenges would be limited to whether the action agencies' acceptance was arbitrary and capricious. *See also supra* note 21.

IV. CONSULTATION AND THE SNAKE RIVER SALMON

The NMFS has conducted a number of formal and informal consultations²⁶¹ concerning the effects of federal activities on the listed Snake River salmon. These consultations cover a broad range of activities, including activities attempting species and migration enhancement,²⁶² continuation of activities which have contributed to the current status of the salmon,²⁶³ and activities designed to reduce the economic and recreational side effects of salmon conservation measures.²⁶⁴ This section analyzes the NMFS consultation framework and biological opinions issued on two important activities—operation of the FCRPS, and harvest of salmon.

A. NMFS Objectives for 1992 Consultations

Most of the 1992 salmon consultations were conducted under extreme time pressures due to the seasonal and ongoing nature of the federal actions involved and the fact that the first salmon listing did not occur until November 20, 1991.²⁶⁵ NMFS had only the ESA's prohibition on actions "likely to jeopardize the continued existence of a species" to guide it in carrying out its consultations because no critical habitat had yet been designated or proposed,²⁶⁶ and a recovery plan had not yet been devel-

261. See *supra* note 14 (explaining informal consultation).

262. See, e.g., NMFS, BIOLOGICAL OPINION ON IDAHO DEP'T OF FISH AND GAME'S 1992 JUVENILE AND ADULT TRAPPING PROGRAM (Apr. 8, 1992).

263. See, e.g., FCRPS OPINION, *supra* note 65.

264. See, e.g., Letter from Merritt E. Tuttle, Division Chief, NMFS, to Robert E. Willis, COE Portland District (Dec. 6, 1991) (concurrence to COE biological assessment on Columbia River emergency dredging sites).

265. These time pressures were unnecessary; the Snake River Sockeye listing was proposed on April 5, 1991, and the chinook listing was proposed on June 27, 1991. See Sockeye Listing, *supra* note 25, at 58,619; Chinook Listing, *supra* note 26, at 14,654. Section 7(a)(4) requires federal action agencies to confer with the Services on actions which are likely to jeopardize any species proposed for listing. See 16 U.S.C. § 1536(a)(4) (1988). Recommendations during a conference are strictly advisory, and formal consultation is still required if the species is listed before the action is complete. However, the action agency can request that a conference be conducted according to the procedures for formal consultation, and if this is done, the result is a "conference opinion" which can be adopted as a biological opinion when the species is listed if no significant new information has been developed. See 50 C.F.R. § 402.10(c)-(d) (1992). Section 4(b)(7) does provide for emergency listing of species in some circumstances, see 16 U.S.C. § 1533(b)(7) (1988), and if this occurred, a Service argument that time constraints prevented full consultation might be legitimate.

266. Section 4 of the ESA requires, "to the maximum extent prudent and determinable," the designation of critical habitat concurrently with listing. 16 U.S.C. § 1533(a)(3) (1988). However, the absence of critical habitat designation has little substantive effect since under the current regulations, the ESA's prohibition on "adverse modification" applies only if an action "appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species." 50 C.F.R. § 402.02 (1992). Thus, adverse modification effectively requires a finding of jeopardy. See *supra* note 9. The importance of the restriction on adverse modification is further reduced by the fact that critical habitat has not been designated for most listed species despite the fact that courts have held that critical habitat designation should occur concurrently with listing. See *Northern Spotted Owl v. Lujan*, 758 F.Supp.

oped.²⁶⁷ As a result, NMFS decided that there was not time for comprehensive consultation on all federal actions, limiting many consultations to 1992 activities instead of addressing longer term management strategies. Further, NMFS made no attempt to establish guidelines for consultation based on the biological needs of the species, as required by the "jeopardy standard."²⁶⁸ Instead NMFS adopted a weak interim standard, stating that "[u]ntil specific standards are determined through the recovery plan process, the goal of all Federal agencies should be to improve survival and make progress toward reversing the decline of listed and proposed species."²⁶⁹

Under this interim plan, NMFS did not require a numerical increase in salmon survival; all it required was progress toward reducing mortality from baseline levels.²⁷⁰ NMFS did develop estimates of the reductions in mortality necessary to level the decline of the spring/summer and fall chinook, estimating that reductions of 7.4 percent to 20.7 were needed for the spring/summer chinook and 2.3 to 5.9 percent for the fall chinook,²⁷¹ but it did not require the reductions to be met in 1992.²⁷²

621 (W.D. Wash. 1991) (holding that failure to designate critical habitat for owl was arbitrary and capricious). See also U.S. GENERAL ACCOUNTING OFFICE, ENDANGERED SPECIES ACT: TYPES AND NUMBER OF IMPLEMENTING ACTIONS 29 (May 8, 1992) [hereinafter IMPLEMENTING ACTIONS] (indicating that critical habitat has been designated for only 16 percent of listed species). Furthermore, when critical habitat designation does occur, it involves consideration of economic factors. See 16 U.S.C. § 1533(b)(2) (1988).

267. Section 4(f) requires the Services to promulgate recovery plans for listed species unless they find that a plan will not promote the conservation of the species. 16 U.S.C. § 1533(f) (1988). However, the approval of recovery plans runs considerably behind listing. The FWS has a goal of recovery plan approval within 2.5 years after listing, but most plans take over 3 years, and recovery plans have been approved for only 61 percent of listed species. See IMPLEMENTING ACTIONS, *supra* note 266, at 33-36.

268. See *supra* note 9.

269. Letter from Rolland A. Schmitt, Regional Director, NMFS, to Ernest J. Harrell, Corps of Engineers, North Pacific Division 1-2 (Dec. 5, 1991) (on file with author) [hereinafter Letter to Federal Agencies] (Announcing sockeye listing and presenting consultation requirements and recommendations); FCRPS OPINION, *supra* note 65, at 15. The adoption of this interim goal has produced ongoing legal challenges by both industry and environmentalists. See Aluminum Co. of America v. Franklin, No. CV-92-972FR (D. Or. filed Aug. 5, 1992) (arguing excessive emphasis on hydroelectric operations); Northwest Resource Information Center v. NMFS, No. C92-1156 (W.D. Wash. filed July 21, 1992) (arguing consultation and protection inadequate).

270. See, e.g., FCRPS OPINION, *supra* note 65, at 16, 17. NMFS did not give a statutory justification for its "improvement from baseline" approach, which appears to incorporate ongoing operations, into the environmental baseline, see 50 C.F.R. § 402.02 (1992) ("effects of the action" definition), as if they were completed actions. However, this approach conflicts with the Supreme Court's interpretation of section 7: "Under the Court's reasoning, the Act covers every existing federal installation, including great hydroelectric projects and reservoirs, . . . The 'actions' that an agency would be prohibited from 'carrying out' would include the continued operation of such projects or any change necessary to preserve their continued usefulness." Tennessee Valley Auth. v. Hill, 437 U.S. 153, 203 (1978) (Powell, J., dissenting).

271. See STABILIZATION REPORT, *supra* note 75, at 14.

272. FCRPS OPINION, *supra* note 65, at 17. However, the NMFS did state that "the greatest

NMFS used estimated mortality under 1992 conditions and preexisting management strategies as the baseline from which decreased mortality was required.²⁷³ Baseline periods differed from consultation to consultation, and even within consultations, according to data availability and similarity of conditions.²⁷⁴ Notably, 1991 operations were excluded from the baselines because of incomplete data and because of changes in management strategies made in attempts to avert the proposed listing of the salmon; therefore 1992 improvements over "baseline" mortality are possible without making any improvements over 1991 operations or mortality rates.²⁷⁵ NMFS even admitted that application of the interim goal in subsequent years might not ensure the continued survival and recovery of the species.²⁷⁶ Consequently, the Service suggested that it was likely that "future standards will impose far more stringent requirements than are necessary to achieve the 1992 interim goal."²⁷⁷ But for 1992 operations, NMFS cited the "complexity of the species' life cycle, which includes the presence of multiple age classes in a single spawning year" as justifications for determining that actions conducted under the interim goal would not jeopardize the continued existence of the species.²⁷⁸

The adoption of an interim standard, acknowledged by NMFS as likely to be insufficient to reverse or even halt the decline of the species,²⁷⁹ is inconsistent with the ESA's implementing regulations and both the express language and the intent of the ESA. Section 7 requires that, through consultation, federal agencies "insure" that their actions are "not likely to jeopardize the continued existence" of any endangered or threatened species.²⁸⁰ The intent of the ESA is to give endangered species the benefit of the doubt where agency actions might jeopardize the species.²⁸¹ The

proportional improvements are expected of those activities with the greatest proportional take." *Id.* at 16.

273. See, e.g., FCRPS OPINION, *supra* note 65, at 17; CRFMP OPINION, *infra* note 336, at 6.

274. See, e.g., FCRPS OPINION, *supra* note 65, at 17-19 (baseline 1984-90 for juvenile passage, 1990 operations applied to 1928-78 runoff conditions for total juvenile mortality, 1975-90 for adult passage); CRFMP OPINION, *infra* note 336, at 6 (baseline 1986-90 harvest rate).

275. See, e.g., FCRPS OPINION, *supra* note 65, at 17-19; CRFMP OPINION, *infra* note 336, at 6.

276. See, e.g., FCRPS OPINION, *supra* note 65, at 15-16.

277. *Id.* at 16.

278. *Id.* at 15-16. This reliance on the "complex life cycle" implied that 1992 losses would be acceptable due to the fact that returning salmon would be spread out over several years and would be mixed with salmon from other years, thus minimizing the effects of mistakes in 1992. However this reliance on dispersed effects and mixture with other salmon is questionable in light of the extremely depressed condition of the salmon stocks and low returns in recent years. See discussion *supra* section II. B.

279. See, e.g., FCRPS OPINION, *supra* note 65, at 50.

280. 16 U.S.C. § 1536(a)(2) (1988).

281. H.R. CONF. REP. NO. 697, *supra* note 7, at 12.

implementing regulations require a finding of jeopardy if an action is expected to "reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of the species."²⁸²

NMFS admitted that application of its interim 1992 goal may not even level the decline of the listed species,²⁸³ indicating that further reduction in both the numbers and reproduction of listed species may occur as a result of 1992 operations. If this happens, it will appreciably reduce the chances of survival in the wild for at least two of the listed species, the sockeye and the fall chinook. By relying on the "complexity of each species' life cycle" and the "presence of multiple age classes in a single spawning year"²⁸⁴—in essence, the existence and eventual safe return of other members of the species, currently either in emergency rearing programs, at sea, or in the lakes and rivers—NMFS failed to give the listed species the benefit of the doubt. It also ignored the fact that the regulations call for survival in the wild,²⁸⁵ not mere survival.

In 1989 and 1990, the known sockeye return did not allow any breeding. In 1991, sockeye breeding potential was minimal.²⁸⁶ Under these circumstances, the reasonableness of NMFS reliance on future natural returns to mitigate damage caused in the current year is questionable.²⁸⁷ The danger of immediate jeopardy is less severe for the chinook, because its returns have not yet reached single digits; however, the fall chinook return has already fallen to the point where long-term viability may be threatened.²⁸⁸ At a minimum, NMFS should require sufficient progress in reducing mortality to prevent any further decline of this species, not mere progress toward reversing the decline. The purpose of consultation under the ESA is to "insure" that federal actions are "not likely to jeopardize" listed species,²⁸⁹ not to merely reduce mortality. As the following discussion of some of the consultations shows, progress under the interim goal of

282. 50 C.F.R. § 402.02 (1992).

283. FCRPS OPINION, *supra* note 65, at 50.

284. FCRPS OPINION, *supra* note 65, at 16.

285. 50 C.F.R. § 402.02 (1992)(definition of "jeopardize").

286. FCRPS OPINION, *supra* note 65, at 12 (returns of 0, 1, and 4).

287. Some of the endangered sockeye are being maintained in a captive rearing program, but these fish cannot be relied upon because of the danger of genetic drift and catastrophic loss to disease or system failure. See generally Michael L. Goodman, *Preserving the Genetic Diversity of Salmonid Stocks: A Call for Federal Regulation of Hatchery Programs*, 20 ENVTL. L. 111 (1990).

288. See generally GRANT G. THOMPSON, NMFS, DETERMINING MINIMUM VIABLE POPULATIONS UNDER THE ENDANGERED SPECIES ACT (1991)(indicating that minimum viable population to maintain genetic variability is generally believed to fall within the range of 1,000 and 10,000 adults). See also Endangered and Threatened Species; Endangered Status for Winter-Run Chinook, 57 Fed. Reg. 27,416, 27,421 (1992) (proposed June 19, 1992) (indicating that for fish with a three to five year life cycle, annual runs of 200-500 adults are needed to avoid loss of genetic diversity).

289. 16 U.S.C. § 1536(a)(2) (1988). See also *supra* note 9.

NMFS has been inadequate to insure that "jeopardy" is not likely to occur.

B. *Operation of the Federal Columbia River Power System*

Consultation on the 1992 operation of the Columbia River Power System (FCRPS) began on December 20, 1991. NMFS combined formal consultation on the Snake River sockeye, which had been listed one month before, and a formal conference on proposed species for the Snake River spring/summer and fall chinook.²⁹⁰ NMFS issued a final biological/conference opinion on April 10, 1992, twelve days before the Snake River spring/summer and fall chinook were listed as threatened species.

1. *Proposed FCRPS Activities*

The FCRPS Opinion covered the 1992 operation of the FCRPS by the Corps of Engineers (COE), the Bonneville Power Administration (BPA), and the Bureau of Reclamation (BOR). This opinion covered the operation of all federal dams on the Columbia and Snake Rivers, including the eight mainstem dams through which migrating Snake River salmon must pass.²⁹¹ The activities proposed for 1992 consisted of baseline operations with modifications to enhance salmon survival. The baseline used for juveniles was based primarily on 1984-1990 operations, but the base operations were applied to historical runoff conditions outside of the baseline period.²⁹² The baseline for adults consisted of operations from 1975-1990.²⁹³ NMFS admitted that baseline operations of the FCRPS were a significant factor in the decline of the listed salmon and were likely to jeopardize the species.²⁹⁴ Nevertheless, consultation focused only on changes made in baseline operations,²⁹⁵ including reservoir drawdowns and flow augmentation, a water temperature control experiment, a predator control program, increased law enforcement, changes in operation and maintenance, and changes in spill. Most of the changes were proposed by the action agencies, but significant changes such as increased

290. FCRPS OPINION, *supra* note 65, at 3, 11. A conference opinion can be adopted as a biological opinion when a proposed species is listed. See *supra* note 265.

291. See *supra* note 65 (listing of dams).

292. FCRPS OPINION, *supra* note 65, at 17-19.

293. *Id.* at 19.

294. FCRPS OPINION, *supra* note 65, at 17. See also STABILIZATION REPORT, *supra* note 75, at 3, 5, 14 (indicating that chinook populations are currently declining at approximately 25 percent per generation, and that improvements ranging from 2.7 to 20.7 percent are needed in each of five life stages of the salmon, and showing three phases for which hydropower may be a significant factor: presmolt mortality, downstream passage, and upstream passage).

295. Baseline operations essentially mean the continuation of business as usual under prelisting management strategies. Under the NMFS interim goal, focus was on "improvements" from this baseline instead of on the adverse effects of operations. This approach is not justified by ESA or its regulations. See *supra* notes 270, 275 and accompanying text.

spill and flow augmentation were added during the consultation process.²⁹⁶

2. *Effects of FCRPS Activities*

NMFS evaluated the effects of the 1992 operations in terms of changes relative to effects of pre-1991 baseline operations based on analysis of years for which similar conditions or appropriate data existed.²⁹⁷ Because of the nature of available data, NMFS used operations during different time periods as baselines for estimating the effects of operations on adults, juvenile travel times, and total juvenile mortality.²⁹⁸ Many of the estimated changes are qualitative because of inadequate data.²⁹⁹

The FCRPS plan called for reservoir drafting and flow augmentation to reduce juvenile migration time. The plan directed the COE to draft the four lower Snake River reservoirs to near minimum operating pool (MOP) for the period from April 1 through July 31, and to draft John Day Reservoir on the Columbia River to the extent possible without reducing agricultural pumping capacity.³⁰⁰ The plan also called for augmenting flows from upstream reservoir releases by varying amounts depending on runoff conditions, with the effect of producing higher flows throughout more of the juvenile migration period than would be provided under baseline operations. NMFS estimated that the FCRPS plan would increase average flow during the peak of the sockeye and spring/summer chinook juvenile migration, April 10 to June 20, by 6.6 percent on the Snake River, from 60 kcfs under baseline operations to 64 kcfs, and by 9 percent on the Columbia River, from 209 kcfs to 228 kcfs.³⁰¹ Similarly, flows on the Snake River would be increased during the peak of fall chinook migration in July from a baseline of 20 kcfs, by either 32.5 percent, to 26.5 kcfs, for 31 days, or by 67 percent, to 33.4 kcfs, for 15 days.³⁰² However, during the majority of the period of sockeye and spring/summer chinook juvenile migration, these increases result in flow levels amounting to less than 46 percent of the flows recommended by the CBFWA on the Snake river, and just 76 percent of recommended flows on the Columbia River. Similarly, the brief highest flow periods during the peak of fall chinook juvenile migration would only reach either 24 percent or less than 31

296. See FCRPS OPINION, *supra* note 65, at 2.

297. See *supra* note 270, 275 and accompanying text.

298. FCRPS OPINION, *supra* note 65, at 17-19. See also *supra* note 275 and accompanying text.

299. FCRPS OPINION, *supra* note 65, at 17-19.

300. *Id.* at 4. "MOP" is "the minimum elevation of the established normal operating range of a reservoir." FLOW MEASURES, *supra* note 122, §§ 11-5. The COE expected that the effect on agricultural pumping would be substantially below 4.5 feet above MOP. *Id.* §§ 4-141.

301. FCRPS OPINION, *supra* note 65, at 21.

302. *Id.* at 23-24.

percent of the minimum flows recommended for the entire migration period.³⁰³ Further, because of the acceptance of normal pre-1991 operating conditions as the baseline,³⁰⁴ combined with low 1992 runoff conditions, the resulting flows are even short of the average flows that have been provided in recent years,³⁰⁵ which NMFS previously recognized as inadequate.³⁰⁶

NMFS expected a number of other changes in operations to have significant effects, including increased spill at Ice Harbor and Lower Monumental Dams above the baseline levels required by the 1989 Fish Spill MOA.³⁰⁷ NMFS expected these increases to increase fish passage efficiency (FPE)³⁰⁸ at the dams by up to 26 percent, thereby reducing dam passage mortality significantly. NMFS also expected an extended season during which migrating smolts would be collected and transported to the Lower Columbia by barge or truck to significantly reduce fall chinook mortality because the Service believes that under current low flow hydropower system conditions, losses associated with transport are lower than those associated with river migration.³⁰⁹ NMFS also expected the salmon to benefit from programs to reduce squawfish predation, increased law enforcement efforts to prevent illegal fishing, installation of wires over fishways to prevent bird predation, and hiring of biologists to monitor juvenile bypass facilities.

NMFS evaluated the combined effects of these actions using both quantitative and qualitative factors, and stated that determination of the combined effects was "ultimately a matter of judgment."³¹⁰ For juveniles,

303. See FLOW PROPOSAL JUSTIFICATION, *supra* note 101, at 44. See also *supra* text accompanying note 107.

304. See *supra* note 270, 275 and accompanying text. NMFS applied recent operating conditions as the baseline despite the fact that in recent years flows have been manipulated to provide higher flows in the fall and winter when power demand is greater, resulting in lower spring and summer flows than historical flows under similar runoff conditions. See FLOW PROPOSAL JUSTIFICATION, *supra* note 101, at 50.

305. Spring flows on the Snake River will be only 71 percent of the recent average, and spring flows on the Columbia will be 97 percent of recent average. See FCRPS OPINION, *supra* note 65, at 21 (stating that during the April 10 to June 20 period between 1984-90 average has been 90 kcfs on the Snake River and 235 kcfs on the Columbia River). Further, the expected Snake River summer flows during fall chinook juvenile migration are lower than during any of the periods for which NMFS has data on the flow/travel time relationship. *Id.* at 24.

306. See *supra* note 109 and accompanying text.

307. However, increased spill was not certain under the FCRPS plan because the spill provision was limited by a statement that the spill would be provided only so long as it "does not cause nonpower impacts and BPA agrees to the power loss." FCRPS OPINION, *supra* note 65, at 9.

308. "FPE" is the percentage of fish avoiding passage through the dam's turbines. The NMFS estimates that turbine passage can cause 10 to 19 percent mortality and that the maximum mortality by other means of passage is 4 percent. *Id.* at 38.

309. *Id.* at 19, 25-28.

310. *Id.* at 39.

NMFS used modeling to produce numerical estimates of mortality using baseline and 1992 operations, but the model did not take into account all qualitative factors, and NMFS admitted that the results were not precise.³¹¹ For both adults and juveniles of all species the NMFS concluded that some decrease in mortality, from that under baseline conditions, would result from 1992 action modifications, but indicated that the magnitude of the decreases could not be precisely determined.³¹²

NMFS did develop some numerical estimates of changes in mortality, but these changes may not satisfy either section 7(a)(1)'s duty to conserve listed species or section 7(a)(2)'s duty to not jeopardize listed species. The figures indicate that juvenile mortality at baseline operations would be 71 percent for sockeye, 91 percent for fall chinook, 70 percent for spring chinook, and 73 percent for summer chinook.³¹³ Modeling showed improvements of 1.7 percent for sockeye, 9.1 percent for fall chinook, 2.4 percent for spring chinook, and 1.9 percent for summer chinook. Even with the improvements in operations, juvenile mortality remained staggeringly high: 69 percent for sockeye, 82 percent for fall chinook, 67 percent for spring chinook, and 71 percent for summer chinook.³¹⁴

NMFS estimated adult baseline mortality from causes other than legal harvest at 18 percent for sockeye, 69 percent for fall chinook, and 35 percent for spring/summer chinook.³¹⁵ NMFS estimated a 3.2 percent improvement for fall chinook adults, reducing mortality to 66 percent, but for the other species NMFS could only predict "some decrease in mortality."³¹⁶ The issuance of a "no jeopardy" opinion despite these extremely high mortality rates and small improvements appears inconsistent with NMFS' nearly simultaneous determination that in order to level the decline of the species, at each life stage, improvements of 2.3 to 5.9 percent were needed for fall chinook, and 7.4 to 20.7 percent for spring/summer chinook.³¹⁷ Further, NMFS stated that "the greatest proportional improvements are expected of those activities with the greatest proportional take,"³¹⁸ making its "no jeopardy" opinion even more inexplicable.

These small improvements were improvements only over baseline operations; in other words, over what would happen during 1992 if business

311. *Id.* at 43.

312. *Id.* at 42-47.

313. *Id.* (rounded to nearest percent).

314. *Id.* (rounded to nearest percent).

315. *Id.* at 29, 42-46 (including fallback, delay, and illegal harvest mortality)(rounded to nearest percent).

316. *Id.* at 43-46.

317. See STABILIZATION REPORT, *supra* note 75, at 14.

318. FCRPS OPINION, *supra* note 65, at 16.

was conducted as usual.³¹⁹ NMFS considered baseline operations "likely to jeopardize the continued existence" of the salmon;³²⁰ these operations contributed to the current status of these species, and to the current annual five to six percent reduction in chinook populations.³²¹ In addition, NMFS acknowledged that 1992 runoff would be below normal, and that salmon survival could be low in 1992 due to drought conditions.³²² Thus, the 1992 improvements approved in NMFS' biological opinion on FCRPS operations may result in no numerical increase in survival when compared to the actual numbers of salmon surviving in past years, making it clear that the baseline used does not reflect the biological needs of the salmon. NMFS has expressed concern that "if the proposed actions were continued beyond 1992, in conjunction with similar mortality reductions in other life history phases, it would not be sufficient to level the decline of all three species in one generation," and that "[c]ontinued population declines would jeopardize the continued existence of the species."³²³ In these circumstances, it is difficult to see how NMFS or the federal action agencies responsible for FCRPS operation could rely on small improvements from an artificial baseline to fulfill the ESA's mandate to "insure" that federal actions are not likely to jeopardize listed species.

3. *Incidental Take Guidelines*

When a "no jeopardy" opinion is given to an action which will involve the "take" of listed species, the Services must include an incidental take statement in the biological opinion specifying the amount of take that is authorized and imposing conditions to minimize take.³²⁴ NMFS could not determine the precise number of Snake River salmon that would be taken by FCRPS operations, but it developed quantitative estimates and included these in an incidental take statement for FCRPS operations. These estimates stated that passage mortality of adults, from causes other than legal harvest, should not exceed 18 percent for sockeye, 35 percent for spring/summer chinook, and 66 percent for fall chinook. Expected maximum passage mortalities for juveniles were 69 percent for sockeye, 68-71 percent for spring/summer chinook, and 82 percent for fall

319. See *supra* note 270, 275 and accompanying text.

320. FCRPS OPINION, *supra* note 65, at 17.

321. See STABILIZATION REPORT, *supra* note 75, at 3.

322. FCRPS OPINION, *supra* note 65, at 50.

323. *Id.* at 50 (emphasis in original). Even a leveling of the decline of the species in one generation would result in a smaller population than the present one because initial returns would not experience all of the improvements (i.e., salmon already at sea have already experienced two life stages in which improvements were not made). See STABILIZATION REPORT, *supra* note 75, at 1.

324. See *supra* note 21.

chinook.³²⁵ These estimates assumed that FCRPS operations would conform to an incidental take statement requiring operations to be carried out in accordance with the terms of the consultation and the resulting incidental take statement.

NMFS included a number of reasonable and prudent measures to minimize incidental take, along with general and site specific terms and conditions in the incidental take statement. These reasonable and prudent measures included: (1) modifying structures and operations at dams and bypass facilities to minimize mortality of juveniles and adults; (2) expanding juvenile and adult monitoring programs to determine effects of activities; (3) conducting a predator management program that would minimize incidental take of salmon; and, (4) increasing law enforcement to reduce poaching and studying the effects of this program on salmon survival.³²⁶ Although these measures may seem substantial, the terms and conditions implementing them make it clear that the term "minimize"³²⁷ actually only meant "reduce." The actual terms and conditions did not place a heavy burden on the action agencies, as most involved minor "housekeeping" details such as keeping fish screens and passage facilities clean and operational, monitoring salmon migration, developing new monitoring methods, and operating squawfish elimination devices in a conscientious manner.³²⁸ However, some of the terms and conditions had the potential to affect FCRPS operations. For example, in addition to requiring spill according to the Fish Passage Plan (FPP),³²⁹ they also required the operation of turbines to be within one percent of peak efficiency, prohibited the operation of unscreened units during the fish passage season, and required the shutdown of units when screens or gatewells were not cleaned.³³⁰

4. Conservation Recommendations

In its biological opinion on FCRPS operations, NMFS also suggested a number of discretionary "conservation recommendations."³³¹ Most of these measures centered on research aimed at reducing mortality in future

325. FCRPS OPINION, *supra* note 65, at 63. "Take" of listed species by federal agencies is only authorized if it is consistent with the terms of an incidental take statement. See *supra* note 21. Reinitiation of consultation is necessary if "take" exceeds that authorized in an incidental take statement. See 50 C.F.R. § 402.14(i)(4) (1992).

326. FCRPS OPINION, *supra* note 65, at 63-71.

327. "Minimize" means "to reduce to the smallest possible amount or degree." WEBSTER'S ENCYCLOPEDIA UNABRIDGED DICTIONARY OF THE ENGLISH LANGUAGE 912 (1989 ed.).

328. FCRPS OPINION, *supra* note 65, at 63-72.

329. U.S. ARMY CORPS OF ENGINEERS, FISH PASSAGE PLAN FOR 1992 (March 1992).

330. FCRPS OPINION, *supra* note 65, at 63-68.

331. See *supra* note 151.

years, developing integrated life cycle models for the salmon, and formulating a biologically-based performance standard against which hydro-power operations could be measured.³³² However, some measures potentially capable of immediate implementation were also included in the recommendations, including purchasing additional water for flow augmentation, acquiring spare parts to minimize down time for fish passage facilities, and improving survival of transported juveniles through measures reducing loading stress and holding times.³³³

C. *Salmon Harvest Opinions*

NMFS conducted a number of consultations on various 1992 harvest activities, including inriver fisheries under the Columbia River Fishery Management Plan (FMP), the Bering Sea and Gulf of Alaska Groundfish FMPs, Indian Ceremonial and Subsistence Fisheries (C&S Fisheries), and salmon harvesting under the FMP off the coasts of Washington, Oregon, and California.³³⁴ Many of these were informal consultations and did not result in biological opinions,³³⁵ but those consultations which did result in biological opinions serve to illustrate how the NMFS handled the harvest issue.³³⁶

NMFS applied its interim goal "to improve survival and make progress toward reversing the decline of listed and proposed species" with improvement expressed in terms of decreased mortality instead of increased survival.³³⁷ NMFS used the period of 1986-1990 as the baseline for comparison, primarily because of data availability and because management during that period was representative of current management

332. FCRPS OPINION, *supra* note 65, at 51-56.

333. *Id.*

334. See NMFS, BIOLOGICAL OPINION ON BUREAU OF INDIAN AFFAIRS 1992 SPRING/SUMMER CHINOOK FISHERIES OF THE SHOSHONE-BANNOCK TRIBES I (June 29, 1992) [hereinafter BIA OPINION] (describing consultations that had been conducted and were in progress).

335. Formal consultation is not required, if, following informal correspondence and communication with the Service, an action agency determines that the action is not likely to adversely affect a listed species or critical habitat, and the Service gives a written concurrence. See 50 C.F.R. § 402.14(b)(1) (1992).

336. See, e.g., NMFS, BIOLOGICAL OPINION ON 1992 SUMMER AND FALL FISHERIES CONDUCTED UNDER THE COLUMBIA RIVER FISHERY MANAGEMENT PLAN AND 1992 MANAGEMENT AGREEMENT FOR UPPER COLUMBIA RIVER FALL CHINOOK (June 12, 1992) [hereinafter CRFMP OPINION]; NMFS, ADDENDUM TO BIOLOGICAL OPINION FOR 1992 SUMMER AND FALL FISHERIES CONDUCTED UNDER THE COLUMBIA RIVER FISHERY MANAGEMENT PLAN AND 1992 MANAGEMENT AGREEMENT FOR THE UPPER COLUMBIA RIVER FALL CHINOOK SALMON (June 30, 1992) [hereinafter CRFMP ADDENDUM]; NMFS, BIOLOGICAL OPINION ON THE 1992 FISHERIES CONDUCTED UNDER THE FISHERY MANAGEMENT PLAN FOR THE SALMON FISHERIES OFF WASHINGTON, OREGON, AND CALIFORNIA (May 1, 1992) [hereinafter PPMC OPINION].

337. See, e.g., CRFMP OPINION, *supra* note 336, at 6 (quoting letter from Rolland Schmitt, NMFS Northwest Regional Director, to federal Agencies (Dec. 5, 1991)).

principles.³³⁸ NMFS acknowledged that in order to level the decline of the species,³³⁹ reductions in mortality of 7.4 to 20.7 percent were needed at each life stage for spring/summer chinook, and that reductions of 2.3 to 5.9 percent were needed for fall chinook, but these figures were not treated as requirements.³⁴⁰ Despite the fact that NMFS determined that the loss of even one adult sockeye could jeopardize the species, NMFS only required a reduction in mortality.³⁴¹

Regulating harvest of individual stocks of salmon is difficult because many stocks are in the harvest areas concurrently. Moreover, current knowledge and technology do not always allow the singling out of a specific stock for protection while allowing other similar stocks in the same area to be harvested. NMFS estimated the risk of catching a listed species by using hypergeometric distribution,³⁴² or by finding the historical percentage of catch in a given area and applying the percentage to the projected total 1992 catch.³⁴³ None of the 1992 salmon harvest consultations resulted in a jeopardy opinion, and nearly all the consultations anticipated significant reductions from the 1986-1990 baseline mortality, primarily due to reductions in harvest rates.³⁴⁴ Some of these reduced harvest rates were largely due to constraints on harvest unrelated to the ESA,³⁴⁵ and others were due to proposed harvest rates below those allowed under existing management plans.³⁴⁶ However, NMFS indicated that comprehensive consultations on management strategies would be necessary once a recovery plan is developed.³⁴⁷

338. See, e.g., PFMC OPINION, *supra* note 336, at 8; CRFMP OPINION, *supra* note 336, at 6.

339. See *supra* note 323.

340. See, e.g., CRFMP OPINION, *supra* note 336, at 6.

341. *Id.*

342. See, e.g., *id.* at 8. The hypergeometric distribution method used by NMFS involved estimating the total run size, and the run size of the listed species. Then NMFS determined the mathematical probability of catching one or more of the listed species at given catch levels. NMFS estimated a total sockeye run size of 50,000 and a Snake River sockeye run of 8, and produced probabilities ranging from 0.02 for a catch of 100, to 0.39 for a catch of 3,000. *Id.* at 8-9.

343. See, e.g., PFMC OPINION, *supra* note 336, at 8-11.

344. See, e.g., *id.* at 10 (40 percent reduction in exploitation of fall chinook); CRFMP OPINION, *supra* note 336, at 19-20 (22.3 percent reduction in spring/summer chinook harvest and 74.7 percent reduction in fall chinook harvest). But see BIA OPINION, *supra* note 334, at 6, 11 (harvest of 56 spring/summer chinook allowed as incidental take to catch of 220 salmon despite absence of baseline catch for comparison).

345. See PFMC OPINION, *supra* note 336, at 14 (concerns over Klamath River fall chinook).

346. See, e.g., CRFMP OPINION, *supra* note 336, at 18-20. Many opinions were issued late, or at the last possible minute after extended negotiation. Thus, the consultation requirement was probably the primary cause of decisions to forego harvest. See, e.g., *id.* at 1-2 (Opinion issued June 12 for fishery scheduled to start on June 1). NMFS claimed time pressures constrained the scope of consultations, and chose not to use consultation to address the underlying management plans which served as the baseline for consultation and which allowed for higher harvest levels. See *supra* note 265 and accompanying text.

347. See, e.g., Letter from William W. Fox, Jr., NMFS Director, to Phillip Anderson, PFMC

Despite the fact that none of the biological opinions found jeopardy, many of the harvest activities involved "incidental take" of listed species.³⁴⁸ Thus, NMFS was able to impose mandatory "reasonable and prudent measures" in incidental take statements. However, most of these measures and the terms and conditions implementing them were not very restrictive. For example, NMFS authorized the ocean fishery to take "unspecified numbers" of spring/summer and fall chinook, subject only to a measure requiring management consistent with the action agency's preseason plan and continuation of sampling of fisheries to facilitate a post-season analysis of impacts by NMFS.³⁴⁹ Similarly, so long as expected incidental take was not exceeded, the CRFMP incidental take measure required only inseason management consistent with preseason harvest objectives and continued monitoring sufficient to provide statistically valid estimates of the numbers and species composition of salmon caught.³⁵⁰ However, the incidental take statement did set levels of take below the levels which would normally have been allowed under the CRFMP. Since individual stocks could not be identified and treated separately, incidental take was expressed as total numbers of fish allowed, or as percentages of the total run.³⁵¹ No take of Snake River sockeye was directly allowed, but in one opinion allowing 3.1 percent of the total sockeye run to be harvested, NMFS acknowledged that there was a probability of 0.22 percent that one or more Snake River sockeye would be taken.³⁵²

D. *Implications of the Salmon Consultations*

If the NMFS goal of simply reducing mortality from levels at baseline operations was acceptable, the NMFS consultations on FCRPS operations and harvest activities would have to be considered marginally successful. ESA consultation produced substantive changes in dam operations and

Chairman, (May 1, 1992) (accompanying biological opinion) (indicating that interim plan was a stopgap measure, and stating that recovery plan will consider all sources of mortality and measures needed to ensure survival and recovery).

348. Harvest, might appear to involve "purposeful" rather than "incidental" take, but under the current regulations, an action constitutes "incidental take" if it results from, but is not the purpose of, an otherwise lawful activity. 50 C.F.R. § 402.02 (1992). Thus, where the target of harvest is another nonlisted salmon stock, an action would still constitute an "incidental take" and the more stringent requirements for a "purposeful take" in section 10 of the ESA would not be implicated. See 16 U.S.C. § 1539 (1988). See also Michael C. Blumm, *Saving Idaho's Salmon: A History of Failure and a Dubious Future*, 28 IDAHO L. REV. 667, 702 (1991-92) (explaining requirements for permits for purposeful take).

349. PFMC OPINION, *supra* note 336, at 15-16.

350. CRFMP OPINION, *supra* note 336, at 23-24.

351. See, e.g., *id.* at 24 (using different methods for different fisheries and stocks).

352. CRFMP ADDENDUM, *supra* note 336, at 4-5. See also *supra* note 342 (hypergeometric distribution used for determining probability).

harvest levels, both through concessions made by action agencies desiring "no jeopardy" opinions and through incidental take limitations imposed by the NMFS. These changes in operations and harvest levels will benefit the listed species. However, the consultations do not seem to satisfy section 7(a)(2)'s standard that federal agencies "insure" that their actions do not jeopardize the continued existence of a listed species because, instead of considering the biological needs of the species, NMFS required only improvements from an artificial "baseline" of the harm that the species would sustain if previous management policies continued unchanged.

The NMFS did not expressly mention economic or political implications of its opinions, but obviously these impermissible factors played a role in the 1992 "no jeopardy" decisions. NMFS determined that baseline operations of the FCRPS were "likely to jeopardize the continued existence" of the salmon,³⁵³ yet gave 1992 operations a "no jeopardy" opinion despite the fact that the proposed flow improvements of seven percent on the Snake River and nine percent on the Columbia River during the critical juvenile spring/summer chinook and sockeye migrations resulted in lower than average flows and flows far short of those considered biologically sound by the CBFWA.³⁵⁴ Further, the FCRPS action was structured to minimize impacts to other uses, as illustrated by the fact that reservoir drawdowns were limited by irrigation impacts³⁵⁵ and increased spill at Columbia River dams was to be provided only so long as it "does not cause nonpower impacts and BPA agrees to the power loss."³⁵⁶ Requiring mortality reductions measured against what would have resulted from past operating conditions or harvest levels is inherently flawed because decreases from an artificial "baseline" level of mortality are meaningless if the "improved" action results in a decrease in the numbers of a listed species, as was likely under 1992 drought conditions.³⁵⁷

V. CONCLUSION

This examination of biological opinions issued by the NMFS on the Snake River salmon and by the FWS on the northern spotted owl makes it clear that consultation under section 7 of the ESA presents no absolute bar to major federal actions, despite acknowledged harm to listed species. In the case of the owl, the FWS issued numerous "no jeopardy" opinions for timber harvest despite widespread violation of the 50-11-40 rule,³⁵⁸ which

353. FCRPS OPINION, *supra* note 65, at 17.

354. *See supra* notes 301, 302 and accompanying text.

355. FCRPS OPINION, *supra* note 65, at 4.

356. *Id.* at 9 (quoting FPP, *supra* note 329, at 1).

357. *See supra* note 322 and accompanying text.

358. *See, e.g., supra* notes 201, 242 and accompanying text.

it acknowledged to be a critical component of the only existing credible long-term conservation strategy for the owl.³⁵⁹ The FWS also allowed actions to proceed despite "take" of hundreds of owl pairs through destruction of habitat.³⁶⁰ In the case of the salmon, NMFS accepted small improvements from an artificial "baseline" of mortality that would occur if past management strategies were continued,³⁶¹ despite the fact that resulting flow conditions did not even approximate the biologically-based recommendations of the CBFWA,³⁶² and despite NMFS' concern that the changes would be insufficient to "level the decline" of the salmon.³⁶³ NMFS' "baseline" approach, which appears to be a product of political expediency with no statutory basis,³⁶⁴ ignored the biological needs of listed species and allowed NMFS to issue a "no jeopardy" opinion for FCRPS operations despite the fact that (1) there was no expectation of increased numerical survival;³⁶⁵ (2) only minimal changes were made in operations;³⁶⁶ and, (3) expected mortality rates remained as high as 66 percent for adults and 82 percent for juveniles.³⁶⁷ Clearly, the ESA does not prevent all harm to listed species.

Section 7's mandate requires the action agencies to "insure" that their actions are not likely to jeopardize a listed species.³⁶⁸ However, when faced with potential political repercussions,³⁶⁹ the Services appear reluctant to issue a "jeopardy" opinion unless clear scientific evidence exists indicating that an action is likely to cause irreparable harm to a species' chances of survival.³⁷⁰ Unwilling to declare jeopardy, the Services' attempts to protect listed species through other means, such as conditions imposed on permits for "incidental take,"³⁷¹ as well as through warnings in strongly worded discretionary "conservation recommendations."³⁷² Thus, while the section 7 consultation requirement has not directly blocked many federal actions, it has resulted in extensive Service involvement and monitoring of the day-to-day operations of other federal agencies. While this oversight has

359. See, e.g., BLM 1991 OPINION, *supra* note 137, at 18-21.

360. See, e.g., *supra* notes 144, 170, 225 and accompanying text.

361. See *supra* notes 270, 275 and accompanying text.

362. See *supra* note 303 and accompanying text.

363. See *supra* note 323 and accompanying text.

364. See *supra* notes 270, 275.

365. See *supra* note 323 and accompanying text.

366. See *supra* note 328 and accompanying text.

367. See *supra* notes 314, 316 and accompanying text.

368. 16 U.S.C. § 1536(a)(2) (1988).

369. See *supra* note 13 and accompanying text.

370. The Services are effectively reversing the statutes' burden, and this approach receives some support from the current regulations despite the fact that it conflicts with legislative history. See *supra* note 9.

371. See *supra* note 21.

372. See *supra* note 151.

achieved some piecemeal species protection, it has also produced uncertainty, delay, and frustration among federal agencies and those who depend on their actions.

The consultation process of the ESA is currently not achieving adequate species protection, is resulting in economically crippling uncertainty, and has resulted in seemingly endless legal challenges to agency actions. In this context, the consultation process might easily be considered "broken," and revision of the statute might be encouraged by agencies and industries desiring both greater certainty and less intrusive measures, and by environmentalists desiring greater species protection.

However, the efficiency and reliability of the consultation process can be improved without making major changes in the statute. The consultation problems are not due to the text of the ESA, but to the failure of the Services and federal action agencies to seriously attempt to fulfill their statutory responsibilities and to use the current statutory framework effectively. The efficiency and reliability of the consultation process could be greatly improved through changing the section 7 implementing regulations to more closely reflect the ESA's purpose, and through increased use of "jeopardy" opinions combined with subsequent reliance on the exemption process. Further improvements could be made through increasing public participation and through increased reliance on programmatic consultations involving agency management strategies instead of individual actions or groups of actions for a single year. Although these changes could be instigated by the Services, rapid and efficient adoption with a minimum of legal challenges would require congressional action.

A. *Regulatory Imbalance*

The ESA's implementing regulations currently overemphasize action agency independence and underemphasize the ESA's overriding goal of species protection. This imbalance is primarily seen in the definitions of "jeopardize," and "destruction or adverse modification of critical habitat,"³⁷³ and in the "minor change rule"³⁷⁴ which limits Service ability to require mitigation. But this overemphasis on action agency discretion is also evidenced by the absence of language giving the Services the ability to require consultation or to define the scope of consultation. When the implementing regulations were amended in 1986, the Services stated clearly in the preamble of the new regulations that consultation was not intended to "establish substantive policy for federal agencies."³⁷⁵ If the

373. See 50 C.F.R. § 402.02 (1992). See also *supra* notes 9 and 266.

374. See *supra* note 21.

375. See Interagency Cooperation Final Rule, *supra* note 12, at 19,928.

Services used their remaining discretion aggressively, effective protection of listed species would be possible within the bounds of these regulations. However, the current regulations allow the agencies and Services to avoid immediate political repercussions at the expense of species protection and long-term efficiency.

While courts have recognized that the duty to avoid actions "likely to jeopardize" a listed species takes priority over the "primary missions" of federal agencies,³⁷⁶ neither the action agencies nor the Services seem to recognize this priority. The federal action agencies view the ESA as an obstacle to avoid instead of as a goal to achieve.³⁷⁷ Furthermore, the Services appear reluctant to require modifications in the basic management strategies of other agencies in the face of strong political opposition, the possibility of adverse economic consequences, and the weakly asserted Service authority under current ESA regulations.³⁷⁸

The ESA requires that agencies "insure" that their actions are not likely to jeopardize a listed species, and the Act's legislative history indicates that listed species are to be given the benefit of the doubt,³⁷⁹ making it clear that the burden is on the action agency to "demonstrate to the consulting agency that its action will not violate section 7(a)(2)."³⁸⁰ Despite the ESA's mandate, the Services and the current regulations give action agencies the benefit of the doubt, and jeopardy opinions are only issued when the Services find that an action "is likely to jeopardize" a listed species. This conflicts with the ESA's mandate, and as a result, the action agencies have little incentive to adopt protective long-term management strategies. Under the current regulations, species protection is reduced to a patchwork of "take" restrictions, even when programmatic changes in management strategies are needed and available. A new rule making is needed to extend Service authority explicitly to the management strategies of federal agencies and to make express the Act's intent to place the burden on the action agencies to demonstrate that their actions will not jeopardize listed species.

376. See, e.g., *Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 185 (1978); *Sierra Club v. Marsh*, 816 F.2d 1376, 1383 (9th Cir. 1987). The duty to avoid "jeopardy" is different from the duty to "conserve" where courts have found greater agency discretion. See, e.g., *Pyramid Lake Paiute Tribe of Indians v. United States Dep't of the Navy*, 898 F.2d 1410, 1416-19 (9th Cir. 1990).

377. See, e.g., *Seattle Audubon Soc'y v. Evans*, 952 F.2d 297, 301 (9th Cir. 1992) (FS attempted to argue that ESA listing relieved it of the duty to manage for spotted owl viability under NFMA). See also *supra* notes 185, 219 and accompanying text (BLM attempts to reduce scope of consultation to evade reasonable and prudent measures).

378. This reluctance is illustrated by the fact that the FWS allowed the BLM to consult on individual sales (although FWS did treat the sales as interrelated) and to systematically violate the 50-11-40 rule. See, e.g., *supra* note 201 and text accompanying note 242.

379. H.R. CONF. REP. NO. 697, *supra* note 7, at 12.

380. *Id.*

B. *Increased Reliance on the Exemption Process*

The owl and salmon consultations indicate that the consultation process is not functioning as Congress intended, at least not where federal operations of immense political and economic importance are involved. Political and economic considerations have no place in the making of a "jeopardy" or "no jeopardy" decision. The 1978 ESA amendment providing an exemption procedure was intended, in part, to result in flexibility which would discourage political decisions by the Services, since Congress believed that "[t]hose individuals charged with the administration of the act do not have the legal authority to weigh the political importance of an endangered species."³⁸¹ Decisions involving consideration of political and economic factors are particularly inappropriate in the consultation process because consultation is not a public process, and the results of consultation are not easily accessible by the public. Further, self-imposed regulatory limitations on Service authority, preventing the Services from considering alternatives that are inconsistent with the intended purpose of the action or which are outside the jurisdiction of the action agency,³⁸² and which limit the Services' ability to require mitigation measures to minor modifications,³⁸³ may inhibit the Services from prescribing alternatives and mitigation measures that clearly prevent jeopardy. These regulatory restrictions may also prevent the development of efficient solutions which may be outside the recognized authority of the action agency.

Congress created an exemption procedure which allows for the weighing of political and economic concerns because it anticipated that some federal actions would jeopardize the existence of listed species.³⁸⁴ Unlike consultation, the exemption procedure is publicly accessible, involves an exploration of all alternatives, and is an appropriate forum for consideration of political and economic effects. However, the ESA exemption process has been largely ignored; exemptions have only been sought on six occasions, and on three of those occasions the process was dropped before completion.³⁸⁵ Those who argue that the ESA does not allow for the weighing of economic and social costs can do so only because neither the Services nor federal action agencies have been willing to rely on the exemption process. For the ESA to function as Congress intended, the Services must issue a "jeopardy" opinion whenever a federal action agency

381. H.R. REP. NO. 1625, *supra* note 8, at 13.

382. See 50 C.F.R. § 402.02, 402.14(h)(3) (1992).

383. *Id.* §§ 402.02, 402.14(i)(2).

384. H.R. REP. NO. 1625, *supra* note 8, at 13.

385. Exemptions have been granted in two of the three cases where the process was pursued to completion. See IMPLEMENTING ACTIONS, *supra* note 266, at 37-38. See also BLM Exemption, *supra* note 222, at 23,405.

cannot meet its burden of showing that its proposed action "is not likely to jeopardize" a listed species. The action agencies may then seek exemptions for actions involving benefits which outweigh species costs.³⁸⁶

Although reliance on the Endangered Species Committee creates a danger that a particular species, or subpopulation of a species, may be knowingly sacrificed, it also presents the possibility of an efficient resolution either barring the action entirely, or allowing the action but requiring extensive permanent mitigation measures and management changes.³⁸⁷ Further, if the Services were more willing to issue jeopardy opinions, action agency opposition to the delay, public scrutiny, and uncertainty of the exemption process might prompt action agencies to adopt sound long-term conservation strategies instead of catering to the political expediency of the moment.

C. Programmatic Consultation

Case by case consultation creates both uncertainty for action proponents and inadequate protection for listed species. The Services should have express authority to demand programmatic consultation on entire management plans instead of consultations on individual actions or groups of actions. This power is arguably present under the ESA and its current regulations.³⁸⁸ However, the Services have been reluctant to require formulation of new management strategies in the context of consultation.³⁸⁹ Programmatic consultation, combined with periodic revisions and continued monitoring by the Services would allow individual actions to proceed without further consultation, absent discovery of significant new information. Although delays could result from requiring programmatic consultation because the official adoption of new management strategies might require compliance with the National Environmental Policy Act,³⁹⁰

386. However, exemptions must be sought on a programmatic basis if real results are to be achieved. The BLM's attempts to seek exemptions on individual sales, although partially successful, indicates the futility of such an approach. See BLM Exemption, *supra* note 222, at 23,405.

387. See, e.g., *id.* at 23,408 (allowing 13 of 44 sales to proceed but requiring adoption of conservation strategy). Delays due to use of the exemption process should not exceed 190 days. See 16 U.S.C. §§ 1536(g)-(h) (1988). The "minor change rule" of the current regulations prevents the Services from requiring similar mitigation and management changes, see *supra* note 21, and the Services are required to protect the "distribution" of the species under the regulations definition of jeopardize, thus limiting the potential for compromise. See 50 C.F.R. § 402.02 (1992).

388. See *Lane County Audubon Soc'y v. Jamison*, 958 F.2d 290, 294 (9th Cir. 1992) (holding that management strategy is "agency action" and that under the regulations the action agency must consult on any action "at the earliest possible time."). See also 50 C.F.R. § 402.14(a) (1992).

389. Even the new draft recovery plan which recognizes the value of and encourages programmatic consultation, would allow agencies to conduct case by case consultations which could undermine recovery efforts. DRAFT RECOVERY PLAN, *supra* note 30, at 128-29. See also *supra* note 375 and accompanying text.

390. National Environmental Policy Act, 42 U.S.C. § 4321-4370 (1988). See, e.g., *Seattle*

these delays are warranted in light of the goals of the ESA and the irrevocability of species extinction. Further, delays due to NEPA compliance would be more predictable and possibly shorter than current delays which result from successful legal challenges to ill-planned agency actions. Express Service authority to demand programmatic consultations would make the action agencies more accountable for their actions, and would remedy the current situation where the refusal of one federal agency to conduct programmatic consultation can invalidate the management strategies of other federal agencies, as occurred when the BLM refused to adopt the ISC strategy and sought exemptions from jeopardy determinations.³⁹¹

D. *Increased Public Participation*

Much of the current controversy surrounding the ESA is an indirect result of the fact that the consultation process is subject to almost no public review. This hidden process has enabled the Services and action agencies to engage in political maneuvering and bargaining, often resulting in short-term compromises without adequate regard for long-term effects. This process allows the Services to avoid political fire by not issuing "jeopardy" opinions and the action agencies, by acquiescing to Service terms and conditions, to pursue activities without exposing their agency to the public scrutiny that would be required for either adopting new management strategies or using the ESA exemption process. The public is thus largely unaware of the extent of harm that the Services are allowing the action agencies to inflict upon listed species and of the extent of action agency resistance to the ESA's mandate. As a result of this lack of information, large segments of the public view the conditions which the Services do impose on agency actions as excessive and consider legal challenges to agency actions which have received "no jeopardy" opinions to be harassment by environmental plaintiffs.

The Services and the action agencies could be made more responsible and accountable by introducing a greater degree of public participation and notification. Greater reliance on programmatic management strategy consultations will allow direct public participation in the NEPA process, but consultation needs to be more public as well. Direct public participation through notice and opportunity to submit written comments, such as that provided under section 10(c) for private "take" permits,³⁹² may be impracticable due to the sheer volume of federal actions. However, it would

Audubon v. Moseley, No. C92-479WD, 1992 U.S. Dist. LEXIS 12,500, at *28 (finding FS management strategy in violation of NEPA due to shortcomings of Environmental Impact Statement, partially due to BLM exemption).

391. See Seattle Audubon v. Moseley, No. C92-479WD, 1992 U.S. Dist. LEXIS 12,500, at *28.

392. 16 U.S.C. § 1539(c) (1988).

not be impracticable to require notice that consultation has been requested and publication of a summary of the results of consultation, along with instructions for obtaining copies of complete biological opinions. Further, where programmatic consultations are involved, it would be practicable to allow for written comments and a public record, just as is now done when private "take" permits are sought.

Other studies have shown that consultation usually offers rapid, efficient, and minimally restrictive resolution to conflicts between listed species and federal actions.³⁹³ But, in the cases of the owl and the salmon, the process has failed to resolve the conflicts in an economically, politically, or ecologically sound manner. This failure might suggest that section 7 of the ESA is in need of revision. However, closer analysis indicates that the statutory framework of the ESA is adequate; all that is really needed is for the Services and action agencies to accept their statutory responsibilities and to properly use their authorities under the current statute. Congressional prodding may be necessary in order to instigate changes in Service and action agency policies, but this can be accomplished without major revision of the ESA or of the consultation process.

393. See, e.g., IMPLEMENTING ACTIONS, *supra* note 266, at 30-32.