

Salmon on the Brink: The Imperative of Integrating Environmental Standards and Review on an Ecosystem Scale

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I. INTRODUCTION

From a fish perspective, aquatic health under the ESA and clean water under the Clean Water Act should be the same thing, and if they're not, something's wrong.

Will Stelle, Regional Administrator
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"Salmon Slip from Bounty to Brink." So exclaimed the massive headline on the front page of the *Seattle Post-Intelligencer* on March 3, 1998. Of course, salmon in the Pacific Northwest have been on the brink for decades. As early as 1937 Congress expressed concern about the Columbia River's salmon runs.² By 1978 the National Marine Fisheries Service was considering listing Snake River salmon populations under the Endangered Species Act,³ a threat the agency finally followed through on fourteen years later.⁴ But on February 26, 1998,

1. Preston, Gates & Ellis LLP, *William Stelle on the Endangered Species Act*, ENVTL. & LAND USE LAW NEWSLETTER (Wash. State Bar Ass'n), Summer 1997, at 5.

2. Northwest Research Info. Ctr. v. Northwest Power Planning Council, 35 F.3d 1375, 1377 (9th Cir. 1994) (citing S. DOC. NO. 75-87 (1st Sess. 1937)). Congress itself was warned about declining salmon stocks by Spencer Fellerton Baird, an official with the Commission on Fish and Fisheries, as far back as 1875. *What Listings Will Bring*, REGISTER GUARD (Eugene, Or.), Mar. 16, 1999.

3. *Northwest Research*, 35 F. 3d at 1377.

4. 56 Fed. Reg. 58619 (1991) (announcing determination by the National Marine Fisheries Service that the Snake River Sockeye Salmon is endangered); 57 Fed. Reg. 14653 (1992) (announcing determination by the National Marine Fisheries Service that the Snake River spring/summer Chinook salmon and Snake River fall Chinook salmon are threatened). The listing actions were delayed largely as a result of the creation of the Pacific Northwest Electric

the National Marine Fisheries Service announced the unprecedented proposed listings under the Endangered Species Act of thirteen salmon and steelhead populations in Washington, Oregon, and California.⁵ On March 24, 1999, nine of these species, including the Puget Sound Chinook, were formally listed;⁶ the remainder are expected to be listed in the near future.

The Endangered Species Act listings radically changed the world for decision makers and environmental managers in the Pacific Northwest. Although other fish have been listed in the past—most infamously, the snail darter⁷—the migratory nature of salmon and steelhead species implicates a far greater range of habitat than virtually any other species. Encompassed within this range are dozens of land and water uses that present potential threats to the species' survival.⁸ The listing of the Puget Sound Chinook is also the first major Endangered Species Act listing in a heavily urbanized region, and it could have a potentially crippling effect on the regional economy and the ability to sustain important public services, from water withdrawals for irrigation to road construction and maintenance.⁹ In short, billions of

Power and Conservation Planning Council in 1980. See 16 U.S.C. § 839(a)-(h) (1994). The Council was charged with preparing and adopting a program "to protect, mitigate, and enhance fish and wildlife, including related spawning grounds and habitat, on the Columbia River and its tributaries." *Id.* § 839b(h). It failed miserably, as evidenced by the recent proposed listings, which include five species in the Columbia-Snake River basin. See *Fisheries Service Proposes Protection for 13 Salmon, Steelhead Populations on the West Coast* (Press Release Feb. 26, 1998) <http://www.nwr.noaa.gov/1press/022698_1.htm> (visited May 22, 2000) (hereinafter Listing Press Release).

5. Listing Press Release, *supra* note 4. The formal proposals were published in the Federal Register on March 9-10, 1998. See *Endangered and Threatened Species: 63 Fed. Reg. 11482 (1998)* (proposed Endangered Status for Two Chinook Salmon ESUs and Proposed Threatened Status for Five Chinook Salmon ESUs; proposed redefinition, threatened status, and revision of critical habitat for one chinook salmon ESUs; proposed designation of chinook salmon critical habitat in California, Oregon, Washington, Idaho); *Endangered and Threatened Species: 63 Fed. Reg. 11774 (1998)* (proposed threatened status and designated critical habitat for Hood Canal summer-run Chum salmon and Columbia River Chum salmon); *Endangered Species: 63 Fed. Reg. 11798 (1998)* (proposed threatened status for two ESUs of Steelhead in Washington and Oregon); *Endangered and Threatened Species: 63 Fed. Reg. 11750 (1998)* (proposed threatened status and designated critical habitat for Ozette Lake, Washington Sockeye salmon).

6. *Endangered and Threatened Species: 64 Fed. Reg. 14308-14328 (1999)*; *Endangered and Threatened Species: 64 Fed. Reg. 14508 (1999)*; *Endangered and Threatened Species: 64 Fed. Reg. 14577 (1999)*.

7. See *Tennessee Valley Authority v. Hill*, 437 U.S. 153 (1978).

8. For instance, to spawn in the Snoqualmie River, a king salmon must evade suffocating silt and floods washing off timberland and housing developments, swim through wastewater from dairy farms and untreated human sewage, and navigate urban runoff contaminated with toxic, oil and pesticides just to make it to the ocean. See Rob Taylor, *As Obstacles for Chinook Pile Up, Fish Numbers Shrink*, SEATTLE POST-INTELLIGENCER, March 3, 1998, at A7. Upon its return four years later, the salmon must run "a gauntlet of nets and hooks" from Alaska to Bellingham Bay. *Id.*

9. See, e.g., Steve Wilhelm, *Impacts of ESA Listing Are Here*, 20 PUGET SOUND BUS. J. 1,

dollars of investment and the livelihoods of hundreds of thousands are at stake.

Despite the consequences of the listings, ignoring the plight of the salmon and steelhead runs is not an option. First of all, it is not legally possible. More importantly, there is broad public support for an aggressive campaign to restore salmon runs. While "eat an owl, save a logger" bumper stickers were popular in Western Washington during the early 1990s,¹⁰ there is an entirely different view toward salmon in the Pacific Northwest. Salmon, like the recovering bald eagle, are at the top of the list of "charismatic megafauna."¹¹ For millennia, salmon formed the cornerstone of tribal culture and economies and retain a high status as a regional icon and symbol of the quality of life in the Pacific Northwest. As the title of the Washington governor's salmon plan notes, "extinction is not an option."¹²

The salmon and steelhead listings come a quarter century after the enactment of federal legislation that pledged to protect aquatic systems. Obviously, the legislation has not succeeded. As the Pacific Northwest and policymakers struggle to address the ramifications of the new listings, "watershed management" has come to the forefront as the modern, more effective, paradigm for aquatic ecosystem protection. The watershed management approach, a subset of ecosystem management that uses scientific evaluation of watershed dynamics and limitations to establish watershed specific standards and prioritize restorative actions, has generated much enthusiasm during the past decade amongst scientists, academics, and federal and state pollution control agencies.¹³ Today, both the federal government and Washing-

85 (May 21-27, 1999); Sean Robinson, *Salmon Listing Raises Housing Cost Questions*, 20 PUGET SOUND BUS. J. 32 (June 11-17, 1999).

10. The 1990 listing of the spotted owl under the Endangered Species Act and the resulting restrictions on timber harvest in the Pacific Northwest precipitated an outpouring of protest and animosity directed towards both federal regulators and the owl itself. See *\$7,500 Reward in Arson Cases, Owl Killings*, SEATTLE TIMES, Feb. 26, 1991, at C4; *Loggers Protest Owl Decision*, NEW YORK TIMES, June 25, 1990, at A13.

11. Robert Devine, *The Little Things That Run the World: Invertebrates, Fungi, Protozoan and Bacteria*, SIERRA 81(4) (July 1996), at 32; Jim Watson, *Charisma! Charisma in Animals*, INT'L WILDLIFE 26(1):20 (Jan. 1996).

12. STATE OF WASHINGTON, GOVERNOR'S SALMON RECOVERY OFFICE, DRAFT STATEWIDE STRATEGY TO RECOVER SALMON: EXTINCTION IS NOT AN OPTION (1999).

13. See, e.g., Robert W. Adler, *Addressing Barriers to Watershed Protection*, 25 ENVTL. L. 973 (1995); COASTAL AMERICA, TOWARD A WATERSHED APPROACH: A FRAMEWORK FOR AQUATIC ECOSYSTEM RESTORATION, PROTECTION, AND MANAGEMENT (1994); [hereinafter COASTAL AMERICA]; EPA, THE WATERSHED PROTECTION APPROACH: ANN. REP. 1992 (1993) (EPA-840-S-93-001); NATURAL RESOURCE CONSERVATION SERVICE, THE NRCS WATERSHED PROGRAM ROLE IN LOCALLY-LED CONSERVATION: A STRATEGY FOR THE 21ST CENTURY, <<http://www.nhq.nrcs.usda.gov/CCS/Watrsd.html>> (visited May 22, 2000).

ton have adopted—on paper, at least—watershed management as the preferred methodology for implementing water and aquatic species protection programs.¹⁴

A watershed, or ecosystem, focused approach to pollution control may very well lead to more comprehensive and efficient pollution management. However, management on a watershed scale must operate within the boundaries created by the same legislation that has thus far failed to prevent the precipitous decline of many aquatic ecosystems and species. The environmental statutes primarily responsible for creating and protecting healthy, freshwater ecosystems—namely, the Clean Water Act¹⁵ and Endangered Species Act¹⁶—were written in an era when the comprehensive, broad-scale approach to pollution control envisioned by the ecosystem management approach was not part of the legislative discourse. More significantly, for two decades federal agencies focused their statutory and regulatory sights on small pieces of the environment, such as a point source discharge or an isolated population, rather than overall ecosystem health or multispecies habitat requirements.

Now, more than twenty-five years after the enactment of these landmark environmental statutes, results are mild. Great progress has been made in some areas, such as reducing point-source discharges from industries and municipal wastewater treatment plants.¹⁷ In fact, we are getting to the point of diminishing returns in regulating many point sources: it will become increasingly—and prohibitively—expensive to squeeze additional reductions out of current and future point-source discharges. The current challenge in meeting the Clean Water Act's call for fishable, swimmable waters is nonpoint-source pollution from agricultural runoff, leaking septic systems, construction, parking lots, and streets. The 1998 Washington water quality assessment, for instance, found that agriculture was responsible for fifty-seven percent of the water pollution in the state.¹⁸ Although there are well-estab-

14. THE WATERSHED PROTECTION APPROACH: ANN. REP. 1992, *supra* note 13; WASH. REV. CODE ch. 90.82 (1998). In the words of President Clinton's recently released *Clean Water Action Plan*, a watershed approach is "the best way to bring state, tribal, federal, and local programs together to more effectively and efficiently clean up and protect waters." EPA, CLEAN WATER ACTION PLAN: RESTORING AND PROTECTING AMERICA'S WATERS iii (1998) (EPA-840-R-98-001).

15. Federal Water Pollution Control Act (Clean Water Act) §§ 101-607, 33 U.S.C. §§ 1251-1387 (1994).

16. Endangered Species Act §§ 2-18, 16 U.S.C. §§ 1531-44 (1994).

17. ROBERT ADLER ET AL., *THE CLEAN WATER ACT 20 YEARS LATER* 16 (1993); Council on Environmental Quality 1994-95, at 14 (1997).

18. See Heath Foster, *U.S. Means Business in Saving Salmon, State Farmers Warned*, SEATTLE POST-INTELLIGENCER, Apr. 10, 1999, at A-1.

lished solutions for containing many nonpoint sources, imposing such controls is often a greater political and financial challenge than requiring point source controls. Similarly, as more and more species are listed as threatened or endangered under the Endangered Species Act, it is apparent that the narrowly-focused, species-by-species approach, applied only when at the verge of extirpation or extinction of a population, is an ineffective and inefficient way to address the problem of declining biological diversity.

Efforts to develop more cost-effective and politically acceptable management plans for the recovery of threatened salmon populations and improve the health of aquatic systems require a shift to environmental management on an ecosystem or whole-watershed scale. If ecosystem management is to succeed, however, standards, policies, and review under the environmental statutes must be applied uniformly and consistently. Although the agencies that implement the Clean Water Act and Endangered Species Act focus on providing healthy conditions for cold-water fish, currently there are no common fish-based standards or policies, and review processes for the two acts are entirely inconsistent. Predictably, this lack of coordination increases both the costs of compliance and frustration on the part of those trying to comply.

This Article examines the interplay between the Clean Water Act and Endangered Species Act, the necessity of applying these statutes under an ecosystem or watershed based model, and the need to coordinate and integrate standards and review processes under the acts. The concept of watershed management is summarized in Part II, and Part III gives a brief overview of the two statutes and their implementation. Part IV focuses on the opportunities for, and necessity of, streamlining and integrating the standards and review under the two statutes to support the integrated, place-based, management model envisioned by a watershed approach. We conclude in Part V that a change in the historical approach to environmental management is essential if we are to take the next big step forward in environmental health.

II. WHAT IS WATERSHED MANAGEMENT?

A watershed—also known as a drainage basin—is the area in which “all water, sediments, and dissolved materials flow or drain from the land into a common river, lake, ocean, or other body of water.”¹⁹ It includes both the water resource(s) and the land from

19. EPA, WETLANDS AND WATERSHEDS, <<http://www.epa.gov/OWOW/wetlands/facts/fact26.html>> (last revised May 25, 1999). Some agencies and academics define watersheds

which the water drains. Watersheds vary greatly in size, from a few acres for some small streams, to the one million-square-mile watershed of the Mississippi River, which itself is made up of thousands of smaller watersheds.²⁰ Predictably, watersheds often cross multiple jurisdictional and geographic boundaries. The watershed for the Columbia River, for instance, is spread over two nations, five states, two EPA administrative regions, and the jurisdictions of numerous local governments.²¹

Watershed management is premised on the notion that the quality of rivers, streams, wetlands, and other water sources is directly related to the quality of the environment surrounding these waters, which in turn depends in part on the effluents discharged into the area's waterbodies. A watershed focused approach to water protection considers the whole system, including other resource management programs, which address land, air, and water, when developing solutions to the problems of a given water resource. A significant component of watershed management is the participation of stakeholders in the affected communities in decision-making and planning for the watershed.²²

The fundamental difference between watershed management and the traditional approach to environmental regulation and management is the focus of watershed management on the health of the watershed and the tailoring of environmental standards and restoration measures to meet that goal. The traditional environmental management paradigm, on the other hand, takes the opposite approach: It focuses on individual property owners and permit applicants, in the belief that compliance at the individual level will filter upwards to overall health at the watershed or ecosystem level. So far, it has not.

Watershed management is not a new idea in the United States. In the late 1800s, John Wesley Powell, explorer and first director of the U.S. Geological Survey, advocated the organization of the social and political institutions of the West along "hydrographic" districts, or self-governing geographic units.²³ The era following World War II

in less broad terms but, because the EPA is the agency charged with implementing the Clean Water Act, the EPA definition is the one used here.

20. COASTAL AMERICA, *supra* note 13, at 1.

21. The watershed lies under both Canada and the United States, including Washington, Oregon, Idaho, Montana, and Wyoming. This includes EPA regions VIII and X.

22. See, e.g., THE WATERSHED PROTECTION APPROACH: ANN. REP. 1992, *supra* note 13, at 11-12.

23. BETSEY RIEKE & DOUG KENNEY, RESOURCE MANAGEMENT AT THE WATERSHED LEVEL: REPORT TO THE WESTERN WATER POLICY REVIEW ADVISORY COMMISSION 4 (1997). Powell's concept pointed to two related, but opposing, approaches: (1) the adoption of comprehensive and integrated watershed management, like that being proposed today; and (2)

saw an explosion of the use of federal interagency river basin committees, which were supposed to be used to coordinate regional development activities and broaden community decision-making; these committees were terminated, however, when studies showed that the committees acted as tools of special interest groups.²⁴ Soon thereafter, the nation's first "comprehensive" river basin legislation, the Water Resources Planning Act of 1965²⁵ established a federal interagency Water Resources Council to oversee and implement comprehensive, coordinated, joint programs prepared by river basin commissions that included federal, state, and local representatives.²⁶ However, disclaimers and savings clauses undermined the ability of the statute to change the legal status quo, and the statute's provisions were effectively abandoned when President Reagan disbanded the Water Resources Council in 1981.²⁷

Although previous efforts at large-scale river basin management failed,²⁸ efforts at the small watershed scale have generated more success. As noted by one observer, "[u]pstream-downstream conflicts . . . take on an decidedly different nature when the parties are only twenty miles apart and members of the same civic and social organizations, than when hundreds of miles (and numerous political jurisdictions) separate parties that never meet and that have little appreciation of the others' situation."²⁹ For example, efforts in the Pu'u Kukui Watershed on Maui to control feral pig populations, which were causing excessive erosion and thus contributing to the growth of exotic plants and alteration of the area's hydrology, have been largely successful.³⁰

the "wise use" management of water for human benefit through large, structural water projects built with massive federal funding. See Robert W. Adler, *Addressing Barriers to Watershed Protection*, 25 ENVTL. L. 973, 1005 (1995). The latter approach triumphed in statutes such as The Reclamation Act, 43 U.S.C. §§ 372-600(e) (1902), the Federal Power Act, 16 U.S.C. §§ 791(a)-823(b) (1902), and the Flood Control Act, 33 U.S.C. §§ 701-09(b) (1936). While the first approach was largely ignored in the United States until just recently, it was adopted in New Zealand in 1991. See Lloyd Burton & Chris Cocklin, *Water Resource Management and Environmental Policy Reform in New Zealand: Regionalism, Allocation, and Indigenous Relations*, 7 COLO. J. INT'L ENVTL. L. & POL'Y 75 (1996).

24. See RIEKE & KENNEY, *supra* note 23, at 5.

25. Pub. L. No. 89-80, 79 Stat. 244 (1965) (codified as amended at 42 U.S.C. § 1962) (1994).

26. See William Goldfarb, *Watershed Management—Slogan or Solution?* 21 B.C. ENVTL. AFF. L. REV. 483, 487 (1994), at 487.

27. See Adler, *supra* note 13, at 1010-13.

28. The Tennessee Valley Authority is, arguably, a successful regional organization in terms of coordinating development in a multistate river basin, but its success in the environmental realm is questionable.

29. RIEKE & KENNEY, *supra* note 23, at 54-55.

30. See STEVEN L. YAFFEE ET AL., *ECOSYSTEM MANAGEMENT IN THE UNITED STATES: AN ASSESSMENT OF CURRENT EXPERIENCE* 241-42 (1996).

The Tensas River Basin Initiative in Louisiana has managed to bring together a range of stakeholders to address significant ecosystem destruction and water quality problems, despite the difficult economic situation in the region.³¹ Similarly, the Feather River Coordinated Resource Management Group in California brought together previously antagonistic groups to address erosion and water quality concerns.³²

Although the success of some small watershed groups is encouraging, it is important to recognize that the stimulus for most watershed schemes has not been a general desire to improve the habitat of aquatic species. Rather, these schemes have emerged as a result of crises brought on by environmental regulation. For instance, one of the most sweeping, complex, and significant watershed-based initiatives of the decade is the California Bay-Delta program, which involves the two major rivers systems—the Sacramento and San Joaquin—that drain California's Central Valley. The Bay-Delta initiative, an effort to allocate water among agricultural, urban, and environmental uses and restore the ecological health of the San Francisco Bay Delta, has been driven in large part by a number of endangered species listings.³³ Another watershed initiative, developed to focus on metal contamination in the Upper Animas River in Colorado and New Mexico, came about largely due to concern about the possibility of harsh new water quality regulations or a federal Superfund action.³⁴ Metal contamination concerns were also the motivating factor for the formation of the Clear Creek Watershed Forum in Colorado.³⁵ A watershed project in the Memhi, Pashsimeroi, and East Fork of the Salmon Rivers in Idaho developed out of fear of the repercussions of salmon recovery actions under the Endangered Species Act.³⁶ Similarly, federal listing of the black bear helped move the Tensas River Basin Initiative forward.³⁷ Indeed, a survey of 105 sites practicing ecosystem management³⁸ found that federally listed threatened or endangered species were present in eighty-one percent of the project areas.³⁹

31. See *id.* at 269-70.

32. See RIEKE & KENNEY, *supra* note 23, at 29-31.

33. Mary Curtius, *S.F. Bay: Cleaner but Still a Ways to Go*, L.A. TIMES, Sept. 10, 1998, at A1.

34. See RIEKE & KENNEY, *supra* note 23, at 13-14.

35. See *id.* at 26-28.

36. *Id.* at 16-18.

37. See YAFFEE, *supra* note 30, at 270.

38. Watersheds are a category of ecosystems. Watershed management is, for most intents and purposes, the equivalent of ecosystem management.

39. See YAFFEE, *supra* note 30, at 7.

III. THE STATUTES

A. *The Endangered Species Act*

1. Statutory Provisions

The 1973 Endangered Species Act,⁴⁰ administered by the United States Fish and Wildlife Service and National Marine Fisheries Service (the services), is the nation's premier legislation for preserving biodiversity and the habitat and ecosystems upon which species depend. Under section 4 of the act, the services determine, based on the "best scientific and commercial data available," those species that should be listed as either "endangered" or "threatened."⁴¹ Thus, consideration of economic impact plays no role in the listing decision.

At the time of listing the services must, "to the maximum extent prudent and determinable," designate the critical habitat of the species.⁴² The critical habitat is the specific areas within or outside the geographical range of the species at the time of listing that are found to contain the physical or biological features essential to the conservation of the species and that may require special management or protection.⁴³ Although economic and other impacts are not considered during the listing process, the services must consider such impacts when designating critical habitat. Furthermore, areas may be excluded from designation as critical habitat if the costs of designation would outweigh the benefits, provided such exclusion would not result in the extinction of the species.⁴⁴

Once a species is listed and its critical habitat defined, it is unlawful for any person⁴⁵ to "take" any endangered animal species⁴⁶

40. Endangered Species Act §§ 2-18, 16 U.S.C. §§ 1531-44 (1994).

41. See Endangered Species Act § 4. A species is "endangered" if it is "in danger of extinction throughout all or a significant portion of its range," *id.* § 3(6), and "threatened" if it is likely to become endangered "within the foreseeable future." *Id.* § 3(20). As of March 31, 1999, 703 species of plants and 478 species of animals were listed as threatened and endangered under the Endangered Species Act. U.S. Fish & Wildlife Serv., Divs. of Endangered Species, ENDANGERED SPECIES GENERAL STATISTICS <<http://www.fws.gov/r9endspp/esastats.html>> (revised March 31, 1999).

42. Endangered Species Act § 4(a)(3). This determination is open to further revision. *Id.* In addition, the services must develop "recovery plans" for listed species unless the agencies determine that such a plan "will not promote the conservation of the species." *Id.* § 4(f)(1). Recovery plans are advisory documents only, not binding agreements.

43. 50 C.F.R. § 424.02(d) (1999).

44. See Endangered Species Act § 4(b)(2); 50 C.F.R. § 424.12(a) (1999).

45. "Person" includes private individuals and corporations, instrumentalities and political subdivisions of federal, state and local governments, and "any other entity subject to the jurisdiction of the United States." Endangered Species Act § 3(13), 16 U.S.C. § 1532(13) (1994).

46. See Endangered Species Act § 9(a)(1). The removal or damage of endangered plants on

unless authorized by a service under an approved “[habitat] conservation plan.”⁴⁷ “Take” is defined as any activity that would or would attempt to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a species covered by the act, either directly or indirectly (e.g., through harm arising from habitat alteration or destruction).⁴⁸

In addition to the “take” prohibitions of the Endangered Species Act, which apply to private and public sectors,⁴⁹ section 7 of the act imposes an affirmative duty on all federal agencies to initiate consultation with the relevant service whenever the agency authorizes, funds, or engages in an activity which might adversely affect an endangered or threatened species or its designated critical habitat.⁵⁰ First, the agency must provide a “biological assessment” of the potential impacts of the proposed action to the service;⁵¹ the service then has ninety days from the initiation of consultation to issue a “biological opinion” detailing how the proposed agency action may affect a listed species.⁵² If the service finds that the action will jeopardize a listed species or its designated habitat, the service may require “reasonable and prudent alternatives” to mitigate the damage.⁵³

Two tools are available in nonfederal actions to exempt certain activities from “take” under the Endangered Species Act. The more familiar of these is the Habitat Conservation Plan (HCP), which is available under section 10 of the act.⁵⁴ HCPs are typically developed through one-on-one negotiations with private landowners or repre-

federal lands, or elsewhere if in knowing violation of state law, is also prohibited. *Id.* § 9(a)(2).

47. Endangered Species Act § 10. Such “take” is authorized under an “incidental take permit.”

48. See 16 U.S.C. § 1532(19) (1994); 50 C.F.R. § 17.3 (1999) (defining harm and harass); Sweet Home Chapter of Communities for a Great Oregon v. Babbitt, 515 U.S. 687 (1995) (upholding inclusion of habitat modification in regulatory definition of “harm”).

49. Endangered Species Act §§ 3(13), 9(a)(1)(B).

50. See Endangered Species Act § 7(a)(2), 16 U.S.C. § 1536(a)(2) (1994). The activity may be an action undertaken either by the agency directly or an activity by an applicant (including a state) for whom formal approval or authorization from the federal agency is essential before engaging in the specified activity. See 50 C.F.R. § 402.02 (1999). Affected actions include, but are not limited to: (a) actions intended to conserve listed species or their habitat; (b) the promulgation of regulations; (c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (d) actions directly or indirectly causing modifications to the land, water, or air. *Id.*

51. See Endangered Species Act § 7(c). The contents of a biological assessment are discretionary, but generally include the results of physical inspections to determine the presence of a listed or proposed species, an analysis of the likely effects of the action on the species or habitat based on biological studies, review of the literature, and the views of species experts. The assessment also should describe any known future nonfederal activities in the action area that are likely to impact the species. See 50 C.F.R. § 402.12(f) (1999).

52. Endangered Species Act § 7(b)(3).

53. Endangered Species Act § 7(b)(3)(A).

54. Endangered Species Act § 10(a)(1)(B).

sentatives of state and local governments. Once an HCP is approved, an "incidental take permit" is issued authorizing incidental take in the course of otherwise lawful land use activities in exchange for long-term habitat protection measure on the part of the landowner.⁵⁵ Essential elements of the HCP include an assessment of the likely impact from incidental take; a description of the proposed steps the applicant will take to "minimize and mitigate" such impacts; a provision for long-term funding committed in support of the HCP; a description of the alternative actions considered and reasons such alternatives were not chosen; and any other measure deemed necessary or appropriate by the service.⁵⁶

Another recently-developed tool available under the Endangered Species Act is the section 4(d) Special Rule. This rule enables the services to accept packages of protective regulations or other actions that help lead to "conservation" of a species in exchange for exemptions to the prohibition of take.⁵⁷ The ultimate goal under section 4(d) is the adoption and implementation of a recovery plan that results in the "conservation" of the listed species. The section 4(d) rule applies only to species listed as *threatened* under the ESA, however, and not to those species listed as *endangered*. While Congress statutorily defined in some detail the prohibitions and exemptions for endangered species, it provided a broad grant of secretarial regulatory discretion to decide the level of protection appropriate for each threatened species.⁵⁸ This flexibility and the ability to bring multiple jurisdictions and other entities into a single rule prescribing both protective measures and exemptions makes 4(d) especially attractive for geographically broad scale efforts to recover threatened species, such as the Tri-County Salmon Restoration Initiative in Central Puget Sound.

Despite the flexibility granted in section 4(d), the Fish & Wildlife Service has opted to generally apply "take" provisions immediately upon the listing of a threatened species.⁵⁹ Conversely, under the statu-

55. See Endangered Species Act § 10(a)(1)(B), 16 U.S.C. § 1539(a)(1)(B) (1994); 50 C.F.R. § 17.3 (1999).

56. See Endangered Species Act § 10(a)(2)(A).

57. Endangered Species Act § 4(d).

58. Donald J. Barry, *Waiting to Exhale Under the ESA: The Evolution of HCPs and 4(d) Rules*, paper delivered to a Conference on Biodiversity Protection at the Natural Resources Law Center, University of Colorado School of Law, Boulder, Colorado, June 10-12, 1996, at 3. Barry, then counselor to the Assistant Secretary for Fish and Wildlife and Parks, U.S. Department of the Interior, helped draft key parts of the ESA as a congressional staff member and counseled Secretary Babbitt on such initiatives as the "no surprises" policy, which has made HCPs much more useful and attractive. He is now Assistant Secretary of the Interior for Fish and Wildlife and Parks.

59. Endangered and Threatened Wildlife and Plants, 40 Fed. Reg. 44415 (1975), codified at 50 C.F.R. § 17.31 (1999). In a few notable cases, the Fish and Wildlife Services has issued a

tory interpretation of the National Marine Fisheries Service, there is no legal prohibition on "take" until the issuance of a 4(d) rule.⁶⁰ Indeed, the National Marine Fisheries Service uses the 4(d) rule to define those activities which will constitute an illegal "take," similar to a section 10 agreement, but without detailed statutory requirements.

2. Historical Implementation

Although the Endangered Species Act professes to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved,"⁶¹ the act's substantive provisions and early implementation clearly show that the legislation is fundamentally species-by-species in its orientation. The services must "list" individual species if they are endangered or threatened, federal agencies must avoid "jeopardizing" such species,⁶² and all parties must avoid "take" of any listed species.⁶³ Where is the mention of ecosystems? Decisions are made "only about the species, based only on the status of the species, and only on behalf of the species."⁶⁴ Perhaps the greatest defect of the Endangered Species Act is that under its provisions the services—or any other federal agency, for that matter—are not explicitly directed to prevent any damage to a species before it is listed. In other words, a species must be on the way to extinction before any land use restrictions and conservation benefits are available under the act.⁶⁵ Clearly, the statute is not the "Endangered Ecosystems Act."

"special" rule pursuant to 50 C.F.R. §§ 17.40-.48 exempting a threatened species from the automatic take provisions applied to endangered species. See, e.g., Endangered and Threatened Wildlife and Plants, 57 Fed. Reg. 588 (1992) (Louisiana black bear); Endangered and Threatened Wildlife and Plants, 58 Fed. Reg. 16758 (1993) (California gnatcatcher); Endangered and Threatened Wildlife and Plants, 60 Fed. Reg. 9484 (1995) (spotted owl).

60. See, e.g., National Marine Fisheries Service, Northwest Region, THE ESA AND LOCAL GOVERNMENTS: INFORMATION ON 4(D) RULES <<http://www.nwr.gov/1salmon/salmesa/4dguid2.htm>> (revised May 7, 1999).

61. Endangered Species Act § 2(b), 16 U.S.C. § 1531(b) (1994).

62. "Jeopardize" means "to engage in an action that reasonably would be expected, directly or indirectly to reduce appreciably the likelihood of both survival and recovery of a listed species in the wild . . ." 50 CFR § 402.02 (1999).

63. "Take" means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." *Id.* § 3 (19); 16 U.S.C. 1532 (1994).

64. J.B. Ruhl, *Thinking of Environmental Law as a Complex Adaptive System: How to Clean Up the Environment by Making a Mess of Environmental Law*, 34 HOUSTON L. REV. 933, 971 (1997). See also Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act, 61 Fed. Reg. 4722, 4724 (1996) (Endangered Species Act "is not intended to establish a comprehensive biodiversity conservation program").

65. The services have attempted to combat this statutory reality in recent years through various initiatives, including the Candidate Conservation Agreements Policy, 62 Fed. Reg. 32183 (1997); Safe Harbor Agreement Policy, 62 Fed. Reg. 32178 (1997) (providing assurance that a landowner may engage in land uses in the future under Section 10 so long as such uses do

Compounding the problems of narrow focus and specificity has been the reluctance of the implementing agencies to enforce the Endangered Species Act's most substantive provisions. In addition to the costs of listing itself,⁶⁶ the agencies do not want to be the focal point of the political backlash associated with many listing decisions because of the often staggering costs of protecting species and habitat.⁶⁷ Review of federal actions under section 7 of the Endangered Species Act has also been erratic. Between 1987 and 1995, approximately 186,000 Federal actions were reviewed for adverse impacts to listed species. However, formal consultations were initiated in only 2.7% of the actions, and only 0.3% resulted in the issuance of jeopardy biological opinions.⁶⁸

not degrade a listed species' population and habitat below baseline levels); and No Surprises Policy, 62 Fed. Reg. 29091 (1997) (promising no increased financial burden on habitat conservation plan permittees in the event unforeseen circumstances require increased conservation efforts following the issuance of a plan).

66. Like other conservation programs, species conservation under the Endangered Species Act has suffered from a lack of funding. In 1990 the Office of the Inspector General of the Department Interior estimated that full recovery of all the species listed and warranting listing would cost roughly \$4.6 billion. See OFFICE OF INSPECTOR GENERAL, DEP'T OF INTERIOR, AUDIT RPT. NO. 90-98, THE ENDANGERED SPECIES PROGRAM OF THE U.S. FISH AND WILDLIFE SERVICE 11 (1990) (cited in Andrew A. Smith et al., *The Endangered Species Act at Twenty: An Analytical Survey of Federal Endangered Species Protection*, 33 NAT. RESOURCES J. 1027, 1043 (1993)). The report found that just compiling the documentation necessary to determine if listing was necessary cost \$60,000 per species on average; to review all of the candidate species at that time would have taken fifty years and cost \$114 million. Smith et al. at 1046. However, for fiscal years 1988 through 1992, appropriations for Endangered Species Act responsibilities never exceeded \$41.5 million annually. See *id.* at 1043 n.116. Furthermore, what expenditures do take place typically focus on high visibility species. For example, in 1990 more than half of Endangered Species Act expenditures were spent on only 1.7% of the 591 listed species; 25% of the species had expenditures of less than \$1,000, and 19% received no money at all. See Richard Haeuber, *Setting the Environmental Policy Agenda: The Case of Ecosystem Management*, 36 NAT. RESOURCES J. 12-13 (1996). During the Reagan administration, funding of Endangered Species Act programs increased only three percent, despite a 30% increase in the number of listed species. *Id.* These figures are especially disheartening when compared to the annual \$300 million appropriated for federal conservation programs for game wildlife. See *id.*

67. The Bonneville Power Administration, for example, must budget up to \$435 million annually for fish protection measures as a result of the 1992 listing of Snake River salmon, resulting in higher rates for its users. See *NMFS Seeks to List West Coast Salmon; Impacts Seen for Industry in Several States*, 28 ENV'T REP. (BNA) 2358 (Mar. 6, 1998). Grazing plans and timber harvests have been scaled back throughout the nation to accommodate listed species. See Oliver A. Houck, *Reflections on the Endangered Species Act* 25 ENVTL. L. 689, 694 (1995). The recent proposed listings of the thirteen salmon and steelhead populations on the West Coast came about only as a result of a lawsuit filed by a coalition of environmental, commercial, and sport fishing groups. See *Puget Sound Gillnetters Assn. v. Daley*, No. C97-1741-D (W.D. Wash. filed Nov. 1997). The Oregon Natural Resources Council had petitioned NMFS to protect Chinook salmon stocks three years earlier, so the statutory one year review period for making a listing determination had long since expired. See *id.*

68. Reasonable and prudent alternatives were found for all but 100 of the 600 "jeopardy" projects. It is worth noting that in 1986 the Fish and Wildlife Service changed the consultation

The critical habitat provisions of the Endangered Species Act are arguably the most important enforcement provisions of the act in terms of ecosystem protection. However, the services have regularly exercised their statutory discretion not to designate critical habitat, despite congressional intent that such discretion be used sparingly.⁶⁹ As a result, critical habitat never has been designated for seventy-five percent of listed species.⁷⁰ Even when they do designate critical habitat, the services frequently exempt areas important for species recovery on the grounds that the economic impact would be too severe.⁷¹

Despite the troubled history of the statute, the Endangered Species Act has recently undergone promising innovations in its application. The single most important reform in recent years has been the introduction by Interior Secretary Babbitt of the “no surprises” policy in 1994. Under this policy, once an HCP was approved, the federal government promised that it would not return at a later date to ask for more land or mitigation funding, even if the species covered by the HCP continued to decline.⁷² The policy, published in final form in February 1998, provided the certainty needed to make HCPs a workable and attractive tool for proactive conservation initiatives by private parties.⁷³ Secretary Babbitt also actively promoted large-scale, multi-species, and habitat-based HCPs.⁷⁴ The Clinton Administration applied such an approach in its response to the listing of the Northern Spotted Owl and the citizen suits, which reduced the harvest of National Forest Timber—especially old growth—to a fraction of historic levels in the Pacific Northwest.⁷⁵ As it became clear that the spotted owl was only the first in a potentially long line of listings affecting the Northwest,⁷⁶ the administration championed the develop-

requirement language from actions that might “affect” to actions that might “adversely affect” a listed species; prior to this change, an average of 19% of interagency consultations resulted in a biological opinion. Smith et al., *supra* note 66, at 1055.

69. *Id.* at 1048-49.

70. U.S. Fish and Wildlife Service, Endangered Species General Statistics <<http://www.fws.gov/r9endssp/esastats.html>> (May 31, 1997).

71. See Smith et al., *supra* note 66, at 1049.

72. Habitat Conservation Plan Assurances (“No Surprises”) Rule, 63 Fed. Reg. 8859 (1998).

73. Barry, *supra* note 58, at 8.

74. *Id.* at 10-12.

75. The Allowable Sales Quantity (ASQ) for National Forests in the Pacific Northwest (Region 6, which includes parts of northern California, Oregon, and Washington) during the Reagan and Bush administrations prior to the listing of the spotted owl averaged over five billion board feet (BBF); the authorized level for R6 under the current Northwest Forest Plan is 1.2 BBF, but sales have so far not reached the billion board foot mark.

76. See, e.g., Endangered and Threatened Species, 64 Fed. Reg. 14308 (1999) (final listing of four Chinook subspecies); Endangered and Threatened Species, 64 Fed. Reg. 14508 (1999) (final listing of two Chum salmon subspecies, two steelhead subspecies, and one sockeye subspe-

ment and adoption of the 1995 Northwest Forest Plan that adopted a multispecies approach.⁷⁷

Private-sector initiatives also showed an expanded approach from a focus on a single species to a focus on the multiple species within the ecosystem. The Washington-based Murray-Pacific Company, for example, extensively overhauled its almost completed spotted owl HCP for its privately-owned timberlands after it became clear that proposed protection of the marbled murrelet and anadromous fish could also impact its operations. Murray Pacific developed the first "all species" HCP in 1994.⁷⁸ Two years later the Plum Creek Timber Company developed an HCP for its lands in the Interstate 90 corridor that addressed over fifty species.⁷⁹

At the same time that a multispecies approach was being tested in the Pacific Northwest, the Fish and Wildlife Service initiated a campaign to implement the programs of the Endangered Species Act through an ecosystem approach.⁸⁰ Thereafter, the National Marine Fisheries Service joined the Fish and Wildlife Service in issuing an interagency policy pledging to incorporate ecosystem considerations into actions regarding listing, interagency cooperation, and recovery.⁸¹ Noting that the "future for endangered and threatened species will be determined by how well the agencies integrate ecosystem conservation with the growing need for resource use,"⁸² the agencies promised to develop cooperative approaches that would "restore, reconstruct, or rehabilitate the structure, distribution, connectivity and function" upon which threatened and endangered species depend.⁸³ The policy specifically mentioned the need to integrate ecosystem-based goals

cies); Endangered and Threatened Wildlife and Plants, 63 Fed. Reg. 31647 (1998) (final listing of two species of bull trout). See also Steve Wilhelm, *More Local Fish Species May Be Endangered*, 20 PUGET SOUND BUS. J. 6 (July 2-8, 1999).

77. The Northwest Forest Plan was developed by a blue ribbon, interdisciplinary, interagency team of biologists, economists, sociologists, and other experts who made up the Forest Management Assessment Team. See generally *Seattle Audubon Society v. Lyons*, 571 F. Supp. 1291 (W.D. Wash. 1994); FOREST MANAGEMENT ASSESSMENT TEAM, *FOREST ECOSYSTEM MANAGEMENT: AN ECOLOGICAL, ECONOMIC AND SOCIAL ASSESSMENT* (1993).

78. Interviews with Tim Thompson, who served as chief consultant for Murray Pacific, and Toby Murray, Murray Pacific manager (on file with author).

79. Rob Taylor, *A Timber Plan That's Wrapped in Green: Protecting Habitat—or Undermining It?* SEATTLE POST-INTELLIGENCER, June 25, 1996, at B1-2.

80. U.S. FISH AND WILDLIFE SERVICE, U.S. DEP'T OF THE INTERIOR, AN ECOSYSTEM APPROACH TO FISH AND WILDLIFE CONSERVATION, <<http://goose.arw.r9.fws.gov/NWRSFiles/HabitatMgmt/concept.html>> (revised May 2, 2000).

81. Endangered and Threatened Wildlife and Plants, 59 Fed. Reg. 34273 (1994) (interagency cooperative policy for the ecosystem approach to the Endangered Species Act).

82. *Id.* at 34274.

83. *Id.*

originating in the Endangered Species Act with existing mandates of other environmental laws, including the Clean Water Act.⁸⁴

B. The Clean Water Act

1. Statutory Provisions

When Congress extensively revised the Federal Water Pollution Control Act (Clean Water Act)⁸⁵ in 1972, it shifted the focus of the act from enforcement through state water quality standards to enforcement through national technology standards for point sources of pollution.⁸⁶ Provisions added that year forbid the release of pollution from a "point source" of pollution unless specific statutory requirements are fulfilled.⁸⁷ A point source is defined as "any discernible, confined and discrete conveyance. . . from which pollutants are or may be discharged."⁸⁸

The most significant limitations on point sources are those of the National Pollution Discharge Elimination System (NPDES) permit process, which imposes technology-based controls for limiting the discharge of pollutants.⁸⁹ The issuance of an NPDES permit is conditioned on the compliance of the permittee with all effluent elimination requirements established in the Clean Water Act (CWA) or with other conditions deemed necessary by the EPA to carry out the purpose of the act.⁹⁰ A discharge that meets the NPDES permit requirements is considered to be in compliance with most of the act's operative provisions.⁹¹

84. *See id.*

85. 33 U.S.C. §§ 1251-1387 (1994).

86. *See* Oliver A. Houck, *TMDLs: The Resurrection of Water Quality Standards-Based Regulation Under the Clean Water Act*, 27 ENVTL. L. REP. (Envtl. L. Inst.) 10329, 10337 (July 1997).

87. Clean Water Act § 301, 33 U.S.C. § 1311 (1994).

88. Clean Water Act § 502(14). An exception is made for return flows from irrigated agriculture. *See id.* Although the NPDES program is supervised by the EPA, states are encouraged to apply to implement their own programs. *See id.* § 402(b)-(c). When an NPDES program is delegated to a state, the EPA retains oversight responsibilities; if the agency believes that a proposed state permit will violate the provisions of the Clean Water Act, the EPA may reject it and promulgate an alternative permit in its place. *See id.* § 402(d). Furthermore, if the EPA determines that a state is not administering its NPDES program appropriately, and the state fails to take corrective action, the EPA must revoke approval of the state program. *See id.* § 402(c)(3). Today, the EPA has delegated NPDES programs to 43 states. *See* State Program Requirements, 61 Fed. Reg. 65047, 65051 (1996).

89. Clean Water Act § 402, 33 U.S.C. § 1342 (1994).

90. Clean Water Act § 402(a), 33 U.S.C. § 1342(a) (1994).

91. Clean Water Act § 402(k).

The Clean Water Act also includes a permitting program that regulates the discharge of "dredge and fill" materials into the waters of the United States.⁹² It is under these provisions that the use of ecologically vital wetlands is controlled.⁹³ The Army Corps of Engineers administers a permitting program⁹⁴ subject to substantive water protection criteria developed by the EPA.⁹⁵ The EPA also has the authority to veto a permit issued by the Corps if it determines the discharge of materials into the area at issue will "have an unacceptable adverse effect on aquatic resources, wildlife, drinking water, or recreation."⁹⁶ Numerous activities are exempted from these permitting requirements, however, including the discharge of dredged or fill material from traditional farming, silviculture, and ranching activities.⁹⁷

When Congress overhauled the Clean Water Act in 1972, it also retained provisions for water quality standards to supplement the new

92. Clean Water Act § 404, 33 U.S.C. § 1344 (1994).

93. In 1985 the U.S. Supreme Court upheld the Corps' expansive definition of "waters of the United States," which included wetlands. See *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121 (1985). Wetlands in the continental United States decreased from over 220 million acres in the 1600s to an estimated 103.3 million acres by the mid-1980s as a result of draining and conversion to other uses. See EPA, AMERICA'S WETLANDS—OUR VITAL LINK: STATUS AND TRENDS <<http://www.epa.gov/OWOW/wetlands/vital/status.html>> (visited May 22, 2000). The ecological significance of wetlands in a watershed is immense. Wetlands provide food and habitat for fish and wildlife, flood protection, shoreline erosion control, opportunities for recreation, and products for human use, such as fish and wild rice. See EPA, VALUES AND FUNCTIONS OF WETLANDS, <<http://www.epa.gov/OWOW/wetlands/wetlanda.html>> (last revised May 25, 1999). In the Southeast, 96% of the commercial catch and more than 50% of the recreational harvest of fish and shellfish occurs in the estuary-coastal wetlands system. See *id.* Nationally, hunters spend over \$600 million in pursuit of wetlands-dependent birds. See *id.* They also improve water quality by acting as a filter for surface runoff by processing organic wastes, removing or retaining its nutrients and reducing sediment before the runoff reaches rivers and other open waters. *Id.*

94. There are two types of permits issued under the "dredge and fill" provisions of the Clean Water Act. "General" permits, overseen only by the Corps, dispense of administrative review requirements for routine activities that have minimal environmental impact. Clean Water Act § 404(e), 33 U.S.C. 1344(e) (1994). "Individual" permits, which cover dredge and fill activities not covered by general permits, are subject to a lengthy and usually costly review process involving both the EPA and the Corps. See 40 C.F.R. § 230.10 (1999). An individual permit may not be issued if there is a "practical alternative to the disposed discharge that would have a less adverse impact on the aquatic system." 40 C.F.R. § 230.10(a) (1999). Applicants must also minimize wetland degradation to the extent appropriate and practical, *id.*, and they must perform "compensatory mitigation: in the event that wetland degradation or loss is unavoidable. 40 C.F.R. § 230.10(c) (1999).

95. Clean Water Act § 404(b)(1).

96. Clean Water Act § 404(c). This division of power is the product of compromises made by Congress in an attempt to balance environmental concerns with environmental interests. See Oliver Houck & Michael Rolland, *Federalism in Wetland Regulation: A Consideration of Delegation of Clean Water Act Section 404 and Related Programs to the States*, 54 MD. L. REV. 1242, 1255 (1995).

97. Clean Water Act § 404(f)(1).

point source permitting programs.⁹⁸ The act requires each state to adopt water quality standards for its waters that identify the desired “beneficial” use for each stream segment⁹⁹ and the amount of pollution that would impair this use.¹⁰⁰ These standards are subject to review by the EPA¹⁰¹ and include numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements.¹⁰² Wherever attainable, the chosen water quality standard should be high enough to sustain the Clean Water Act’s goal of “fishable and swimmable” waters.¹⁰³

As part of the water quality standards provisions, Congress introduced the concept of “total maximum daily loads” (TMDLs). The TMDL for a waterbody establishes the maximum quantitative amount of a pollutant that may be released from point and nonpoint sources without violating the water quality standards established by the state.¹⁰⁴ A TMDL includes the best estimate of pollution from nonpoint sources or natural background sources (load allocations), the amount of pollution from specific point sources (wasteload allocations), and a margin of safety “which takes into account any lack of knowledge.”¹⁰⁵ After identifying water quality standards, a state must determine which of its waters do not comply with these measures and

98. See Clean Water Act § 303. These controls were included after a bitter campaign by states and other interests who wished to avoid national technical standards for point sources. For an excellent overview of this political process, see Houck & Rolland, *supra* note 96.

99. The EPA has never defined “stream segment.”

100. See Clean Water Act § 303(a)-(c), 33 U.S.C. § 1313(a)-(c) (1994); 40 C.F.R. § 130.3. State water quality standards are reviewed by the EPA at a minimum of every three years. Clean Water Act § 303(c)(1). While the development of water quality standards is primarily a state responsibility, the EPA may also promulgate new or revised water quality standards affecting one or more states when the agency deems such action necessary to fulfill the purposes of the Clean Water Act. See 40 C.F.R. § 131.22(b) (1999).

101. The EPA has ninety days to notify a submitting state of any changes that must be made before EPA approval is granted. See Clean Water Act § 303(c)(3). If the state fails to adopt such changes within ninety days following notification, the EPA must “promptly” prepare and publish a new or revised water quality standard for the waterbody(s) involved. See *id.* § 303(c)(4). Furthermore, the EPA may issue a revised or new water quality standard “in any case where the [agency] determines that a revised or new standard is necessary to meet the requirements of [the Act].” *Id.* § 303(c)(4)(B).

102. See 40 C.F.R. § 130.7(b)(3) (1999).

103. See 40 C.F.R. § 130.3 (1999).

104. See 40 C.F.R. § 130.2(i) (1999); 40 C.F.R. § 130.7(c)(1) (1999). The promulgation of a TMDL for a WQLS only impacted by nonpoint source has been highly controversial. Recently, however, a federal court held that such waters are covered by the TMDL process requirements. See *Pronsolino v. Marcus*, 91 F. Supp. 2d 1337 (N.D. Cal. March 30, 2000).

105. 40 C.F.R. § 130.2(i) (1999). Aside from monitored NPDES outlets, it is virtually impossible to perfectly quantify every discreet point and nonpoint source, and a TMDL preparer can make only a fair approximation of relative contributions. See David L. Yaussy, *Clean Water Act: TMDLs—Pollution Control’s Next Horizon*, in ENVIRONMENTAL COMPLIANCE LAW & STRATEGY 6 (1996).

thus qualify as “water quality limited segments” (WQLS).¹⁰⁶ Those WQLS unable to meet state water quality standards even after the implementation of NPDES permit requirements¹⁰⁷ and other pollution controls¹⁰⁸ are then ranked based on the designated use of the segment and the severity of the pollution.¹⁰⁹ After ranking, states must develop a TMDL for all pollutants that exceed the allowed parameters identified for each WQLS.¹¹⁰ As with state-issued NPDES permits and water quality standards, WQLS lists and TMDLs must be reviewed and approved by the EPA.¹¹¹

Although the point-source controls on pollution achieved notable success, the nation’s waterways continued to suffer from contamination.¹¹² Thus, in 1987 Congress further amended the Clean Water Act to add a new focus on controlling nonpoint source pollution.¹¹³ Unlike point sources of water pollution, nonpoint sources are not defined in the Clean Water Act, but are interpreted to be any pollution source not included in the definition of point source.¹¹⁴

106. See Clean Water Act § 303(d), 33 U.S.C. § 1313(d) (1994). Neither Congress nor the EPA has ever defined “segment.”

107. See Clean Water Act § 303(d).

108. See 40 C.F.R. §§ 130.7(c)(1)(ii), (b)(1) (1999).

109. See 40 C.F.R. § 130.7(b)(4) (1999). The resulting list is commonly referred to as a state’s 303(d) list.

110. See 40 C.F.R. § 130.7(b)(5) (1999). Prioritization should take into account risk to human health and aquatic life; the degree of public interest and support; recreational, economic, and aesthetic concerns; the vulnerability of a particular waterbody as an aquatic habitat; immediate programmatic needs; court orders and decisions relating to water quality; and national policies and priorities. See EPA, GUIDANCE FOR WATER QUALITY DECISIONS: THE TMDL PROCESS 13-14 (1991) (EPA 440/4-91-001).

111. See Clean Water Act § 303(d)(2), 33 U.S.C. § 1313(d)(2) (1994). If disapproved, the EPA must promulgate WQLS lists and corresponding TMDLs within 30 days. See Clean Water Act § 303(d)(2). Lack of state and EPA compliance with the TMDL mandate has led to a virtual epidemic of litigation during the past five years, which in turn has refocused attention on the TMDL program. For a discussion of this litigation, see Dianne K. Conway, Note, *TMDL Litigation: So Now What?*, 17 VA. ENVTL. L. J. 83 (1998).

112. In 1991 the EPA estimated that more than half of the river miles impacted by nonpoint source pollution could not support designated uses because of nonpoint source pollutants, and use was only partially supported in an additional 28% percent of the river miles. See EPA, MANAGING NONPOINT SOURCE POLLUTION—FINAL REPORT TO CONGRESS ON SECTION 319 OF THE CLEAN WATER ACT 15-16 (1989) (EPA 506-9-90-001). Nonpoint source runoff is estimated to be responsible for 99% of sediment, 88% of nitrates, and 84% of phosphates entering U.S. waters. See NANCY R. HANSEN ET AL., THE CONSERVATION FOUNDATION, CONTROLLING NONPOINT-SOURCE WATER POLLUTION—A CITIZEN’S HANDBOOK 2 (1988).

113. See Clean Water Act § 101(a)(7), 33 U.S.C. § 1251(a)(7) (1994).

114. See MANAGING NONPOINT SOURCE POLLUTION, *supra* note 112, at 5. Nonpoint-source pollution occurs when water runs over land or through the ground, picks up pollutants, and deposits them in surface waters or groundwater. See EPA, WHAT IS NONPOINT SOURCE (NPS) POLLUTION? QUESTIONS AND ANSWERS, <<http://www.epa.gov/OWOW/NPS/qa.html>> (last revised Dec. 30, 1997). The leading known causes of nonpoint pollution are agricul-

The 1987 Clean Water Act amendments emphasized the importance of reducing nonpoint-source pollution by promoting the use of structural best management practices (BMPs)¹¹⁵ to slow or retain pollutants produced by surface water runoff.¹¹⁶ However, unlike the act's permitting programs, the implementation of the nonpoint-source provisions was left to the states; the EPA has no enforcement authority.¹¹⁷ Furthermore, rather than providing penalties for polluters who fail to adopt nonpoint pollution control practices, the Clean Water Act merely provides for grants to encourage the adoption of these practices. These grants largely failed to materialize,¹¹⁸ leaving states on their own to combat the complex problem of addressing nonpoint-source pollution. The EPA has embarked on a new strategy for strengthening the nonpoint-source program,¹¹⁹ but the agency still lacks implementation and enforcement authority.

2. Historical Implementation

The Clean Water Act establishes a goal of "fishable and swimmable" waters throughout the nation. Like the Endangered Species Act, though, the implementation of the Clean Water Act typically has been characterized by specificity and narrow focus. Since the statute's enactment, the Environmental Protection Agency has focused almost exclusively on program goals, particularly those of the permitting programs, rather than on rehabilitating aquatic ecosystems. While there are some notable exceptions—namely, the Great Lakes¹²⁰ and Chesapeake Bay—they are exceptions. Furthermore, the TMDL mandate,

ture, silviculture, mining, construction, and urban runoff. See MANAGING NONPOINT SOURCE POLLUTION, *supra* note 112, at 19-22.

115. Clean Water Act § 319(b).

116. See Clean Water Act § 319, 33 U.S.C. § 1329 (1994).

117. See *id.* For a discussion of this issue, see Conway, *supra* note 111, at 114-17.

118. In 1987 Congress authorized \$400 million in such grants for State nonpoint source pollution programs through 1991. See Clean Water Act § 319(j). But Congress ultimately appropriated \$38 million in 1990 instead of the promised \$100 million, and only \$51 million was actually appropriated in 1991 instead of the promised \$130 million. See PAUL DOYLE & LARRY MORANDI, NAT'L CONF. STATE LEGISLATORS, FINANCING CLEAN WATER: NONPOINT SOURCE POLLUTION 2 (1991).

119. See EPA, NONPOINT SOURCES—PICKING UP THE PACE: EPA'S DRAFT PROPOSED STRATEGY FOR STRENGTHENING NONPOINT SOURCE MANAGEMENT <<http://www.epa.gov/OWOW/WTRL/NPS/nsfsnsm.index.html>> (last revised Oct. 6, 1999).

120. The Clean Lakes Program, Clean Water Act § 314, 33 U.S.C. § 1324 (1994), was a precursor to the EPA's watershed protection approach. Ever since the program's structure was formally established in 1980, watershed management techniques were emphasized. See EPA, A COMMITMENT TO WATERSHED PROTECTION: A REVIEW OF THE CLEAN LAKES PROGRAM 17 (1993) (EPA-841-R-93-001) [hereinafter EPA, CLEAN LAKES REVIEW]. Priority was given to applicants proposing to utilize restoration and protection methods aimed at controlling pollutants at the source through watershed management. See *id.*

which arguably provides the greatest stimulus in the Clean Water Act for a multifaceted approach to water pollution control, was virtually ignored by the EPA and the states until an explosion of litigation in the mid-1990s.¹²¹

At one time, the narrow focus on point sources was a winning strategy. The most significant sources of water pollution in the early 1970s were the highly visible, and much maligned, industrial and municipal outfalls that dumped billions of gallons of untreated chemicals and sewage into the nation's waterbodies. This pollution was relatively easy to understand, attack, and regulate, and thus it became the focus of the "new" Clean Water Act when it was overhauled in 1972. Federal, state, and local pollution control agencies won public recognition for clamping down on these highly visible point-source discharges with technology-based controls.

Despite past success, however, the limitations of the historical approach are apparent today. According to President Clinton's *Clean Water Action Plan*, a majority of the nation's waterbodies remain impaired, primarily by nonpoint-source pollution.¹²² In response to the continued poor state of the nation's waters despite the regulatory hammers of the Clean Water Act, in 1991, the Environmental Protection Agency embarked on a watershed approach to controlling water pollution.¹²³ The agency's vision of watershed protection was traditional: it consisted of assessing the key threats to a watershed, and the development of an integrated solution addressing these threats, with the participation of all stakeholders in the watershed.¹²⁴ In 1996 this approach culminated in the EPA's Healthy Watersheds Strategy, which seeks to augment national regulatory programs with community-based solutions.¹²⁵ The key elements of the strategy are: public empowerment by providing watershed information on the Internet; developing the National Watershed Assessment Project, a cooperative project with the states for the assessment of every watershed in the nation; and reinventing the Total Maximum Daily Load program as the driving force behind the restoration of impaired waters and watersheds throughout the nation.¹²⁶

121. See EPA, Office of Water, *TMDL Litigation by State* (Jan. 22, 1999) <<http://www.epa.gov/OWOW/tmdl/lawsuit1.html>>; Conway, *supra* note 111.

122. See CLEAN WATER ACTION PLAN, *supra* note 14, at 19.

123. See EPA, THE WATERSHED PROTECTION APPROACH: AN OVERVIEW (Dec. 1991) (EPA-503-9-92-002).

124. See *id.* at 2.

125. See Memorandum from Robert Perciasepe, Assistant Administrator, EPA, to Regional Water Division Directors 1 (Aug. 9, 1996) (on file with author).

126. See *id.* at 2.

IV. INTEGRATING THE APPLICATION OF THE
ENDANGERED SPECIES ACT AND CLEAN WATER ACT
WITHIN AN ECOSYSTEM APPROACH

Over 1100 species have been listed since the passage of the Endangered Species Act,¹²⁷ of which only twenty-eight have been removed.¹²⁸ Wetlands continue to be lost at a rate of 70,000 to 90,000 acres per year.¹²⁹ Thirty-six percent of all stream and river miles, thirty-nine percent of lakes, thirty-eight percent of estuaries, and ninety-seven percent of shore miles along the Great Lakes suffer full or partial impairment.¹³⁰

The current state of the nation's waters and wildlife reveals the ineffectiveness of the traditional, narrowly focused, independent application of the Endangered Species Act and Clean Water Act and points to the compelling need for a broader-based approach to environmental management. Importantly, the stated fundamental policies of the Endangered Species Act and Clean Water Act—"preservation of ecosystems"¹³¹ and the "restor[ation] and maintain[ance] [of] the chemical, physical, and biological integrity of the Nation's waters"¹³²—are very much in keeping with the goal of ecosystem and watershed management. Making waters fishable requires allowance for fish migration, and implies treatment of rivers and other waterbodies as a whole system to ensure healthy habitat that satisfies the biological needs of the fish throughout their lifecycle. The Endangered Species Act even expressly orders federal agencies to cooperate with state and local agencies "to resolve water resources issues in concert with conservation of endangered species."¹³³

Today, both the Endangered Species Act, which is forcing us to secure healthy habitat for a rapidly increasing number of species, and the Clean Water Act's emerging requirement for limits based on TMDLs are driving us toward environmental management on a watershed or ecosystem scale. Of course, additional environmental improvement could be achieved through tougher enforcement, new technology, and more determined leadership. The costs of environ-

127. Fish and Wildlife Service, Endangered Species General Statistics <<http://www.fws.gov/r9endspp/esastats.html>> (revised March 31, 1999).

128. See FWS, Species Removed From the Endangered and Threatened Lists <<http://endangered.fws.gov/delisted.pdf>>.

129. See *id.*

130. See CLEAN WATER ACTION PLAN, *supra* note 14, at 7. The EPA surveyed 19% of all rivers and streams, 40% of all lakes, 72% of all estuaries, and 94% of all Great Lake shore miles.

131. Endangered Species Act § 2(b), 16 U.S.C. § 1531(b) (1994).

132. Clean Water Act § 101(a), 33 U.S.C. § 1251(a) (1994).

133. Endangered Species Act § 2(c).

mental compliance, however, ultimately determine the outer boundary of protective environmental initiatives. If these costs exceed the burden the nation, or its political leadership, is prepared to bear, governments at all levels will respond by rolling back environmental standards.¹³⁴ Shifting to a broad approach to environmental management at the watershed or ecosystem scale promises both greater efficiency and efficacy, because environmental resources can be targeted at the most pressing problems and needs.¹³⁵

Implementing the environmental statutes on a watershed or ecosystem scale is not without its own set of problems, however. This section examines limitations inherent in the current statutory framework relating to flexibility for environmental management at the watershed or ecosystem scale. It also looks at new tools available for promoting watershed health. Finally, this section will address one of the most significant intersections between these two statutes: the consultation requirement for federal actions under Section 7 of the Endangered Species Act.

A. *Toward a Watershed-Based Approach to Environmental Management*

To better understand some of the problems and opportunities arising from efforts to shift to a broad-scale approach to environmental management and the application of the Endangered Species Act and

134. This was very nearly the case with the Endangered Species Act in the mid-1990s, when the cost of listings became apparent in the West. The listing of the Northern Spotted Owl in the Pacific Northwest, for example, brought to a virtual halt the harvest of timber in the region's National Forests and constrained logging operations on other private timberlands. Despite efforts to restrict the export of raw logs from the region and other steps to make timber available, the small and independent lumber mills and timber-dependent communities that traditionally relied on this federal timber were hard hit. As the economic impacts of the owl and other individual listings grew, so did the pressure to waive the restrictions of the listings and even gut the Endangered Species Act itself. Timber salvage riders were enacted by Congress that temporarily suspended harvest restrictions in certain areas. The Endangered Species Act case under attack by those who argued that wave after wave of listings would wreck the economy of the rural West, especially after the change in party control of Congress in 1994. Two things saved the Endangered Species Act from its own endangered status. The most obvious was a rallying of support for "ancient forests" and the Act from environmental groups and others. The more subtle factor was the development by the Clinton administration of a new set of tools and incentives that would make the Act more pro-active, flexible, broader in scope, and "user friendly" for landowners seeking long-term certainty for their operations.

135. The authors assume that the actual revision of the current statutes to include a greater emphasis on watershed-based solutions is not realistic at the present time. The present composition of Congress and the executive branch make it highly unlikely that either the Endangered Species Act or Clean Water Act will be significantly revised in any way whatsoever. Therefore, a watershed-based approach must be configured to operate within the current statutory framework.

Clean Water Act, it is helpful to first look at two recent initiatives in Washington that adopt a watershed-based approach to address environmental problems.

As it became clear that Puget Sound Chinook salmon would be listed, local leaders in the central Puget Sound area began building a broad coalition to support salmon recovery and respond to the Endangered Species Act listing in a pro-active manner. With leadership from the county executives of Washington's three largest counties (King, Pierce, and Snohomish), mayors of the major cities, tribal leaders, environmentalists, and representatives of business and other key interests, the "Tri-County Salmon Restoration Initiative" was organized in early 1998.¹³⁶

The Tri-County salmon restoration effort is a two-pronged approach: (1) an early action program, and (2) a long-term watershed approach based on Water Resource Inventory Areas (WRIAs) defined by the Washington Department of Ecology for watershed planning, assessment, and management purposes.¹³⁷ Both prongs are grounded in science. The Tri-County salmon initiative is focused on seven major watersheds¹³⁸ and is designed to produce a system of WRIA-based biological assessments and plans, implemented by the jurisdictions and other WRIA participants.¹³⁹

In essence, the Tri-County WRIA-based approach calls for a top-to-bottom watershed evaluation, including: assessing the current productivity of the watershed and identifying factors that limit productivity, identification of important habitat areas, defining minimum and maximum flows, and assessing the restoration needs of each watershed. Responsibility for implementing the protection and restoration priorities established by the biological assessment will be negotiated among the jurisdictions and other participants in a WRIA effort and recorded in a WRIA implementation agreement. This WRIA plan will then be reviewed by the National Marine Fisheries

136. See Tri County ESA Effort Seeks Recovery (July 1998) <<http://www.psreorg/view/viewjuly.html>>.

137. See Salmon Information Center, Tri-County ESA Response <<http://www.salmon.gen.wa.us/tricounty/tri-cresponse.htm>> (March 16, 1999).

138. Snohomish, Stillaguamish, Cedar-Sammamish, Duwamish-Green, Puyallup-White, Nisqually. See KING COUNTY DEPT. OF NATURAL RESOURCES, CHINOOK STOCK STATUS AND DISTRIBUTION: TRI-COUNTY WRIA BASINS 6 (1998).

139. Because of the wide-ranging nature of the salmon life cycle, and because freshwater, estuarine, and nearshore habitats are largely controlled and impacted by the jurisdictions that are a party to the Tri-County initiative, the WRIA as the basic unit for recovery made the most sense. The alternative of having each of the many jurisdictions in a WRIA act separately and narrowly to recover salmon was seen as biologically ineffective, economically inefficient and, quite frankly, too fragmented for NMFS review, given the agency's workload limitations.

Service (NMFS) to ensure it promotes "conservation" of the species and, when approved, will be included in a 4(d) rule as sufficient to meet the WRIA participants' Endangered Species Act salmon recovery obligations.

Two key features of the WRIA plan are that it is driven by science, rather than by political considerations, and it aims to meet the recovery needs of salmon and other aquatic species for the whole WRIA. Perhaps most importantly, the plan allows participants to target their funds and efforts towards the highest priorities within a watershed, rather than being confined to actions within their own jurisdictional limits. For example, instead of spending hundreds of millions of dollars to tear up concrete along the industrialized Duwamish waterway, the City of Seattle could achieve a much more beneficial result at a fraction of the cost by protecting and restoring key spawning and rearing habitat in the middle watershed that is at imminent risk of development, or by securing additional flow in the summer and fall when temperature and other water quality problems caused by low flows kill migrating salmon.

Because of the enormity and high cost of the Tri-County Salmon Restoration Initiative, one of the principal concerns of participants is that, despite a unified and integrated effort, state and federal agencies may come back for a "second bite at the apple." In other words, the counties and other participants want assurance that if they spend the hundreds of millions, perhaps billions, of dollars necessary to comply with the prohibitions on take under the Endangered Species Act, they will not be soon faced with conflicting or overlapping water quality standards or TMDLs generated under the Clean Water Act. Without such assurance, there will be little incentive to move ahead with the initiative.

The issue of uncoordinated requirements between the Endangered Species Act and Clean Water Act was also extensively discussed during the multiagency negotiations over the "Forests and Fish agreement."¹⁴⁰ The Forests and Fish Agreement was negotiated by the Fish and Wildlife Service, National Marine Fisheries Service, EPA, Washington State Department of Natural Resources, Washington State Department of Fish and Wildlife, Washington State Department of Ecology, several Native American tribes, the Washington State Association of Counties, the Washington Forest Protection Association, and the Washington Farm Forestry Association.¹⁴¹ The goals of the process were (1) to provide compliance with

140. WASH. REV. CODE §§ 75.46.300-.350, 76.09.010-.400 (1998).

141. See Forests and Fish Report (Apr. 29, 1999). Environmental groups were involved in

the Endangered Species Act for aquatic and riparian-dependent species on nonfederal forest land, (2) to restore and maintain riparian habitat on nonfederal forest lands to support a harvestable supply of fish, (3) to meet the requirements of the Clean Water Act for water quality on nonfederal forest lands, and (4) to keep the timber industry economically viable in Washington.¹⁴²

The impetus for the Forest and Fish process arose from fears that the EPA, Fish and Wildlife Service, and National Marine Fisheries Service might apply separate fish-based water quality requirements for the same upper watershed areas. As this concern echoed to the highest levels, the Clinton Administration pledged to solve the coordination problem and develop a common fish-based water quality standard.¹⁴³ The Final Agreement, transformed into legislation (ESH B2091) and passed during a special legislative session,¹⁴⁴ grants timber companies fifty years of immunity from the ESA prohibition on take in exchange for concessions aimed at protecting cold water fish spawning habitat.

The Tri-County Salmon and Forest and Fish initiatives highlight some of the problems facing stakeholders who attempt to introduce watershed management on a large scale. If such efforts are to be successful, basic inconsistencies between the application of environmental statutes must be addressed.

The agencies implementing the Endangered Species Act and Clean Water Act currently use different paths and approaches in determining appropriate water quality. The National Marine Fisheries Service applies a "properly functioning condition" standard based on the biological needs of the anadromous fish or marine species. The NMFS has established a matrix of habitat and water quality needed to sustain salmon in watersheds that includes temperature, sedimentation, flow, and other parameters.

The Clean Water Act, on the other hand, requires that water quality standards approved by the EPA be based on the "designated use" of a waterbody.¹⁴⁵ In many cases, this "use" will be fish based,¹⁴⁶

the negotiations for nearly two years, but they pulled out in a dispute over what they felt were too many concessions on the part of NMFS. See Editorial, *Another Timber-Fish War?*, SEATTLE POST-INTELLIGENCER, Sept. 27, 1999, at E2.

142. See *id.*

143. Vice President Al Gore and Terry Garcia both committed the administration to a unified, "one-stop shop" approach to water quality standards under the Endangered Species Act and Clean Water Act during discussions with Tri-County leaders and during a press conference in Seattle on September 13, 1998.

144. Editorial, *Session Took Some Steps; More Needed*, SEATTLE POST INTELLIGENCER, May 21, 1999, at A12.

145. Clean Water Act § 303(c), 33 U.S.C. § 1313(c) (1994).

but not always. Overall, the process adopted by the EPA has been largely numerically driven, rather than biologically based.

The imposition of different standards, imposed by different agencies on the same waterbody is inefficient. More importantly, different standards breed confusion, frustration, and legal gridlock among the property owners and industries who must comply with both the Endangered Species Act and Clean Water Act. According to EPA's Region 10 ESA-CWA Integration Coordinator, Phil Millam, and other members of a federal-state team developing a common watershed assessment tool for both ESA and CWA, it would be an inefficient "travesty" for ESA conservation planning and CWA TMDLs to proceed on separate tracks for the same water bodies.¹⁴⁷ For instance, a timber company may be directed by the Fish and Wildlife Service to develop elaborate and costly timber harvest plans based on a seventy-five foot buffer zone along streams in upper watersheds in order to prevent "take" of bull trout. The company would be understandably frustrated and angry if, three years later, the EPA informed it that buffers of one hundred feet were required to comply with TMDLs for sediment and temperature.

Greater emphasis by the EPA and state agencies on narrative, biologically-based water quality standards, rather than quantitative standards, would greatly improve the services' ability to integrate the application of the two environmental statutes. Personnel uniting and reviewing standards would examine the same parameters as the services. Because the most sensitive beneficial use is generally cold water fish spawning habitat, there is little risk of lowering standards.

The adoption by the EPA, NMFS, and FWS of common protocols and approaches for scientific assessments of watershed function and priorities will also be critical to a coordinated application of the Endangered Species Act and Clean Water Act. Developing common federal water quality standards to be applied by all agencies must be a top priority. To be effective, these standards must be based on fish biology, that is, the standard necessary for an aquatic ecosystem to produce and sustain a healthy fish population. Recent action at the regional and national level in response to the proposed and final salmon and steelhead listings is promising. During a visit to Seattle in

146. See, e.g., WAC 173-201A-030 (1999) (Classification of Washington surface waters based in part on ability to sustain fish habitat.)

147. Quote from Phil Millam for this Article by Dianne Conway and Dan Evans. Comments made at March 6, 2000, Fish and Water Irrigation District subgroup on common ESA-CWA assessment tool in Olympia, Washington. Members of this work group include federal and state agencies as well as tribal, environmental, and irrigation district representatives, and are facilitated by one of the authors, Dan Evans.

September 1998, Vice-President Al Gore pledged to support and promote uniform federal environmental requirements.¹⁴⁸ Soon thereafter, the regional headquarters of the National Marine Fisheries Service and EPA initiated discussions aimed at resolving inconsistencies between regulatory application of the environmental statutes.¹⁴⁹ In August 1999 the Pacific Northwest regional offices of the services and the EPA developed and released for comment and initial use a draft guidance document aimed at encouraging and facilitating the integration of conservation planning under the Endangered Species Act and TMDLs. The August 16, 1999 draft document, "Integrating the Clean Water Act and Endangered Species Act: Analysis, Commitments and Recommendations for Aligning Total Maximum Daily Loads and Habitat Conservation Plans," provides guidance and discusses how ESA Habitat Conservation Plans (HCPs) and CWA TMDL analyses can be integrated. It also notes that the goals of the CWA and ESA are generally compatible and complementary but that the differences must be addressed in integrated plans. Although the focus of the guidance document is on individual landowners developing HCPs, it provides useful tools for larger scale applications, such as whole watersheds.¹⁵⁰ Overall, the current discussions among the agencies bode well for future cooperation and coordination.

Perhaps the greatest obstacle to integrating applications of the Endangered Species Act and Clean Water Act, however, is that each statute is subject to a different standard of review. As noted earlier, property owners, municipalities, and other stake-holders can negotiate long-term agreements for Endangered Species Act compliance with the National Marine Fisheries Service and Fish and Wildlife Service through section 10 Habitat Conservation Plans and section 4(d) rules. These agreements may be designed to last for decades. The Plum Creek HCP, for instance, was approved for a fifty-year period.¹⁵¹ Thus, stakeholders are able to obtain long-term certainty that, so long as they comply with the terms of the agreement, they will not be subject to legal sanctions under the Endangered Species Act for their land use and other activities. Accordingly, they are able to make impor-

148. Joel Connelly, *Gore Defends Clinton on Seattle Visit; Fundraising, Salmon Issues Also on Agenda*, SEATTLE POST-INTELLIGENCER, Sept. 14, 1998, at A1.

149. Discussion with Phil Millam, former chief of the Office of Water for EPA Region 10, and Tim Hamlin, Director of Water Quality for Region 10. Phil Millam now works with EPA and NMFS to spearhead such a resolution.

150. The ESA-CWA integration guidance document was signed by Chuck Clarke, Regional Administrator of EPA, Region 10; Will Stelle, Jr., Regional Director for NMFS; and by Anne Badgley, Regional Director of the US FWS.

151. Taylor, *supra* note 79, at B1-2.

tant, long-term business decisions with substantial certainty that they will not be derailed by the Endangered Species Act.

On the other hand, water quality standards, by law, are subject to triennial review by the EPA.¹⁵² Thus, standards are only “guaranteed” for three years. Furthermore, “rediscovered” TMDL requirements will have ramifications on water use and pollution control yet to be seen. Consequently, any long-term decisions by stakeholders are necessarily made in a state of uncertainty.

Obviously, the statutory constraints of the Clean Water Act make it very difficult to provide long-term assurance that compliance with an HCP or similar agreement will shield the party to the agreement from all legal exposure. Is there a solution? One possibility goes back to the use of a common standard. If all the relevant agencies, including the EPA, were signatories to a biological opinion based on fish biology (which, barring major genetic mutations, is unlikely to change) there would be far greater certainty that water quality standards will not change. Another solution to the review dilemma is the adoption by the EPA of a more lenient time frame for TMDL listing and development in exchange for substantive concessions by landowners and industries aimed at watershed restoration. Such an approach was adopted in the final Forests and Fish Report. In exchange for considerable changes in forest practices, monitoring, and enforcement, the EPA and Department of Ecology agreed to consider waterbodies encompassed by the agreement “lower priority” for TMDL development. TMDLs will not be developed for such streams and lakes for at least ten years, and then only if no alternatives to TMDLs have been developed.

B. Using New Tools to Promote Watershed Health

Most watersheds, even those with urbanized segments, now receive more pollution from nonpoint sources than from point sources, which have often been controlled to the point of diminishing returns.¹⁵³ The EPA or delegated state authority has a much easier time tightening technology-based controls for point sources—even though the cost of additional controls is usually very high and the marginal environmental benefit very low—than pursuing reductions in nonpoint pollution. There are several reasons for this. First, as

152. See Clean Water Act § 303(c)(1); 33 U.S.C. § 1313(c)(1).

153. Typically, the cost of environmental controls increase geometrically as effluent becomes cleaner. This diminishing return principle appears to be broadly applicable and should drive environmental managers and policy makers to search for low-cost, high-benefit pollution control opportunities in a watershed or airshed.

noted above, the statutory provisions of the Clean Water Act provide the EPA and delegated state authorities with much greater control over point sources than nonpoint pollution. Second, the diffused nature of nonpoint runoff makes it more difficult to identify, quantify, and regulate than pollutants being discharged from an easily identified outfall. Third, and perhaps most significantly, many sources of nonpoint pollution—dairy farmers, homeowners, and motorists—often lack the financial resources to implement the full array of Best Management Practices (BMPs) and have proven to be politically insulated from efforts to crack down on nonpoint-source pollution.¹⁵⁴

Due to their control over land use, state and local governments play an essential role in watershed protection. Unlike the EPA, which has no enforcement authority over controls on nonpoint sources, states may regulate and enforce zoning and construction, agricultural, and timber harvest practices. As noted by William Stelle, Regional Administrator for the Northwest Region of the National Marine Fisheries Service, when protecting aquatic ecosystems “[t]he states can be much more effective across the board than federal agencies They have a bigger toolbox.”¹⁵⁵

Unfortunately, due to the monetary and political costs associated with the control of nonpoint sources of pollution, many states have failed to take any meaningful action to combat the nonpoint-source problem. Most state nonpoint-source programs are voluntary; for example, a state might suggest best management practices to combat problems with agricultural runoff from fields and excess sedimentation from timber roads, but there are usually no legal consequences if farmers and timber companies choose to ignore them. When faced with the prospect of the listing of endangered species or strict water pollution controls on point source pollution, however, states are often motivated to take action.¹⁵⁶ California is implementing a \$43 million

154. One recent exception to this circumstance was the crack down by EPA Region 10 on certain dairy farmers in western Washington, who were identified as some of the most egregious violators of nonpoint rules. It helped in this case that members of the dairy community worked with EPA to identify the worst offenders. Conversation with Chuck Clarke, Regional Administrator for EPA Region 10, and Phil Millam.

155. Rob Taylor, *Compromises Likely on Salmon Protection—Feds Usually Eager for Local Control*, SEATTLE POST-INTELLIGENCER, Mar. 5, 1998, at A1.

156. Although using the Endangered Species Act and Clean Water Act as motivation mechanisms draws on the “top down, command and control” nature of these statutes for which they are so frequently criticized, it is arguably necessary to effect change. As noted in the prior discussion of watershed management, the majority of watershed initiatives developed at least in part due to the threat of federal intervention under these two statutes. See *supra* text accompanying notes 28-33. This is not surprising: a central tenant of alternative dispute resolution theory is that parties will not negotiate in earnest unless they believe that the alternative to negotiating will leave them worse off. See Goldfarb, *supra* note 26, at 501-02 (citing DOUGLAS J. AMY,

habitat restoration and watershed planning project aimed at protecting steelhead, and is also reviewing its forest practice rules following recommendations by the National Marine Fisheries Service.¹⁵⁷ Idaho embarked on a conservation program aimed at restoring watersheds degraded by excess sediment in response to the threatened listing of bull trout.¹⁵⁸ As a result of the impending salmon and steelhead listings, the governor of Washington called for the development of salmon recovery plans by local officials and citizen groups by Fall 1998, and joined the region's other governors in a call for \$200 million in federal aid to fund watershed management teams and other save-the-salmon strategies.¹⁵⁹

Whatever the motivation, with the pollution in most watersheds now largely coming from nonpoint sources, there is an urgent need to develop new nonpoint strategies that are practical and effective. This must be made a higher priority than high-cost, low-benefit efforts to wring additional reductions out of point sources. New opportunities are made possible with a watershed approach that could greatly improve watershed productivity and water quality at a lower cost than is possible under a traditional, narrowly focused approach to environmental management. Guided by a scientific assessment of an entire WRIA, for example, Tri-County participants in a WRIA plan could, as noted above, pool their resources and target the highest priority actions, that is, those that will result in the most significant improvements, to restore the biological health of the watershed. They should also be able to address some of the water quality issues on a WRIA basis using scientific analysis to determine the highest priorities and apply controls accordingly. This approach is highly attractive, because it enables WRIA participants to restore ecosystem function and water quality at the lowest cost by targeting the highest priorities.

The concept of maximizing the effectiveness of water quality controls and minimizing the costs of pollution control on a watershed scale by allowing polluters to trade high-cost, low-benefit control requirements under the Clean Water Act for lower-cost, higher-bene-

POLITICS OF ENVIRONMENTAL MEDIATION (1987)). The ramifications of a species listing or tighter restrictions on water quality are nearly universally seen as "worse", at least from an economic standpoint.

157. *NMFS Lists Two Steelhead Groups, Defers to State Plans on Three Others*, 28 ENV'T REP. (BNA) 2439 (Mar. 20, 1998).

158. See GOVERNOR PHILIP E. BATT BULL TROUT CONSERVATION PLAN: EXECUTIVE SUMMARY (1999) <<http://www.enn.com/enn-news-archive/1996/02/021396/02bull12.txt>> (visited May 22, 2000).

159. *Proposed Listing of Puget Sound Salmon Called Turning Point on Water Protection*, 28 ENV'T REP. (BNA) 2360 (Mar. 6, 1998); Editorial, *Single Authority Needed to Save Fish*, SEATTLE POST-INTELLIGENCER, Jan. 19, 1999, at A6.

fit opportunities is not new. The potential benefits of “effluent trading” have generated much interest in market-based solutions to pollution control in recent years by commentators and the EPA. In 1997 the EPA published draft guidelines for effluent trading¹⁶⁰ and has been encouraging pilot projects around the country.¹⁶¹ This development is especially significant in watersheds where point sources have been controlled to the point of diminishing returns—that is, to the point where achieving additional reductions is disproportionately expensive—and most of the load entering the watershed is from nonpoint runoff which could be controlled at a far lower cost.

In a number of watersheds in western Washington, the conditions for effluent trading based on whole-watershed planning appear very promising. In the typical watershed in central Puget Sound, for instance, the lower watershed is urbanized, the middle watershed is a combination of rapidly growing suburbs, dairy farms, “hobby farms,” and other rural land uses; and the upper watershed is used for forestry and water supply purposes. After decades of progress on point sources, the nonpoint sources produce most of the pollution load in the form of nutrients (nitrogen, phosphates) and pathogens from farm animal wastes, leaking septic systems, and fertilizers and pesticides. Point-source dischargers who meet the criteria of the guidelines and have high-cost, low-benefit Clean Water Act obligations should be able to “buy” much greater load reductions for a lower cost by applying at least some of their resources to low-cost, high-benefit nonpoint control opportunities.

Recently, EPA Region 10 initiated an effluent-trading demonstration project on the Lower Boise River in Idaho. The goal of trading is an up to eighty percent reduction in total phosphorus in the river originating from farm runoff and municipal sewage treatment plants, as will likely be called for in TMDLs.¹⁶² Market studies found that the cost per pound for removal of phosphorus through capital investments in the sewage treatment plants along the river ranged from \$20 to \$175 per pound for a source’s final increment of reduction needed to reach the pollutant target.¹⁶³ On the other hand, the cost implementation of BMPs aimed at reducing phosphorus runoff from agricultural practices ranged from only three to twelve dollars per

160. EPA, OFFICE OF WATER, DRAFT FRAMEWORK FOR WATERSHED-BASED TRADING, (May 1996) (EPA 800-R-96-001).

161. For a discussion of past attempts at effluent trading, see generally the EPA’s watershed safe and linked documents <<http://www.epa.gov/OWOW/watershed/trading/>>.

162. EPA, EPA REGION 10’S EFFLUENT TRADING INITIATIVE, <<http://www.epa.gov/r10earth/innovation.htm>>.

163. See *id.*

pound per year.¹⁶⁴ Furthermore, in addition to reducing the amount of total phosphorus, the BMPs would greatly reduce excess sediment runoff that also causes violations of the state water quality standards. Thus, the Endangered Species Act requirement to restore and protect riparian and in-stream habitat conditions, and the Clean Water Act requirement to improve water quality by reducing sedimentation caused by erosion, nutrients, and pathogens from farm animal wastes, could both be addressed by acquiring easements along stream corridors, constructing wetlands, and installing fencing to prevent cattle from degrading riparian conditions.

The TMDL program is a very attractive candidate for promoting watershed health. Instead of focusing on an individual pollutant problem, as in the case of NPDES permit controls, a TMDL takes a broad look at all pollution sources and their cumulative effect on a watershed. Not surprisingly, the EPA believes that the TMDL program will play a significant role in the conversion to a watershed management approach. In discussing the EPA's new Healthy Watershed Strategy, the Assistant Administrator of Water declares that "[r]ecent litigation and the rapidly increasing availability of environmental information and management tools create a new opportunity for us to reinvigorate the TMDL program and to accelerate the watershed protection approach."¹⁶⁵

Since the enactment of the Clean Water Act in 1972, many states have been extremely reluctant to promulgate TDMLs. Now that the courts are forcing states to promulgate them, there is concern that some states may fail to incorporate load restrictions that are stringent enough to do any good. If there is a unified policy on the federal level, however, there is a safety net. The Clean Water Act allows the EPA to disapprove a TMDL and promulgate a new one "as [the agency] determines necessary to implement the water quality standards applicable to such waters. . . ."¹⁶⁶ The agency may disapprove a state's water quality standards if the standard does not contain criteria sufficient to protect the designated use,¹⁶⁷ which must be consistent with the "fishable and swimmable" goal of the Act.¹⁶⁸ The Clean Water Act requires each state to develop a TMDL for any waterbody that does not achieve applicable water quality standards following the

164. The Cost of Supplying Phosphorus Reductions—Summary (6/15/98) (on file with authors).

165. Perciasepe Memo, *supra* note 125, at 3.

166. Clean Water Act § 303(d)(2), 33 U.S.C. §§ 1313(d)(2) (1994); *see also* 40 C.F.R. § 130.7(d)(2) (1999).

167. 40 C.F.R. §§ 131.21(b), 131.6(c) (1999).

168. *Id.* § 131.6(a).

implementation of point-source and other controls. Additionally, one of the central purposes of the Clean Water Act is to provide water quality sufficient for the protection and propagation of fish and other aquatic wildlife.¹⁶⁹ Yet many water quality impairments necessitating TMDLs stem from degraded habitat.¹⁷⁰ For instance, numerous streams are designated as cold-water fish spawning habitat¹⁷¹ but are unable to achieve this standard due to excessive sediment, temperature problems, or agricultural run-off. TMDLs for such impaired waterbodies will need to include measures to control the land use activities that cause water quality to fall or remain below applicable standards.

Another tool that has emerged in recent years is the use of "habitat parameters" in TMDLs in lieu of quantitative requirements. The TMDL for the South Steens River in Oregon, for instance, uses "view to sky" (the inverse of shade) and "active stream bank erosion" as surrogates for addressing excessive water temperature impacts. As the TMDL notes, "[a]lthough heat loads can be derived and allocated, e.g., megawatt-hours (MWH) per day, they are of limited value in guiding management activities needed to solve identified water quality problems."¹⁷² The surrogate measures are linked to management actions needed to solve the problems that cause the excessive water temperature, such as lack of riparian vegetation and erosion of sediment caused by the grazing of livestock.

The use of habitat parameters as surrogates provides a more practical method of addressing many sources of nonpoint pollution. It also creates a method for monitoring compliance with a TMDL on nonpoint sources. Instead of measuring sediment load in a stream, for instance, which can be subject to many different variables, a landowner's compliance may be monitored by whether she has built a fence to keep her cattle away from the stream. In addition, if listed fish species occur in the same stream, the TMDL requirements could—and should—mirror those required to prevent "take."

One of the principal limitations on using broad-scale environmental management tools, including effluent trading and targeting habitat protection and restorations efforts to the highest priorities, is the science needed to evaluate watershed dynamics and establish pri-

169. See Clean Water Act § 101(a)(2), 33 U.S.C. § 1251(a)(2) (1994).

170. See DRAFT TMDL PROGRAM IMPLEMENTATION STRATEGY § 3.8.3 (1996) <<http://www.epa.gov/OWOW/tmdl/strategy/strathp.html>>. The Clean Water Act specifically requires states to identify TMDL development waterbodies impacted by thermal discharges which as a result cannot "assure protection and propagation of . . . [aquatic species]." Clean Water Act § 303(d)(1)(B).

171. These standards are usually focused at the protection of salmon and trout.

172. Oregon Department of Environmental Quality, South Steens Total Maximum Daily Load (TMDL) (June 1998).

ority actions. Both the Endangered Species Act and Clean Water Act (under the 303(d) listings and TMDLs), require this type of analysis. Currently, watershed evaluation for the Endangered Species Act is more subjective than the quantitative approach required for TMDLs. Development of an interagency agreement for a common watershed evaluation methodology and protocol among the services and EPA would be an obvious step toward meeting the needs of the two acts and integrating them in an efficient manner.

Another important requirement for watershed management is the forum or infrastructure for watershed planning and coordination. The listing of Puget Sound Chinook salmon has put pressure on counties, tribes, and other local authorities to develop prototype structures to neutrally and comprehensively assess watershed needs. Because state and local governments have jurisdiction over land use and water use, they have primary responsibility for making the Endangered Species Act and Clean Water Act work in their watersheds to protect and restore salmon habitat. Instead of waiting for federal agencies to develop and refine solutions for these challenges, local governments and state agencies should take the lead in developing thoughtful approaches to protecting and restoring aquatic habitat that are consistent with federal statutory requirements. Federal agencies, after all, will have their hands full providing technical support and reviewing these proposals.

Overall, the policy directive is clear: we must develop models for environmental management at the watershed and ecosystem scale that integrate the major requirements of the Endangered Species Act and Clean Water Act, if we hope to recover listed species and meet the goals of the CWA efficiently and effectively. Continued use of the traditional approach will only lead to continued inadequate results and increased frustration on the part of those forced to make significant economic concessions for little environmental benefit.

C. Improving Section 7 Consultation

Federal agency consultation under section 7 of the Endangered Species Act provides another opportunity for integrating the application of the Endangered Species Act and Clean Water Act. Addressing potential concerns about listed species early in a federal agency's decision-making process will lead to a more coordinated approach and decrease the possibility that different standards will be applied under the Endangered Species Act later on.

The EPA and the services have already recognized the need for increased coordination in the consultation process implemented under

section 7 of the ESA. In a 1992 memorandum of understanding between the EPA and the services, the agencies acknowledged that consultation should occur on the national level "to the maximum extent possible."¹⁷³ The EPA committed itself to consultation with the services when developing water quality criteria guidance that might impact endangered or threatened species.¹⁷⁴ State water quality standards were also subject to consultation when a state submitted use designations not protective of aquatic life or water quality standards containing aquatic life criteria less stringent than the criteria developed by the EPA.¹⁷⁵

A 1997 decision by the D.C. Circuit Court of Appeals addressed the EPA's authority to promulgate water quality regulations developed through consultation with the services to protect endangered and threatened species. In *American Iron & Steel Institute v. EPA*,¹⁷⁶ the court examined the requirement in the EPA's *Final Water Quality Guidance for the Great Lakes*¹⁷⁷ that a Great Lake state incorporate into its water quality standards and NPDES permit programs any water quality provision determined by the EPA, pursuant to its own authority and the results of section 7 consultation, necessary to avoid jeopardizing the continued existence of a threatened or endangered species.¹⁷⁸ The court upheld the requirement on the basis of language in the Clean Water Act that directed the EPA to develop pollutant limits for the Great Lakes which "protect human health, aquatic life, and wildlife, and . . . provide guidance. . . on minimum water quality standards. . ." ¹⁷⁹ This broad language was "all the authority the EPA needed" to issue the regulations protecting endangered and threatened species in the Great Lakes region.¹⁸⁰ The court's interpretation bodes well for integration of the similarly broad language of the water quality

173. See Draft Memorandum of Agreement Between the Environmental Protection Agency, Fish and Wildlife Service and National Marine Fisheries Service Regarding Enhanced Coordinator Under the Clean Water Act and the Endangered Species Act, 64 Fed. Reg. 2742, 2751 (1996) [hereinafter Draft MOU].

174. *Id.* at 4-7. The statutory obligation of the EPA to develop such criteria is found in Section 304(a) of the Clean Water Act.

175. The Director of the Washington, D.C., office of the Fish and Wildlife Service might also request a consultation in light of new information.

176. 115 F.3d 979 (D.C. Cir. 1997).

177. 60 Fed. Reg. 15366 (Mar. 23, 1995).

178. 115 F.3d at 1002-03.

179. *Id.* at 1003.

180. *Id.* In its decision in *American Forest and Paper Assoc. v. EPA*, 137 F.3d 291 (5th Cir. 1998), the Fifth Circuit distinguished the D.C. Circuit's opinion by noting that the Clean Water Act provision at issue was a "far broader grant of authority" than that found in the NPDES provisions. *Id.* at 298.

standard requirements of the Clean Water Act¹⁸¹ with the consultation provisions of the Endangered Species Act.

On a related front, EPA regulations have long required consultation with the services when the EPA issues NPDES permits.¹⁸² However, how a program is delegated to a state consultation over individual permits is discretionary.¹⁸³ Recently, the federal agencies responsible for implementing the Endangered Species Act and Clean Water Act sought to broaden consultation over state NPDES programs and other Clean Water Act programs. In January 1999 a draft agreement between the EPA and the services concerning section 7 consultation over state water quality standards, NPDES permits, and wetlands dredge and fill permits ("Draft Section 7 Agreement")¹⁸⁴ was published in the Federal Register. The Draft Section 7 Agreement aims to use a "team approach at the national, regional and field office levels to restore and protect watershed and ecosystems to achieve the goals of the [Endangered Species Act] and [Clean Water Act]."¹⁸⁵ The EPA believes the proposed framework will help ensure a uniform level of protection for species regardless of their location and provide greater certainty for states and tribes assuming a permitting program in the future.¹⁸⁶

As part of the Draft Section 7 Agreement, the EPA pledges to amend its NPDES and water quality standard regulations to prohibit the issuance of a permit or standard that would likely jeopardize a listed species or result in the destruction or adverse modification of designated critical habitat.¹⁸⁷ The services and EPA would also con-

181. The statutory and regulatory language of the water quality standard provisions is relatively vague and expansive. For instance, the EPA may reject a state water quality standard if it "is not consistent with the applicable requirements of this chapter." See Clean Water Act § 303(c)(3), 33 U.S.C. § 1313(c)(3) (1994). The agency may even issue a revised or new water quality standard "in any case where the [agency] determines that a revised or new standard is necessary to meet the requirements of this chapter." *Id.* § 303(c)(4)(B).

182. See 40 C.F.R. § 122.49 (1999).

183. See 40 C.F.R. § 124.59(b), (c) (1999). Unless a state uses federal funds to develop an NPDES permit, the EPA does not consider review of such permit a federal action. Telephone Interview with Tom Charlton, Permits Divs., Office of Water, EPA (May 11, 1998) (transcription on file with author).

184. See Draft MOU, *supra* note 173.

185. See *id.* at 2742.

186. EPA, DRAFT MEMORANDUM OF AGREEMENT REGARDING THE CLEAN WATER ACT AND ENDANGERED SPECIES ACT: QUESTIONS AND ANSWERS REGARDING ITS IMPLICATIONS FOR CLEAN WATER ACT STATE/TRIBAL PERMITTING AND STANDARDS PROGRAMS 2 (1997) (on file with author).

187. See Draft MOU, *supra* note 173, at 2750, 2755-56. See also John W. Steiger, *The Consultation Provision of Section 7(a)(2) of the Endangered Species Act and Its Application to Delegable Federal Programs*, 21 *ECOL. L. Q.* 243, 266 (1994) ("the most reasonable interpretation of section 7(a)(2) is that it applies to any action in which the agency has discretion to prevent the action, regardless of whether that discretion is limited.").

sult on approval of new and existing state permitting programs and new or revised state water quality standards.¹⁸⁸ Under this scheme states or tribes would not be required to consult with the services,¹⁸⁹ but the EPA "will ensure" that the states and tribes provide the services with notices of draft permits, after which the appropriate service will supply comment as it deems necessary.¹⁹⁰ Significantly, the proposed agreement also states that if the services inform the EPA that the water quality standard(s) of a particular state are inadequate to protect a species, and the state declines to make appropriate revisions, the EPA regional office will recommend that the EPA promulgate a new standard under its own authority.¹⁹¹

Unfortunately for the consultation process, litigation over the delegation of NPDES programs to the states of Louisiana and Oklahoma has cast a shadow over some of the provisions of the Draft Section 7 Agreement. As part of the agreements delegating the NPDES program to these states, the EPA required a commitment from the states that they confer with the services when they issue an NPDES permit.¹⁹² This requirement, however, was instantly challenged by the American Forest and Paper Association (AFPA),¹⁹³ which charged that the EPA had exceeded its authority under both the Clean Water Act and Endangered Species Act.¹⁹⁴ Although the United States Dis-

188. See Draft MOU, *supra* note 173, at 2751, 2755-56. If the EPA promulgates a permit or state water quality standard itself, the agency will comply automatically with Section 7 consultation provisions. See *id.* at 2755, 2756. The draft Section 7 addresses only permitting programs delegated in the future; the EPA would run in to contractual difficulties if it attempted to impose such duties on already delegated permitting programs, unless the delegation agreement allowed for such consultation. See Steiger, *supra* note 187, at 284.

189. This differs from the delegated Louisiana and Oklahoma NPDES programs, which obligate the states to confer with the services when developing permits. See State Program Requirements, 61 Fed. Reg. 47932, 47934-4735 (1996) (Louisiana); State Program Requirements, 61 Fed. Reg. 65047, 65053 (Oklahoma) (1996).

190. Draft MOU, *supra* note 173, at 755. Unlike the delegated Louisiana and Oklahoma NPDES programs, the EPA is not obligated to reject a proposed permit if the Fish and Wildlife Service determines it will jeopardize a listed species or its critical habitat; rather, it will reject such a permit based on its own analysis. See *id.* at 29. Of course, such a determination will take any analyses by the Services into account. See *id.* at 2755-56.

191. See *id.* at 2754.

192. See State Program Requirements, 61 Fed. Reg. 47932, 47934 (1996) (final approval of the Louisiana pollutant discharge elimination system) State Program Requirements, 61 Fed. Reg. 65047 (1996) (final approval of the Oklahoma pollutant discharge elimination system).

193. See *American Forest & Paper Ass'n v. EPA*, 137 F.3d 291 (5th Cir. 1996); *American Forest & Paper Ass'n v. EPA*, 154 F.3d 1155 (10th Cir. 1997). Petitions for review of an EPA action approving a state NPDES permit may be filed in any circuit court of appeals. See *Clean Water Act* § 509(b)(1), 33 U.S.C. § 1369(b)(1) (1994).

194. See *Petitioner's Brief at 18-22, American Forest & Paper Ass'n v. EPA*, 137 F.3d 291 (5th Cir. 1996) (No. 96-60874); *Petitioner's Brief at 17-21, American Forest & Paper Ass'n v. EPA*, 154 F.3d 1155 (10th Cir. 1997) No. 97-9506. The AFPA also claimed that neither EPA nor the Fish and Wildlife Service has the authority to protect species merely proposed for listing,

trict Court for the Tenth Circuit dismissed the Oklahoma lawsuit on the basis of lack of standing,¹⁹⁵ the United States Court of Appeals for the Fifth Circuit found for the AFPA.¹⁹⁶ Although the process outlined in the Draft Section 7 agreement is distinguishable from the Louisiana delegation, other courts may nonetheless follow the Fifth Circuit's lead.

While consultation provisions for state-issued TMDLs are not included in the Draft Section 7 MOU,¹⁹⁷ the recently issued draft report of the TMDL FACA committee recommends that the EPA and the states "coordinate with, and where appropriate formally consult with, the Services. . . to ensure that individual TMDLs are adequately protective of federally. . . recognized threatened, endangered, or sensitive species."¹⁹⁸ Unfortunately for section 7 consultation purposes, the Clean Water Act gives the EPA only thirty days to review a TMDL, and only an additional thirty days to promulgate a substitute TMDL after disapproving that of a state.¹⁹⁹ Arguably, by imposing such a restrictive time limitation Congress did not intend to include discussions with other agencies as part of the review process.²⁰⁰ This point is bound to be strongly litigated if the EPA does adopt consultation procedures for TMDLs. The time constraint is implicitly acknowledged by the consent decree for the TMDL lawsuit in Pennsylvania, which contains the first acceptance by the EPA of a duty to

and that the EPA's imposition of Section 7 based requirements was an "unjustified departure" from past EPA interpretations of the Clean Water Act and Endangered Species Act. See Petitioner's Brief at 29-34, *American Forest & Paper Ass'n v. EPA*, 137 F.3d 291 (5th Cir. 1996) No. 96-60874.

195. *American Forest and Paper Ass'n*, 154 F.3d 1155.

196. See Clean Water Act § 402(b).

197. An informal cover memo from Geoff Grubbs of the EPA Office of Water to Bob Adler et al. (on file with the author) states that "TMDLs are slated to be discussed for possible inclusion in a future MOU." Notably, when the EPA develops a TMDL itself, it appears that the agency consults with the Services where appropriate. For instance, the EPA engaged in formal consultation with the Fish and Wildlife Service when developing the TMDL for dioxin for the Columbia River due to concern about the potential effect on neighboring bald eagle populations. See *Dioxin/Organochlorine Ctr. v. Clarke*, 57 F.3d 1517, 1523 (9th Cir. 1995). However, the TMDL was established by the EPA before the FWS issued a biological opinion. See *id.* at 1523 n.9. This fact did not appear to bother the United States Court of Appeals for the Ninth Circuit, which reviewed the TMDL after challenges by both industry and environmental groups. See *id.*

198. See EPA REPORT OF THE FEDERAL ADVISORY COMMITTEE ON THE TOTAL MAXIMUM DAILY LOAD (TMDL) PROGRAM 67 (1998) (EPA-100-R-98-006).

199. See Clean Water Act § 303(d)(2), 33 U.S.C. § 1313(d)(2) (1994). Similarly, the Act gives the agency only ninety days to review a state's revised or new water quality standard. See *id.* § 303(c)(3).

200. Of course, the Endangered Species Act and its consultation requirements did not exist at the time Congress created the TMDL requirements, but Congress has never attempted to add consultation requirements following passage of the Endangered Species Act.

confer with the services prior to approving or establishing the state's TMDL list.²⁰¹ Although the EPA must "request information" from the services about the existence of any endangered or threatened species in the area affected by TMDLs prior to taking final action on the 1998 TMDL list,²⁰² the services will have only thirty days to comment on the final list.²⁰³ This agreement may be the start of a trend, however—the settlement of the TMDL lawsuit in Alabama contained similar provisions.²⁰⁴

Overall, establishing a national framework for consultation will focus attention on the habitat impacts of water quality decision-making and increase the level of species protection. Almost as importantly, it will decrease the likelihood of different standards being subsequently issued by the services. It certainly marks a significant programmatic change from the EPA's previous practice of not consulting the services on water quality standards or NPDES program delegation.²⁰⁵

201. See *American Littoral Society v. EPA*, Civ. No. 96-489, at 19-20 (E.D. Pa. 1997) (consent decree). See also *American Littoral Society v. EPA*, Civ. No. 96-339, at 25 (D.N.J. 1996) (alleging approval, disapproval, or development of New Jersey's § 303(d) required consultation with the FWS in accordance with § 7 of the Endangered Species Act); Letter from James E. May, Dir. of Env't'l Law Clinic, Widener University School of Law, and Howard Fox, Sierra Club Legal Defense Fund, to Carol M. Browner, Administrator, EPA, at 13-14 (June 12, 1997) (letter of intent to file a citizen suit under the Clean Water Act and Endangered Species Act due to various alleged violations related to the TMDL program in Maryland) (on file with author).

202. See *American Littoral Society*, *supra* note 201, at 19.

203. *Id.* at 20.

204. Interview with Rick Parrish, Attorney, Southern Environmental Law Center and member of the TMDL FACA Committee (May 7, 1998) (transcript on file with author).

205. See *Mudd v. Reilly*, No. CV-91-P-1392-S (N.D. Ala. 1993). The plaintiffs in the suit alleged that the EPA violated Section 7 of the Endangered Species Act by: failing to consult with the Services in reviewing an NPDES permit; failing to consult when reviewing Alabama's water quality standards used in the NPDES program; failing to consult when approving ADEM's issuance of general NPDES permits; and failing to consult when granting funds to ADEM for its NPDES program. Plaintiff's Motion for Summary Judgment at 2-7, *Mudd v. Reilly*, No. CV-91-P-1392-S (N.D. Ala. 1993). The case was settled out of court in May 1993 after the EPA agreed to reopen and formally consult on its 1991 review of Alabama's water quality standards. *Mudd v. Reilly*, No. CV-91-P-1392-S, at 3-4 (N.D. Ala. 1993) (settlement agreement). The Fish and Wildlife Service issued a Biological Opinion on the potential impacts of Alabama's water quality standards on federally listed species on Oct. 8, 1996. See Letter from Sam D. Hamilton, Assistant Regional Director, Fish & Wildlife Serv., to John H. Hankinson, Regional Administrator, EPA (Oct. 8, 1996) (enclosing copy of Biological Opinion) (on file with author).

V. CONCLUSION

To protect your rivers, protect your mountains.

Emperor Yu of China²⁰⁶

The plight of the West Coast salmon and steelhead runs after more than a quarter century of environmental legislation aimed at saving aquatic ecosystems is a model example of the dangers of narrow specialization by federal and state agencies and programs with limited focus on singular goals. Although arguably successful in certain circumstances, this historical approach to both species preservation and water quality improvement ignores the crucial physical interrelationships between water uses and land and water management. It also is massively inefficient. As noted by one observer over a decade ago:

Twenty-five government agencies now spend \$10 billion a year on water but they do not work in unison. The Department of Agriculture drains wetlands while the Fish and Wildlife Service of the Department of the Interior tries to preserve them. The Bureau of Reclamation in the Department of the Interior irrigates new farmland while the Department of Agriculture pays farmers to leave the land idle. The Fish and Wildlife Service tries to halt channelization while the Federal Emergency Management Administration pays for bulldozers to slough through streams in attempts to push gravel away after floods.²⁰⁷

In contrast to the traditional approach, a watershed and ecosystem-based approach to environmental management offers great promise of maximizing environmental restoration and minimizing costs in the recovery of these species. To be truly effective, however, the standards and review processes of the key environmental statutes must be harmonized to prevent many of the same inefficiencies and limitations inherent in the traditional approach to environmental health. Policymakers must also examine new tools for addressing watershed health in a more efficient and cost-effective manner. The costs of maintaining the status quo are simply too great. For, as long as the

206. Yu the Great was the first emperor of the Xia dynasty (c. 21st–16th centuries B.C.). According to Chinese legend, following a great flood in the valley of the Yellow River, Yu organized the local people to cut channels and construct other projects to drain the flood waters away to the sea in what was quite possibly one of humankind's first community-based watershed projects. *Yu the Great Conquers the Flood* <<http://www.sh.com/culture/legend/yu.htm>> (visited May 22, 2000).

207. T. Palmer, *ENDANGERED RIVERS AND THE CONSERVATION MOVEMENT* 40 (1986).

Endangered Species Act is applied in a last ditch manner to single species, relying more on the “emergency room” than on preventive medicine; and as long as the Clean Water Act is focused narrowly on point sources of water pollution and mandating technology-based controls, while largely ignoring nonpoint sources, we will be stuck in the current inefficient and ineffective state of environmental health.